Electronically Manufactured Law

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**ELECTRONICALLY MANUFACTURED LAW**

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**ABSTRACT**

We increasingly communicate and experience law through an electronic medium. Existing scholarship suggests that prior changes in the communication of law – from oral to scribal, scribal to moveable type, the widespread publication of cases – influenced the development of the law, including by contributing to the rise of basic concepts such as precedent. One element of the present shift in the communication of law is that the process by which we find the law has been transformed. Specifically, legal case research, once conducted exclusively through the use of print-based resources (reporter volumes, case digests, treatises), is now conducted primarily through searches of electronic legal databases. This Article employs principles of cognitive psychology to generate empirical predictions about how the shift from a print-based to an electronic research process changes researcher behavior and research outcomes. The Article then assesses the broader impacts of these changes with respect to the content and practice of law.

Specifically, the Article identifies three changes to the research process that are salient for predicting the broader impacts of the shift from print-based to electronic research: (1) Electronic researchers are not guided by the key system to the same extent as print researchers when identifying relevant theories, principles, and cases; (2) Electronic researchers do not encounter and interpret individual cases through the lens of key system information to the same extent as print researchers; and (3) Electronic researchers are exposed to more and different case texts than print researchers. The Article then considers these basic changes in light of principles of cognitive psychology, including the influence of labeling, categorization, and confirmatory bias on understanding, and offers empirical predictions about the impacts of the shift from print-based to electronic research.

First, the Article predicts that the shift to electronic research gives rise to “diversity in framing.” There will be greater divergence between researchers with regard to the theories and principles identified as potentially applicable to a set of facts and this will lead to greater disputes about what is in dispute. Second, the Article predicts that the shift to electronic research leads to more “tilting at windmills.” Researchers will have greater difficulty making accurate judgments about whether an argument has merit and will thus advance marginal theories and cases with greater frequency.

Each of these predicted changes gives rise to broader impacts on the law. In an adversarial system, judicial options for case resolution are largely defined – and constrained – by the theories proffered by counsel. Diversity in framing would expand judicial authority by providing judges with a wider variety of options for the resolution of disputes. This underlines the way in which counsel serve as gatekeepers by exercising independent judgment about which cases and theories have sufficient merit to warrant pursuit. Increased tilting at windmills may require critical reexamination of the existing limits placed on lawyers in their role as gatekeepers – such as Federal Rule of Civil Procedure 11 – to prevent a waste of judicial and client resources. A follow-up article will test the “diversity in framing” and “tilting at windmills” predictions.
ELECTRONICALLY MANUFACTURED LAW

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INTRODUCTION

Law now arises, evolves and is practiced and applied through an electronic medium. From top to bottom, the law proceeds through electronic channels with respect to everything from the content, dissemination and digestion of judicial opinions (judges cite to Internet sources in opinions available online, bloggers post immediate reactions, scholars upload analysis to the Social Science Research Network) to the formation of legal argument and documents (attorneys research in electronic legal databases, use word processing to draft documents, exchange work product over e-mail, file papers electronically) to the development of case facts (smoking guns take the form of errant emails, “document” reviews mine electronic databases, depositions are videotaped) to even the way in which attorneys are hired and retained (students use Above the Law to vet firms, firms employ Google® searches to vet law students, clients use web profiles to vet attorneys). The recent furor following Kennedy v. Louisiana over the Supreme Court’s failure to
discovering that the Uniform Code of Military Justice authorizes the death penalty for child rape underscores law’s enmeshment with the electronic medium. That the federal law was overlooked by litigants and the Court alike suggests a pitfall of electronic research (military decisions do not appear in the seemingly inclusive “All Federal Cases” database); that the omission was brought to light on the blogosphere and quickly made its way to the pages of the *New York Times* attests to the power of online legal commentary.

In this new age of electronically manufactured law, the raw materials of law – its primary sources (case texts) – increasingly reside in digital form and are discovered by legal researchers using digital means. A description of the not-so-distant past when the raw materials of law were bound in (and to) hard-copy print illustrates the magnitude of this change:

> Lawyers are probably more dependent upon the literature of their profession than their prototypes in any other field. They simply cannot function away from a working law library, because law books are not merely the repositories of secondary reference materials, but are the actual and indispensable source material of the law. Law books differ greatly in form and use from those in other fields. This is a difference based upon the nature of law, which must be considered if the differences are to be understood and the books used intelligently. . . . [D]ecisions as made and . . . rules as enacted are not published and arranged on book shelves by subject matter, but by jurisdiction and date. Thus, there is an enormous and constantly changing mass of decisions and legislative rules. From these the lawyer must speedily and accurately extract the law applicable to his specific problem, so as to be able with some degree of certainty to predict the action of a court to which the problem may conceivably be presented. . . . He who understands the why and how of law books has a very substantial advantage over him who does not.1

The nearly forty-year-old summary of the method and import of legal research excerpted above, with its emphasis on law libraries and law

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1 MILES O. PRICE & HARRY BITNER, EFFECTIVE LEGAL RESEARCH A PRACTICE MANUAL OF LAW BOOKS AND THEIR USE 1 (Augustus M. Kelley 1969) (1941).
books, illustrates the fundamental transformation of legal research as the print-based research process has rapidly given way to electronic research using electronic legal databases such as Westlaw® and LexisNexis®.

Prior shifts in the communication of law, such as the advent of writing and print, contributed to the development of core legal concepts such as abstraction and precedent; the ongoing sea change in the way that attorneys find and access the law likewise promises to transform both the practice and content of the law. Indeed, finding the raw materials of law through the legal research process drives the legal enterprise and the development of the law, informing and shaping the arguments and decisions that attorneys make as advisers, gatekeepers, adversaries, and judges.

Scholars, anthropologists and law librarians warn that the shift from print to electronic research will significantly impact the law in myriad ways. The shift to electronic legal research has, for example, been posited to free researchers from the conforming influence of case digests, thereby liberating legal research from the hegemony of publisher-generated cases indices and contribute to the demise of the “myth” of the common law; render it difficult to research abstract concepts and thus encourage an emphasis on case facts at the expense of principles; lead to rapid rule extraction and shallow legal reasoning and analysis; result in the discovery of more novel cases and inconsistent authority, thereby supporting the philosophies of legal realism and critical legal studies; cause judicial opinions to become less cryptic and stylized; result in greater citation to non-law sources, or sources other than statutes and case law, in judicial decisions; replace existing institutional sources of cognitive legal authority (the National Reporter System, Shepard’s citators and the like) with new, market-selected sources of cognitive legal authority (including possibly search systems themselves); impose higher standards of conduct (requiring online searching) for assessing the adequacy of a lawyer's research; and cause lawyers to specialize.

As yet, however, these predictions and, in some instances, warnings have fallen on deaf ears. Although many of the predicted impacts from the shift to electronic research would, if accurate, beg for a concerted response from the academy and profession, little effort has been made to critically examine and understand, let alone address, the changes resulting from the shift in research process. Time for debate over the normative question of whether a shift to electronic research is “good” or “bad” may be long past. However, the time is overripe to understand the
consequences of the shift to electronic research and address and manage those consequences head on (and thereby minimize the “bad” and maximize the “good”).

This Article seeks to strengthen the case for the academy and the profession to pay heed to the consequences of the shift to electronic research, most significantly by employing a new analytic tool (cognitive psychology) to guide predictions about the impacts of the shift to electronic research and, thereby, address a perceived credibility gap. This credibility gap arises from the difficulty and imprecision in postulating how changes in research process translate into changes in researcher behavior and research outcomes. Applying principles of cognitive psychology to a detailed comparison of the print and electronic research processes provides a more analytical basis for connecting changes in research process with changes in researcher behavior and research outcomes.

The Articles uses cognitive psychology to generate two specific predictions about how electronic research will change the law – electronic research will lead to increased diversity in framing (divergence in the selection of the legal theory or theories through which to conceptualize facts, arguments and cases) and tilting at windmills (the advancement of marginal cases, theories and arguments). The Article then explores how an increase in diversity in framing and tilting at windmills could affect the profession and the law. For example, in an adversarial system, judicial options for case resolution are largely defined – and constrained – by the theories proffered by counsel. Diversity in framing could expand judicial authority by providing judges with a wider variety of options for the resolution of disputes. This underlines the way in which counsel serve as gatekeepers by exercising independent judgment about which cases and theories have sufficient merit to warrant pursuit. Increased tilting at windmills may require reconsidering the existing limits placed on lawyers in their role as gatekeepers – such as Federal Rule of Civil Procedure 11 – to prevent the dedication of client and judicial resources to lost causes while protecting attorneys from sanction for innocent, electronic research-related lapses in judgment.

Specifically, Part I of this Article reviews existing legal theory, scholarship, and data that suggest that the shift to electronic research will likely engender broad ranging impacts. Part II details differences between the print and electronic research processes and discusses three changes in
research process that are particularly salient for purposes of understanding the significance of the shift to electronic research: (1) Electronic researchers are not guided by the key system to the same extent as print researchers with respect to identifying relevant theories, principles, and cases; (2) Electronic researchers do not encounter and interpret individual cases through the lens of key system information to the same extent as print researchers; and (3) Electronic researchers are exposed to more and different case texts than print researchers. Part III uses principles of cognitive psychology (primarily, the influence of labeling and categorization, confirmatory bias and selective information processing) to examine these process differences and predict two major (non-process) consequences of the shift to electronic research, increased diversity in framing (divergence in the selection of the legal theory or theories through which to conceptualize facts, arguments and cases) and tilting at windmills (the advancement of marginal cases, theories and arguments). Part IV concludes by assessing the broader significance of the hypothesized increases in diversity in framing and tilting at windmills.

I. WHY THE SHIFT TO ELECTRONIC RESEARCH MERITS ATTENTION

Legal research is a cornerstone of the legal process and the development of the law and electronic research clearly changes the way that lawyers conduct legal research. However, while the mechanical

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2 See Lucia Ann Silecchia, Legal Skills Training In the First Year of Law School: Research? Writing? Analysis? Or More?, 100 DICK. L. REV. 245, 269 (1996) (“First and foremost, research and writing -- along with analysis -- have been repeatedly identified as the two most basic skills needed by competent attorneys. They are at the heart of what attorneys do in practice.”) (internal citations omitted). See generally Michael S. Fried, The Evolution of Legal Concepts: The Memetic Perspective, 39 JURIMETRICS J. 291, 303-06 (1999) (describing doctrinal evolution and observing that Oliver Wendell Holmes “argued that . . . the development of the law can be considered a ‘struggle for life among competing ideas,’ leading to ‘an ultimate victory and survival of the strongest.’”) (quoting Oliver Wendell Holmes, Law in Science and Science in Law, 12 HARV. L. REV. 443, 449 (1899)).

3 Law librarians and legal research instructors report that students trained in electronic research overwhelmingly rely exclusively on electronic research (even when required to learn the mechanics of print research as well). E.g., Lee F. Peoples, The Death of the Digest and Pitfalls of Electronic Research: What Is the Modern Legal Researcher To Do?, 97 LAW LIBR. J. 661, 674-75 (2005); see generally Robert Berring, Legal Research and the World of Thinkable Thoughts, 2 J. APP. PRAC. & PROCESS 305, 313 (2000) (“Law students come to law school
differences between the conduct of print-based research and electronic research are apparent, the conclusion that these differences will generate (non-process\textsuperscript{4}) impacts on the law and the practice of law\textsuperscript{5} does not necessarily follow.\textsuperscript{6} Is there any reason to think that the shift to electronic research will have broader impacts, beyond the niceties of the individual researchers’ practices – i.e., give rise to changes in researcher behavior and research outcome (caused by changes in the research process but limited in their impact to the research process) that influence the decisions that attorneys make and the content of their argument and analysis (and ultimately the development of doctrine and the profession)? After all, the content of the law itself – individual case text, for example – is (largely) unchanged, regardless of whether a researcher finds a hard copy of a case in a reporter volume after using a print digest or reviews it in electronic form on a computer screen (or even as a print out) after locating it using an

\textit{trained in Internet searching, fully conversant with modern search engines and interfaces. . . . They tolerate very little in the way of traditional legal research training.

\textit{)} There is also evidence that even the “old guard” is adapting to and adopting electronic research. \textit{E.g., Hearing on Proposed Rule 32.1: Hearing Before the Administrative Offices of the U.S. Courts, Advisory Committee on Appellate Rules,} (April 13, 2004) [hereinafter “Hearing on Proposed Rule 32.1”] (testimony of the Honorable Myron H. Bright, pp. 18-19, lines 21-22, 1-2) (“Anyway, speaking of the computer age, I just came back from computer school at age 85 and I wasn’t the only older judge there.”). \textit{See generally Barbara Bintliff,} \textit{From Creativity to Computerese: Thinking Like a Lawyer in the Computer Age,} 88 Law Libr. J. 338, 344 (1996) (“Attorneys, law students, and law professors, took to computer-assisted case retrieval like bears to honey.”).

\textsuperscript{4} Process impacts would include changes directly related to the manner of conducting research – for example, the ability to conduct research outside of a law library. By “non-process” impacts, I refer to changes in researcher behavior and research outcome (caused by changes in the research process but limited in their impact to the research process) that have the potential to influence the decisions that attorneys make and the content of their argument and analysis.

\textsuperscript{5} Of note, I do not address impacts an academic law. For a discussion of how electronic research may impact the legal academy, see F. Allan Hanson, \textit{From Key Numbers to Keywords: How Automation has Transformed the Law,} 94 LAW LIBR. J. 563, 589-92 (2002) (raising the possibility that electronic research may contribute to increases in the volume of publications, the incorporation of empirical data in legal scholarship, and interdisciplinary work).

\textsuperscript{6} \textit{E.g., Berring, Legal Research and the World of Thinkable Thoughts, supra note 3, at 306 (“[T]here is danger in over emphasizing the impact of technology because the format change has not truly altered the functional basis of the materials of legal research themselves.

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electronic database search. And the body of the law being researched remains (for the most part) the same, regardless of whether it is being accessed by researchers through print or electronic means.

Although not directly concerned with this question, work from a number of fields (both legal and non-legal, including medium theory, historical analyses of prior shifts in the communication of law, and (broadly) legal realism) when applied in the present context strongly suggest that the digitization of the legal research process is likely to have significant consequences. Additionally, examples of the growing influence of electronic research (beyond the research process) abound, most notably as visible in the recent debate over the treatment of unpublished cases and the centrality of electronic research to that debate. Finally, a number of prior legal articles and a much smaller amount of empirical research referenced therein have identified potentially significant, non-process impacts of the shift to electronic research. Together, this existing work supports the view that the shift from print to electronic research has the potential to bring with it significant (non-process) impacts that merit attention.

Medium Theory and Legal Historical Scholarship

The basic observation of medium theory is that technological changes in the dissemination and preservation of information affect how information is understood and, thereby, give rise to larger societal impacts. Medium theory essentially posits that the medium by which information is communicated (oral v. print v. television, etc.) is not neutral and instead significantly shapes how the information being conveyed is

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7 There are a number of caveats to this assertion, as when, for example, an electronic database is of limited content (i.e., does not incorporate cases before a date certain), there is a differential in the timeliness with which print resources are updated to reflect recent decisions, or there is an error either in the print or electronic cataloguing of a case. However, differences in content between print and electronic collections can be characterized as on the margin.

understood. In the context of the shift from print to electronic research, the relevant technological change is the advent of electronic research databases; the relevant medium change is that case law and other authority are now predominantly communicated to the legal researcher via electronic database, screen images, and print-outs as opposed to through bound, hard copy volumes. As a general matter, medium theory would seem to support the idea that changing the medium through which legal researchers encounter the law will impact their understanding and practice of it – indeed, this proposition is significantly narrower than the broad claim of medium theory that changes in the communication of information influence society at large.

A significant body of scholarship (some grounded in medium theory) has examined how prior shifts in the way that law is communicated – the transition from an oral tradition to reliance on the written word, the movement from scribal writing to print and moveable type, the widespread and systematized publication of cases – have influenced the development of the law. Scholars draw convincing connections between the advent of

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10 "A medium is any instrument of communication; it carries or ‘mediates’ the message. . . . The telephone, the radio, the film, the television are all equivalently media along with print and the human voice, to say nothing of painting and sculpture.” FRED INGLIS, MEDIA THEORY: AN INTRODUCTION 21 (1990).

11 See generally F. Allan Hanson, From Key Numbers to Keywords: How Automation has Transformed the Law, supra note 5, at 570 (observing with respect the key number system that “[t]he medium is the message: a technique for managing information became a major factor in the development of a particular concept of the nature of the law.”).

12 Medium theory is a complex subject, fraught with intricacy and dispute. This Article relies only on the broadest notions of medium theory, as described in text, to lend support to the idea that the shift to electronic research may have broader impacts outside of the research process itself.

print and the development of robust notions of precedent\textsuperscript{14} and the growth in the volume of reported case law and principles of legal realism.\textsuperscript{15} Others explain that abstraction -- a fundamental cornerstone of legal reasoning -- is inexorably bound to the communication of law through the written word.\textsuperscript{16} More recently, scholars and researchers have considered the ways in which the use of technologies such as video- and teleconferencing may impact adjudication.\textsuperscript{17}

The details of these arguments, which have been painstakingly chronicled elsewhere, need not be rehearsed here. For present purposes, the significance of this legal and historical scholarship is that it lends credence to the general proposition that shifts in how law is communicated are inextricably connected to the way in which law is understood and practiced. That prior shifts in the communication of law contributed to (or caused) law to change and develop creates an imperative to study the most recent of such shifts, the electronic storage and retrieval of the law.


\textsuperscript{15} Berring, \textit{Legal Research and Legal Concepts: Where Form Molds Substance}, \textit{supra} note 13 at 35-39; Collins & Stover, \textit{supra} note 13 at 533 (“To this day, archetypal notions of Anglo-American jurisprudence – the force of precedent, the rule of a reasoned decision, and the supremacy of law – are linked to print. For example, the very notions of ‘binding precedent’ and ‘supremacy of law’ are premised on the extraction of a ‘rule’ from a past account of legal reality (i.e., a past account of legally recognized facts and reasons) in order to control a future account of legal reality. Critical to the enterprise of binding precedent is the fact that such accounts are provided in printed texts.”).

\textsuperscript{16} E.g., Collins & Stover, \textit{supra} note 13, at 521-23.

Legal Realism

A basic precept of legal realism provides further support to the view that a significant change in the way law is researched may have broad impacts on the law itself. A foundational principle of legal realism (and perhaps even a now generally accepted view, including in law and economics and behavioral law18) is that the behaviors, experiences, and attitudes of those administering and applying the law can influence its content.19 If we recognize that the content and meaning of law flows not exclusively from logic, reasoning and doctrine, but also reflects the imprint of those choosing and applying that logic, reasoning and doctrine, then understanding widely shared experiences and practices of legal actors (judges, attorneys) is relevant to understanding the law itself.20

Recognizing the significance of the shared experiences and practices of legal actors helps to answer the question posed infra – if making case law and other source material available through an electronic medium does not change the content of that case law, then what reason do we have to think that it might yet have broader impacts on the law? A simple response is that significantly altering the research process of those who practice and apply the law is by itself enough to suggest the possibility of broader impacts on the law that those legal actors identify,

18 Daniel A. Farber, Review: Toward a New Legal Realism, 68 U. Chi. L. Rev. 279, 280 (2001) (“If it is to promote human welfare, law must be grounded in an understanding of behavior. This often requires the help of the social sciences to illuminate the behavior of the people whom law regulates, and also that of those who do the regulating.”).
19 E.g., Karl N. Llewellyn, Some Realism About Realism – Responding to Dean Pound, 44 Harv. L. Rev. 1222 (1931); Jerome Frank, LAW AND THE MODERN MIND 100 (1930).
20 Brian Leiter, Rethinking Legal Realism: Toward A Naturalized Jurisprudence, 76 Tex. L. Rev. 267, 284 (1997) (observing that according to “the Sociological Wing of Realism--Llewellyn, Moore, Oliphant, Cohen, Radin, among others-- … judicial decisions are causally determined by the relevant psycho-social facts about judges, and at the same time judicial decisions fall into predictable patterns because these psycho-social facts about judges--their professionalization experiences, their backgrounds, etc.--are not idiosyncratic, but characteristic of significant portions of the judiciary. Rather than rendering judicial decision a mystery, the Realists' Core Claim, to the extent it is true, shows how and why lawyers can predict what courts do.”).
Legal research is, after all, a behavior central to the legal actor’s endeavor and it is an experience and practice widely shared by legal actors. Accordingly, the very basic insight of legal realism that law’s content reflects the experiences of legal actors suggests that the shift to electronic research, viewed as a change in an experience widely shared by legal actors, may have significant impacts on the doctrinal evolution and practice of law.

Unpublished Decisions, Non-Citation Rules, and Federal Rule of Appellate Procedure 32.1

The ongoing debate over the treatment of unpublished cases is one example of how the shift to electronic research is already impacting the law in ways that warrant our attention – even though we do not necessarily identify these developments as related to the rise of electronic legal media.

In the mid-1960s and early 1970s, when the Judicial Conference and the Federal Circuits debated and then adopted limited publication rules, electronic legal research was in its nascent stages. Thus, the

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21 Moreover, legal realism (and more recently, behavioral law and economics) support the proposition that empirical analysis, including analysis using principles of psychology, (such as that proposed in this Article) can be a beneficial tool for understanding these possible effects on law.

22 Some might argue that legal realism would view doctrinal legal research and argument as irrelevant, or at least wholly secondary, to judicial decision making which is instead driven primarily by a judge’s personal beliefs and experiences. But see Joseph William Singer, Review: Legal Realism Now, 76 CAL. L. REV. 465, 472 (1988) (explaining that legal realism does not entirely reject the significance of doctrine because “the fact that the judge must justify the decision by conventional legal arguments constrains her, not because the law itself logically requires the result, but because the argument for a change in the law must appear to fit with existing practice, and more importantly, the argument must persuade a particular audience that is likely to be conservative about such matters. Existing doctrine may therefore be very manipulable, ambiguous, and contradictory, yet still substantially constrain judges’ decisions.”).

23 Specifically, the Judicial Conference recommended that the courts of appeals publish “only those opinions which are of general precedential value.” Kirt Shulberg, Digital Influence: Technology and Unpublished Opinions in the Federal Courts of Appeals, 85 CAL. L. REV. 541, 546 (1997) (quoting Report of the Proceedings of the Judicial Conference of the United States 11 (1964)), and “directed the circuits to develop plans to limit publication of judicial opinions.” Id. at 546. The circuits accordingly adopted individual publication rules. For an explanation of how the growth of electronic databases defeated calls for selective
decision to adopt limited publication rules came about with print-based research as the backdrop and the rationales for limiting publication were indexed to the print-based research reality (for example, reducing the volume of case law and thereby reducing hard copy storage and research costs). As one author has observed, “the arguments in favor of limited publication plans were necessarily premised on legal storage and research as it then existed – on the printed page. Questions of cost, fairness, access and efficiency were all fundamentally linked to this paper-based publishing regime.”

It is unsurprising, then, that as this backdrop has changed in the shift to electronic research, non-publication (and accompanying non-citation) rules have been the subject of critical reexamination. Important reasons for adopting those rules – such as the costs of physical storage and research of voluminous case law – have been directly impacted (and in some instances rendered irrelevant) by the prevalence of electronic legal databases and research.

When non-publication/non-citation rules were adopted, the act of designating a case as unpublished severely circumscribed its availability. The opinion would not be published in the printed reporter volume and thus it was, for the most part, available only to litigants in the case being decided (although subject to collection by repeat players, such as the government). The widespread electronic dissemination of unpublished publication of New York state cases, see Gary D. Spivey, Remembering James M. Flavin, New York State Bar Ass’n J. Vol. 80, No. 2 at 11, 17-18 (February 2008) (describing how online research capabilities “spur[red] an insatiable demand for access to an ever-expanding body of legal information,” thereby “sound[ing] the death knell to calls for greater selectivity in the publication of decisions.”).

24 Id. at 547-49.
25 Id. at 556.
26 Indeed, in responding to the expressed opposition of public defenders in the Ninth Circuit to a rule allowing use of unpublished opinions, one attorney reportedly remarked that public defenders in the Ninth Circuit “must be scared of computer research.” Hearing on Proposed Rule 32.1, Testimony of Stephen Barnett, p. 107, lines 10-12.
27 Id. at 556-63.
28 Lauren K. Robel, The Myth of the Disposable Opinion: Unpublished Opinions and Government Litigants in the United States Courts of Appeals, 87 MICH. L. REV. 940, 955 (1989) (“[B]ecause the [unpublished] opinions are most often distributed only to parties and judges, the frequent litigants will have unique access to a useful
decisions, however, meant that those decisions were, for all intents and purposes, as readily available as published decisions.

Under these changed circumstances, it became increasingly clear that the fox didn’t manage to stay out of the hen house – on either side of the bench. Judges (perhaps to a greater extent because their “unpublished” words were now broadcast far and wide) appeared unable to resist the temptation to invest unpublished decisions with meaningful reasoning and analysis (or use them to resolve novel questions), and litigants could not help but seek out, rely on, and cite to (many times in violation of prevailing non-citation rules) these unpublished decisions.  

In response to growing debate about the circuits’ inconsistent approaches to non-publication and non-citation rules, the Federal Rules Advisory Committee recently adopted a new rule of federal civil procedure, Rule 32.1. Federal Rule of Civil Procedure 32.1 establishes a generally applicable federal rule permitting attorneys to cite unpublished decisions. While circuits remain free to determine how and when to designate decisions as unpublished and what level of importance to afford them, attorneys are now, at minimum, free to cite to unpublished decisions.

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29 Lauren K. Robel, The Practice of Precedent: Anastasoff, Noncitation Rules, and the Meaning of Precedent in an Interpretive Community, 35 IND. L. REV. 399 (2002). This is not to suggest that prior to electronic publication unpublished opinions had no value and/or were not collected and used by those with access. See Robel, The Myth of the Disposable Opinion, supra note 28. However, the availability of unpublished decisions in electronic databases exacerbated and highlighted these issues and was a predominant force leading to revision of the rules.

30 In a preface to the publication of Rule 32.1, the Advisory Committee in fact made reference to the notable level of controversy and debate surrounding the issues of non-publication and non-citation: “Needless to say, this is a controversial matter. Many attorneys and bar organizations are strongly opposed to no-citation rules; indeed, Dean Schiltz tells me that no issue has generated more correspondence to the Advisory Committee over the past six years.” Memorandum from Judge Anthony J. Scirica, Chair Standing Committee on Rules of Practice and Procedure to Judge Samuel A. Alito, Jr., Chair Advisory Committee on Appellate Rules, Report of Advisory Committee on Appellate Rules 27 (May 22, 2003).

31 FED. R. APP. PROC. 32.1(a).
Both the Advisory Committee Note to Rule 32.1 and the transcripts from Advisory Committee hearings during the drafting and adoption of the rule illustrate the great extent to which electronic databases and legal research, and concerns generated thereby, brought about the need for the new rule and drove the debate regarding its adoption. The Advisory Committee Note explains that two of the chief concerns about allowing citation to unpublished decisions – the concern that permitting citation will increase the time that judges devote to drafting unpublished decisions (thereby frustrating judicial efficiency) and the concern that permitting citation will create advantages for institutional, repeat litigants with treasure troves of collected, unpublished opinions – are blunted by “the widespread availability of ‘unpublished’ opinions on Westlaw and Lexis.”

The hearing transcripts regarding the drafting and adoption of Rule 32.1 are an even richer source of comment about the impact of electronic research. The transcripts are filled with references to the E-Government Act (which requires all circuits to publish their opinions online and was in the process of being implemented at the time of the hearings) and speculation about the ramifications of that online publication with regard to unpublished opinions. The electronic availability of unpublished decisions was repeatedly offered as a counterpoint to suggestions that institutional actors have unique access to unpublished decisions, thereby creating fairness issues. And the ease and ready availability of electronic research was also repeatedly referenced to demonstrate that permitting citations to unpublished opinions would not impose unduly burdensome research obligations on practitioners.

And although not expressly remarked upon, it seems clear that much of the empirical data cited during the testimony was likely available in large part because of the electronic availability of decisions. For

33 E.g., Hearing on Proposed Rule 32.1, p. 18, lines 17-22; p. 19, lines 1-2; p. 26, lines 1-3; p. 96, lines 14-20;
34 Hearing on Proposed Rule 32.1, Testimony of Judah Best, pp. 87, 95.
35 E.g., Hearing on Proposed Rule 32.1, Testimony of Diane P. Wood, p. 26, lines 4-9 (“With free Internet access – maybe you’ll go to the public library or whatever – every last word coming out of the Courts of Appeals Is available to anyone with the skill and the access to navigate these free website, both inside and outside the judiciary.”); Testimony of Stephen Barnett, p. 107, lines 21-22, p. 108 lines 1-2.
example, one testifier cited to a study showing “no correlation between a circuit’s per-judge workload and the percentage of opinions that the circuit chooses to publish” and to a study showing that over a two-year span, “some judges published as many as 120 opinions while other judges, also active judges, published as few as 20” (and used this data to support the view that there is “ample room for judges to significantly increase the number of opinions that they publish. . .”). 36 Similarly, one cannot help but think that many of the “sky is falling” predictions by proponents of the proposed rule – namely, that unpublished decisions threaten the legitimacy of the judiciary by “send[ing] a message that courts are engaging in results-oriented decision making” and revealing inconsistent decisions37 – would have been almost nonsensical in a world without the ready electronic availability of unpublished decisions. For in such a world, no one person would have access to enough unpublished decisions to identify any such inconsistencies and/or derive from them a view that the judiciary is engaging in rampant “results-oriented decision making.”

This progression from the initial adoption of non-publication and non-citation rules to the subsequent debate about these rules and finally to the adoption of Federal Rule of Civil Procedure 32.1 provides a good example of a broader effect of the shift to electronic legal databases and research. Electronic research not only undercut many of the original rationales for the adoption of non-publication rules, but the ready availability of unpublished cases appears to have encouraged changes in the behavior of legal actors (with respect to the judges authoring unpublished opinions and the practitioners using them) and thereafter the adoption of a new rule of Federal Civil Procedure permitting citation to unpublished opinions. The content of the debate about the adoption of Rule 32.1 illustrates even further the extent of the impacts of electronic research on practitioners and courts.

And while the adoption of Rule 32.1 may provide a particularly good example of a recent development in the law driven at least in part by the new realities of electronic research, it is not the only one. For example, an argument can be made that the recent flux in law school curricula may likewise be influenced by the rise of electronic research. The structure of the digest system (the lynchpin of print research) reflects the seminal first year curriculum developed by Dean Christopher Langdell at Harvard Law School and thereafter adopted widely – contracts, torts,

37 Hearing on Proposed Rule 32.1, Testimony of Richard Frankel, p.69, lines 8-16.
civil procedure, criminal law, property). As described in detail infra, Robert Berring and others have argued persuasively that the digest system, once omnipresent as an organizational structure for comprehending and ordering the law, has lost much of its influence with the ascendancy of electronic legal research. After over one-hundred years, the traditional Langdellian curriculum, derived from the digest system, appears to be endangered. In 2006, Harvard Law School announced that was revising its first-year curriculum to reduce class hours devoted to traditional courses (torts, contracts, etc.) and require three new courses on legislation and regulation, international law, and problem solving. That curriculum derived from the West digest system categories appears to be waning in tandem with the decreased relevance of the West digest system – arguably a direct result of the shift to electronic research – is suggestive. Reform of the law school curriculum may also be connected to the shift to electronic legal research.

Existing Legal Scholarship and Empirical Data

It is unsurprising in light of the compelling case that can be made that the shift from print-based law to electronic law is likely to have significant impacts that a number of legal scholars have considered the influence of digitization on the law (generally) and on legal research (specifically). These scholars have posited a variety of observations and

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38 See Carol M. Bast & Ransford C. Pyle, Legal Research in the Computer Age: A Paradigm Shift?, 93 LAW LIBR. J. 285, 287 (2001) (“The first-year courses Langdell established at the Harvard Law School track the digest classification scheme. The major digest classifications – property, contracts, torts, and crimes – are the subject matter of introductory law school courses. Individual digest topics are the subject matter of other law school courses.”); Berring, Thinkable Thoughts, supra note 3, at 309; Hanson, supra note 5, at 570-71.

39 See footnote 71 and accompanying text infra pp. 24-27.

40 Rethinking Langdell: Historic Changes in 1L Curriculum Set Stage for New Upper-Level Programs of Study (Harvard Law Today, December 2006) (“‘Over 100 years ago, Harvard Law School invented the basic law school curriculum, and we are now making the most significant revisions to it since that time.’”); see also Jonathan D. Glater, Harvard Law Decides to Steep Students in 21st-Century Issues, N.Y. TIMES, Oct. 7, 2006, at A10.

41 E.g., Steven Barkan, Deconstructing Legal Research: A Law Librarian’s Commentary on Critical Legal Studies, 79 LAW LIBR. J. 617 (1987); Carol M. Bast & Ransford C. Pyle, Legal Research in the Computer Age: A Paradigm Shift?, supra note 38; Robert C. Berring, Chaos, Cyberspace and Tradition: Legal
predictions about the ramifications of the shift to electronic legal research. As noted above, the shift to electronic legal research has been posited to free researchers from the conforming influence of case digests, thereby liberating legal research from the hegemony of publisher-generated cases indices and contribute to the demise of the “myth” of the common law;\textsuperscript{42}


\textsuperscript{42} E.g., Berring, \textit{Where Form Molds Substance}, \textit{supra} note 13, at 26 (“[T]he ability to search without an imposed structure will nakedly expose the myth of the common law and the beauty of the seamless web to the general legal world.”); Farmer, \textit{supra} note 41, at 399; KATSH, \textit{THE ELECTRONIC MEDIA AND THE TRANSFORMATION OF LAW}, \textit{supra} note 13, at 45. \textit{But see} Schanck, \textit{supra} note 41,
render it difficult to research abstract concepts and thus encourage an emphasis on case facts at the expense of principles;\textsuperscript{41} lead to “rapid rule extraction” and shallow legal reasoning and analysis;\textsuperscript{44} result in the discovery of more novel cases and inconsistent authority, thereby supporting the philosophies of legal realism and critical legal studies;\textsuperscript{35} cause judicial opinions to become less cryptic and stylized;\textsuperscript{46} result in greater citation to non-law sources, or sources other than statutes and case law, in judicial decisions;\textsuperscript{47} replace existing institutional sources of cognitive legal authority (the National Reporter System, Shepard’s citators and the like) with new, market-selected sources of cognitive legal authority (including possibly search systems themselves);\textsuperscript{48} impose higher standards of conduct (requiring online searching) for assessing the adequacy of a lawyer’s research;\textsuperscript{49} and cause lawyers to specialize.\textsuperscript{50}

The majority of these analyses are grounded in extrapolation from historical experience (looking to the impacts of prior shifts in the organization and communication of case law), comparisons between pre- and post-electronic research methods, the personal research experiences of the author or interviews with other researchers, experience gleaned from at 17-19 (“My experience in performing legal research, in assisting others in their research, and in reading cases lead me to conclude that key numbers, headnotes, indexes, and so forth have had little or no impact on either the content of our law or our understanding of the legal system.”); Pantaloni, \textit{supra} note 13, at 699-700 (rejecting the view that print-based indices exerted a strong conforming influence on legal research).

\textsuperscript{43} Bast & Pyle, \textit{supra} note 38, at 297-98; Bintliff, \textit{supra} note 3, at 345.
\textsuperscript{44} Lien, \textit{supra} note 41, at 88-90; 126-34.
\textsuperscript{45} Hanson, \textit{supra} note 5, at 580-81; Berring, \textit{Where Form Molds Substance, supra} note 13, at 26.
\textsuperscript{46} Berring, \textit{The Search for Cognitive Authority, supra} note 41, at 1703-04 (“The mummified and stylized prose of today’s judicial opinion will become a museum piece.”).
\textsuperscript{47} \textit{Id.} at 1689-91 (citing to Frederick Schauer & Virginia J. Wise, \textit{Legal Positivism as Legal Information}, 82 CORNELL L. REV. 1080 (1997) and Frederick Schauer & Virginia J. Wise, \textit{Nonlegal Information and the Delegalization of Law}, 29 J. Legal Stud. 495 (2000)); see also Hanson, \textit{supra} note 5, at 584-89.
\textsuperscript{48} \textit{Id.} at 1705-08.
\textsuperscript{50} Berring, \textit{Where Form Molds Substance, supra} note 13, at 27; \textit{Thinkable Thoughts, supra} note 3, at 315 (predicting the rise of more specialized, individual expertise).
legal research and writing instruction, and/or anecdotal observations about how lawyers conduct legal research and use the results. A small amount of empirical testing of predictions about the impacts of the shift to electronic research has been done, but it has thus far been limited.

In a very few instances, authors have conducted actual comparative analyses of how researchers conduct research using print versus electronic research methods by requiring researchers to address questions using print resources or electronic resources and then comparing the results. One study of a group of twenty-eight law students compared their performance in answering fact and rule-based questions using print and electronic research methods. The study found that (contrary to the prediction that it is harder to research abstract concepts using electronic research) the students had a slightly better success rate using print resources to answer “fact” questions and a slightly better success rate using electronic resources to answer “rule” questions.

A small amount of empirical work has also been done analyzing the content of written legal materials in an attempt to adduce changes between the print and electronic research periods. An analysis of 180

51 E.g., Hanson, supra note 5, at 580 (referencing practitioner interview); Schanck, supra note 41, at 17-19 (discussing the way “lawyers tend” to conduct research in critiquing prior attempts to assess the impacts of electronic research); Lien, supra note 41, at 92-93 (reasoning in part from a “survey[ ] [of] those legal skills traditionally associated with technology and [a] consider[ation] of how the newer uses of technology differ” along with an “examin[ation] [of] the uses of technology-based . . . work environments”). See also Berring, The Search for Cognitive Authority, supra note 41, at 1678 (“Very few legal scholars have even thought about these [legal information] issues, and if they do, they find it almost impossible to escape the constraints of their own experience. The way one learns to perform research becomes second nature. It can be put into perspective only with the greatest difficulty.”).

52 Peoples, supra note 3, at 670-71. The most conclusive finding of the Peoples study related to the law students’ attitudes toward research. Students felt strongly that electronic word searches were the most effective research tool and reported feeling more confident more quickly that they had found the correct result when researching using that method – even though, over all, they generated more correct answers using print-based research methods. As summarized by the study’s author, “[t]he vast majority of students ranked the print digest at or near the bottom for effectiveness, said it took them a long time to feel confident and satisfied when using it, and found the digest cumbersome and unwieldy to use. . . . For all practical purposes, the print digest is dead to these students before they learn it exists.” Id. at 674.
California Supreme Court opinions, designed to capture changes in the frequency of citations to various sources over time, indicated that the advent of electronic research had not (contrary to some predictions) caused that court to cite more cases, to cite more cases from outside jurisdictions, to cite recent cases with greater frequency, to cite to electronic authorities, or to cite to secondary sources for authority with greater frequency.\(^{53}\) An analysis of briefs and court decisions involving cases of first impression from the Massachusetts Supreme Judicial Court revealed a statistically significant drop in the use of reasoning using analogy.\(^{54}\) And one researcher concluded, after comparing judicial opinions contained in Volume 175 of the United States Reports (beginning with cases from October 1899) to opinions contained in the June 29, 1999 issue of United States Law Week, that Supreme Court decisions have, in the age of electronic research, become longer and more convoluted with more frequent citations to sources other than cases and statutes.\(^{55}\)

These empirical studies have, however, been limited in number and scope.\(^{56}\) The inquiry into the impacts of electronic research is plagued with a credibility gap. The initial step of the inquiry – understanding and comparing how the literal mechanics of legal research differ between print-based and electronic research processes – can be studied and set forth in a relatively concrete, analytically rigorous way.\(^{57}\) However, the subsequent step in the inquiry – ascertaining how the identified changes affect the researcher, the product of research, and/or the practice of law – depends on far more subjective assessments that frequently boil down to educated

\(^{53}\) Hellyer, supra note 41, at 292-98.

\(^{54}\) McKenzie & Vaughn, supra note 41, at 16 (finding that in the analyzed sample briefs in the period between 1956 and 1965, 56.25% employed reasoning by analogy, while only 47.69% of sample briefs from the period 1993 to 2003 employed reasoning by analogy).

\(^{55}\) Berring, The Search for Cognitive Authority, supra note 41, at 1683-91.

\(^{56}\) This is not to suggest any lack of imagination or diligence on the part of those undertaking the research; it instead underlines the challenge of the task and the logistical constraints of undertaking more ambitious empirical studies. As co-authors noted in explaining their decision to narrowly circumscribe their analysis, “[w]e were afraid we would be overwhelmed if we looked at too many variables . . .” McKenzie & Vaughn, supra note 41, at 14.

\(^{57}\) E.g., Bast & Pyle, supra note 38, at 296-98 (providing a detailed description of the change in research process).
guesses based on experience and anecdote. For example, while it is possible to concretely demonstrate the way in which electronic legal research allows the legal researcher to forego the use of case digests, determining how that fact (the declining use of the case digest) bears on the individual researcher’s conduct and conclusions is far less susceptible to rigorous analysis.

This tenuousness of the middle step of the inquiry prevents the conclusions that follow about the broader impacts of the shift to electronic research from developing the force and urgency that they otherwise might. Many of the conclusions already suggested by those who have addressed this issue scream for a response from the legal community. Scholars, for example, have posited that electronic research is doing no less than dumbing down legal reasoning. Yet, the response of the legal community (academic and otherwise) can thus far best be characterized as one of salutary neglect. Electronic research rushes onward, encompassing ever more of the legal research pie and every day more completely defining the experience of the practicing lawyer with little attention focused on how it affects the practice of law, whether there might be unintended consequences, and what measures might be warranted to manage these consequences.

58 See generally Lawrence M. Friedman, Law, Lawyers, and Popular Culture, 98 Yale L. J. 1579, 1583 (1989) (“[I]f you consider the possible impact of telephones or computers on legal systems, any social theorist will feel sure that there must be some impact, and no doubt a substantial impact. . . . But telephones [and] computers . . . do not automatically transform themselves into change in legal rules and legal institutions. If social and technological inventions have an ‘influence’ (a most slippery concept), that influence must be indirect. At the very least, there must be some intervening steps. Hence any social theory must go beyond the simple-minded equation that joins together particular social and legal events or changes, and find a process or mechanism that actually links the two together.”).

59 This should not be taken to suggest that existing scholarship on this topic is without merit. Indeed, this Article owes a large debt to the scholarship about the impacts of the shift to electronic that has preceded it. See supra note 41.

60 E.g., Berring, Thinkable Thoughts, supra note 3, at 318 (“Law schools and the Bar must begin to take information issues seriously. Decisions about legal information do not just relate to the format of our information, they relate to the very heart of what we do. . . . This is a call to arms. The legal profession must seize control of its own information destiny.”).

61 Lien, supra note 41, at 88-89; 126-34.
This Article builds upon prior analyses of the impacts of the shift to electronic research by offering a new tool (cognitive psychology) for conducting the “second” step of the inquiry into the impacts of electronic legal research and, by so doing, to provide greater force to the call for the impacts of electronic legal research to be better understood and managed. As described in greater detail infra Part III, cognitive psychology can be used as an analytical tool to better predict and understand how the changes in the research process affect legal researchers and their work. Thus, while this Article owes a great debt to the many considered analyses about the impacts of electronic research that have gone before it and necessarily relies to some extent on experience, observation and anecdote, its predictions about how identified changes in the mechanics of research impact the researcher and her work are further grounded in principles of cognitive psychology.

II. A DETAILED COMPARISON OF PRINT AND ELECTRONIC RESEARCH PROCESSES – IDENTIFYING SALIENT DIFFERENCES

Brief narrative descriptions of basic print and electronic research processes succinctly demonstrate how the shift from print-based research to electronic research alters the mechanics of case research.

Print Sources: Basic case research process

1. Go to the law library.
2. Choose the appropriate case digest.

62 There are innumerable idiosyncrasies, short-cuts, and alternate approaches to conducting print and/or electronic case research. Moreover, today’s researchers may use a hybrid electronic/print-source approach. The following descriptions purport only to illustrate a generic print search and a generic electronic search and capture some basic differences between print and electronic research.

63 The description that follows is summarized from E. SLOAN, BASIC LEGAL RESEARCH 82-86 (2d ed. 2003).

64 Digests are limited by jurisdiction and date range. West’s Federal Practice Digest, Fourth Series, includes summaries of cases from all federal courts from the 1980s to the present (prior series in the set include older cases); West’s Supreme Court Digest includes summaries of cases from the United States Supreme Court; state digests include summaries of cases from the state’s courts and the federal courts within the state; regional digests include summaries of cases arising from all...
3. Identify topics and key numbers using the index to the digest or digest topic subjects. The case digests organize case summaries by subject categories, called “topics,” of which there are over 400. These “topics” are then subdivided further into West key numbers, of which there are approximately 100,000.

4. Locate and “pull” the hard copy digest volume(s).

5. Review the case summaries under the identified key numbers.

6. Update the digest. This requires: (1) checking the pocket part for the subject volume covering the topic; (2) checking the separate set of interim pamphlets at the end of the digest set; (3) reviewing the closing table; (4) pulling any reporters not yet incorporated into the digest updates; and (5) checking the “mini-digest” at the end of the reporter.

7. Select cases to physically “pull” in hard copy from the case reporter volumes.

8. Physically locate and “pull” the reporter volume for each case sought to be retrieved.

9. Locate each case within the reporter volume by turning to the correct page.

10. Memorialize useful search results (by, for example, taking notes or making photocopies of the reporter pages).

11. Shepardize useful cases. This requires the researcher to (1) locate the correct set of Shepard’s volumes for the reporter; (2) locate the particular volume and update booklets and pamphlets from the applicable Shepard’s set; (3) locate the entry for the case within each volume; (4) interpret the entries (entries include alphabetic and numerical descriptors that correspond to history codes, treatment codes, etc.); and (5) identify any cases that need to, in turn, be physically located and reviewed.

12. Physically locate and “pull” the reporter volume for each case sought to be retrieved.

13. Locate each case within the reporter volume by turning to the correct page.

Electronic Database: Basic case research process

1. Log-in to a legal database from a computer terminal.

2. Choose a case database to search.

3. Enter search terms and run a search.

4. “Click through” hits. This may include “clicking into” sources beyond the cases retrieved by the initial search – for example, cases referenced within the cases retrieved by the initial search and suggested secondary source materials.
6. Memorialize useful search results (by, for example, saving or printing cases, taking notes, cutting and pasting retrieved content).
7. “Click” to Shepardize.

A close comparison of the processes of print-based case research and electronic case research reveals at least three basic changes in research process that are salient for understanding the broader (non-process) impacts of the shift to electronic research: (1) Electronic researchers are not guided by key system information to the same extent as print researchers with respect to identifying relevant theories, principles, and cases; (2) Electronic researchers do not encounter and interpret individual cases through the lens of key system information to the same extent as print researchers; and (3) Electronic researchers are exposed to

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69 While the advent of electronic research also gives rise to changes in the way researchers locate and access other sources of law (statutes, regulations, secondary sources), see, e.g., Peter W. Martin, *The Internet: “Full and Unfettered Access” to Lawsome Implications*, 26 N. Ky. L. Rev. 181, 194 (discussing impacts from the digitization of agency materials), this Article will focus narrowly on case research both in an effort to narrow the scope of the inquiry and out of recognition that case research is a primary and basic research exercise. See generally Berring, *Collapse of the Structure of the Legal Research Universe: The Imperative of Digital Information*, supra note 41, at 12 (“[O]n the practical level, theorists continue to parse and analyze cases in much the same manner as their forebears. Therefore the practice of law has continued to lean heavily on finding, reading, and relating cases. The profession’s obsession with tying cases together has not abated.”); Bintliff, supra note 3, at 341 (“[I]t is in the written decisions of the judicial branch that the law, whether statutory, administrative, or common law, is explained and interpreted. . . . Because the use and understanding of court decisions is so fundamental to the practice of law, I am concentrating on them as I discuss the impact of computers on legal thinking.”).

70 By “key system information,” I mean key topics, key subjects, key numbers, and case digest blurbs, including other information contained in the case digests.

71 Although other authors, first and most notably Robert Berring, see Berring, supra note 41 and Richard A. Danner, *Legal Information and the Development of American Law: Writings on the Form and Structure of the Published Law*, 99 LAW LIBR. J. 193 (2007) (describing the influence of Berring’s work, particularly with respect to his observations about the import of the digest system), have previously explained that this occurs, I do so again here to help illustrate the analysis that follows and also to respond to other authors’ assertions that key topics and numbers were not integral to print research, see Schanck, supra note 41, at 17-19; Pantaloni, supra note 13, at 699-700 (rejecting the view that print-based indices exerted a strong conforming influence on legal research).
more – and different – case texts than print researchers. Each of these changes is described in greater detail below.

1) Electronic researchers are not guided by key system information to the same extent as print researchers with respect to identifying relevant theories, principles, and cases.

Access to cases in a print-only world was largely controlled by case digests and indices (and thereby, by the key topics and subjects contained therein). It simply isn’t possible to walk into a library full of bound, chronological case volumes and peruse those volumes directly to locate (in any remotely efficient way) relevant cases. Some retrieval tool is needed to allow the researcher to identify cases relevant to her inquiry. And in the print-only world case digests and indices were the dominant retrieval tool. (Indeed, one author observes that legal indexing systems “establish a virtual conceptual tyranny over access.”) They were such an indispensable retrieval tool, in fact, that, as Robert Berring has argued persuasively, the National Reporter System, Digest System, and Shepard’s citators all achieved a high level of cognitive authority. “One of the fascinating features of these systems of information was the depth of respect they commanded. Sanctioned neither by legislative enactment nor by judicial decree, the National Reporter System, the Digest System . . . and Shepard’s citators nevertheless embedded themselves in the collective legal consciousness.”

This is not to deny that there exist other ways for locating cases, including in chief “working backward” from a discovered case or secondary source (practice guide, treatise). However, even methods of locating cases that do not start in a digest or index frequently use those tools at some point. For example, a researcher who begins with one on-point case may use key numbers from that case to locate other on-point cases or simply augment the search using a digest. Additionally, many oft-

72 Farmer, supra note 41, at 399.
73 Berring, The Search for Cognitive Authority, supra note 41, at 1680-81. See also Bast & Pyle, supra note 38, at 287 (“Digests are a meme vehicle because their conservative organizational structure has facilitated the replication of legal concepts in successive generations of case law. In addition, the digest classification scheme is learned by successive generations of law school students; this comprehensive classification of the law underlies the attorney’s approach to the law.”) (citation omitted).
used secondary sources are modeled on the digest system and reflect its organization.

As described above, in a paradigmatic print search the researcher chooses the appropriate case digest and uses the digest to identify topics and key numbers in the index to the digest or digest topic subjects that are potentially relevant to the researcher’s inquiry. The researcher, armed with knowledge of the inquiry or problem to be solved, then peruses the topics and key numbers and makes judgments about where there are “matches” between those topics and key numbers and the research question. Those researcher-identified “matches” determine which cases (or at least the first cut of cases) the researcher reviews to find a solution to the problem or inquiry. In this way, the digests and topic and key numbers inexorably guide and influence the researcher’s identification of theories, principles and cases.

The researcher plays an active role in making “matches” between the research question and the topics and key numbers. Researchers may make such a “match” even before looking at the topics and key numbers. For example, a researcher may look at a set of facts and have prior knowledge that the issue presented involves the Statute of Frauds and accordingly look up that term in the subject digest. On the other hand, in what is frequently described as “serendipity” in the print research process, researchers may, through the act of browsing through tables of contents and the digest itself, derive unexpected “matches.”

However, even though the researcher plays an active role in using these retrieval tools, the digests, topics and key numbers are nonetheless guiding the research process. First, any preconceived notion that a researcher brings to the search (like the aforementioned Statute of Frauds) will only bear fruit if the principle, theory or term is one that the digest also uses and identifies with the same terminology. For example, a researcher who looks at a set of facts or legal problem and concludes that the relevant theory is “coconut disaggregation” is not going to be able to use that term to navigate the digest because the digest does not recognize it. (Similarly, any “serendipity” is limited to principles, theories and subjects recognized by the case digest.) Moreover, within a broad topic,

74 See Bintliff, supra note 3, at 342-43 (“Sometimes the best digest research was the result of serendipity. Something seen out of the corner of an eye suddenly inspired a thought-provoking argument.”).
such as the Statute of Frauds, the researcher will be guided to narrower subtopics, principles and cases using the information contained in the digest. Finally, once a researcher has located a subject or key topic/number that she thinks is a good “match,” the researcher then relies on the digest case descriptions to decide which cases to pull. Thus, in a print-based search, both the research process and the results it yields will frequently be informed and influenced by the case digests and key topics and numbers.

The paradigmatic electronic research process, on the other hand, is emancipated from the case digest and key topics/numbers.75 Using Boolean word searching, the researcher selects (or even invents) the criteria that she thinks will be most useful for identifying relevant cases. The researcher can attempt to use any idea that she brings to the research question as a tool to identify potentially relevant cases (even “coconut disaggregation”) and swiftly and quickly experiment with different criteria.

75 That key topics/numbers need not be used does not, of course, mean that they cannot be used as part of an electronic search. However, for the reasons that follow, key topics/numbers are less likely to be used and, even if used, less likely to be as determinative in the context of an electronic search. First, the evidence suggests that the generation of attorneys who have grown up with the availability of electronic research are unlikely to use print sources sufficiently to develop a familiarity with the digest/key system and are, moreover, likely to rely exclusively on electronic research. Peoples, supra note 3, at 670-74. Second, it is still relatively unwieldy, slow and difficult to use key numbers in online searching, especially without prior familiarity with the key number system. See Peoples, supra note 3, at 675 (observing after conducting an empirical test of student searching that “KeySearch was not shown to be a tool that successfully integrated the structure of the print digest into the electronic environment.”). And the key number system is not available on many of the free, public access databases. Finally, even when used as part of an electronic search, key numbers don’t direct the research process as dictatorially as they do in a world limited to print sources. A researcher may, for example, use her own search terms in tandem with the key number, thereby injecting a personal spin on searching divorced from the key system. Thus, to the extent that key topics and numbers guide online searches they do so with far less frequency and far less influence than in print-limited research. 76 See Hanson, supra note 5, at 598 (“There is no intrinsic organization or order to the way in which the millions of such items [cases or journal articles] are stored in electronic databases. What sites, cases, or articles emerge depends entirely on the user’s search strategy. Even when search engines rank the relevance of the various hits, it is an ad hoc evaluation made with reference to the specific search query.
One marked difference, then, between print-only and electronic research is the diminished influence of case digests and key topics/numbers on the search process. The print research process caused “[g]enerations of lawyers . . . to conceptualize legal problems using the categories of the Topics and Key Numbers of the American Digest System.” In a print-only research world “[t]he categories established by the Digest System were deeply ingrained. Even if one could only stumble along, the ruts were deep and easy to follow.” Electronic searchers, on the other hand, can readily and effectively search without ever referencing a digest or learning what key topics/numbers have been assigned to the cases that they recover.

(2) Electronic researchers do not encounter and interpret individual cases through the lens of key system information to the same extent as print researchers.

Using case digests and key numbers/topics to locate cases not only influences the way in which a researcher identifies relevant doctrines, principles and cases, but also the information that a researcher has about a case before reading its text. Before seeing word one of the text of a case, a researcher undertaking a paradigmatic print-based search will be exposed to all of the following information about the case: (1) a statement about the subject matter category the case falls in; (2) a statement about the principle of law for which the case is indexed; and (3) a short summary of the case with respect to that principle.

During a typical Boolean word search, on the other hand, a researcher will likely receive far less information about a case prior to reading its text. Usually, the only immediate information that an electronic researcher will have about a case (before being exposed to the
case text) is that it meets the criteria of her individually-crafted search. This is so because electronic search results are frequently listed with the case citation followed by a short snippet of text from the case highlighting where in the case the searched-for terms appear. Researchers are invited to jump directly into not just the case text, but the section of the case text deemed most responsive to the search terms. 

Thus, although electronic researchers may have some exposure to a key topic/number before reading case text, that exposure is not required in order for the researcher to find the case or the relevant text within the case, is likely to be fleeting, and the case researcher has no need to analyze the information in order to efficiently structure her search. A print researcher, on the other hand, must not only read and understand the key system information, but has quite a bit invested in doing so correctly. While a false step in electronic research may cost seconds and be rectified with a backward click, locating useless cases in a print-based search is time consuming and energy intensive. The researcher has to locate the relevant reporter volume, find the case at the correct page within the reporter, and then (without the benefit of hyperlinks) flip to the correct section of the case. These differences in research process support the assertion that, as a general matter, electronic researchers do not encounter and interpret individual cases through the lens of key system information (key topics, numbers, digest blurbs) to the same extent as print researchers.

(3) Electronic researchers are exposed to more – and different – case texts than print researchers.

As described above, the time and energy costs to a print researcher to obtain case text for review after it has been identified as a case of interest (locating and physically pulling the reporter, flipping to the proper page) are higher than for an electronic researcher (scanning the text excerpted on the search results page or clicking into a retrieved case). 

80 Of course, electronically stored cases do include key number headings and snippets of these headings may produce a “hit” to search terms and/or a researcher may view these headings once clicking into the case text. Notably, however, a key feature of these headings is that they permit the researcher to click on the heading in order to jump directly to the relevant portion of the case text.

81 See Bast & Pyle, supra note 38, at 290-91 (identifying as a disadvantage of the key number system the fact that it is time-consuming) (“The system is a deeply layered index; a researcher looking for a case first must locate the correct topic and then follow through all the layers in the outline before locating the case on point. On a more prosaic level, the need for a researcher gathering information to first use
Additionally, the costs of memorializing reviewed cases are higher for the print researcher. The print researcher must photocopy or take notes as opposed to printing, saving on the computer, or cutting and pasting portions of case text directly into notes or drafts. For these purposes, a distinction between cases and case texts is critical. Print researchers may well be exposed to more cases in the form of digest blurbs, but the value of these tools is precisely that they prevent the researcher from needing to review a large number of case texts directly in order to identify relevant precedent.

The heightened time and energy costs for case text retrieval during print searches do not dictate that print researchers will always review less case text. However, the assertion that, as a general matter, electronic researchers will be exposed to more case text during the course of research gains force when this cost differential is considered in light of other factors.

Consider that the initial results page for just one electronic search will contain the excerpted text of twenty different cases. In the span of three minutes or so, an electronic researcher can scan the excerpted text of these twenty cases to identify relevant results. And each new page further into the result list provides twenty additional case text excerpts, and each new search produces new result lists, and so on. Moreover, an

the digest index, then its volumes of case summaries, pocket parts, and supplements is a cumbersome process, especially when the researcher still must consult bound reporter volumes and advance sheets after the digest is used.”) The question of monetary costs is somewhat different. There are costs associated both with obtaining and maintaining a print library and with obtaining access to private electronic search databases. Assuming, however, that a researcher has access to and is conducting an electronic search, then there is very little incremental cost for reading additional case texts. While the initial search is subject to charge, clicking into results retrieved by the initial search is generally not. As such, electronic researchers worried about cost have an incentive to run broader initial searches and spend time reading through a large volume of case texts (to weed out unresponsive retrievals), thereby exposing themselves to even more case texts.

82 Notably, because researchers are trained to create overbroad searches to locate relevant cases, many of the retrieved results are likely to be anomalous, thus requiring the researcher to screen results for relevancy. See Robert C. Berring, Full Text Databases and Legal Research: Backing into the Future, 1 HIGH TECH. L.J. 27, 43 (1986) (discussing a study showing the low relevancy rate of retrieved results in electronic searches).
electronic researcher can fly between hyperlinked cases within a search result with amazing ease. (Search #1 pulls up case A; while scanning the text of case A the researcher sees a citation to case B; with a click, the researcher speeds directly into the text of case B.) This presents a stark comparison to the time and energy for a print researcher to locate and review a portion of the text of twenty different cases, or to look up a case referenced in a retrieved case.

This leads to a second and related assertion, namely that electronic researchers are more likely to be exposed to different case texts than print researchers. This captures both the idea that a print researcher and an electronic researcher, setting out with the same research inquiry, are likely to exhibit greater divergence with respect to case texts reviewed and the idea that two electronic researchers, setting out with the same research inquiry, are likely to exhibit greater divergence with respect to case texts reviewed as compared to one another than two print researchers presented with the same research inquiry. There are two reasons for this.

First, there is a higher time/energy penalty for pursuing a false lead during print research than during electronic research. As such, we would

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83 I focus here on time/energy costs as opposed to monetary costs. Searching in private electronic databases can be expensive, however, and many have raised concerns about the distributional consequences of pricey electronic research. E.g., Berring, Not Throwing Out the Baby, supra note 41, at 618-29; Olufunmilayo B. Arewa, Open Access in a Close Universe: Lexis, Westlaw, Law Schools, and the Legal Information Market, 10 LEWIS & CLARK L. REV. 797 (2006). However, for the purposes of the present discussion focused generally on differences between print and electronic research processes, time/energy costs seem to be the more appropriate metric for a number of reasons. First, “Lexis and Westlaw both have modified versions of their databases that are priced for the small firm and solo practitioners market,” and there are increasingly a “range of competitors in the low end of the market in terms of pricing.” Olufunmilayo, supra note 83, at 831. Moreover, there are numerous strategies for resource-limited researchers to conduct cost effective searches in electronic databases (for example, if the charge is by search a researcher can run one overbroad search and then merely click around within retrieved results without incurring additional charge and if the charge is assessed hourly a researcher can download and save a broad search result and peruse it at length without additional charge). Second, case law is available from a number of free online collections and databases, such as FindLaw, the Cornell University Law Library, and many courts (spurred in part by Section 205 of the E-Government Act). And, finally, the cost of using a private electronic database must be compared to the costs generated by an attorney billing by hour.
expect a print researcher to be more discerning when screening for relevant results (i.e., determining the threshold of likely relevancy for deciding to pull a case). Going off on a bit of a wild hare for an electronic researcher will pose little in the way of time/energy costs. Thus, a print researcher faced with a case digest excerpt for a case that suggests that it has a 10% chance of being relevant to the researcher’s inquiry and an electronic researcher faced with a case text excerpt likewise suggesting a 10% chance of relevancy could be expected to make different decisions about the utility of tracking down the case. In short, it is reasonable to expect that frolics and detours would be far more common in the context of electronic research. These frolics and detours might include forays into marginally related areas of law or, for example, non-controlling jurisdictions.

The second and more important reason that print and electronic researchers will likely be exposed to different case texts lies in the homogenizing influence of case digests and key system information as compared to the more individualized nature of Boolean searching. As described above, a print researcher will frequently decide which case texts to pull and review using a case digest as the mediating tool. The digests, key topics, key numbers and case blurbs influence both the category of cases that the researcher deems relevant and the specific case texts that the researcher chooses to review. The case texts that an electronic researcher will be exposed to are determined by the search that the researcher elects to run. And the searches that electronic researchers run are highly individualized. They can be structured in different ways (as Natural Language searches or Words and Terms searches, for example) and the researcher has complete control over search content. These electronic searches will almost always yield at least a handful of wholly irrelevant results that get ensnared in the net cast by the search but have no bearing on the issue being researched. Significantly, these “by-catch” results are case texts that a print researcher would not be expected to encounter,

Thus, even for a resource-limited attorney, an expensive electronic search may nonetheless be more economical than a print search if it saves attorney time. See Hanson, supra note 5, at 580 (“[W]hen everyone utilized the West key number system and other preautomated research techniques, opposing attorneys would tend to develop their arguments on the basis of the same cases, nearly all of which were familiar to judges and experts in that field of law. Automated research, with its open-ended quality and potential to be highly customized, is more likely to turn up a number of novel cases that, it could be argued, should be considered as precedent for the case at hand.”) (citation omitted).
unless a key number was erroneously assigned or a case digest excerpt faulty or misinterpreted by the researcher.

III.

COGNITIVE PSYCHOLOGY-DERIVED PREDICTIONS ABOUT THE CONSEQUENCES OF A CHANGED RESEARCH PROCESS: DIVERSITY IN FRAMING AND TILTING AT WINDMILLS

A close comparison of the electronic and print research processes thus reveals some broad and generalized differences: (1) Electronic researchers are not guided by key system information to the same extent as print researchers with respect to identifying relevant theories, principles, and cases; (2) Electronic researchers do not encounter and interpret individual cases through the lens of key system information to the same extent as print researchers; and (3) Electronic researchers are exposed to more – and different – case texts than print researchers. Merely identifying these differences without more sheds little illumination on the broader question -- are these changes in research process meaningful? What, if any, ramifications do these process changes have outside of the context of the legal research process itself? Cognitive psychology provides a useful analytical tool to suggest answers to these questions.

Over the last twenty years, legal scholars have employed cognitive psychology to inform a great number of legal analyses with perhaps the most important manifestation of the legal use of cognitive psychology taking shape in the behavioral law and economics movement.\textsuperscript{85} Cognitive psychology has been used to examine everything from the appropriate scope of consumer warranty disclaimers\textsuperscript{86} to the behavior of juries.\textsuperscript{87} In the main, cognitive psychology has been applied to the lay public (as consumers or subjects of the law), judges or juries; however, some scholars use cognitive psychology to better understand and predict the


behaviors of attorneys in practicing the law. There are a few basic principles and theories in cognitive psychology that appear to be particularly useful in understanding the significance of the differences in research process described above. These are described briefly below.

Influence of labeling

Affixing a label or title to text can significantly influence understanding of the text’s meaning. Cognitive psychology teaches that existing knowledge greatly shapes understanding and “allows us to make new inferences that are crucial to our understanding.” Because people accumulate so much knowledge, what becomes relevant in any particular instance is “not total knowledge . . . but rather the knowledge that the reader brings to bear in understanding,” or activated knowledge. And labels or a title can work as triggers, determining what knowledge the reader brings to bear upon a particular text and thereby significantly shaping understanding.


89 This discussion of cognitive psychology is grounded in basic principles of cognitive psychology, primarily as outlined in DOUGLAS L. MEDIN, BRIAN H. ROSS & ARTHUR B. MARKMAN, COGNITIVE PSYCHOLOGY (John Wiley & Sons 4th ed.) (2005) [hereinafter “Medin”].

90 Molly Warner Lien briefly references cognitive learning theory in describing the intersection between technology and learning styles to provide support for the view that use of electronic media discourages nuanced understanding and analysis of case law. Lien, supra note 41, at 118-26 (“[W]orking methods that allow lawyers and students to input now and think later may be harmful for those who give in to the temptation. The person who uses an infobase to cut and paste portions of a case text into a brief is rearranging the thoughts of others, rather than reading ‘closely, critically, and muliperspectively.’”) (citations omitted).

91 Medin, supra note 89, at 213.
92 Id. at 211.
93 Id. at 212 (italics in original).
To illustrate the power of labeling, consider the following paragraph:

The procedure is actually quite simple. First you arrange things into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else, due to lack of facilities, that is the next step; otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one never can tell. After the procedure is completed one arranges the materials into different groups again. They can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated.\(^94\)

Now imagine that you were given the same paragraph but with a title this time – “Washing Clothes.” The information is readily understood when a label is affixed. Experimental data indicates that readers who are provided with both the paragraph and its title develop a better understanding of the text than readers provided with the same paragraph sans title.\(^95\) Although everyone knows how to wash clothes, it is only when that knowledge is activated (in this example by the title) that it shapes understanding of the passage.

**Influence of categories**

Categorization is a basic and pervasive cognitive function that permits people to utilize prior experience. The way in which items or concepts are categorized can significantly influence how they are understood. “[C]ategorization can both exaggerate (between-category) differences and inappropriately minimize (within-category) differences.”\(^96\) Bundling items or concepts into one category not only gives rise to the perception that those items or concepts are similar to one another, but also to the

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\(^94\) *Id.* at 213 (quoting Bransford and Johnson (1972)).

\(^95\) *Id.* Notably, ability to remember the paragraph is used as a proxy for gauging understanding.

\(^96\) *Id.* at 322-23.
perception that items or concepts within the category are distinguishable from items or concepts in a different category.

By way of example, consider the set of drawings below:

[insert Tajfel and Wilkes 1963 study Figure 10.1 Medin p. 321]97

In a 1963 study conducted by Tajfel and Wilkes, half of the participants were shown the two sets of lines without the category labels and half were shown the two sets of lines with the category labels. All of the participants were asked to estimate the lengths of the lines. Participants shown the lines with the category labels described the lines within category A as more similar in length and further reported a greater difference in line length between the category A and B lines. “In other words, the labels made the examples within a category more similar and the differences across categories more distinctive.”98

Confirmatory bias and selective information processing

Cognitive psychology further instructs that people are biased in the way that they seek out and digest information.99 Once people form a hypothesis about a possible solution to a problem, they have a notable tendency to seek out information that supports the hypothesis (to the exclusion of information that might contradict it).100 Moreover, when people encounter information they tend to minimize the information if it appears to contradict a preexisting hypothesis or belief but emphasize the information if it supports the hypothesis or belief.101

For example, in one experiment demonstrating these effects, psychologists assembled subjects with differing beliefs about a controversial subject, for example whether marijuana use poses health risks.102 The subjects were given summaries of a series of studies about marijuana’s health impacts; the studies had mixed results and conclusions.

97 Id. at 321 (citing Tajfel and Wilkes (1963)).
98 Id. at 321.
99 Id. at 12, 383-86.
100 Id. at 384-85 (citing Wason (1960)).
101 Id. at 12, 384-86.
102 Id. at 12 (citing Ross, Lepper & Hubbard, 1975 & Ross, 1977).
After the study, the psychologist again measured the subjects’ views about the health risks of marijuana. Notably, even though they had been provided with the same balanced scientific information (that ostensibly should have tempered their respective viewpoints), the subjects not only clung to their original beliefs but did so with greater zeal. Subjects who entered the study believing that marijuana was not harmful were even more convinced of its benign nature and subjects who entered the study believing that marijuana has serious health impacts were even more convinced of its harmful effects. “Apparently, people tended to see flaws in the studies whose results did not fit their views and did not see any problems with the studies that supported their views.”

The above-described principles of cognitive psychology suggest that the differences between the print and electronic research process will change not only how lawyers access the “literature of their profession,” but also what they find when they access that literature and what they make of it. As noted above, a number of other authors have thought carefully about the likely impacts of the shift to electronic research. This article seeks to add to that work the predictive value of established principles of cognitive psychology. Considering the differences between the print and electronic research processes described above together with the aforementioned principles of cognitive psychology (influence of labeling, influence of categories, confirmatory bias, and selective information processing) leads to two predictions about significant (non-process) consequences of the shift to electronic research – increased diversity in framing and tilting at windmills.

A. Diversity in Framing

The term “framing” is used here to reference an attorney’s selection of the legal theory or theories through which to conceptualize facts, arguments, and cases. The phrase “diversity in framing” captures the idea that attorneys working from the same or similar set of case facts may identify disparate legal theories as applicable to the case, proceeding or motion. Note, divergence does not mean that the frames proposed by attorneys will necessarily be novel or innovative. See generally Richard Delgado & Jean Stefancic, Why Do We Ask the Same Questions? The Triple Helix Dilemma.

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103 Id. at 12.
104 Price & Bitner, supra note 1.
105 See supra note 41.
106 Note, divergence does not mean that the frames proposed by attorneys will necessarily be novel or innovative. See generally Richard Delgado & Jean Stefancic, Why Do We Ask the Same Questions? The Triple Helix Dilemma.
of cognitive psychology, one likely result of the shift to electronic research is that there will be greater diversity in framing. Framing occurs throughout the legal process. It occurs when an attorney first considers whether a client has a claim and, if so, what kind. It occurs when an attorney decides what claims to include in a complaint and when opposing counsel decides whether to bring a motion to dismiss or for summary judgment and, if so, on what grounds. It occurs when an attorney decides what legal theories to raise in response to a motion to dismiss or motion for summary judgment or on appeal.

Notably, the way that a case or argument is framed can dictate its outcome. On a grand scale, consider, for example, challenges to the constitutionality of the United States Sentencing Guidelines. The Guidelines went into effect in November 1, 1987. The first constitutional challenge to the Guidelines reached the Supreme Court in 1989 and the Guidelines were thereafter upheld against a host of constitutional challenges, including challenges brought under the non-delegation doctrine, separation of powers doctrine, the privilege of the accused to testify on her own behalf, and the Double Jeopardy Clause. It was not

Revisited, supra note 41, at 318-24 (arguing that electronic research stifles new ideas and true creativity for a number of reasons, including by emphasizing facts over abstract ideas, including the internalization of key system categories, and reduced opportunities for “conceptual browsing”).

107 As an example of framing, consider the following from the Yale Law Report wherein Neal Katyal, lead architect of the challenge to military tribunals in Hamdan v. Rumsfeld, described the process of bringing the case: “Katyal spent two and half years working on a brief about separation of powers until a fresh-faced student looked at the problem from an angle Katyal himself had not considered. ‘Here comes a student, with little prior knowledge, and he has a different way of looking at it. . . .’” Kaitlin Thomas, Hamdan v. Rumsfeld Neal Katyal Leads Students from Guantanamo to the Supreme Court, YALE LAW REPORT, Summer 2006, at 37, 41.

108 See generally Marcia L. McCormick, Selecting and Framing the Issues on Appeal: A Powerful Persuasive Tool, 90 ILL. B.J. 203 (2002) (providing examples where the way in which an appeal was framed influenced the outcome and observing that “the framework of the argument itself - the theory of the case and the way the issues are framed - is a powerful persuasive tool. . . . The framework can control the outcome of the case because it funnels the facts toward a specific conclusion.”).


until 2000, 2004 and 2005 that the Supreme Court finally held the Guidelines largely unconstitutional, relying on the Sixth Amendment right to a jury trial. This underlines the importance of framing the question “are the U.S. Sentencing Guidelines unconstitutional.”

One conclusion that can be drawn from considering the differences between the print and electronic research processes together with principles of cognitive psychology is that electronic researchers will be more likely to diverge with respect to framing. In broad terms, greater divergence is likely because print researchers are guided by key topics, numbers and case digest blurbs to a far greater extent than electronic researchers when selecting cases to review and in reviewing those cases. The key system labels and categorizes legal topics and (ultimately) the case text that the researcher reviews. Cognitive psychology instructs that the labels and categories provided by the key system will strongly influence the researcher. The labels and categories of the key system remain constant and therefore exert a homogenizing influence on print researchers. More specifically, as compared to electronic research (and

112 See Bintliff, supra note 3, at 343-44 (“[The digest system] guided our thinking and analysis of the law by providing us with a structure used across the country. Lawyers in Florida and South Dakota, Ohio and Nevada, consulted the same books, used the same organization framework, found the same cases.”); Hanson, supra note 5, at 599 (“Paradoxically, although information accessed electronically may have enhanced meaning for individual users because it is tailored more specifically to their particular purposes, it is less meaningful as a basis for collective consciousness and professional specialization in social groups precisely because of its individualistic quality.”); McKenzie & Vaughn, supra note 41, at 5 (referring to the digest indices as “a pre-formed framework, an outline of the law, that guided the researcher’s thought process” and arguing that little or no pre-analysis is involved in electronic research).
113 See supra notes 91-98 and accompanying text. Notably, while not referencing cognitive psychology, Robert Berring has written persuasively about the importance of classification in influencing understanding of the law. See Berring, Thinkable Thoughts, supra note 3, at 310-11 (“Because those who use the [classification] system tend to conceptualize in terms of the system and, as a system matures, it becomes authoritative, the classification system simply describes the universe. Researchers mature using it, organize their thoughts around it, and it then defines the world of ‘thinkable thoughts.’
114 Put another way, print research using the key system functions like a series of signs directing researchers where to go and signaling how to understand what they find when they get there. (Imagine a road sign “10 miles to Pocatello” followed by
when considered in light of relevant principles of cognitive psychology),
print research promotes greater uniformity as between different researchers
with respect to (1) the cases retrieved by the researcher, and (2) researcher
interpretation of retrieved cases.

Uniformity in case retrieval

A few key points about the print research process help to explain how
it facilitates overlap in researcher case retrieval. First, print researchers
are far more likely than electronic researchers to be exposed to the same
data (the same universe of topics, within a topic the same options with
respect to key numbers, and within key numbers the same case digest
blurbs) at various decision points during the research process. Recall that
case digests organize cases into over four hundred topic categories. Each
topic begins with an overview that lists “Subjects Included” and “Subjects
Excluded and Covered by Other Topics,” and is then broken down into
many individual key numbers. The overview at the beginning of each
topic lists all of the key numbers falling under the topic, sometimes further
grouped under organizational headings. Although print researchers may
elect to focus their search in different topic areas, they are all faced with
selecting from the same set of topics. And although print researchers may
elect to pull different cases, they all select based on the same set of case
digest descriptions organized in the same system of key topics and
numbers. Electronic researchers, on the other hand, may entertain
innumerable different permutations of Boolean searches.

another reading “Welcome to Pocatello.”) Although there will be variations in the
signs that individual researchers encounter and how individual researchers interpret
those signs, overall print research using the key system is a far more directed and
uniform research process than electronic research. The key system does not
require researchers to choose a particular fork in the road when conducting
research; it does, however, make it far more likely that researchers are making
decisions based on similar (or even the same) sets of information.

There are numerous junctures where print research would not necessarily be
uniform as between researchers. For example, different researchers could select
different topics and/or key numbers as their access point. However, the point is not
that print research results in absolute uniformity as between researchers, only that it
is likely to result in greater uniformity than electronic research.

Notably, to the extent that two print researchers select different topics through
which to begin their research, the overview section can help to channel an errant
researcher back to the more on-point topic.
Moreover, that common data that print researchers encounter is structured as categories and labels. The topics and key numbers announce categories that cases fit within; along with the case blurbs, they also function as “labels” announcing the meaning of the cases to be retrieved. Cognitive psychology instructs that these categories and labels will significantly influence researcher choices about which cases to review. Thus, although even print researchers pursuing the same research question may not retrieve an identical set of cases (because they may make different decisions at these various junctures about the topics or key numbers to review or the particular cases to retrieve), the uniformity of the predetermined options that they are presented with makes it more likely that they will retrieve at least some (if not many) of the same cases. In deciding whether to retrieve a particular case, researchers will have not only a good amount of information about the case (what topic it falls under, what key number subject it falls within, the case blurb description) but the same information about the case.

It is easy to imagine that two print researchers researching the same question might select the same topic to research from, identify the same key numbers as particularly relevant, and within those key numbers decide to retrieve the same cases based on how closely the case blurbs seem to line up to the research question. By way of comparison, electronic research is a process of veritable entropy that makes it far less likely that there will be the same amount of overlap with respect to the cases retrieved.

First, the number of possible permutations in constructing a Boolean search is vast. Will the search be structured as a natural language search or a terms and connectors search? Most significantly, what language or term(s) will the researcher use to search? Will the researcher search by words? By phrases? By author, title, all of the above? Will the researcher place a date range on the search? Even a small change in search criteria can lead to dramatically different result lists.

Second, the result lists that researchers obtain after a search do not neatly summarize each case’s relevance with respect to a particular key number, as do case digest blurbs. Instead, the result lists highlight areas where the search criteria appear in the case. Will a researcher decide to “click into” and investigate a case based on the highlighted snippet of case text (taken out of context)? Even with respect to deciding which cases to

117 See supra notes 91-98 and accompanying text.
review in depth, the electronic research process offers far greater possibilities for divergence. Thus, considering changes in the research process and the strong influence of categories and labels on understanding, it is fair to predict that electronic researchers, presented with a wider range of more ambiguous data during the research process than print researchers, will end up with more idiosyncratic results (i.e., greater variety in cases retrieved) than print researchers.

**Uniformity in case interpretation**

The conforming influence of the print research process does not end with the selection of cases. For the reasons described below, when print researchers retrieve a case through the print research process they are more likely to adopt uniform interpretations of the case’s meaning. Thus, print researchers are more likely to have overlap with respect to the cases that they retrieve and more likely to understand those cases in similar ways.

By the time a print researcher actually reads the text of a case, she will frequently already have a good amount of information about the case’s meaning. Consider, for example, the case *Doe v. Celebrity Cruises, Inc.* 118 An electronic researcher retrieving this case after a Boolean search would know only that it matched the search criteria and have seen a snippet of the case text with the search terms highlighted. A print researcher, on the other hand, would know the topic that the case falls under (Ferries), the heading that it falls under (Regulation and Operation), the heading(s) that it does not fall under (Establishment and Maintenance), the key number that it falls under (Duty to operate and transport), the key numbers related to the topic that it may or may not fall under (e.g., Franchises and privileges, Character of a ferry as a highway, Licenses and taxes, Tolls or fares, etc.), and the case digest description (“Common carriers by sea who have a contractual duty to transport passengers to destination in a reasonably safe manner include ferries, ocean liners, or cruise ships. Shipping Act of 1984, § 3(6), 46 App. U.S.C.A. § 1702(6).”).

In light of the strong influence that categories and labels have on understanding, 119 we would expect that a print researcher who retrieves this case would interpret the case through the lens of these categories and labels. An electronic researcher interpreting the case would do so without

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119 *See supra* notes 91-98 and accompanying text.
the influence of these categories and labels. Again, even with the preface of uniform category and label information two print researchers could well reach different conclusions about the import of a case. And even when electronic researchers read a case without such uniform preparatory information they may well reach the same interpretation of the case. However, there does seem to be some basis to predict that print researchers, conditioned by numerous prior signals about a case’s meaning and significance, would converge more frequently with respect to their interpretations of the case than electronic researchers unconditioned by uniform prior signals about case meaning.

In sum, viewing changes in the research process through the lens of cognitive psychology suggests a broad shift in the content of search results – we would expect greater uniformity as between researchers in the context of a print search and (conversely) greater divergence as between researchers in the context of an electronic search. The connection between this shift in the (comparative) content of search results and framing decisions seems clear. The primary purpose of conducting research is to inform decisions about what claims or motions to bring and what kinds of arguments to make, how to structure arguments, and the like. Greater variety between researchers with respect to cases researched and interpretations thereof would naturally lead to greater variety in terms of framing. It is logical to posit that when there is greater variety in the cases that researchers review and the manner in which they interpret them (without uniform signals from key system information) they will be more likely to articulate different theories and arguments based on those research materials.

120 Legal reasoning has been defined as “the method by which lawyers invent arguments, judges and regulators make considered legal decisions, and students learn the law.” Vern L. Walker, Discovering the Logic of Legal Reasoning, 35 Hofstra Univ. L. Rev. 1687, 1704 (2007). Although our understanding about the precise process of legal reasoning is limited, it seems clear that discovering applicable substantive legal rules is at least one component of the process. Id. at 1693-96.

121 Consider, for example, a situation where Researcher A reviews cases 1-8 and bases her analysis on the knowledge gleaned from those cases. Researcher B reviews cases 1-8 and case 14 and bases her analysis on knowledge developed from those cases. If Researcher B finds a useful new theory, angle or argument in case 14 that is not articulated in cases 1-8, then the “frame” adopted by Researcher B may be different than that adopted by Researcher A. Similarly, if Researcher A and Researcher B both review case 1 but Researcher A interprets the cases as relevant and applicable to the question at hand (and goes on to research a related
B. Tilting at Windmills

Considering changes in the research process in light of principles of cognitive psychology also leads to a prediction that there will be more tilting at windmills in a world of electronic research. The phrase “tilting at windmills” means simply that attorneys will be more likely to advance marginal cases, theories and arguments (i.e., tilt at windmills) and concomitantly less aware that they are doing so. The term “marginal” captures the idea that a theory or argument is more likely to be perceived as irrelevant, weak, and/or less likely to be accepted by courts. Notably, purposefully advancing a marginal case, theory or argument – built on an unusual but creative strategy, or a strategy that is weak on doctrine but with a strong normative claim – is a time-honored, laudable approach to challenging and advancing the law (and is not what is meant by tilting at windmills). It is one thing to self-consciously (and with full appreciation of the low likelihood of success) set out to push doctrinal limits or shoot the moon; it is quite another to tilt at windmills by advancing a marginal claim, theory or argument without appreciating its tenuousness (shoot the moon by accident).

Recall the observations about differences between electronic and print research: (1) Electronic researchers are not guided by key system information to the same extent as print researchers with respect to identifying relevant theories, principles, and cases; (2) Electronic researchers do not encounter and interpret individual cases through the lens of key system information to the same extent as print researchers; and (3) Electronic researchers are exposed to more – and different – case texts than print researchers. Recall also the principles of cognitive psychology described above – the strong influence of categories and labels on understanding and the tendency to seek out information supportive of a claim or belief and avoid or dismiss information that does not support a claim or belief (confirmatory bias and selective information processing). Taken together, these observed differences in research process and principles of cognitive psychology suggest that electronic research will
encourage tilting at windmills because it (1) facilitates the resurrection and use of moribund cases, (2) facilitates and encourages researchers to more readily distinguish contrary cases, and (3) facilitates and encourages researchers to minimize the limitations or weakness of cases/theories perceived to be supportive. In short, both print and electronic researchers are motivated in their research and subject to confirmatory bias; electronic research exacerbates confirmatory bias (as compared to print research) by removing some of the checks on confirmatory bias that are present during a print search.

Resurrection of moribund cases

A “moribund” case is an old case that has not been cited or has been cited only a few times. In a print search, these cases are less likely to be found than during an electronic search. In a print search, these cases would likely only be found through a case digest (since it would be impossible to work back from a case citing the original case where the original case hasn’t been cited). However, digests cover limited time periods and thus it is labor intensive to locate old cases. Each digest set is divided into different series that cover limited time periods. For example, the Federal Digest covers cases from 1754 to 1939; the Modern Federal Practice Digest covers cases from 1939 to 1960; West's Federal Practice Digest 2d covers cases from 1961 to 1975; West's Federal Practice Digest 3d covers cases from 1975 to 1992; and West's Federal Practice Digest 4th covers cases from 1992 to the present. In order to locate an un-cited or lightly cited case dated before 1939, a print researcher would most likely have to make her way through four earlier digests. In electronic research, on the other hand, the moribund case may be on the first page of the researcher’s result list if the search parameters happen to match the case text.

Both their vintage and lack of subsequent citation suggest that moribund cases have withered on the vine for a reason – perhaps they are poorly reasoned or out of step with how the law has developed. 122 While the vintage and lack of subsequent citation should cause researcher’s to

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122 See generally Michael S. Fried, The Evolution of Legal Concepts: The Memetic Perspective, 39 JURIMETRICS J. 291, 303-06 (1999) (describing doctrinal evolution and observing that Oliver Wendell Holmes “argued that . . . the development of the law can be considered a ‘struggle for life among competing ideas,’ leading to ‘an ultimate victory and survival of the strongest.’”) (quoting Oliver Wendell Holmes, Law in Science and Science in Law, 12 HARV. L. REV. 443, 449 (1899)).
afford less weight to moribund cases, confirmatory bias and selective information processing suggest that if a moribund case suits a researcher’s goals, the researcher will be inclined to overlook such shortcomings.

**Distinguishing cases**

Even in the face of confirmatory bias and selective information processing, reasonable researchers will reconsider an idea or argument if presented with case law that is sufficiently discouraging – a recent, on-point and contrary case from the appropriate jurisdiction, for example. However, part of an attorney’s charge is not to give up too quickly and to ably distinguish cases contrary to the research goal when possible. For the reasons that follow, electronic research may contribute to lowering a researcher’s threshold for when a case can reasonably be distinguished.

First, as described above, the digest and key systems provide a print researcher with a significant amount of information about a case before the researcher reviews the case text and, per cognitive psychology, the labels and categories imposed by the digest and key systems will have a strong influence on researcher understanding. If a case shows up under a key topic or number that is directly relevant to the researcher’s goal, the researcher is not only more likely to retrieve the case, but (because it fits within the appropriate category) to credit it’s holding as relevant and significant to the research question. Although the researcher might be inclined to attempt to distinguish the case as a result of motivated researching, confirmatory bias and/or selective information processing, a

\[123\] Here is a good description of the motivations that attorneys bring to their research: “The entire reason that the lawyer is engaged in the process of legal interpretation is to facilitate her client’s ability to achieve some concrete objective. She has, in other words, a particular purpose for engaging in legal analysis. This purpose will invariably lead her to attempt to discover the subset of plausible legal interpretations that best supports her client’s goals, a tendency expressly sanctioned by the rules of professional conduct.” David B. Wilkins, *Legal Realism for Lawyers*, 104 HARY. L. REV. 469, 483 (1990) (describing the view of partisanship underlying the traditional model of legal ethics). See also Hanson, supra note [ ], at 565 (“For their part, lawyers aim to develop the best possible arguments that benefit their clients. Thus, the two parties to a lawsuit try to cast the situation in different lights and scour the past for precedent pointing in opposite directions.”) (emphasis in original).

\[124\] *Id.* at 473 n. 17 (identifying and describing rules of professional conduct that encourage zealous advocacy).
researcher may be less inclined to do so where the key system categories and labels also provide a strong signal that, as discouraging as the case may be, it is on-point and relevant to the research question. An electronic researcher, however, would make the decision as to whether a case is distinguishable without the moderating influence of key system categories and labels.

Second, case texts are more ambiguous and subject to a greater range of interpretations than secondary source (key system) statements about the meaning of case texts. Imagine giving two attorneys a case and asking them to describe its holding and significance. Now imagine also giving those two attorneys all of the digest and key system information for a case (the subject, key topic and key number that it falls under, the digest blurb) and asking them to describe its holding and significance. Again, the strong influence of categories and labeling on understanding indicates that there would likely be far greater divergence in interpretation based on the case text alone than there would be when case text is coupled with secondary source input about the case’s meaning. That electronic researchers will tend to be exposed to a greater number of case texts, largely without prior key system information about the meaning of those texts, suggests that confirmatory bias and selective information processing will have greater influence on electronic researchers.

Measuring the value of authority

On the flip side (and for many of the same reasons), we would expect electronic researchers to be less apt than print researchers to recognize faults in a case or theory supportive of a research goal. Recall that one of the ways that categories shape understanding is by causing people to perceive that differences between items in distinct categories are greater than they actually are. Thus, knowing (based on digest and key number signals) that case A is in category A and that case B is in category

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125 The above-postulated distinction is perhaps easier to envision when comparing the research processes side by side. A print researcher and electronic researcher are both interested in developing a line of argument favorable to a client’s needs. The print researcher identifies a case that seems to be very closely on point – the key topic and number both fit, as does the case digest description – although it cuts against developing the argument. By the time the print researcher visits the (more ambiguous) case text to determine if the case is distinguishable in some way, she will already have cause to believe that the contrary case is applicable to the research question. An electronic researcher, on the other hand, will generally be exposed to more case texts earlier in the research process than a print researcher.
B will encourage the print researcher to view case A and case B as distinct – if category A seems more applicable to the research question than category B, then cases in category B are more likely to be understood as irrelevant. An electronic researcher encountering cases A and B without knowing what categories they fall into, however, will have no preexisting information to cause her to doubt the relevance of case B and may thus be less inclined to dismiss case B.

In short, a print researcher – even in the throes of confirmatory bias and selective information processing – will likely be more aware of and influenced by secondary source information (in the form of key topics, numbers and digest blurbs) which communicates that a case doesn’t really apply to the research question at hand. An electronic researcher, likewise in the throes of confirmatory bias and selective information processing, will be less likely to be aware of information calling into doubt the relevance of a case and therefore will not have a force tempering the influence of strong biases to understand the case as supportive of the research goal.

Accordingly, electronic research takes away some of the checks against the exercise of confirmatory bias and selective information processing present in print research (the moderating influence of the digest and key systems) and introduces new temptations to motivated

126 See generally Bintliff, supra note 3, at 342-43 (observing that the digests “allow[ed] researchers to understand the relationship, context, and hierarchy of identified rules” and ascertain “when our arguments had been used, and when we were pushing the envelope of interpretation through the use of innovative logic.”).
127 Indeed, legal research instructors report that law students conducting electronic research frequently locate a snippet of one case that seems supportive and may not even bother to read and understand the whole case, let alone the broader doctrine. E.g., McKenzie & Vaughn, supra note 41, at 8 (“[I]ncreasingly, students seem to avoid the hard work of reading, digesting and analyzing the results of research. They search online, hit the print button and try to hand in the printed results. We call this the datadump phenomenon, and suspect the ‘cut and paste’ feature of electronic retrieval adds to this . . . . ”).
128 Electronic research also removes some of the more intuitive signals that print research communicates about a source’s authority. See Lien, supra note 41, at 101 (“Print sources . . . have distinguishing markers that are helpful in the reasoning process. Although we may not be consciously aware of it, when we pull out a bound volume of United States Reports and turn the pages, we are influenced by
researchers (readily available moribund cases, low costs for conducting frolics and detours to identify marginally supportive authority, immediate access to ambiguous case text, a temptation to false confidence in electronically-located research results). As one scholar has noted, “[w]here the research enterprise once consisted of finding a relevant precedent or two and exploring the universe of cases around them, now each side in any dispute can find bunches of relevant cases. String citations to great gobs of precedent are typical, and briefs continue to expand, each page packed with ‘relevant’ authority.”

Notably, testimony from the debate about the adoption of Rule 32.1 discussed supra pp. 10-15 indicates a concern about tilting at windmills and, in particular, the ability of attorneys to locate and cite to appropriate sources of authority. Numerous judges opined that attorneys appearing before them frequently cited unpublished opinions of dubious value, thereby demonstrating lack of judgment. The Honorable Myron H. Bright observed, “[i]f all of the lawyers who are going to appear in this committee were the quality of the lawyers that appear before us, I wouldn’t worry about it because there wouldn’t be an unpublished opinion that would be cited unless it was the rare case, but that’s not true. The quality of lawyers who appear in appeals in section, in circuits, and otherwise.” The Honorable Diane P. Wood added that “[l]awyers, as you know, as Judge Bright said, are of vastly different abilities and some lawyers are not going to be as discriminating as you would be, I am confident. We read briefs like this all the time.” She went on to express concern about the ability of the hoi polloi of practicing lawyers to separate the wheat (significant decisions) from the chaff (unpublished decisions):

the very nature of the compilation to pay attention to the source. By contrast, all bits of information look alike when presented online.”) (citations omitted).

129 See generally Lien, supra note 41, at 89 (observing that “the methodology of researching in and working with electronic texts encourages work habits that prioritize speed and all too easily enable lawyers to find a kernel of phraseology that may support their often incorrect preconceived notions.”) (citing Barbara Bintliff, From Creativity to Computerese: Thinking Like a Lawyer in the Computer Age, 88 L. LIBR. J. 338, 348 (1996)); see also Bast & Pyle, supra note 38, at 292-93 (discussing studies showing that electronic researchers frequently have false confidence that electronic searches have produced satisfactory results).

130 Berring, Collapse, supra note 41, at 28.


It reminds me a little bit of one of my favorite scenes from a movie. I’m a big Indiana Jones fan and as you may remember, the very last scene of ‘Raiders of the Lost Ark’ deals with the question where are they going to hide the ark? Where are they going to keep it where it’s absolutely safe? And you see some men trundling it down on a hand cart in an enormous warehouse in some – I always think of Suitland out here in Maryland, but they’re hiding it in the midst of this giant mass of boxes and I have a feeling that the worthwhile things are going to be hidden in a similarly huge mass of cases.\footnote{Changes in the threshold for deeming a case supportive or distinguishing cases may help to explain the divergent views of practitioners and judges in the debate over the adoption of Rule 32.1. Practitioners contended that “many times unpublished cases are cited because there are holes in existing precedent,”\footnote{Hearing on Proposed Rule 32.1, Testimony of Diane P. Wood, p. 27, lines 17-22 and p. 28, lines 1-7.} while judges contended (with equal fervor) that unpublished opinions were “incredibly boring” and repetitive,” addressing the “90 percent” of cases on which the entire circuit would agree.\footnote{Hearing on Proposed Rule 32.1, Testimony of Richard Frankel, p. 82, lines 12-13.} The truth may be that electronic research has helped to condition researchers to expand their view of what is perceived as a doctrinal “hole” by more readily dismissing contrary authority and more readily adopting as supportive marginal authority. In other words, if there isn’t a case factually on all fours, then there is a “hole” that a client’s case can be imagined to fit within.}

IV.
THE BROADER IMPACTS OF DIVERSITY IN FRAMING AND TILTING AT WINDMILLS

Absent rigorous empirical analysis to confirm that increased diversity in framing and tilting at windmills are (in fact) two effects of the shift to electronic research, it is premature to dwell at length on the larger
significance of these posited developments. However, even if these predictions about results of the change to electronic research don’t hold up to empirical testing, understanding their potential significance nonetheless has some utility, if only to illustrate that even seemingly minor effects on researcher behavior can have much broader impacts. If, in fact, our changed research process does result in greater diversity in framing or tilting at windmills, either of these developments could have significant impacts on the law and/or the profession.

**Diversity in Framing**

Richard Delgado argues that the key system and its subject matter indices are inherently conservative, lead to “unconscious self censorship,” stifle “genuine innovation,” and that electronic research doesn’t go far enough to free researchers from their channeling influence and encourage true creativity in law.\(^{136}\) Molly Warner Lien and Barbara Bintliff, on the other hand, argue that the key system and its subject matter indices are crucial to developing nuanced, meaningful legal arguments and thus raise concern that electronic research divorces the researcher from these tools.\(^{137}\)

This Article reaches a more limited, but nonetheless significant, conclusion. Namely that – regardless of whether it results in more innovation and creativity or merely marginal legal arguments – with electronic research as the norm, the framing of a case will become a more

\(^{136}\) Delgado, *Triple Helix Dilemma, supra* note 41, at 216-22; Richard Delgado & Jean Stefancic, *Why Do We Ask the Same Questions? The Triple Helix Dilemma Revisited, supra* note 41, at 310 (arguing that electronic databases do not in fact free researchers from conventional, key-system-defined searching because “[t]he categories formerly inscribed in the West Digest System, where they guided searches along predictable lines, remain in our minds where they limit what we can do just as effectively as they did when they were overt and on the page.”).

\(^{137}\) Bintliff, *supra* note 3, at 343 (arguing that the West digest system topic outlines “allow[ ] researchers to understand the relationship, context, and hierarchy of identified rules. . . . The digest’s organization follows the same pattern as our legal reasoning process.”); Lien, *supra* note 41, at 89, 101 (observing that “[p]rint sources . . . have distinguishing markers that are helpful in the reasoning process” and lamenting that “[w]hile technology unquestionably gives lawyers the ability to marshal bits of information instantly from a host of cases, and to dispatch them into memoranda and briefs like well-drilled soldiers in a war of logic, the speed of deployment inevitably discourages lawyers from taking the time to analyze the wisdom, correctness and applicability of legal arguments.”).
significant and disputed aspect of litigation. If accurate, even this more limited claim has potentially significant implications flowing from it.

For example, by offering a greater variety of possible “frames” for a case, parties may inadvertently enhance the role of judges. A core principle of our adversarial system is that judges decide the matters before them based (at least primarily) on the facts and theories presented to them. If accurate, even this more limited claim has potentially significant implications flowing from it.

For example, by offering a greater variety of possible “frames” for a case, parties may inadvertently enhance the role of judges. A core principle of our adversarial system is that judges decide the matters before them based (at least primarily) on the facts and theories presented to them. Litigants confine a judges’ decision to “a very narrow range of possibilities--possibilities defined by the facts elicited by the parties and the legal theories advanced by them.”

Moreover, greater diversity in framing has at least the potential to enhance unpredictability with respect to claims, motions, and trial outcomes. The greater the number of perceived claims and theories in play, the greater the possible permutations with respect to whether a claim(s) is brought, how a motion is resolved, whether a case is won or lost. Decreasing predictability could have myriad affects, perhaps most obviously with respect to incentives for settlement.

138 Courts will rarely decide a question sua sponte where the parties have failed to raise and brief the issue. See generally Christopher J. Peters, Adjudication as Representation, 97 COLUM. L. REV. 312, 353 (1997) (describing how litigants shape the issues before a court and observing that “[t]he decisionmaking process in a court case has much more to do with the participation of the litigants than with the authoritative fiat of the judge. . . . importantly, the stricter the conception of the adversary system that is adhered to, the smaller will be the realm of judicial authorship of the resulting decision.”). See also id. at 352 (“Theoretically, of course, the court could make its choice on a whim, or on a theory entirely separate from any advanced by either of the litigants. But the court probably will consider itself to be much more constrained than this. Unless it wishes to renounce centuries of Anglo-American juridical tradition, the court must articulate reasons for whatever decision it makes. The most complete and readily available sets of reasons are those offered by each of the parties and contained in their briefs and, perhaps, their oral arguments. This is an enormous practical incentive for the court to avoid setting off on its own and deciding the motion according to some independent theory. And even aside from this incentive, the court is likely to feel . . . that its decision must be ‘strongly responsive’ to the arguments of the parties in order to qualify as legitimate adjudication.”).

139 Id. at 355.

140 E.g., Peter Toll Hoffman, Valuation of Cases for Settlement: Theory and Practice, 1991 J. DISP. RESOL. 1, 29 (1991) (describing the considerations attendant in decisions to settle, including “[t]he consequence of litigation most
Tilting at Windmills

An increase in tilting at windmills could likewise have significant ramifications. One important role for practitioners is to act as gatekeepers with respect to which cases and claims to bring, what theories to pursue, what motions to bring and how to contest those motions, when to settle, when to go to trial, etc.141 If electronic research has a tendency to cloud the judgment of lawyers as gatekeepers and thereby cause them to tilt at windmills, or pursue marginal claims or theories, this could have significant effects on investments of client and judicial resources.

One practical consideration in thinking about an identified increase in tilting at windmills is whether it should prompt reconsideration of the content and/or application of Federal Rule of Civil Procedure 11 (“Rule 11”).142 Under Rule 11, attorneys certify that, “to the best of the person's knowledge, information, and belief, formed after an inquiry reasonable under the circumstances . . . the claims, defenses, and other legal contentions [in the attorney’s submissions to the court] are warranted by existing law or by a nonfrivolous argument for extending, modifying, or reversing existing law or for establishing new law. . . .” Does the combination of cognitive bias and electronic research that encourages tilting at windmills argue for relaxed application of Rule 11 – recognition of a “the computer made me do it” defense of sorts? Or does it perhaps argue for greater policing of attorney gate-keeping, either through

141 See Fred Zacharias, Lawyers as Gatekeepers, 41 SAN DIEGO L. REV. 1387 (2004) (describing the advising, screening and gatekeeping functions performed by lawyers). See also id. at 1389-90 (“Let us consider, as a starting point, the famous statement of Elihu Root that ‘half of the practice of a decent lawyer consists in telling would-be clients that they are damned fools and should stop.’”) (quoting 1 Philip C. Jessup, Elihu Root 133 (1938)). See generally Bintliff, supra note 3, at 349-50 (arguing that electronic research may cause researchers to lose sight of legal rules such that they “cannot develop an accurate prediction of a case’s outcome” and may, in turn, “run the risk of losing the predictability, and with it the stability, of our judicial system.”).

142 This analysis would also apply with respect to Model Rule 3.1, which provides that “a lawyer should not bring a proceeding, raise or controvert an issue ‘unless there is a basis in law or fact for doing so . . ., which includes a good faith argument for an extension, modification or reversal of existing law.’” Margolis, supra note 49, at 5.
reworking Rule 11 or applying it with greater stringency, as a necessary measure to condition attorneys in an electronic research world to take greater care in evaluating the claims and theories that they advance?

CONCLUSION

Ultimately, cognitive psychology – while useful to help predict how changes in research process may affect larger issues (such as research outcomes and interpretation) – cannot confirm the manifestation of these predicted effects. Cognitive psychology has, however, been useful in providing an analytical basis for developing a few likely possibilities with respect to the shift from print to electronic research (diversity in framing, tilting at windmills). Significantly, narrowed in this fashion, these two predictions are more amenable to empirical testing than the general proposition that the shift to electronic research is having broad, non-process impacts. With refinement based on response to this Article, a follow-up article may undertake empirical testing of the diversity in framing and tilting at windmills predictions.

While any effort to empirically test the validity of the diversity in framing and tilting at windmills predictions would pose significant challenges (including careful construction of testing parameters), some possible bases for empirical testing do suggest themselves. Print and electronic researchers could, for example, be tasked with a research problem and observed to track the case texts that they review and determine whether, on balance, there is greater overlap with respect to the cases that print researchers qua print researchers review as compared to electronic researchers qua electronic researchers. This, of course, does not directly test either prediction; it does, however, test one assertion underlying those predictions – that print research results in greater uniformity in case retrieval. Similarly, the predicted resurrection of moribund cases could be assessed by reviewing case citation data to determine if there has been an increase in instances where cases with no or few citations are suddenly cited after a significant interim.

With respect to directly testing the predictions, one potential value for identifying an increase in diversity in framing could be the number of different arguments or theories raised by parties and resolved by courts over time. Evidence already suggests that judicial opinions are lengthier in
the age of electronic research than in the print research past\textsuperscript{143}; the next step would be to assess whether this increased heft results, in part, from the need to dispose of a greater variety of arguments. Among the values for identifying an increase in tilting at windmills could be the frequency of rejections by courts of litigant attempts to distinguish cases.

As noted above, any effort to empirically test whether electronic research does, in fact, result in increased diversity in framing and/or tilting at windmills would require careful consideration and structuring as well as significant elbow grease and resources. The difficulty of this endeavor, indeed the difficulty of any endeavor to empirically test predictions about the impacts of the shift to electronic research, underscores the utility of employing some analytical tool (in this case, cognitive psychology) beyond reasoning from experience and conjecture before setting out to conduct empirical inquiry.

\textsuperscript{143} See Berring, The Search for Cognitive Authority, supra note 55 and accompanying text.