

Fall 1994

Legal Databases, Legal Epistemology, and the Legal Order

Nazareth A.M. Pantaloni, III

1994 Call for Papers

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Mr. Pantaloni discusses the implications of reliance on electronic versions of the law for legal epistemology and the structure of the legal system. Based on an examination of the early history of print, he challenges currently fashionable models of technological change.

A resistance fighter understands that technology must never be accepted as part of the natural order of things, that every technology . . . is a product of a particular economic and political context and carries with it a program, an agenda, and a philosophy that may or may not be life-enhancing and that therefore require scrutiny, criticism, and control. In short, a technological resistance fighter maintains an epistemological and psychic distance from any technology, so that it always appears somewhat strange, never inevitable, never natural.

—Neil Postman, *Technopoly*

To judge rightly of the present we must oppose it to the past; for all judgment is comparative, and of the future nothing can be known.

—Samuel Johnson,

The History of Rasselas, Prince of Abissinia

I. Introduction

The proliferating use of the LEXIS and WESTLAW legal databases has been accompanied by speculation about the possible effects on our current system of law. Most of the discussion has focused on changes in the topography of the legal system, legal research and legal practice,¹ as well as

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** Reference and Circulation Services Librarian, Rutgers-Camden School of Law Library, Camden, New Jersey. I am indebted to Dr. Kathleen Reed of Drexel University for her suggestions made during the preparation of the first draft of this paper. Critical readings by Linda Karr O'Connor led to many insights and improvements in subsequent drafts. Pat Court, Janet Gillespie, Sandra Beehler, Claire Germain, and Lawrence Reilly provided encouragement and suggestions. The usual disclaimers apply.

1. See, e.g., Peter W. Martin, *The Future of Law Librarians in Changing Institutions, or the Hazards and Opportunities of New Information Technology*, 83 LAW LIBR. J. 419 (1991).

practical issues associated with the technology, its development² and its implementation.³ With the exceptions of Bob Berring⁴ and Ethan Katsh,⁵ few writers have begun to address the epistemological implications of legal databases, and the ramifications for the structure of the legal system and its relationship to society.

This article surveys some of the literature on the implications of legal databases. Specifically, I discuss some of the issues presented by attempts to describe the adoption of computer-assisted legal research and the impact of legal databases. After critiquing the speculations of others, I argue that most of the writers discussing the use of legal databases have implicitly adopted an erroneous model of technological change that has led them and others to reach specious conclusions about the appropriate responses of law librarians and the legal system to the question of implementing legal databases.

II. Paradigms and Method

According to most authors chronicling the advent of legal databases and other information technologies, we are in the midst of a revolution.⁶ Indeed, for some writers the capabilities of legal databases are now approaching the realm of science fiction.⁷ According to this view, not only will legal databases institute "a major technological shift in the delivery of legal information,"⁸ but also a paradigmatic shift in "the way legal problems and legal structures will be conceptualized in the future."⁹

2. See, e.g., John Doyle, *WESTLAW and the American Digest Classification Scheme*, 84 LAW LIBR. J. 229 (1992) (discussing the impact of inconsistent key number assignments on search retrieval). West purports to have remedied some of the problems described by Doyle. See *West Polishes Up the Key Number System*, PASSWORD, Feb. 1993, at 8.

3. On pedagogical issues presented by computer-assisted legal research, see KATHLEEN M. CARRICK, *LEXIS: A LEGAL RESEARCH MANUAL* iii (1989); Donald J. Dunn, *Why Legal Research Skills Declined, or When Two Rights Make a Wrong*, 85 LAW LIBR. J. 49, 58-61 (1993).

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

5. M. ETHAN KATSH, *THE ELECTRONIC MEDIA AND THE TRANSFORMATION OF LAW* (1989).

6. According to Peter W. Martin, "[A] major technological shift in the delivery of legal information is underway . . . [involving] a massive shift from print to electronic storage and retrieval." Martin, *supra* note 1, at 420. He further states: "We are now ready for the electronic compilation of legal scholarship—a step that will take us beyond the WESTLAW and LEXIS collections and completely displace print." *Id.* at 428 (emphasis added). See also M. Ethan Katsh, *Communications Revolutions and Legal Revolutions: The New Media and the Future of Law*, 8 NOVA L. REV. 631, 655-56 (1984).

7. Donald Dunn has suggested, "We are not far from a legal information parallel universe that once only the likes of Asimov and *Star Trek* writers could envision." Dunn, *supra* note 3, at 60.

8. Martin, *supra* note 1, at 420.

9. Berring, *supra* note 4, at 15.

Further, as Ethan Katsh has suggested, there will be "a transformation in the legal order."¹⁰

Taking exception with this view might only seem to raise issues related to the history of technology and historiography generally: how to conceptualize and describe the revolution may be debatable, but the fact of its occurrence is not.¹¹ This discussion is more than simply a debate regarding the rate and characteristics of technological change, however; the current model for describing the implementation of computer-assisted legal research may be invalid. More importantly, uncritical adherence to the model could confuse certain issues and obscure other critical questions concerning the adoption of legal databases.

Implicit, if not explicit, in the notion of an information technology revolution is the assertion that once a technology is introduced, it will inevitably lead to certain articulable effects. Many writers speculating about the possible outcomes of new technologies focus on the readily apparent characteristics of an innovation and then describe its purported social, psychological, and cultural consequences in analogous terms: faster computers with advanced capabilities will result in more efficient work and better solutions to problems; newer and better technologies supplant old, obsolete ways of doing things. Inferences made on the basis of generalizations about the features of the technology in question appear intuitively coherent and valid because they are supported by a paradigm of "technological determinism."¹²

This view is most widely associated with Marshall McLuhan, who maintained that most historical phenomena are a product of various forms of communication, such as print, radio, television and film. This is so, according to McLuhan, because once "a new technology comes into a social milieu it cannot cease to permeate that milieu until every institution is saturated."¹³ As a result, "the medium . . . shapes and controls the scale and form of human association and action."¹⁴

10. Katsh, *supra* note 6, at 631.

11. Martin states:

That a major technological shift in the delivery of legal information is underway constitutes a noncontroversial observation. We may have different judgments about how far and how fast this shift is occurring in various institutional settings, but does anyone now question that a massive shift from print to electronic storage and retrieval is well underway?

Martin, *supra* note 1, at 420.

12. RUTH FINNEGAN, *LITERACY AND ORALITY: STUDIES IN THE TECHNOLOGY OF COMMUNICATION* 8 (1988). Finnegan asserts: "In this model what essentially counts is not the social, political or cultural institutions, but the underlying and determining technology." *Id.* at 11.

13. MARSHALL McLUHAN, *UNDERSTANDING MEDIA* 161 (1964), *quoted in* Katsh, *supra* note 6, at 631; KATSH, *supra* note 5, at 4. Katsh quotes from the Signet reprint of the McGraw-Hill hardcover edition.

14. McLUHAN, *supra* note 13, at 24 (Signet edition).

The history of the printing press and its purported effects have been described in equally deterministic terms by Elizabeth Eisenstein.¹⁵ According to Eisenstein, moveable type caused "a communications revolution, or (most explicitly) a shift from scribal to typographic culture,"¹⁶ which purportedly led to such diverse historical outcomes as the Protestant Reformation in the sixteenth century and the Scientific Revolution in the seventeenth century.¹⁷

A fundamental problem with this view is that it regards the relationship between technological change and societal and cultural changes as unilateral: printing and other communication technologies are seen as the cause of all that is surveyed. However, written and oral forms of communication are influenced by cultural and societal factors, and it would be more felicitous to describe the relationship as recursive and circular, acknowledging that changes in some societies and their institutions are correlated with technological changes and innovations, which are in turn shaped by the uses and demands (sometimes conscious, at other times unthinking) of the culture.

The intuitive coherence of the idea that a society and its institutions are primarily shaped by technology may be due to the following. The course of history is relative,¹⁸ but historians work on a "continuum" of "objectivity and subjectivity."¹⁹ Furthermore, as the anthropologist Ruth Finnegan has suggested, "[e]very age, perhaps, likes to think it has its own imminent 'revolution,' and its own sense of engagement in cataclysmic changes"²⁰ As a result, in the writing of history there is always discontinuity.²¹ Emphasizing the discontinuities results in a compelling perspective on history that may draw attention to previously unnoticed relationships,²² but the explanatory value of such an account may blind us to other equally important factors and leave us with nothing but invalid generalizations that are neither verifiable nor refutable. As a result, we may reach misguided conclusions about the proper present course of action.

Besides these historiographical issues, it is also essential to query our assumptions about the nature of technological change. Ideally, one should

15. See generally ELIZABETH EISENSTEIN, *THE PRINTING PRESS AS AN AGENT OF CHANGE* (1979).

16. Elizabeth Eisenstein, *Some Conjectures About the Impact of Printing on Western Society and Thought: A Preliminary Report*, 40 J. MOD. HIST. 1, 2 (1968).

17. Katsh, *supra* note 6, at 646 (discussing EISENSTEIN, *supra* note 15, at 303-13, 453-516).

18. MARY J. CARRUTHERS, *THE BOOK OF MEMORY* 13 (1990) (discussing the historian Lawrence Stone).

19. BRIAN STOCK, *LISTENING FOR THE TEXT* 76 (1990).

20. FINNEGAN, *supra* note 12, at 1.

21. STOCK, *supra* note 19, at 87.

22. FINNEGAN, *supra* note 12, at 41.

articulate an explicit conceptual model, but few writers in this area have done so. Instead, they all implicitly assume a unilateral relationship between a new technology and some purportedly dependent variable, usually ignoring, sometimes denying, relevant cultural and societal factors.

Katsh relies heavily on McLuhan and Eisenstein's model of technological change as applied to communication technologies to support his theory that "[p]rinting technology helped create the modern legal order and has continued to be a major influence upon it."²³ And, further, that putative "significant differences between print and the new technologies"²⁴ will "cause a transformation in the current legal order that has developed in the West in the last five hundred years [as a product of the spread of printing]."²⁵

The goal of Katsh's comparative historical perspective is to develop a conceptual model for the process of implementing a novel information technology to understand the implications of such innovations for law and the legal system.²⁶ Katsh suggests and demonstrates that historical examples of once-novel information technologies can be of value in understanding the possible influences of new information technologies on the law.²⁷ While Katsh focuses on printing, such a study could also include written and oral communication,²⁸ which are also "socially created products of human ingenuity and development."²⁹

A comparative historical perspective, while legitimate, involves methodological issues that must be confronted and kept in mind to qualify our discussion when, as is so often the case, the discursive tools available to us cannot adequately describe the subject at hand.³⁰ Most of these issues

23. Katsh, *supra* note 6, at 631 (citing EISENSTEIN, *supra* note 15, at Pt. III, notes 35-81 and accompanying text).

24. *Id.* at 632.

25. *Id.* at 631. See also *The Transformation of Law and Its Consequences for Legal Research, Panel Discussion*, in GRAYLYN CONFERENCE REPORT 1990, at 24, 27 (Donald Dunn ed., 1991) (comments of M. Ethan Katsh) [hereinafter *Panel Discussion*].

26. Katsh, *supra* note 6, at 632.

27. *Id.* at 632; KATSH, *supra* note 5, at 49-112. Other critical perspectives are also possible. One could also undertake a comparative study of the use of modern information technologies in other professions, such as architecture, or disciplines, such as chemistry or linguistics. There are also useful conceptual tools to be found in "diffusion research," which focuses on the patterns in the introduction, implementation, and adoption of innovations, i.e., the "diffusion of innovations." See, e.g., EVERETT M. ROGERS, *DIFFUSION OF INNOVATIONS* (3d ed. 1983); EVERETT M. ROGERS, *COMMUNICATION TECHNOLOGY: THE NEW MEDIA IN SOCIETY* (1986).

28. FINNEGAN, *supra* note 12, at 1-2.

29. *Id.* at 5.

30. As the historian Brian Stock has suggested: "Social reality, to the degree that it can be encompassed in language, is a compromise between an objectivity that cannot be known *in toto* and a subjectivity that cannot be wholly reflected upon while it is being experienced." STOCK, *supra* note 19, at 87.

involve questions of historiography and the nature of technological change. The answers suggest that simplistic generalizations about the effects of new information technologies may be misleading. The effects of innovations are perhaps highly complex, being influenced by cultural and social—not purely technological—factors.³¹

III. Orality and Literacy

People talk a great deal about language nowadays, as if they had suddenly discovered that they had been talking for thousands and thousands of years.

—Eugene Ionesco, *Fragments of a Journal*

During the past decade, a number of historians, mostly medievalists, have initiated a subtle, more nuanced look at the revival of the written word in the West during the Middle Ages. This work, along with a reexamination of the early history of print, which emphasizes the continuities in the dynamics of communication, suggests a more complex pattern of transition which renders projections based on dichotomies between “old” and “new” modes of communication much more problematic.

A number of authors have established the view that oral and written communication are dichotomous, each with distinct patterns of thought and forms of consciousness.³² Orality and literacy are described as having unique social and psychological effects that are purportedly correlated with differences in the law and its processes. According to this view, “law” in an oral culture tended toward the customary, the participatory, the ceremonial, the adaptable, and the contextual.”³³ Literacy is then frequently described as having supplanted the characteristics of orality in Europe during the Middle Ages. During this ensuing “scribal”³⁴ era, it is suggested that law “tended toward the present, the hierarchical, the informational, the spatial-temporal, and the artificial.”³⁵ In contrast, print is described as linear, conceptual, abstract, and rational.³⁶ Accordingly, with the advent of moveable type, “the law tended toward the

31. FINNEGAN, *supra* note 12, at 7.

32. The primary works espousing various theories of “pure orality” include: WALTER J. ONG, *ORALITY AND LITERACY: THE TECHNOLOGIZING OF THE WORD* (1982); MILMAN PARRY, *THE MAKING OF HOMERIC VERSE: THE COLLECTED PAPERS OF MILMAN PARRY* (Adam Parry ed., 1971); ALBERT B. LORD, *THE SINGER OF TALES* (1960); ERIC A. HAVELOCK, *PREFACE TO PLATO* (1963); ERIC A. HAVELOCK, *ORIGINS OF WESTERN LITERACY* (1976).

33. Ronald K. L. Collins & David M. Skover, *Paratexts*, 44 *STAN. L. REV.* 509, 515 (1992).

34. *Id.* at 516.

35. *Id.*

36. *Id.* at 513.

depersonalized, the objectified and systematic, the controllable and inflexible, and the abstract."³⁷

While widely held, this view is now being reexamined and criticized as inadequate.³⁸ What emerges from two recent "contextualist"³⁹ studies of the influences and uses of literacy during the Middle Ages has been described by the historian Brian Stock as a process and pattern of "transformation" and "interdependence."⁴⁰ Stock argues that what characterizes this period of revitalized levels of literacy, which did exist on a small scale in Europe before 1000 A.D.,⁴¹ is not strictly proliferating literacy, but a burgeoning sense of "textuality."⁴² By "textuality," Stock wishes to indicate a society increasingly ordered by texts, where there were varying degrees of literacy and even illiteracy among those who used texts. In describing the process in the context of the medieval practice of oral law (as opposed to written canon law), Stock states:

[T]here was a complex process of assimilation by a different mentality, in which states of textuality, rather than the oral or written alone, comprised the operative element. Only when the underlying social psychology had changed can we speak of a genuine shift to scribal culture.

*The stages were complicated and often imperceptible*⁴³

Further, "[t]he change . . . was not so much from oral to written as from an earlier state, predominantly oral, to various combinations of oral and written."⁴⁴ In short, "the written did not supersede the oral."⁴⁵ Instead, what Stock observes is that in the "literary forms" of some disciplines, such as law and history, the "mode of composition and inner logic retained strong links with the spoken word."⁴⁶ In other contexts, "oral discourse exist[ed] largely within a framework of conventions determined by texts,"⁴⁷ as in the case of "oral confession within structured penitential theology."⁴⁸

37. *Id.* at 516.

38. Perhaps the best survey of both the anthropological and historical evidence is FINNEGAN, *supra* note 12.

39. BRIAN STOCK, *THE IMPLICATIONS OF LITERACY* 5 (1983).

40. *Id.* at 3.

41. *Id.*

42. *Id.* at 7.

43. *Id.* at 9 (emphasis added).

44. *Id.*

45. *Id.* at 16.

46. *Id.* at 74.

47. *Id.* at 12.

48. *Id.* at 77. As Stock explains: "A text does not cease to be structured discourse, obedient to the laws of grammar and syntax, simply because it is spoken aloud. And oral exchange, if recorded, may still preserve many of its original features, for instance, formulae, repetition, and encyclopedism." *Id.* at 13.

M. T. Clanchy's study of "the uses of literacy in the Middle Ages"⁴⁹ also supports a complex view. His analysis of the proliferation and use of records in England from 1066 to 1307 suggests there is no straight line from the introduction of so-called literate tools to a definitive literate culture. Instead, what becomes apparent are the social and political factors that led to an increased reliance on writing for practical and bureaucratic functions, rather than solely for literate and sacred texts. The increased reliance on writing for record-keeping led to what Clanchy describes as a "literate mentality,"⁵⁰ which was comprised of literate habits and assumptions that fostered the spread of literacy beyond clerics.

There was a slow transition from oral to written acts. Before the thirteenth century, wills were viewed as distinctly oral in nature, even if the bequest were written down.⁵¹ In property law, transactions that were conducted by means of rituals and symbolic objects could be corroborated by oral testimony and eventually by written records. Then written documents themselves, in the form of charters, became the instrument of conveyances.⁵²

Many characteristically oral, behavioral, linguistic, and literary stylistic habits continued long after texts were used extensively by a broad range of society. The practice of reading aloud continued after the Middle Ages.⁵³ Authors of literary works wrote in a declamatory voice as if they were addressing an audience, despite the fact that written communication is more permanent.⁵⁴ Further, writing was conceived of as dictating to oneself rather than as a physical act.⁵⁵ In short, written forms of communication conformed to patterns, idioms, and conventions of oral communication during the twelfth century.

49. M. T. CLANCHY, *FROM MEMORY TO WRITTEN RECORD: ENGLAND, 1066-1307*, at 1 (2d ed. 1993).

50. *Id.* at 2. The awkwardness of this concept in relation to the conceptual and definitional problems associated with the terms literacy and illiteracy, discussed *infra* note 63, illustrates the usefulness of Stock's distinction between his use of the word "literacy" and his concept of "textuality." Stock, *supra* note 39, at 3-7. Clanchy seems to suggest that this "literate mentality" existed on an anthropological or societal level. According to his analysis, increased record-keeping introduced novel patterns of thought and behavior among many classes of English medieval society, even those that could not read or write in various contexts. In short, there was a novel relationship between texts and the society as a whole, even for those segments of society that could not read. Stock's "textuality" seems to be a more felicitous term than Clanchy's "literate mentality" to describe this relationship.

51. After the thirteenth century, wills were thought of as written documents. CLANCHY, *supra* note 49, at 254.

52. *Id.* at 254-55.

53. *Id.* at 266-72.

54. *Id.* at 255.

55. *Id.* at 271.

A similar pattern is apparent in the context of law. In conveyances, charters originally recorded transactions as if they were transcriptions of the parties articulating their exchange. By the thirteenth century, charters stopped addressing readers as listeners. "Conversational expressions" gave way to standardized, formulaic forms of expression that "impersonally addressed" posterity.⁵⁶

One might respond at this point that all of these examples, in fact, illustrate a shift from so-called "oral" to characteristically "written" forms of communication. However, two points need to be made clear. First, this was not a linear shift but a recursive transformation in which conventions of oral communication in different contexts shaped and were shaped by written forms of communication. Further, it is important to note that writing has never completely supplanted oral patterns of communication in the law. Indeed, many oral discursive practices still exist in law today. Witnesses swear oaths before testifying at trial, as elected officials do before taking office. Interestingly, these oral acts are coordinated with the symbolic use of a text: an oath-taker swears with the left hand on a Bible.⁵⁷ Furthermore, there are distinctly oral practices in the litigation process, including depositions at the trial stage and oral arguments during appellate review. In short, the technology of writing did not fully abrogate distinctly oral forms of expression.

These two studies illuminate many issues about the study of writing and literacy, as well as the nature of technological change generally. What they reveal is a less-than-linear relationship between the introduction of a novel communication technology, in this case writing, and a unified set of outcomes. Instead, there is a partially recursive relationship in which the new medium of writing was understood in terms of orality, until certain possibilities of writing and literacy, such as record-keeping, a larger vocabulary, and institutions organized around particular texts were realized. These outcomes, in turn, were understood in terms of the cultural and social fabric that supported and implemented writing and literacy. Their significance was understood in relation to that culture.⁵⁸

IV. Print

If then, you are building, lay the foundation of history first.

—Hugh of Saint-Victor, *Didascalicon*

56. *Id.* at 254.

57. For a discussion of the symbolic use of texts and documents during the Middle Ages, see *id.* at 254-60.

58. See generally ALEXANDER MURRAY, *REASON AND SOCIETY IN THE MIDDLE AGES* (1978) (a social history of the authority and social status of literacy in medieval Europe).

A similar process of "transformation" and "interdependence" can be seen in the introduction and adoption of moveable type. It has become commonplace to note that early printed books—1450 to 1480—resemble manuscript books of the same period.⁵⁹ This indicates that consumers of early printed books viewed them and used them in much the same way as manuscript books. Indeed, manuscript books coexisted with printed books in nearly all of the most important libraries of the Renaissance.⁶⁰ Furthermore, the demand for early printed books was perfectly correlated with the sites of commercial centers and other places where an established market and audience for books already existed—capital cities, imperial cities, and centers of international trade⁶¹—suggesting that printed books met an already existing demand.

Many authors writing about the introduction of print seek to make a case for profound psychological and cultural changes. Katsh cites the large numbers of printed books produced before 1500 in his efforts to demonstrate a revolution in habits of thought and social change in response to print.⁶² However, sheer numbers are not always an indication of social or cultural significance.⁶³ While the rate of the acquisition of books grew,

59. See S. H. STEINBERG, *FIVE HUNDRED YEARS OF PRINTING* 29 (rev. ed. 1959); Stock, *supra* note 39, at 33.

60. STEINBERG, *supra* note 59, at 180.

61. *Id.* at 20, 37-40.

62. Katsh, *supra* note 6, at 646 (citing LUCIEN FEBVRE & HENRI-JEAN MARTIN, *THE COMING OF THE BOOK* 262 (1976)) (Katsh states: "[T]welve to twenty million books were printed before 1500 and . . . one hundred and fifty to two hundred million copies were printed in the sixteenth century.").

63. Literacy is generally viewed as a reliable indication of cultural and societal change that would seem to be correlated with the availability of books. However, there are considerable methodological and conceptual problems to contend with. For example, part of the problem with the research and debate on literacy and its purported correlates is that so many of the variables are difficult to define. Even literacy can mean many things. As M. T. Clanchy demonstrates, in England during the Middle Ages, literacy meant being able to read Latin, French and/or Hebrew in various contexts. Furthermore, scribes could frequently write but not read. CLANCHY, *supra* note 49, at 226-30. This problem is compounded by the endlessly debatable (if not indefinable) nature of such abstract concepts as rationality.

Appeals to rationality are frequently attempts to acquire authority. Further, the concept may be a historically contingent idea. As Brian Stock suggests: "[T]he notion that literacy is identical with rationality . . . was just a reworking of the idea of high culture which originated in the West with the Latin assimilation of the Greek heritage." STOCK, *supra* note 39, at 31.

Moreover, even when it is possible to arrive at a definition of such concepts as abstract thought or rationality, it appears that literacy is neither necessary nor sufficient, i.e., it is not a causal factor.

[L]iterate techniques are so necessary to twentieth-century western society, and education in them is so fundamental a part of the modern individual's experience that it is difficult to avoid assuming that literacy is an essential mark of civilization. By contrast, anthropological studies of non-literate societies in the third world and sociological studies of deprived urban proletariats in the west both suggest that literacy in itself is primarily a technology. It has different effects according to circumstances and is not a civilizing force in itself . . .

CLANCHY, *supra* note 49, at 7. See also CARRUTHERS, *supra* note 18, at 297 n.62 (citing SYLVIA

the patterns of consumption continued to be fairly limited to niches previously established by manuscript books. The market for printed books remained constant in that institutions and the educated urban middle class were still the primary consumers. This suggests that important social and economic factors influenced the diffusion of print. The argument for broad, technologically based social changes is further undermined by the marked lack of literacy outside of these classes of consumers until as late as the Reformation.⁶⁴ Indeed, it appears that a strong societal commitment to universal literacy plays an equal, if not more significant, role in shaping the size and growth of a mass reading public than the social changes that make reading possible and place a value on literacy.⁶⁵

Other evidence raises doubts about Katsh's claim of a "complete shift"⁶⁶—as well as its timing⁶⁷—from a scribal to a print culture with the advent of moveable type. The first phenomenon was reported by J. W. Saunders, who first tried to account for the fact that "[a] great deal of Tudor poetry never passed beyond the manuscript stage, and . . . even where it did ultimately reach print, the manuscript was generally considered the normal medium of publication."⁶⁸

SCRIBNER & MICHAEL COLE, *PSYCHOLOGY OF LITERACY*) ("This book reports a study of the introduction of script into a traditionally oral culture, and concludes that no general effects upon abilities to memorize or to think rational thoughts resulted."); STOCK, *supra* note 39, at 33 ("[E]pic poetry . . . contains conceptualized texts, which resemble written forms of record in the same way that the layouts of manuscript pages anticipated the first printed books.").

Finally, where literacy can be shown to have societal effects, "the process by which this takes place is as yet poorly understood, both within earlier phases of western civilization and in contemporary communities which until recently had only a slight acquaintance with the written word." *Id.* at 5.

These problems would seem to warrant extraordinary caution in making extrapolations from such historical evidence to contemporary technological innovations.

64. See STOCK, *supra* note 39, at 13.

65. See generally RICHARD D. ALTICK, *THE ENGLISH COMMON READER: A SOCIAL HISTORY OF THE MASS READING PUBLIC, 1800-1900* (1957). Altick argues that the appearance of a truly mass reading public during the 19th century in England was due to social changes that benefited the poor and working class. The recognition of the value of literacy was in part a product of the Enlightenment's elaboration of the individual, along with contemporary self-improvement movements.

66. KATSH, *supra* note 5, at 33.

67. Katsh is not exactly clear on this point, but it is fairly obvious that he regards the impact of print as immediate. Moveable type is one of the "revolutions" identified in the title of his 1984 article, where he states: "In the mid-1400's, Gutenberg's invention of printing by moveable type was perceived to be equally *miraculous* and *quickly* became a powerful societal force." Katsh, *supra* note 6, at 631 (emphasis added). He is more reserved at other times, stating: "The printing of law books *gradually* turned the law library into as central a legal institution as the courthouse. The printed book *gradually* became the repository of law . . ." *Id.* at 644-45 (emphasis added). This gradual process is presumably a reference to the 450-year-old history of printed reports. KATSH, *supra* note 5, at 45. I agree with the latter, more conservative statements, and would argue that the rate is an important aspect of the nature of technological change that one should be clear about if, as Katsh does, one is going to attempt to draw valid inferences.

68. Daniel Traister, *Reluctant Virgins: The Stigma of Print Revisited*, 26 COLBY Q. 75, 77 (1990)

The work of the Tudor poets Sir Thomas Wyatt (1503-1542), Henry Howard, Earl of Surrey (1517-1547), Sir Edward Dyer (1543-1607), Sir Philip Sidney (1554-1586), and his lesser-known brother, Robert, Earl of Leicester (1563-1626), did not appear in print during their own lifetimes.⁶⁹ With the exception of a pirated edition of his play *Mustapha*, the same is equally true for Sir Philip Sidney's friend and biographer, Fulke Greville (1554-1628).⁷⁰

A similar marked insouciance, if not distaste,⁷¹ at the prospect of appearing in print can be seen in later poets of the Stuart period and even the Restoration.⁷² While John Donne's sermons circulated in print before his death in 1631 (they were his livelihood),⁷³ most of his poetry, including his *Poems*, did not.⁷⁴ Similarly, only a very small portion of the poetical work of Thomas Carew (1595?-1640?), John Suckling (1609-1641?), and Andrew Marvell (1621-1678) appeared in print before their deaths.⁷⁵ Afterward, editions of their work appeared fairly quickly.⁷⁶

At the same time, other equally important writers, such as Edmund Spenser (1552-1599) and John Milton (1608-1674) demonstrated no aversion whatsoever to publishing their major poetical works in print.⁷⁷ However, as Daniel Traister, a bibliographer, points out, "[w]riters who committed their works to print . . . pose few problems. . . . [T]hey were doing exactly what we expect writers in an era of print to have done. . . . *Questions are raised instead by those writers who eschewed print.*"⁷⁸

Saunders accounted for this conundrum by considering the social status of these writers.⁷⁹ The Tudor poets especially were courtiers who regarded

(quoting J. W. Saunders, *The Stigma of Print: A Note on the Social Bases of Tudor Poetry*, 1 *ESSAYS IN CRITICISM* 139, 139 (1951)). Traister opines:

[S]tudies that have proved extremely influential . . . have ignored Saunders, and not to the advantage of the subject they were trying to advance. Yet [Saunders's] essay is particularly important for historians of printing and its impact. It should unsettle views that have come, like a juggernaut, to dominate recent approaches to early printing history. These views see the development of printing from movable type as itself a juggernaut, quickly "revolutionizing" the ways in which knowledge was disseminated in early modern Europe.

Id. at 76 (referring generally to EISENSTEIN, *supra* note 15).

69. Traister, *supra* note 68, at 78-79.

70. *Id.* at 79.

71. *Id.* at 75.

72. *Id.* at 77, 80.

73. *Id.* at 80.

74. *Id.*

75. *Id.*

76. *Id.*

77. *Id.* at 81.

78. *Id.* at 82 (emphasis added).

79. *Id.* at 83-84.

writing poetry as a definitive role that should be developed and refined.⁸⁰ Those with sufficient talent fulfilled a social function by enhancing the cultural life of the court and its members. Their work was written for a circle of friends and acquaintances with similar literary interests, a particular occasion, or for private enjoyment.⁸¹ Appeals to a popular audience would have been “demeaning,”⁸² and concerns about the survival of their work would have been fairly irrelevant.⁸³

Considering the issue of social status makes it possible to account for Spenser’s interest in seeing his work printed. Through print, he could hope to secure the attention of members of the Court, thereby enhancing his career in government service.⁸⁴ At the same time, as Daniel Traister points out, Spenser frequently did not include his name on the title page of his published work, suggesting that he did not want to undermine his social position while attempting to improve it.⁸⁵ As for Milton, his religious and political “didactic and propagandistic aims”⁸⁶ could not have been realized in manuscript.⁸⁷

It may be argued at this point that these are uniquely literary examples from a comparatively early period in the history of print. However, all of the writers mentioned here lived and worked after the period of incunabula. These exceptions are offered not to refute the primacy of print, but rather to query the conceptual model of the history of print put forth by Katsh and others. As Traister states:

Recent historians argue for the immediacy of the impact of print on European history. In at least one kind of writer in one small corner of Europe, however, we find reason to question that immediacy of impact, and hence the generalizations through which we have learned to think about printing history generally.⁸⁸

Furthermore, Saunders’ theory about this exception—that membership in a particular social class was correlated with attitudes toward, as well as the use of, printing—demonstrates the existence of extrinsic yet significant factors influencing the adoption and diffusion of a new communication technology. In this case, it was social status that influenced the failure to adopt the technology of printing for the purpose of publishing poetry.

80. *Id.*

81. *Id.* at 82-83.

82. *Id.* at 84.

83. *Id.* at 82.

84. *Id.* at 81.

85. *Id.*

86. *Id.*

87. *Id.*

88. *Id.* at 84-85.

Literature also provides us with an example of a persistent scribal practice that was of especial importance to the law. Until the end of the nineteenth-century and the widespread use of the typewriter,⁸⁹ professional penmen known as scribes, scriveners, and copyists prepared neat copies of texts and documents. As might be expected, this profession's work was particularly important to the legal system; so much so that many scribes, like Mr. Snagsby, the Law-Stationer in Charles Dickens' *Bleak House*,⁹⁰ devoted all of their services to the legal profession, or, like Bartleby, the enigmatic protagonist of Herman Melville's *Bartleby the Scrivener, A Story of Wall Street*,⁹¹ were directly employed by lawyers. Both novels provide useful insights into the work of law-copyists, the tools of their trade and the services they provided. As Charles Dickens' inventory of Mr. Snagsby's shop illustrates, medieval scribes would probably recognize the implements used by their nineteenth-century counterparts:

Mr. Snagsby has dealt in all sorts of blank forms of legal process; in skins and rolls of parchment; in paper—foolscap, brief, draft, brown, white, whitey-brown, and blotting; in stamps; in office-quills, pens, ink, India-rubber, pounce, pins, pencils, sealing-wax, and wafers; in red tape and green ferret; in pocket-books, almanacks, diaries, and law lists; in string boxes, rulers, inkstands—glass and leaden, penknives, scissors, bodkins, and other small office-cutlery; in short, in articles too numerous to mention⁹²

Numerous indeed, but it is interesting to comment on a few noteworthy items. Among them, a bodkin, or awl, was used to prick holes to mark the start of each line on a page, in the twelfth century as well as the nineteenth century.⁹³ Some of the other writing utensils mentioned by Dickens—penknives, quills, pins and ink—were used by medieval scribes as well.⁹⁴

Herman Melville's *Bartleby* reveals more about the nature of law-copyists' work. Melville's character Bartleby is one of three scriveners employed by a sole practitioner.⁹⁵ While Bartleby ultimately refrains from doing any work, the lawyer in the novel is still portrayed as having

89. The New York law firm of Strong & Cadwalader, now Cadwalader, Wickersham & Taft, was using typewriters, which were invented in 1868, by the 1880s. See DEBORAH S. GARDNER, CADWALADER, WICKERSHAM & TAFT: A BICENTENNIAL HISTORY, 1792-1992, at 10 (1994).

90. CHARLES DICKENS, BLEAK HOUSE 115 (George Ford & Sylvere Monod eds., Modern Library 1985) (1853).

91. HERMAN MELVILLE, SHORTER NOVELS OF HERMAN MELVILLE 109 (Liveright 1928) (1853).

92. DICKENS, *supra* note 90, at 115-16.

93. *Id.* at 116 n.1; CLANCHY, *supra* note 49, at 116 (discussing a description of scribal tools in Alexander Neckham's twelfth-century lexicon *De Nominibus Utensalium*).

94. CLANCHY, *supra* note 49, at 116.

95. MELVILLE, *supra* note 91, at 111.

sufficient work to employ three law-copyists.⁹⁶ As the job title suggests, law-copyists were employed to copy legal papers, such as mortgages, conveyances,⁹⁷ and affidavits.⁹⁸ They were apparently asked to make multiple copies of the same document.⁹⁹

The fairly interesting examples of the courtier poets and of the persistence of medieval scribal practices in the work of the nineteenth century law-copyists are positively remarkable and somewhat puzzling contrasted with Ethan Katsh's dramatic view of the history of printing and the inferences he draws from it. The qualities that we have come to associate with print certainly include the standardization of multiple copies¹⁰⁰ and greater textual accuracy,¹⁰¹ as Katsh and others have suggested. But the suggestion that these characteristics led, by themselves, to the profoundly pervasive and "revolutionary"¹⁰² social, cultural, psychological and institutional changes that Katsh posits¹⁰³ becomes much less defensible and problematic because his account of the impact of print does not account for these exceptions.¹⁰⁴

Katsh ascribes tremendous significance to the standardization that print made possible, suggesting that it resulted in an increased authoritativeness of legal texts.¹⁰⁵ However, at least as late as the nineteenth century, lawyers regularly updated their printed copies of statutes by hand without any

96. *Id.* at 117.

97. *Id.* at 116-17.

98. DICKENS, *supra* note 90, at 121.

99. MELVILLE, *supra* note 91, at 120 ("Bartleby concluded four lengthy documents, being quadruplicates of a week's testimony . . .").

100. Katsh, *supra* note 6, at 649.

101. KATSH, *supra* note 5, at 33.

102. Katsh, *supra* note 6, at 655.

103. *Id.* at 644-55. For example, Katsh suggests:

Print is an ideal medium for fostering both the habits of thought and the values of a liberal legal order. As noted earlier, different media have different strengths and abilities to communicate information of various kinds. *Print is the most suitable medium for communicating law's abstract ideals and for encouraging abstract thought.*

Id. at 651 (emphasis added). See also Collins & Skover, *supra* note 33, at 516 ("After its movement from script to print, the law tended toward the depersonalized, the objectified and systematic, the controllable and inflexible, and the abstract.").

As I noted earlier, oral epic poetry includes abstract concepts, and anthropological evidence suggests the ability to read and write does not lead, by itself, to increased levels of rationality. In short, print seems to be neither sufficient nor necessary for abstract thought. See my discussion, *supra* note 63.

104. Traister, *supra* note 68, at 85-86.

105. *Panel Discussion*, *supra* note 25, at 27. Many of the innovations Katsh describes as a product of print were prefigured by scribal practices and manuscript books. See IVAN ILLICH, *IN THE VINEYARD OF THE TEXT* 93-114 (1993).

concern.¹⁰⁶ And the example of the law-copyists suggests that at least throughout the nineteenth century, the legal system had no reservations about the manuscript production of the very documents that established legal relationships, conveyed property, acknowledged debts and propelled lawsuits. While Dickens's Mr. Snagsby sold "all sorts of blank forms of legal process,"¹⁰⁷ they were apparently neither necessary nor essential. The question "why not?" raises doubts about Katsh's sweeping generalizations about the impact of print on the law.

V. Legal Databases and Legal Epistemology

A. Legal Databases

Forecasts of the imminent revolution to be wrought by legal databases and other forms of computer-assisted legal research, such as CD-ROMs and software for accessing the Internet, seem to be prevailing. However, as with earlier communication technologies, an examination of the dynamics of technological change here reveals a complex process at work.

Database technology is over thirty years old, yet has remained stable in its fundamental conception: computer technology is used to store, access, and retrieve texts and data. While legal databases have been available commercially for twenty years,¹⁰⁸ the heralded developments have been in terms of the increasing availability of materials, along with developments affecting the structure of end-user searching.¹⁰⁹

106. For example, the books and papers of the Cadwalader family that are now at the Temple Law School Library in Philadelphia, Pennsylvania, include a copy of *Acts of the General Assembly of Pennsylvania Carefully Compared with the Originals* printed in Philadelphia by Francis Bailey in 1782. Countless lacunae in the text of the Acts that were available at the time of the publication have been corrected with manuscript leaves that have been tipped into the book (Mr. Bailey's work was not as "carefully compared with the originals" as he warranted). More importantly, manuscript copies of later Acts passed by the General Assembly are included on several quires that have been sewn in at the end of the bound volume.

The book was probably owned by John Cadwalader (1805-1879), who appears to have been more confident about the authoritativeness of the manuscript additions and amendments of this book than he was in the printed text. As a member of the Pennsylvania Bar, legal counsel to the Bank of the United States, Vice-Provost of the Law Academy of Philadelphia, congressman, and a judge on the bench of the U.S. District Court of Eastern Pennsylvania, Cadwalader surely used this book extensively. Indeed, the fact that it is so assiduously corrected and updated confirms this fact.

John Cadwalader seems not to have cared about the standardization and authoritativeness of print that Katsh finds to be so significant to the history of the law. If he had, as a member of a prominent and prosperous Philadelphia family, he surely could have acquired a more satisfactory printed copy of the Acts of Pennsylvania.

107. DICKENS, *supra* note 90, at 115.

108. See William G. Harrington, *A Brief History of Computer-Assisted Legal Research*, 77 LAW LIBR. J. 543, 553 (1984-85).

109. Natural language searching is an obvious example. For a discussion, see Sheilla E. Désert, *WESTLAW Is Natural v. Boolean Searching: A Performance Study*, 85 LAW LIBR. J. 713 (1993).

One possible measure of where we are in the process of implementing legal databases might be to look at how the legal community uses the published opinions that are the basis of legal problem-solving and decision-making. Until the advent of legal databases, the opinions that were available to the legal profession were generally only available in printed reporters.

While legal databases were originally conceived as an alternative to indexes for finding judicial opinions,¹¹⁰ many now view them as an alternative means of text storage that will supplant print.¹¹¹ The legal community's current use of texts, however, suggests that we are still deeply rooted in a bibliographic paradigm.¹¹² That is, the current conception of texts is largely based on texts *qua* printed books. Even though electronic texts do not in any way conform to the physical conventions of the printed page or codex, we still use bibliographic citations for electronic texts. We continue to conceive of, relate to, and interact with texts in terms of volume numbers and page numbers, despite Martin's suggestion that "the page [is] becoming an archaic unit notion."¹¹³

The legal citation rules articulated in *The Bluebook* reflect this bias in favor of printed sources, even while *The Bluebook* attempts to accommodate electronic texts. The thirteenth edition, published in 1981, was the first to provide for the use of opinions available online: "If an unreported case is available on a computerized legal research service, indicate that fact parenthetically."¹¹⁴ The current fifteenth edition, published in 1991, allows for citations to electronic texts with several requirements and some limitations:

When a case is unreported and available on a widely used electronic database, then it may be cited to that database instead of a slip opinion. . . . Enough information must be given to enable a reader to identify the database and find the case. If the database has identifying codes or numbers that uniquely identify the case (as do LEXIS and Westlaw after 1986), these must be given. Screen or page numbers, if assigned, should be preceded by an asterisk. . . .¹¹⁵

The bias is clearly in favor of printed sources: decisions not in print but available online are viewed as "unreported."

110. See Harrington, *supra* note 108, at 543.

111. See Martin, *supra* note 1.

112. This bibliographic paradigm originated in the twelfth century when, as Brian Stock has demonstrated, texts "emerged as a reference system . . . for everyday activities and for giving shape to many larger vehicles of explanation." Stock, *supra* note 39, at 3.

113. Martin, *supra* note 1, at 426.

114. THE COLUMBIA LAW REVIEW ET AL., A UNIFORM SYSTEM OF CITATION Rule 10.8.1 (13th ed. 1986). Parenthetical references are viewed as explanatory. *Id.* at Rule 10.6.

115. THE COLUMBIA LAW REVIEW ET AL., THE BLUEBOOK Rule 10.8.1(b) (15th ed. 1991).

Granted, this may change in time, and citations to electronic texts may become interchangeable with bibliographic citations. Indeed, the legal system is presently grappling with the use of legal opinions available through electronic means.¹¹⁶ As of January 3, 1994, the United States Court of Appeals for the Sixth Circuit implemented a nonproprietary parallel citation that may be used to cite cases from the Sixth Circuit. These new reference numbers are issued by the court; the form is based on recommendations by the Judicial Conference's Committee on Automation and Technology.¹¹⁷ The Supreme Court of Louisiana has also established a parallel, uniform public domain citation to be generated by all of the state's appellate courts, effective December 31, 1994.¹¹⁸

Let us, however, examine closely the specific nature of these proposed changes. The Sixth Circuit clearly regards this as an experiment with electronic citations: there is no order to use the citation and no penalty for failing to do so.¹¹⁹ The Louisiana parallel citation is required.¹²⁰

While the change involves the use of electronic means of access to legal opinions, its impetus is largely nontechnological: it is an attempt to provide citations to federal court opinions in the public domain.¹²¹ This is, of course, in response to the West Publishing Company's claim of copyright protection on its pagination—i.e., copyright in arrangement.¹²² Thus, it is still only a parallel citation for those decisions that are reported in the West reporters and does not address the question of access to unpublished decisions through electronic means.

Accordingly, an equally if not more valid measure of the legal system's view of the authoritativeness of electronic texts is not whether it establishes parallel electronic citations for opinions found in printed reporters, but whether it permits citations to unreported judicial opinions that are only available through nonprint sources. The Sixth Circuit explicitly discourages the use of unpublished opinions except under clearly delimited circumstances.¹²³ The Wisconsin Supreme Court prohibits citations to unpublished

116. The Judicial Conference of the United States has considered the question. 56 Fed. Reg. 38,457 (1991). See also ABA Science and Technology Section, Judicial and Document Interchange Committee, Draft Proposed Resolution of the American Bar Association: Content-Related, Vendor-Neutral Citation Conventions (July 22, 1993) (on file with author).

117. *Hyperlaw, Inc. Announces Use of New Sixth Circuit-Federal Parallel Citation; United States Court of Appeals for the Sixth Circuit Adopts Non-Proprietary Citation*, Bus. Wire, Jan. 20, 1994 (LEXIS, MARKET library, BWIRE file) [hereinafter *Hyperlaw Announcement*].

118. LA. SUP. CT. R. G(8).

119. See *Hyperlaw Announcement*, *supra* note 117.

120. LA. SUP. CT. R. G(8).

121. See *Hyperlaw Announcement*, *supra* note 117.

122. See *West Publishing Co. v. Mead Data Central*, 799 F.2d 1219 (8th Cir. 1986).

123. 6TH CIR. R. 24(c).

opinions except to support a claim of res judicata, collateral estoppel, or law of the case.¹²⁴ The United States Court of Appeals for the Third Circuit, which uses an unofficial electronic citation,¹²⁵ regards decisions that have not been published in the *United States Reports*, the *Federal Reporter*, the *Federal Supplement*, or the *Federal Rules Decisions*, as “not . . . formally reported,”¹²⁶ and prohibits citations to “electronic citation systems”¹²⁷ when an opinion is available in one of the printed reporters.

The current situation clearly indicates that the legal system is currently operating under what I have called a bibliographic paradigm, and is struggling with how to use legal databases and CD-ROMs as a source for judicial opinions. Until that happens, the electronic text, at least in the case of law, appears to be only provisionally regarded as authoritative.

Ethan Katsh argues that “placing information in electronic form increases the number of options that are available for distributing and receiving the information.”¹²⁸ That much is true, but he also argues that “[i]nformation need not be presented any longer in uniform and standardized form, since many of the constraints of print have been lifted.”¹²⁹ And, because of this, “[l]aw may . . . be hurt by a process of communication that is open to doubt, is changeable, and is not always subject to easy verification,”¹³⁰ in the way that printed texts are.

I agree that printed opinions were a factor in the stability of our legal system,¹³¹ but not for the reasons Katsh suggests. Law created a closed system of problem-solving, a self-referential dialectic that perpetually validates itself by revalidating its past juridical acts, through citations to legal authorities, while legitimating its present acts.¹³² This is why the authority of electronic forms of legal texts is a function of its integrity vis á vis the printed text in an official reporter (which is considered more “trustworthy” because it is less “changeable”¹³³) and the degree to which the electronic form comports with that text. Accordingly, the current provisional utility of the electronic text is a function of how well it provides bibliographic markers: volume and page numbers. Katsh fails to recognize

124. WIS. R. APP. P. 809.23(3).

125. See *Hyperlaw Announcement*, *supra* note 117.

126. 3D CIR. R. 28.3(a).

127. *Id.*

128. KATSH, *supra* note 5, at 94.

129. *Id.*

130. *Id.*

131. *Id.*

132. PETER GOODRICH, *LEGAL DISCOURSE: STUDIES IN LINGUISTICS, RHETORIC AND LEGAL ANALYSIS* 173-74 (1987).

133. KATSH, *supra* note 5, at 94.

this fact and is led to a specious conclusion because he focuses solely on technology as an agent of change without recognizing the nontechnological, cultural factors that are involved. What is more, this fact raises some doubts about Katsh's views on the purportedly profound influence of printing on the law. It may be that the legal system's use of precedent and the practice of citing cases did not develop and become entrenched because of the standardization of legal texts. It may be because that standardization made it possible for the legal profession to elaborate and formalize a closed discursive practice that characterizes, in part, our current conception of legal analysis and problem-solving.¹³⁴

B. Legal Epistemology

Epistemology, simply defined, is the study of the nature of knowledge. The primary concerns of epistemology include questions about how we know something and how we can say that we know it, or what is the basis or foundation for what we know. Epistemological questions frequently raise related issues of method and the study of method—methodology. Questions regarding method address what should be done in order to know something, while methodological issues implicate the effects of different research methods on knowledge and understanding.¹³⁵ Thus, by legal epistemology I mean the study of how we know the law and how the methods we use to discern it might affect our understanding of the law.

Most of the attention on legal epistemology initiated by legal databases has focused on the question of legal research methodology: how will our knowledge and understanding of the law change with the ability to find and retrieve the full-text of judicial opinions through key-word searching? The advent of legal databases has drawn attention to the influences of the West Publishing Company's digests, with their indexing scheme of topics and "key numbers," on the conceptual coherence of the law.¹³⁶ This realization has prompted speculation about how the use of alternate research methods might affect the law.

Katsh has suggested that the West digests "probably . . . subtly shaped the attitudes of generations of lawyers and law students about the degree of order that existed in the legal system."¹³⁷ Berring has argued that "[t]he old system of grand structure is gone."¹³⁸ He states:

134. GOODRICH, *supra* note 132, at 173-74.

135. See ALAN R. LACEY, A DICTIONARY OF PHILOSOPHY 56-58 (1976).

136. See generally Berring, *supra* note 4.

137. KATSH, *supra* note 5, at 45.

138. Berring, *supra* note 4, at 26.

We are at the point where the ability to search without an imposed structure will nakedly expose the myth of the common law and the beauty of the seamless web to the general legal world. There is no underlying rational structure to the law other than what the positivists give it.¹³⁹

The Research Agenda of the American Association of Law Libraries, prepared by the Special Committee on the Research Agenda, echoes this view: "What will be the effects of increased reliance on electronic research on the development of the law, once researchers are no longer tied to the structures of the digest and other indexing systems?"¹⁴⁰

These perceptions of the influence of indexes on the law suffers from the same notion of technological determinism that plagues the writing about legal databases. While legal indexes may have influenced the conceptual coherence of the law, they are as much a product as a progenitor of that conceptual structure. That is, while the digests may have shaped some legal concepts, the idea that it is possible to create a universal subject index is, in large measure, dependent upon a view of the law as already ordered and discernible, regardless of the validity of such a view.

A cursory history of indexes indicates that they are shaped by the manner in which texts are used and understood. The first alphabetically arranged reference work of any significance that we know of is Papias's *Elementarium Doctrinae Erudimentum* (1053).¹⁴¹ Papias's alphabetical arrangement, while eminently sensible to us, was not, at the time, widely implemented.¹⁴² This was so because indexes were viewed as an aid to memory¹⁴³ and were typically arranged in terms of a rational relationship or order,¹⁴⁴ much like modern classification schemes, but usually without alphabetic ordering.

The historian Mary Carruthers gives the example of Saint Jerome's index of Hebrew names in the Bible. The Hebrew names are grouped alphabetically for each book of the Bible in canonical order, but not beyond the first letter; after that, they are arranged in the order of their occurrence in the text.¹⁴⁵ This was a more useful tool for readers, who

139. *Id.*

140. Nancy C. Carter, *AALL Research Agenda and Grants Program*, AALL NEWSL., Oct. 1993, at 92, 92.

141. Richard H. Rouse & Mary A. Rouse, *Statim Invenire: Schools, Preachers, and New Attitudes to the Page*, in *RENAISSANCE AND RENEWAL IN THE TWELFTH CENTURY* 201, 203 (Robert L. Benson & Giles Constable eds., 1982).

142. *Id.* at 203, 212.

143. CARRUTHERS, *supra* note 18, at 100-21.

144. Rouse & Rouse, *supra* note 141, at 204, 212.

145. CARRUTHERS, *supra* note 18, at 115.

otherwise would have committed much of the text to memory and would have been working with a manuscript text without pagination.¹⁴⁶

Our conception of fully alphabetical subject indexes represents novel patterns of thought and behavior that came into being during the twelfth century, when memory became insufficient as a finding device with the proliferation of texts and the spread of schools.¹⁴⁷ Alphabetical indexes became a firmly established finding tool during the Renaissance.¹⁴⁸

To suggest that the absence of indexes will undermine the structural coherence of the law ascribes too much significance to indexes and fails to recognize other normalizing practices in the law. As Lloyd A. Fallers has suggested:

In the legal systems most familiar to lawyers, there is an elaborate institutional machinery which mediates between the courts and the rest of the sociocultural system, shaping the interaction between them. Reporters collect, analyze, and publish important cases. Scholars organize legal ideas and legislative and judicial acts into coherent 'fields.' Philosophers reconsider the moral and intellectual bases of legal thought. Legislatures and appellate judges, from time to time, tidy up sections of the law. Politicians and publicists debate legal principles in the public forum.¹⁴⁹

Furthermore, much of the coherence of the law is procedural as well as substantive. As Pierre Bourdieu states, there is "not only the written record . . . , but also the structured behaviors and customary procedures characteristic of the field, which have much the same regularity."¹⁵⁰

In short, while legal indexes may have shaped legal concepts, there are other normative practices in law. It is extremely problematic to hypothesize the effect of legal databases on the conceptual structure of the law based on that proposition alone. The form of legal literature may be an appealing metaphor for the structure of the law, the legal system, and its processes, historically contingent or not.¹⁵¹ However, attempts at establishing such a causal relationship may "set the threshold of explanations impossibly high,"¹⁵² given the influence of other significant factors.

146. *Id.* at 115-16.

147. Rouse & Rouse, *supra* note 141, at 205.

148. IAN MACLEAN, *INTERPRETATION AND MEANING IN THE RENAISSANCE* 36 (1992).

149. LLOYD A. FALLERS, *LAW WITHOUT PRECEDENT* 35 (1969).

150. Pierre Bourdieu, *The Force of Law: Toward a Sociology of the Juridical Field*, 38 *HASTINGS L.J.* 805, 809 (1987).

151. Increasing conceptual incoherence in the law might instead be met with an increase in normative practices and strategies rather than widespread awareness of the law's historically contingent nature. See Jean Stefancic, *The Law Review Symposium Issue: Community of Meaning or Reinscription of Hierarchy*, 63 *U. COLO. L. REV.* 651 (1992) (arguing that the increase in the number of law review symposia is a product of heightened cultural anxiety and a more urgent need for meaning).

152. MICHEL FOUCAULT, *POWER/KNOWLEDGE: SELECTED INTERVIEWS AND OTHER WRITINGS 1972-1977*, at 109 (Colin Gordon ed., Colin Gordon et al. trans., 1980).

VI. Legal Databases and the Legal Order

A. *Technological Change and Legal Information*

Historians . . . package the past into tidy movements, precise turning-points, and great eras of achievement. But that is not how history was for participants

— Christopher Haigh

In describing a history of communication that emphasizes the continuities of technological change, I have tried to suggest some of the inadequacies of the revolutionary model. What appears in an account that eschews the compartmentalization and juxtaposition of old and new forms of communication is a gradual, complex process of change in which new technologies are understood in terms associated with established technologies. Older technologies interact with new innovations, shaping their use and perceptions about them.

Technological change is not a linear transition from old to new. The typefaces of early printed books were cut to resemble manuscript books until printers realized the clarity and resolution possible with metal type.¹⁵³ The standardization of printed texts made it possible to develop and refine modern reference tools, but many innovations, such as the alphabetization of classification schemes and other forms of indexing, were largely prefigured by manuscript books.¹⁵⁴

Katsh has begun to come to terms with this fact in a recent article, where he suggests that electronic media will “displace,” “not replace,”¹⁵⁵ print. The process of technological change is more complicated, however, because not only are new technologies understood in terms of familiar technologies,¹⁵⁶ old and new also shape each other recursively. The term “library” and other metaphors associated with print media are probably not the most felicitous way to describe databases,¹⁵⁷ but “electronic models of how information is organized, stored and processed” will be inadequate in a context in which, as Katsh acknowledges, “words on paper will remain commonplace.”¹⁵⁸

Now, and more so in the future, legal literature is proliferating in a variety of media. We are confronted with an increasing heterogeneity of

153. See STEINBERG, *supra* note 59, at 29-31.

154. See Rouse & Rouse, *supra* note 141, at 202-12; see also ILLICH, *supra* note 105, at 93-114.

155. Ethan Katsh, *Law in a Digital World: Computer Networks and Cyberspace*, 38 VILL. L. REV. 403, 410 (1993) (quoting Michael Benedikt, *Cyberspace: Some Proposals*, in CYBERSPACE: FIRST STEPS 124 (Michael Benedikt ed., 1991)).

156. *Id.* at 408.

157. *Id.* & n.18.

158. *Id.* at 410.

formats. Print and electronic media are different technologies with unique qualities, as well as overlapping uses and characteristics. Keyword access to electronically stored texts makes it possible to ask new questions, but this will not render print concepts obsolete. Many print-based solutions for the arrangement and retrieval of texts, such as indexing and classification systems, answer questions more quickly and effectively than electronic alternatives.¹⁵⁹

There is and will be a conflation of print and electronic models for storing, organizing and accessing texts. Classification schemes and indexes developed in print, such as the West digests and the *Current Law Index*,¹⁶⁰ are searchable on databases, bringing order to electronic texts, but with the flexibility of keyword searching. Efficient use of LEXIS, WESTLAW, and CD-ROMs is oftentimes dependent on print documentation intended to bring order to the frequent inscrutability of a database. As texts are liberated from the physical aspects of the codex by electronic media, our conception of texts may change accordingly¹⁶¹ or remain fundamentally the same.¹⁶² As indexes and classification systems are used to bring order to electronic texts, there may be an interaction resulting in a paradigmatic shift to a conception of texts that is characteristic of neither print nor electronic media, but an amalgam of the two.¹⁶³

The present and imminent reality of legal literature suggests even greater complexity than the juxtaposition of print and electronic sources of information will allow.¹⁶⁴ Accordingly, better questions than the one

159. See CHERYL RAE NYBERG, *SUBJECT COMPILATIONS OF STATE LAWS, 1992-1993*, at xiii-xiv (1994) (discussing the problems and limitations of statutory research on LEXIS and WESTLAW); Nicholson Baker, *Discards*, NEW YORKER, Apr. 4, 1994, at 64 (arguing that features of card catalogs provide better subject access and collocation than online catalogs, and that card catalogs provide useful historical, archival, and bibliographic information that is irretrievable with online catalogs).

160. The *Current Law Index* is searchable on WESTLAW (LRI database) and LEXIS (LAWREV library; LGLIND file). Many other indexes, including those for state and federal statutes, are searchable online. Those with hypertext capability allow a researcher to "jump" to the full-text of a document. In effect, this imposes the order of subject indexing—a print concept—onto the disorder of a database.

161. James J. O'Donnell, *St. Augustine to NREN: The Tree of Knowledge and How It Grows*, in *DIRECTORY OF ELECTRONIC JOURNALS, NEWSLETTERS AND ACADEMIC DISCUSSION LISTS* 1, 6 (Ann Okerson ed., 3d ed. 1993).

162. *Id.* at 6-7. While O'Donnell would probably not agree with my views, he does suggest that people actually using information may simply want what they want when they want it, without any regard for how they get it.

163. To put it more plainly, in the words of James H. Billington, Librarian of Congress, technology will "supplement, not destroy, the book." *Librarian Testifies on Hill for National Library Week: Dr. Billington Stresses Role of Public Libraries*, 52 LIBR. CONG. INFO. BULL. 196, 196 (1993) [hereinafter Billington].

164. Electronic texts will not render print obsolete for a variety of reasons. The biggest factor is economics. Digitization of texts costs \$2 to \$6 per page, limiting conversion to those things that the

articulated by the AALL Special Committee on the Research Agenda¹⁶⁵ might be, "What is the relationship between print and computer-assisted legal research? What do we learn about the advantages and limitations of each by comparing the two? And what constitutes a critical understanding of all the formats and sources of legal information: print, CD-ROMs, microforms, databases,¹⁶⁶ document delivery services,¹⁶⁷ and even government officials and representatives?" Sometimes, knowing who to call may be the best response to a request for legal information.

Print tools and established technical processes may be useful for organizing electronic sources of information. Quickly updated online sources could illuminate our current practices for updating print formats—why, how, and to what end? These and other related questions might lead us to an understanding of the most appropriate media for different legal research tools, as well as the fitness and reliability of particular formats for different questions.

B. Access to Information and the Legal Order

"Ability to pay" is becoming the governing principle of access to information.

— Herbert I. Schiller

The rhetoric of revolution may be invalid, but, more importantly, it also prevents us from asking important critical questions. As Ruth Finnegan has argued, the model "directly affects policy recommendations and practice, often with the implication that the 'information technology revolution' is coming anyway so we had better be there complying with it."¹⁶⁸

One critical question that has gone unanswered in regard to legal databases is the question of access. Most of the writers speculating about

market will pay for. *Building the "Information Superhighway": Dr. Billington Says Libraries Should Play Key Role*, 53 LIBR. CONG. INFO. BULL. 86, 87 (1994). Private information vendors will probably have to appeal to one of two lucrative markets: personal entertainment, which will not remedy inequitable access to information, and information for various disciplines and professions, which will probably be too specialized and expensive to provide wide access. Billington, *supra* note 163, at 210.

165. See *supra* note 140 and accompanying text.

166. See Dunn, *supra* note 3, at 61.

167. Meg Trauner, *Client-Based Document Delivery Services*, 85 LAW LIBR. J. 409 (1993).

168. FINNEGAN, *supra* note 12, at 10. The law library and general library literature is full of this sentiment. See, e.g., James L. Hoover, *Legal Scholarship and the Electronic Revolution*, 83 LAW LIBR. J. 643, 651 (1991) ("These are exciting times, but they may also be the most challenging times libraries have ever experienced. If we are not willing to become leaders of the change, we will be left behind to run information museums."); S. Michael Malinconico, *Information's Brave New World*, LIBR. J., May 1, 1992, at 36 ("We can deny that significant changes are taking place, we can passively let change happen to us, or we can anticipate the nature and shape of the impending changes and exploit them to our advantage.").

the impact of computer-assisted legal research either minimize¹⁶⁹ or ignore the high costs, asserting that electronic access will level inequalities in access due to "space and distance."¹⁷⁰ However, this factor may have more of an impact than other aspects of the technology on the structure of the legal system.

By considering the implementation of the technology in a vacuum, without considering its costs, we will fail to recognize other sources of inequity in access, not only to legal information, but to legal services as well. Martin has suggested that there will be a centralization of legal practice into "megafirms, with many lawyers, many paralegals, and many offices scattered around the globe."¹⁷¹ Contemporary information technologies enable this trend, but they also foster it by requiring large concentrations and agglomeration of material resources, as well as centralization of requisite infrastructures, in order to support the technology.¹⁷² It may not be the technology but its costs that will create a new legal order. Law firms and practitioners that acquire information systems may have to limit their practices to transactions and cases that generate sufficient revenues to pay for them, decreasing the availability of basic legal services that do not generate large fees.

The problem will be more acute if the failure to use computer-assisted legal research becomes a basis for professional liability.¹⁷³ David M. Sandhaus, an attorney and law office automation consultant who favors such a requirement, argues that the costs are immaterial in comparison with concerns about "minimum standards of legal competency."¹⁷⁴ He acknowledges the price, stating, "Admittedly, these computer services are not inexpensive. WESTLAW and LEXIS can easily cost more than \$140 an hour. [The use of CD-ROMs] requires a powerful 486 computer, a CD-ROM player, . . . annual maintenance fees and CD-ROM disk updates that cost in the thousands of dollars."¹⁷⁵ He argues, however, that other

169. Katsh acknowledges that "[e]conomics may interfere with access or distribution." Ethan Katsh, *The Law Librarian as Paratrooper*, 83 LAW LIBR. J. 627, 629 (1991). He asserts, however, that "rates for using commercial sources [will] decline." Katsh, *supra* note 155, at 476. He offers no authority or basis for this assertion.

170. See, e.g., Katsh, *supra* note 169, at 629; Martin, *supra* note 1, at 428.

171. Martin, *supra* note 1, at 421.

172. See MANUEL CASTELLS, *THE INFORMATIONAL CITY: INFORMATION TECHNOLOGY, ECONOMIC RESTRUCTURING AND THE URBAN-REGIONAL PROCESS* 146-51, 163-54 (1989).

173. For discussions of this suggestion, see Teresa N. Fritchard, *Attorneys in the Electronic Information Age: Is There a Duty to Make the Transition?*, FLA. B.J., Mar. 1988, at 17; Laura A. O'Connell, *Legal Malpractice: Does the Lawyer Have a Duty to Use Computerized Research?*, 35 FED'N INS. COUNS. Q. 77 (1984); both articles are cited in Dunn, *supra* note 3, at 60 n.52.

174. David M. Sandhaus, *Computers Are Required for the Practitioner to Avoid Malpractice*, WASH. ST. B. NEWS, Nov. 1993, at 51, 51.

175. *Id.* at 52.

professions "have start-up costs and overhead outlays that are required to meet minimum competency standards."¹⁷⁶ Granted, but just as people do without needed medical attention, they will also go without beneficial legal services as legal fees rise to pay for the technology. Perhaps even more so, since there are no government welfare subsidies for legal services as there are for health care. And even with access to the currently free sources of legal information through the Internet, one will still have to incur hardware costs¹⁷⁷ and fees for commercial access through an Internet service provider.

There has been too little discussion about the ramifications of disparities in access to legal information and the increased reliance on expensive, privately owned databases and other electronic sources of legal information. Most writers regard the use of the technology as inevitable and its effects as technologically determined, disallowing human choice or control. The myth of ineluctable wider and faster access has obscured the truth that is made poignantly clear by Jacques Ellul:

It is astounding constantly to find among their affirmations the belief that everyone will have access to data banks, to all useful information, to any necessary files. But who is this "everyone"? The reference is merely to other technicians. Immigrant workers, poor farmers, and the young unemployed are not going to consult data banks.¹⁷⁸

The false promise, or, as Ellul would say, the "ideology,"¹⁷⁹ merely supports the proliferation of legal databases and the increasingly compelling "need" to adopt their use in the absence of a critical examination of their implementation.

VII. Conclusion

Legal databases and other contemporary information technologies are a product of human innovation. Their implementation can and should be the product of a critical examination and informed choices about their uses and effects, both desirable and undesirable. By rejecting the paradigm of revolutionary change to describe the use of legal databases and computer-assisted legal research, we may more accurately chronicle their history and effects, and also remind ourselves that the legal community can and should make critical decisions about the best use of new technologies. These

176. *Id.*

177. At the Cornell Law Library, members of the reference department were unable to use many of the resources made available through the law school's gopher before the library acquired several powerful (and expensive) 486 machines.

178. JACQUES ELLUL, *THE TECHNOLOGICAL BLUFF* 29 (Geoffrey W. Bromiley trans., 1990).

179. *Id.* at 31.

decisions can be based on considerations about the purported demands and requirements of the technology,¹⁸⁰ or our choices can be shaped by our view of a desirable legal system and whether the technology in question furthers that end.

There will be an evolutionary, not revolutionary, process of change in which electronic texts will interact with, not supplant, print. The end results will be a product of technological, as well as social, cultural, and economic factors. Law librarians are uniquely qualified to consider the questions involved, given their understanding of legal information. They also have a professional duty "to society and the legal profession to . . . improv[e] the quality and minimiz[e] the cost of"¹⁸¹ legal information. This will only be accomplished through critical use of all the sources of legal information and by not blindly accepting speculations about what the future of legal information requires.

180. See Katsh, *supra* note 155, at 485.

181. AALL CODE OF ETHICS (1978), reprinted in AALL DIRECTORY AND HANDBOOK 1993-1994, at 691. The entire principle states:

[T]he Association, in light of the special character and mission of its membership, espouses the principles that law librarians, while engaged in their professional work, . . . have a duty to society and the legal profession to work both individually and through their professional organizations toward improving the quality and minimizing the cost of the library component of the delivery of legal services.