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## MAPPING THE SOCIAL LIFE OF THE LAW: AN ALTERNATIVE APPROACH TO LEGAL RESEARCH

Ian Gallacher\*

*Summary: As the law moves inexorably to a digital publication model in which books no longer play a role, the problem of how to continue to make the law available to all becomes more acute. Open access initiatives already exist, and more are on the way, but all are limited by their inability to provide more than self-indexed search options for their users. Self-indexing, although a powerful alternative to the traditional pre-indexed searching made possible by systems like West's "Key Number" digests, has inherent limitations which make it a poor choice as the sole means of researching the law. But developing a new pre-indexed legal digest would be a prohibitively expensive and complex undertaking, making it unlikely that open access legal information sites can develop and maintain a fully-implemented digesting approach to legal research. This article proposes a reconceptualization of the information already contained within most American judicial opinions in order to permit open access sites to offer a form of pre-indexed research to their users. By mapping a case's location in a graphical representation of the doctrinal development of an issue under consideration, this approach allows the court's citations to prior authority to act as a pre-indexing tool, allows the researcher to update the law by showing more recent cases that have cited to the target case, and gives the researcher the opportunity to trace network links in order to uncover connections between cases that might otherwise have been difficult to discern.*

Legal information is venturing into uncharted waters. The advent of the internet and the world wide web has meant that for the first time in over one hundred years, a viable alternative to publishing the law exists, thereby freeing it from the West Company's<sup>1</sup> control. But the potential afforded by the internet has not yet been realized, perhaps in part because of the inability of potential competitor legal information publishers to offer acceptable search protocols which would make their legal information sites viable alternatives to the expensive but highly sophisticated Westlaw and LexisNexis databases. A new way of looking at the information already embedded into most court decisions, however, perhaps points the way to a different way to conducting legal research which might make such alternative legal information sites more appealing to those interested in researching the law.

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\* Assistant Professor of Law and Director, Legal Communication and Research program, Syracuse University College of Law. Thanks to Dean Hannah Arterian for her continued support, to Heather McCabe and Donna Ford for stimulating my thinking on these issues, to Penny Pether, Kevin Dames, Wendy Scott, and Jeremy Blumenthal for helping me to work through some of these issues, to Katia, for her help and support through the years and, as always, thanks to Julie McKinstry for everything.

<sup>1</sup> West is more properly referred to as Thomson West, or West, a Thomson business, after the acquisition of the West Company by Thomson in 1996 but in this article I will use the shorthand form of the company's name familiar to most lawyers

There are currently two principal approaches to American common law research. A researcher can either follow a pre-indexed path,<sup>2</sup> using a system such as West's proprietorial "key number" digesting method<sup>3</sup>, or the researcher can construct an index of words located in a relationship with other words, with the various words and the relationship between them selected by the researcher at the time of research – the familiar "Boolean"<sup>4</sup> based, or self-indexed, approach to computer-assisted legal research. Both of these approaches have advantages and disadvantages for the researcher,<sup>5</sup> and experienced researchers understand that where possible, comprehensive legal research requires a judicious blend of research methods.<sup>6</sup>

For those with access to one or both of the primary legal databases, LexisNexis and Westlaw, research using both pre-indexed and self-indexed methods is possible. Legal researchers with access only to legal information in book form can still perform pre-indexed research which, while limiting,<sup>7</sup> is sufficient for most purposes. But while pre-indexed research has been available in book form for over one hundred years,<sup>8</sup> it is unclear for how much longer it will continue to be available: the internet revolution has extended the tantalizing possibility of freely available information but the cost of that vision appears to be an inevitable decline into obsolescence for book-based legal information.<sup>9</sup>

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<sup>2</sup> Although pre-indexed research is often thought of as book-based research, because researchers are familiar with the process of working through volumes of regional, federal, and decennial digests, pre-indexed research is available as part of both the Westlaw and LexisNexis legal databases.

<sup>3</sup> West's key numbers are the form of pre-indexing most familiar to most lawyers, but other forms of pre-indexing – most notably the annotation approach of the American Law Reports, or A.L.R. – are still available to legal researchers. A recent decision by West, however, means that A.L.R. annotations are less available than they once were. Whereas A.L.R. annotations have been available in both LexisNexis and Westlaw, West has decided to remove the annotations from LexisNexis from January, 2008, meaning that they will only be available in print form and on Westlaw. Press Release, American Law Reports and Westlaw: An Exclusive Arrangement Highlighted in New Westcast Podcast (August 10, 2007), available at [http://www.thomson.com/content/pr/tlr/tlr\\_legal/230857](http://www.thomson.com/content/pr/tlr/tlr_legal/230857) (accessed September 6, 2007).

<sup>4</sup> Boolean logic is a term honoring George Boole, a British mathematician whose work into symbolic logic proved invaluable to the computer scientists who first developed the relational approach to obtaining information from a computer database. Marilyn Walter, *Retaking Control of Legal Research*, 43 J. LEGAL EDUC. 569, n.1 (1993).

<sup>5</sup> A discussion of the benefits and disadvantages of these two research methods can be found at nn 59-108 and accompanying text.

<sup>6</sup> See, e.g., AMY E. SLOAN, BASIC LEGAL RESEARCH: TOOLS AND STRATEGIES 340 (3d ed. 2006 ("For many research projects, a combination of [print and electronic sources] will be necessary for complete, accurate, and efficient research."))

<sup>7</sup> Legal researchers performing pre-indexed searches can research the legal issues defined by the indexers with efficiency and ease, but the approach has recognized and significant limitations. See, *infra.*, nn 74 - 82 and accompanying text.

<sup>8</sup> John West's digesting sets were first published in 1897, completing the process of systematized legal research begun by West in 1879 with the publication of his Northwestern reporter and continued by the inclusion of the national reporter system, covering all state and federal jurisdictions, which was completed over the next ten years. Lynn Foster & Bruce Kennedy, *The Evolution of Research: Technological Developments in Legal Research*, 2 J. APP. PRAC. & PROC. 275, 276-77 (2000).

<sup>9</sup> The effects of this move away towards computer-assisted legal research and away from book-based legal information have been recognized for some time. See, e.g., Gary J. Bravy & K. Celeste Feather, *The Impact of Electronic Access on Basic Library Services: One Academic Law Library's Experience*, 93 LAW LIBR. J. 261 (2001)(tracking precipitous declines in both student photocopying and in book reshelving, both indicators that students are using computer-assisted legal research and book-based legal information less); Erica V. Wayne & J. Paul Lomio, *Book Lovers Beware: A Survey of Online Research Habits of Stanford Law Students*, 6-7 (Robert Crown

It is impossible to tell how quickly this move away from book-based information will proceed. While West, the principal publisher of primary legal information in book form, appears to have no present plans to discontinue its print operation, the market for print materials is shrinking<sup>10</sup> and that trend is likely irreversible.<sup>11</sup> At the same time, the combination of ever-increasing costs to produce a product that fewer and fewer people want suggests that West will be forced to discontinue book-based legal information at some point in the not-too-distant future.

For those who can afford Westlaw – West’s computer-assisted legal research database – or LexisNexis – the computer-assisted legal research database maintained by West’s principal competitor<sup>12</sup> – the move away from book-based legal research should pose no significant problems. Both databases offer self and pre-indexed research options<sup>13</sup> and users can use either or both of these search strategies to meet their research needs.

For those who cannot afford these services, however, the outlook is unpromising. The present alternatives to Westlaw and Lexis are either unavailable to non-lawyers,<sup>14</sup> incomplete,<sup>15</sup> or charge for their services.<sup>16</sup> While some seek to provide open access to the law for all,<sup>17</sup> West, in particular, has a history of acting aggressively to limit such access

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Law Library Legal Research Paper Series, Research Paper No. 2) (2005)(reporting a three year increase in the number of first year students who reported doing all or most of their legal research online). *See also, infra*, n. 47 (description of surveys of practicing lawyers suggesting increasing reliance on computer-assisted legal research among practitioners).

<sup>10</sup> The move away from print-based legal information has at least two identifiable causes. First, of course, is the move to the internet and away from books that has been identified among practicing lawyers (*see, e.g., supra* at n. 9). The second cause of this move is bottom-line driven. Put simply, the cost of maintaining a print library is increasing, both in terms of the books themselves and in terms of the dollar cost associated with their storage. For an analysis of these costs, *see*, Ian Gallacher, *Forty-Two: The Hitchhiker’s Guide to Teaching Legal Research to the Google Generation*, 39 AKRON L. REV. 151, 193-96 (2006); KENDALL SVENGALIS, LEGAL INFORMATION BUYER’S GUIDE AND REFERENCE MANUAL (“Svengalis”), 25 (2005).

<sup>11</sup> Having done away with a print library, it is highly unlikely that a law firm, for example, will be able to justify the expense associated with the reacquisition of legal information in print form.

<sup>12</sup> LexisNexis is a division of Reed Elsevier Inc.

<sup>13</sup> They offer natural language research options as well, but the natural language search engines are, in essence, devices that translate natural language search queries into Boolean searches. Walter, *supra* n. 4, at 572, n. 19.

<sup>14</sup> Casemaker is an example of an online legal research tool that is available only to bar members in states whose bar associations have joined the Casemaker consortium. For information on the Casemaker site, *see* <http://www.casemaker.us/page.php?page=overview> (accessed August 20, 2007).

<sup>15</sup> Findlaw, a free online legal information site owned by West’s corporate parent, Thomson, provides access to state and federal court opinions but the historical coverage is spotty and varies from jurisdiction to jurisdiction. In order to discover what coverage the site has for a specific jurisdiction, the user must check each library within the Findlaw database. For information on Findlaw’s coverage. *See* <http://lp.findlaw.com/> (accessed August 20, 2007). A fee-based alternative, Fastcase, has more coverage, but admits that its federal appellate coverage extends back only as far as “1 F.2d.” *See* <https://www.fastcase.com/Corporate/Home.aspx> (accessed September 7, 2007).

<sup>16</sup> Loislaw, an online legal information database owned by Wolters Kluwer, claims to offer “up-to-date cases, statutes, rules and regulations, and other primary law for all 50 states and federal jurisdictions,” but charges an unspecified amount to enroll in the service. For further information on Loislaw, *see* <http://www.loislaw.com/> (accessed August 20, 2007).

<sup>17</sup> The present author has proposed that law schools band together to form a consortium to publish the law and make it accessible to all. Ian Gallacher, *Cite Unseen: How Neutral Citation and America’s Law Schools Can*

whenever possible<sup>18</sup> suggesting that true open access to the law might, at best, be delayed. And even when proponents of open access to the law finally prevail to a point that all American common law is freely available to all over the internet, with full historical coverage and no economic restrictions, the question of how information will be retrieved from that database will remain: Boolean-based searching will likely be possible<sup>19</sup> but pre-indexing has

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*Cure Our Strange Devotion to Bibliographical Orthodoxy and the Constriction of Open and Equal Access to the Law*, 70 ALBANY L. REV. 491, 529-34 (2007). Some tentative steps are already being taken to provide free access to the law. See, e.g., Altlaw.org, a site established in collaboration between the Columbia Law School Program on Law and Technology and the Silicon Flatirons Program at the University of Colorado law school providing free access to a full-text searchable database of Supreme Court and Federal Appellate decisions from “the last decade or so.” *Information found at* <http://altlaw.org/about> (accessed August 20, 2007). And in August, 2007, the President and CEO of Public.Resource.Org, Inc. wrote to the President and CEO of Thomson North American Legal, announcing that his organization had “begun the process of scanning the Federal Reporter, the Federal Supplement, and the Federal Appendix” and that it intended to “extract[] the public domain content and republish[] it on the [i]nternet for use by anyone. Letter from Carl Malamud, President and CEO, Public.Resource.Org, Inc., to Peter Warwick, President and CEO, Thomson North American Legal (August 14, 2007) available at <http://bulk.resource.org/courts.gov/> (accessed August 20, 2007). In a New York Times story about Public.Resource.Org, Inc.’s action, John Shaughnessy, a spokesman for Thomson, is quoted as having said: “We have received the letter from Public Resource and Mr. Malamud raises a number of interesting but complex points. We are looking at them now and then will be in touch directly with Mr. Malamud.” John Markoff, *A Quest to Get More Court Rulings Online, and Free* N.Y. TIMES, August 20, 2007 (“Times Article”), available at <http://www.nytimes.com/2007/08/20/technology/20westlaw.html?ex=1345262400&en=9595a33c5fec0648&ei=5090&partner=rssuserland&emc=rss> (accessed August 20, 2007).

<sup>18</sup> Most recently, West fought Mathew Bender and Hyperlaw, a company attempting to publish and sell CD-ROM disks of case law. Bender and Hyperlaw won in both the United States District Court for the Southern District of New York and the Second Circuit. *Matthew Bender & Co. v. West Publ’g Co.*, 158 F.3d 674 (2d Cir.1998) and *Matthew Bender & Co. v. West Publ’g Co.*, 158 F.3d 693 (2d Cir.1998), *cert. denied*, 526 U.S. 1154 (1999). The victory was a pyrrhic one, however: Alan Sugarman, the President and CEO of Hyperlaw, was quoted as saying that the legal battle “cost me a lot of money, and when it was all said and done I was wiped out financially, so I went back to the practice of law.” *Times Article*, *supra*, n. 17. West also sought, and obtained, an injunction preventing Lexis’ then publisher from using West pagination in Lexis-produced versions of cases. *West Publ’g Co. v. Mead Data Cent., Inc.*, 799 F.2d 1219 (8th Cir. 1986). West later blocked another publisher from using its page numbers (*Oasis Publ’g Co v. West Publ’g Co.*, 924 F.Supp. 918 (D.Minn. 1996)), despite an intervening Supreme Court decision that cast doubt on the validity of the Mead Data decision. *Feist Publications, Inc. v. Rural Telephone Service Co.*, 449 U.S. 340 (1991). Most significantly, for the future of open access to the law, West intervened in a Freedom of Information Act (“FOIA”) case seeking to make the JURIS database available to the public. JURIS (“Justice Retrieval and Inquiry System”) was created in 1971 by the Department of Justice (“DOJ”), building on a collection of Supreme Court opinions collected by the United States Air Force under the acronym FLITE (“Finding Legal Information Through Electronics”). James H. Wyman, *Freeing the Law: Case Reporter Copyright and the Universal Citation System*, 24 FLA. ST. U. L. REV. 217, 254 (1996). The DOJ’s purpose in developing JURIS was to have a collection of federal case law its attorneys could use. *Id.* When the burden of data entry and management became too much for the DOJ to handle internally, it contracted with West to provide those services. *Id.* West’s contract, however, allowed it to remove all information entered by it under the terms of the contract if it chose to terminate its relationship with DOJ. *Id.* West indeed did terminate its relationship with the DOJ in 1993, and it exercised its right to remove all the case law added to JURIS during the ten year term of the contract. *Id.* Despite this, a non-profit group brought a FOIA request to have access to at least the data remaining in JURIS after West’s removal of all West-entered material. *Tax Analysts v. Dep’t of Justice*, 913 F.Supp. 599, 600 (D.D.C. 1996). West intervened in the action, claiming a “substantial interest” in the JURIS database, and helped to obtain a ruling that JURIS was not an “agency record” within the contemplation of FOIA. *Id.* at 601, 607; Wyman, *supra*, at 254.

<sup>19</sup> The Altlaw.org site is full-text searchable, albeit somewhat inelegantly, (*see* <http://altlaw.org/search/> advanced) demonstrating that Boolean searching is achievable within an open access legal information site.

proven to be a time and person-intensive process.<sup>20</sup> It is difficult to imagine how a newly-formed open-access legal information database could pre-index all past and present common law in order to allow legal researchers to select between a self-indexed and pre-indexed research protocol.<sup>21</sup>

When faced with a seemingly impossible situation like this, one solution can be to change the parameters of the task, and so it proves with regards to the pre-indexing of legal information. Rather than trying to find ways to generate an external index to caselaw in competition with West and Lexis, it might be better to see if there is another way to approximate the benefits of pre-indexed research using information already available. One possible solution to the problem is to see if the non-proprietary<sup>22</sup> internal information already contained within court opinions can be used as a way of locating the case within the law's doctrinal framework, thereby allowing the court's citation to previous authority to serve as a rudimentary form of pre-indexing. This article suggests that this approach might well be a fruitful one and represents a preliminary analysis of some of the possibilities and potential pitfalls inherent in this alternative method of legal research.

In Part I of the article,<sup>23</sup> I discuss the need to develop a new method of providing open access to the law and some of the problems associated with liberating the law from its present commercial publishers. In Part II,<sup>24</sup> I discuss the advantages and disadvantages offered by pre and self-indexed approaches to legal research. And in Part III,<sup>25</sup> I discuss a way in which pre-existing case information can be used to develop a map of a case's "social" network, thereby permitting a researcher to develop an index of the law, as it relates to an individual case, at least, and allowing an open access site to offer both self and pre-indexed research strategies.

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<sup>20</sup> West has been digesting cases for over 100 years and has had the benefit of that time and labor of a substantial number of indexers.

<sup>21</sup> The magnitude of the process is one of the reasons the author proposed American law schools – institutions with a large body of intelligent, skilled, and motivated students – as the appropriate location for an open access legal information effort. *See*, Gallacher, *supra* n. 17, at 531-33.

<sup>22</sup> It should not be necessary to say that no indexing effort could use, in any way, West's ubiquitous, and most certainly copyrighted, key number system.

<sup>23</sup> Footnotes 26-88 and accompanying text.

<sup>24</sup> Footnotes 89-108 and accompanying text.

<sup>25</sup> Footnotes 109-157 and accompanying text.

I. The Need To Develop A New Method Of  
Providing Free and Open Access To The Law

One of the bedrock principles for a society of laws must be free and open access to the laws upon which the society is based.<sup>26</sup> Indeed, the notion that laws are the property of the population stretches back at least as far as early Seventeenth Century England: “The auntient & excellent Lawes of England are the birth-right and the most auntient and best inheritance that the subjects of this realm have, for by them hee injoyeth not onley his inheritance and goods in peace & quietnes, but his lyfe and his most dear Countrey in safety.”<sup>27</sup>

And so it is in this country today; the decisions of federal<sup>28</sup> and state<sup>29</sup> courts are free from copyright and can be read and freely reproduced by anyone with the money and inclination to do so.<sup>30</sup> Indeed, all recent federal court opinions<sup>31</sup> are required, by law, to be made freely

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<sup>26</sup> Robert Berring has argued that America’s legal system is the most open and easily-accessed in the world. “[I]t is possible for any literate, English-speaking person to walk into a local library, perhaps one that specializes in law, but perhaps not, and find federal and state court cases, statutes, and administrative law.” Robert Berring, Essay, *On Not Throwing Out the Baby: Planning the Future of Legal Information*, 83 CAL. L. REV. 615, 618 (1995). It is doubtful whether access to the law was ever as easy as Berring suggested; the patrons of many libraries, particularly in rural communities, likely had little or no access to legal materials and, at least as important, the finding tools necessary to locate relevant law and instruction on how to use them. And the situation has doubtless deteriorated since 1995, with escalating costs for purchase and storage of legal materials making it increasingly difficult for local libraries to maintain collections of legal information.

<sup>27</sup> 1 THE SELECTED WRITINGS OF SIR EDWARD COKE 127 (Steve Sheppard ed., 2003)(1605). This belief is not universal. Even Coke, who had earlier written that lawyers should write documents in such a way that clients could understand them (“Note reader, there is great reason, that the writing should be expounded in such language, that the party may understand it, although he could read, because, by the law, he is at his peril to deliver it presently upon request, and hath not time to consult upon it with learned counsel.” *Id.*, at 44) also wrote that statutes written in French should not be translated into English. “It was not thought fit nor convenient to publish either of those, or any of the Statutes enacted in those dayes in the vulgar tongue, lest the unlearned by bare reading without right understanding might sucke out errors, and trusting to their owne conceit might endamage themselves, and sometimes fall into destruction.” *Id.*, at 76. Coke’s view is held by some today as well. See, e.g. David Crump, *Against Plain English: The Case for a Functional Approach to Legal Document Preparation*, 33 RUTGERS L.J. 713, 734 (2002)(arguing in favor of abstruse as opposed to “plain” English in some documents, in part because clients are more likely to take seriously legal documents that are written in difficult to understand language).

<sup>28</sup> *Wheaton v. Peters*, 33 U.S. (8 Pet.) 591 (1834).

<sup>29</sup> *Banks v. Manchester*, 128 U.S. 244 (1888).

<sup>30</sup> Although the law has, in theory, been available for publication, the reality is that in the print world, West has been the only significant publisher. Although the Government Printing Office publishes the United States Reports, the official reporter for United States Supreme Court decisions (Svengalis, *supra* n. 10, at 69) the decisions of lower federal courts and twenty-nine state jurisdictions (Alabama, Alaska, Arizona, Colorado, Delaware, the District of Columbia, Hawaii, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, New Jersey, New York, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, West Virginia, Wisconsin, and Wyoming) are only available in print form from West. *Id.* at 69, 471-586.

<sup>31</sup> A “written opinion” has been defined by the federal Judicial Conference as meaning “any document issued by a judge or judges of the court, sitting in that capacity that sets forth a reasoned explanation for a court’s decision,” although “[i]n the courts of appeals, only those documents designated as opinions of the court meet the definition of ‘written opinion.’” Stephen B. Burnbank, *Judicial Accountability to the Past, Present and Future: Precedent, Politics, and Power*, 28 U. ARK. LITTLE ROCK L. REV. 19, 22-23 (2005)(internal quotation marks omitted) (citing Memorandum on Compliance with Website Requirements of the E-Government Act to All Chief Judges, United States Courts, from Leonidas Ralph Mecham 2 (Nov. 10, 2004)).

available on the internet.<sup>32</sup> But this rosy *de jure* picture is at odds with the *de facto* reality because availability is not at all the same thing as accessibility,<sup>33</sup> and while anyone can, in theory, make the law available, only very few can make it accessible.<sup>34</sup>

The contrast between availability and accessibility is readily apparent to anyone who has been asked to conduct research in order to locate a case illustrating a specific point of law and has faced a bank of legal reporters in panic. All the cases ever decided by the courts in a

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<sup>32</sup> E-Government Act of 2002 § 205(a), Pub. L. No. 107-347, 116 Stat. 2913 (codified at 44 U.S.C. § 3501 (Supp. III 2005)). The E-Government Act provides that:

[t]he Chief Justice of the United States, the chief judge of each circuit and district and of the Court of Federal Claims, and the chief bankruptcy judge of each district shall cause to be established and maintained, for the court of which the judge is chief justice or judge, a website that contains the following information or links to websites with the following information:

- (1) Location and contact information for the courthouse, including the telephone numbers and contact names for the clerk's office and justices' or judge's chambers.
- (2) Local rules and standing or general orders of the court.
- (3) Individual rules, if in existence, of each justice or judge in that court.
- (4) Access to docket information for each case.
- (5) Access to the substance of all written opinions issued by the court, regardless of whether such opinions are to be published in the official court reporter, in a text searchable format.

*Id.*

<sup>33</sup> It is also true that by no means all the population has access to the internet, thereby making the E-Government Act's promise of access to all court opinions chimerical at best. While many who do not themselves have access to the internet at home can use internet-enabled computers in public libraries, prisoners in jails typically have, at best, limited access to the internet, and therefore limited access to the opinions placed on the internet in response to the E-Government Act's provisions. And prisoners are active litigants who likely would make substantial use of legal resources were they made available to them. LexisNexis, for one, has identified a market opportunity in the prison world and has developed a service in which a CD-ROM of case law is loaded into a "kiosk" designed specially to withstand the rigors of a prison environment. See Amy Hale-Jeneke, *The "Inside" Information on New Jail Kiosks*, LISP NEWSLETTER, June 2004, available at [http://www.aallnet.org/sis/lisp/news2004\\_1.pdf](http://www.aallnet.org/sis/lisp/news2004_1.pdf) (accessed September 27, 2007).

<sup>34</sup> The E-Government Act, while clearly requiring the publication of opinions in "text searchable format," has failed to make federal case law entirely available to anyone with an internet connection. Nineteen federal courts were reported, in 2004, to be "deferring compliance with the Act's requirements as to the accessibility of written opinions in some respect." Burbank, *supra* n. 31, at 23 (citing Memorandum on Compliance with Website Requirements of the E-Government Act to All Chief Judges, United States Courts, from Leonidas Ralph Mecham 2 (Nov. 10, 2004)). And some courts who have complied with at least some part of the E-Government Act and made their opinions available on the internet have certainly not complied with the spirit of the Act. For a description of the problems associated with courts that use the Public Access to Court Electronic Records, or PACER, service as a means of disseminating their written opinions, see Gallacher, *supra* n. 17, at 516-19. But even had all federal courts fully complied with both the letter and spirit of the E-Government Act, the opinions would remain virtually inaccessible to researchers, and therefore useless for purposes of researching the law. The Act only requires courts to place their own opinions on the internet, thereby creating a group of stand-alone websites with no connections to each other. A search in one site, therefore, will only return the set of cases that correspond to the search for that individual site. In order to build up a comprehensive picture of federal court jurisprudence on a particular issue, therefore, the researcher would be compelled to conduct the same search in almost two hundred websites – an impractical task that no sane researcher would undertake. The promise of universal accessibility to federal court opinions apparently offered by the E-Government Act is, unfortunately, a political, and not a practical, solution: it is a chimerical illusion with no substance.

specific jurisdiction are located in the reporters, and are therefore available to any potential researcher. But reading through each decision in an attempt to locate the required case is, as a practical matter, an impossible task.<sup>35</sup> So in order to render manageable the task of researching the law, a researcher must use some form of indexing system to navigate through the thousands of potentially relevant opinions in order to find the few that relate specifically to the topic at hand.

In a real sense, then, the entity that controls the indexing system controls meaningful access to the law. From 1897 until 1973, this meant that West was the dominant force in legal information because of its key number digesting system.<sup>36</sup> In 1973, Mead Data Central introduced the Lexis – now LexisNexis – database, allowing lawyers to engage in computer-assisted legal research, followed two years later by Westlaw.<sup>37</sup> Lexis' entry into the legal research world, and later the entry of Wolters Kluwer as well,<sup>38</sup> means that there are now three large commercial legal information providers instead of one<sup>39</sup> but the increase in the number of publishers has had little practical effect on driving down the cost of legal information.<sup>40</sup> Put simply, these services are for law firms with clients who can afford to pay substantial monthly sums for legal work; they are not for low income or pro se litigants, or for those who have other reasons for wishing to research the law.

The cost of computer-assisted legal research means that many who want to research the law must continue to use print-based legal information. And for the short term, at least, this is

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<sup>35</sup> One new law student, confronted with a picture of a lawyer working against a background of reporters, is reported as having reacted “Oh my God, I’m going to have to read all those books or that lawyer . . . will have me for lunch, or maybe even just an appetizer.” Maureen Straub Kordesh, *Navigating the Dark Morass: A First-Year Student’s Guide to the Library*, 19 CAMPBELL L. REV. 115, 115 (1996).

<sup>36</sup> Alternatives to West’s key number digesting approach existed during this period but they lacked the comprehensiveness or popularity of West’s solution. Ultimately, the two principal alternative research systems – the American Law Reports annotations and the Lawyer’s Cooperative Publishing Company’s Total Client-Service Library System – came under West’s control. Svengalis, *supra* n. 10, at 10, 75. West later sold the Lawyer’s Cooperative U.S. Supreme Court Reports, Lawyer’s Edition and companion Digest to Reed Elsevier, the owner of LexisNexis, as part of a consent decree entered into between West and the Department of Justice. *Id.* at 596.

<sup>37</sup> *Id.*, at 137.

<sup>38</sup> WoltersKluwer bought Loislaw in 2000 for a price of \$95 million. *Id.*, at 14. Loislaw, formerly LOIS, was developed in 1987 to be a low-cost alternative to Westlaw and Lexis. *Id.*, at 149. Initially, LOIS used CD-ROM as a means of disseminating and updating its libraries of state and federal opinions (although its failure to publish federal district court opinions limited its usefulness to practitioners), but moved to an internet-based distribution method in 1996. *Id.* Loislaw is part of the reason WoltersKluwer is the third largest provider of American legal information in terms of market share and is credited with forcing West to pay attention to the small law firm market. *Id.*, at 15, 149.

<sup>39</sup> In 2003, the last year for which data can readily be obtained, West controlled 39 percent of the legal information market, Reed Elsevier, the current owner of LexisNexis, controlled 26 percent, and Wolters Kluwer, the owner of the Loislaw legal information service and the owner of Commerce Clearing House, the Little, Brown publishing house, and Aspen Law & Business, controlled 17 percent. *Id.*, at 15. The remaining 18 percent was spread among all other legal information publishers. *Id.*

<sup>40</sup> Exactly what the costs of legal information are is an almost impossible question to answer. While Loislaw offers a flat fee for its services, both Westlaw and LexisNexis offer an array of charges, tailored to meet a vast array of needs. A law firm can choose between flat rate charges, calculated by analyzing the firm’s past use of either LexisNexis or Westlaw, can elect to pay for database services on a transactional or time basis, or can negotiate individualized packages tailored to meet the firm’s geographical and practice needs. For more information on Westlaw and LexisNexis pricing, see Gallacher, *supra* n. 10, at 196-97, Svengalis *supra* n. 10, at 140-48.

not a substantial hardship; retrieval of information might take longer using books than computers,<sup>41</sup> and there are some inherent limitations in a pre-indexed research strategy, but the difference in time and recovered information is not so significant that a careful legal researcher using the books is at such a significant disadvantage compared to a computer-assisted legal researcher as to be unable find law to support well-formed legal arguments. But how much longer print-based research will be available is unclear, and this uncertainty fuels the need to develop comprehensive open access electronic alternatives to the expensive Westlaw and LexisNexis databases.<sup>42</sup>

The signs of print-based legal information's impending demise are not hard to find. Perhaps the most apparent of these signs, and certainly the hardest to ignore for those who make purchasing decisions for law libraries, is the increase in price of book based legal information. The price of the Atlantic Reporter, Second series, increased by more than 77 percent between 1999 and 2003,<sup>43</sup> but substantially more disturbing has been the increase in print digest cost.<sup>44</sup> The price of the Hawaii digest, for example, was \$312 in 1999 and was \$1,371.50 in 2003, and the Rhode Island digest rose from \$432 in 1999 to \$1,272.50 in 2003.<sup>45</sup> Added to the costs of the books themselves is the cost of storing and maintaining them in libraries that contribute nothing to a law firm's bottom line.<sup>46</sup> These costs, combined with increasing attorney comfort in engaging in computer-assisted legal research,<sup>47</sup>

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<sup>41</sup> The time difference is limited to information retrieval. It is by no means clear that a research project using digests and case reporters would take, in the aggregate, any longer than a research project conducted using electronic resources.

<sup>42</sup> There are already several commercial database alternatives to Westlaw and LexisNexis. Services such as Loislaw, Fastcase, Casemaker, and others all provide legal information to their subscribers. Adequate though they might be for many purposes, however, the restrictions on access or on coverage make these sites inadequate as open access and comprehensive sources of legal information. See, nn 14-16, *supra* and accompanying text.

<sup>43</sup> Svengalis, *supra* n. 10, at 17. The reporter cost \$262 in 1999 and \$465 in 2003, an increase of \$203. *Id.*

<sup>44</sup> The price increases for print digests are so significant because these are the crucial finding tools necessary to make sense of the vast amount of information contained in the case reporters. A library could have all the available reporters on open display but without the digests to allow researchers to locate the issues analyzed in those opinions, they would have no meaningful function.

<sup>45</sup> Svengalis, *supra* n. 10, at 17. The changes in price are even more disturbing when the full range of the change is taken into account. The Hawaii digest was originally priced at \$819 in 1999 and fell \$507 in that year to reach its final selling price of \$312. *Id.* By 2001, the price of the digest had rebounded to \$512, and in another two years the price was up to \$1,371.50. *Id.* The same trajectory can be seen in the pricing for the Rhode Island digest, dropping from \$1,089 to \$432 in 1999, then rising to \$903 in 2001 and then to \$1,272.50 in 2003. *Id.* Svengalis attributes these increases to a conscious decision by West to "build its subscription lists prior to engineering an extensive program of bound volume revisions" and speaks of customers "lured" into buying products that West intended to increase dramatically in price during the coming four years. *Id.* Whether or not the reasons for these price increases were as nefarious as Svengalis believes, the reality for subscribers was a substantial increase in supplementation costs for an essential legal research tool.

<sup>46</sup> For a discussion of the cost of storing print-based legal information materials in 2006, see Gallacher, *supra* n. 10, at 195.

<sup>47</sup> A 2007 survey of Chicago-area law librarians suggests that we will see an "[e]ver-increasing reliance on electronic over print resources" in the next five years. Tom Gaylord, *Chicago-Area Librarians Survey 5* (2007) (the "2007 Librarian's Survey") (prepared for the 2007 "Back to the Future of Legal Research" Conference hosted by Chicago-Kent College of Law. A copy of the survey results is on file with the Author). The surveyed librarians did not see this trend as a good thing, noting that in the past five years they had seen "too much reliance on electronic [databases]." *Id.* A companion survey suggested that most senior attorneys agreed, with one respondent noting that the past five years had seen "[m]ore and more reliance on keyboard database searching, and less resort to books [which is] not necessarily a good thing because young associates often fail to

suggest that the practice of law firms abandoning their print-based legal information collections will speed up over the coming years.<sup>48</sup>

The de-emphasis on print-based legal information, combined with the continued high cost of the principal commercial databases, suggests a gap in the market that could be exploited by new publishers,<sup>49</sup> although the carrot<sup>50</sup> and stick<sup>51</sup> tactics employed by West in particular indicate that no new commercial competitor can be sanguine about the prospects of entering into successful and lasting competition with such an aggressive<sup>52</sup> and well-funded<sup>53</sup> behemoth.

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develop concepts as a result of their myopic use of keywords. Sanford N. Greenburg, *Chicago-Area Attorney Survey* 1 (2007) (the “2007 Attorney Survey”) (prepared for the 2007 “Back to the Future of Legal Research” Conference hosted by Chicago-Kent College of Law. A copy of the survey results is on file with the Author). Another response echoed this comment, noting that “[t]he use of print materials seems to better stress and underscore the need for analysis. In contrast, on-line research is many time more mechanical . . . and many topics are missed.” *Id.* at 8. Asked for their suggestions for legal research training, most respondents (20 percent) answered that law schools should continue teaching print, as opposed to the 18 percent who suggested that the focus should be on “constructing better, more targeted searches.” *Id.* at 3.

<sup>48</sup> The 2007 Librarian’s survey indicated that 79.2 percent of those librarians responding to the survey had cancelled or planned to cancel subscriptions to at least some print materials. 2007 Librarian’s Survey, *supra* n. 46, at 3. This move to computer-assisted legal research, and away from print, will likely have no effect on the price of the commercial legal information databases. Both LexisNexis and West likely will contend that they have to make up for the loss of revenue from their print products by maintaining the price of their electronic services, and both will have to carry the cost of continuing to retain a substantial number of employees in order to provide the added editorial services that make their versions of the law so valuable to practicing lawyers.

<sup>49</sup> Svengalis has noted that “[s]ignificant opportunities exist for online providers who can effectively deliver primary law while undercutting the prices charged by the two major online legal services. As more courts, legislatures, and administrative agencies offer information on the World Wide Web, the role of the traditional primary law publishers will diminish in those instances where value-added content is not important.” Svengalis, *supra* n. 10, at 17.

<sup>50</sup> West in particular is not shy about acquiring legal information providers when it sees an opportunity for enhancing its own market position and, presumably, eliminating a potential threat. The protection of its market position certainly seems to have been behind the purchase of Findlaw, a free legal information site, in 2001 for a rumored \$37 million. *News This Week Ticker*, NAT’L L. J., Jan. 15, 2001, at A4. Even though Findlaw was “one of the most popular portals for accessing free legal information on the Internet,” (Svengalis, *supra* n. 10, at 14) such a purchase price seems to make little sense unless West perceived a potential threat behind Findlaw’s marketing strategy. In addition to Findlaw, the Thomson Company has made significant purchases in the legal information field since its purchase of West in 1996, including Foundation Press, Federal Publications, the Harrison Company, and Andrews Publications. *Id.*, at 15. In the same period, Reed Elsevier, the owner of the LexisNexis database, has purchased, among others, Matthew Bender & Company, Mealey’s Publications, the Book Publishing Company, Courtlink, Anderson Publishing, and Gould Publishing. *Id.*

<sup>51</sup> In addition to its purchasing activities, West has shown that it is not at all shy in pursuing litigation when it feels that is the appropriate step to take in order to protect its market position. *See, supra*, n. 18.

<sup>52</sup> West’s sponsorship of an award for federal judges has come under particular scrutiny. Sharon Schmickle & Tom Hamburger, *Devitt Award is Prestigious – and Unusual; Close Involvement of Corporate Sponsor Sets it Apart*, STAR TRIBUNE (MINNEAPOLIS), March 5, 1995, at 18A (describing West’s involvement in Devitt Award for federal judges. Recipients of award receive \$15,000 and crystal obelisk); Sharon Schmickle & Tom Hamburger, *Members Accepted Gifts and Perks While Acting on Appeals Worth Millions to Minnesota Firm*, STAR TRIBUNE (MINNEAPOLIS), March 5, 1995, at 16A (describing trips paid for by West and taken by award nominating committee, including several Supreme Court justices, while Court was considering cases in which West was party).

<sup>53</sup> Thomson reported revenues of \$3.647 billion in its legal and regulatory group in 2006, an 8 percent increase over the previous year. The Thomson Corporation 2006 Annual Report, available at <http://ar.thomson.com/main.htm> (accessed September 7, 2007).

And yet competition is necessary if the law is to continue to be accessible to all. The dangers of a situation in which access to legal information is tightly controlled by one or two large corporations<sup>54</sup> are too extreme to allow legal information to be taken hostage in this way. Open access sites such as the Legal Information Institute<sup>55</sup> and Altlaw<sup>56</sup> are important steps in making the law available to everyone,<sup>57</sup> but their collections are too limited to offer comprehensive access to the law to everyone<sup>58</sup> and, perhaps more significantly, their search engines do not allow for both pre-indexed and self-indexed searches. For legal researchers, however, the ability to conduct both types of search is crucial.

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<sup>54</sup> This nightmarish possibility has been named the “Rupert Murdoch scenario” by Robert Berring. Robert C. Berring, *The Evolution of Research: Legal Research and the World of Thinkable Thoughts*, 2 J. APP. PRAC. & PROC. 305, 316 (2000).

<sup>55</sup> Located at <http://law.cornell.edu>. The Legal Information Institute (“LII”) includes a series of recent and landmark Supreme Court opinions and acts as a portal to federal circuit court opinions, but its principal emphasis is on statutory and regulatory law. In this emphasis on federal statutes and regulations, the LII is reflecting the belief of one of its developers, Thomas Bruce, that “[t]he majority of people wanting legal information aren’t doing formal legal research, but rather undertaking a kind of risk-management activity similar to what they might do with a site like WebMD. (And for the lawyers out there tempted to start griping about unauthorized-practice issues, the similarities to WebMD run deep: these folks almost never self-prescribe, and if they do, the effects are probably both drastic and Darwinian, so there’s really nothing to fear). For [an] audience like that, judicial opinions are (most of the time) a secondary interpretative layer that surrounds statutes and regulations. What they want is legislation, regulations, and material that interprets those things.” Posting of Thomas R. Bruce to O’Reilly Radar, [http://radar.oreilly.com/archives/2007/08/carl\\_malamud\\_ta.html](http://radar.oreilly.com/archives/2007/08/carl_malamud_ta.html) (August 24, 2007, 05:20 EST).

<sup>56</sup> *See, supra*, n. 17.

<sup>57</sup> The LII is a leading provider of statutory information. While a Google search for “United States Code” and “US Code” places the LII third, behind the Government Printing Office site that publishes the Code on the internet, a search for “Federal Statutes” places the LII site first. Search performed September 18, 2007.

<sup>58</sup> At the time of writing, Altlaw’s coverage is limited to relatively recent federal appellate court decisions. The oldest decisions on the site are from the Supreme Court, from 1991. <http://altlaw.org/v1/about/coverage> (accessed September 19, 2007). Most circuit court decisions are from the mid 1990s. *Id.* The LII’s coverage is mostly limited to statutory and regulatory materials. *See, supra*, n. 54. Coverage is, of course, something that can be added over time, but in order to be truly helpful, an open access site must have comprehensive coverage of all federal and state opinions from the earliest to the most recent.

## II. The Benefits And Burdens Of Pre And Self-Indexed Legal Research

No legal research of primary sources can ever be said to be unindexed, unless the researcher simply picks up a reporter and begins to read from front cover to back. Researchers either use a pre-indexed resource, such as West's digests, to help them or they construct their own indexes at the time of research and select primary sources that match the index terms they selected. Both of these research techniques have advantages to the researcher and both have limitations that should make researchers cautious about using one technique in preference to another.

### 1. Pre-Indexed Research

Lawyers familiar with the West "Key Number" research system are familiar with the concept of pre-indexing, as should be anyone who has used a reference book with an index in the back.<sup>59</sup> In essence, an indexer takes an opinion and extracts from it those elements of legal doctrine the court has discussed. Each of these doctrinal elements are compared to a master list prepared in advance,<sup>60</sup> are coded according to the master list, and the case citation and

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<sup>59</sup> Obvious though the use of an index might be to some, it is by no means as obvious to contemporary law students as we might think. Every spring semester, in both law schools where I have taught full-time, I assign an in-class research exercise to demonstrate the continued vitality of book-based legal research. In particular, my goal is to show the students that there is little practical difference in the amount of time it takes to take to perform a simple research task in a book and on the internet. The exercise consists of one student being asked to find a recipe for Welsh Rabbit (or Rarebit) in a cookbook I bring to class and another student being asked to find a recipe online. A third student is assigned to be the timekeeper, making a note of how long it takes each student to find the recipe. The student researching online usually finds the recipe first, usually within 30 seconds. The student using the book usually takes about twice as long, finding the recipe in about one minute. Then I ask the class who was faster, and they all take pleasure in telling me that the internet was faster – something they were already confident they knew and were confident I would be unhappy about. I tell them they are wrong and ask again. This usually results in a short but lively conversation about my sanity, and once that is over I ask the class how long each student took to find the recipe. The timekeeper confirms the times, and again I tell the students that they have the wrong answer and tell them that the assignment has been conducted in law time instead of chronological time. If I have a student who has worked in a law firm, that student often recognizes at this point that both students took 0.1 of an hour to complete the assignment, and that gets the class into a discussion of how, when working in terms of billable hours, there is often no difference in speed between researching on Westlaw or Lexis and the books. For our present purposes, though, the significance of this assignment is the reason the student using the cookbook takes so much longer than the student using the internet to find the recipe. In fact, when I first used this exercise, I anticipated that the student using the cookbook would beat the student using the internet, because the internet student would have to type "Welsh Rarebit," which would take longer than merely looking up the words in the cookbook's index. But in six years of conducting this exercise, no student using the cookbook has ever gone directly to the index. Students have used a variety of means to access the information, including looking at the table of contents and flipping through the pages, but the index has been the second or third choice for finding information. One year I even had to suggest that the student use the index because the student was on the point of giving up. The student responded with a rolling of the eyes that I took, charitably to myself, to mean that the student was exasperated with his failure to remember such an obvious finding aid. Although anecdotal in nature, the consistency of the students' failure to first use the index suggests that some profound changes are occurring in the way our students learn and think about information acquisition.

<sup>60</sup> This list is called a thesaurus by indexers. Daniel P. Dabney, *The Curse of Thamos: An Analysis of Full-Text Legal Document Retrieval* 78 LAW LIBR. J. 5, 11 (1986). As Dabney notes, the thesaurus is a powerful document that itself can have a "substantive development on the subject of the collection." *Id.* at 11-12, n.8. As illustration, Dabney uses the development of the topic heading "Bastards" to "Illegitimate Persons" to "Children-out-of-Wedlock." *Id.* at 12, n.8. While these changes reflect a societal shift from antipathy to agnosticism towards children born of unmarried parents, Dabney's point that the choice of language to

code information (together with a brief textual summary of the court’s discussion of the issue) are placed in a digest. The same case can appear in numerous different parts of the digest, depending on the number of different issues discussed by the court.<sup>61</sup>

One of the limitations of the pre-indexed approach is the need of the indexer to order the various concepts embedded in the doctrinal issue being indexed. This process – “stacking” or “precoordination”<sup>62</sup> – is familiar to lawyers who have used the West key number system and have seen a typical matryoshka doll-like<sup>63</sup> headnote at the beginning of a case.

For example, in the case of *Abram v. San Joaquin Cotton Oil Company*,<sup>64</sup> the first legal issue identified by the district court was the unremarkable but crucial proposition that “[f]or the purpose of a motion to dismiss the complaint, all facts well pleaded in the complaint must be accepted as true and correct.”<sup>65</sup> In indexing this issue, the West indexer first noted that this is, in its most general sense, an issue of federal civil procedure, and assigned it the appropriate key number designation for federal civil procedural issues – 170A.<sup>66</sup> More specifically, this is an issue relating to dismissing a complaint – key number designation 170AXI – and even more specifically, the involuntary dismissal of a complaint – key number designation 170AXI(B).<sup>67</sup> Because this opinion flowed from the result of a proceeding to determine whether an involuntary dismissal of the complaint was justified, the indexer then coded the issue even more specifically, with the key number designation 170AXI(B)5.<sup>68</sup> Because the opinion disclosed a determination of the issue, the indexer had to change the pattern of sub designations under the broad 170A designation, assigning this aspect of the issue the key number designation 170Ak1827.<sup>69</sup> And because the opinion discussed a matter that was deemed to have been admitted, the researcher encoded the case with the final key number designation 170Ak1835.<sup>70</sup>

But the researcher’s analysis of this issue was not yet complete, because not only is a motion to dismiss broadly an issue of federal civil procedure, it is also an issue of pretrial procedure and this, too, is a concept contained within the West’s digest thesaurus. So the indexer was then required to index the same issue under a different set of criteria: 307A for pretrial

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describe a legal concept can appear to be a subtle, or not-so-subtle, commentary on the subject of the concept, that could have an effect on the way a researcher thinks about the legal issue, is an important one and reflects an inherent defect in the pre-indexing approach to legal research.

<sup>61</sup> For a more comprehensive overview of the West digesting process, *see*, MORRIS L. COHEN, ROBERT C. BERRING, & KENT C. OLSON, *HOW TO FIND THE LAW*, 83-110 (West Publ’n. 9th ed. 1989).

<sup>62</sup> *Dabney*, *supra* n. 60, at 12.

<sup>63</sup> Matryoshka dolls are Russian nesting dolls, in which progressively smaller dolls are enclosed within a large primary doll.

<sup>64</sup> 46 F.Supp. 969 (S.D. Cal. 1942). This case was selected at random as the first opinion I found in my files when I began looking for a case to illustrate this point.

<sup>65</sup> *Id.* at 972.

<sup>66</sup> *Id.* at 969. In fact, the West indexer back in 1942 did not follow assign these designations and sub designations to the case, since the West thesaurus encoded legal issues differently when the case was originally decided. I have used the contemporary designations for the legal issue described here for simplicity’s sake, but the reordering of designations from time to time is another complicating feature inherent in a pre-indexed research process.

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

procedure, 307AIII for dismissal, 307AIII(B) for involuntary dismissal, 307AIII(B)6 for proceedings and effect, 307Ak686 for matters deemed admitted, and 307Ak 687 for well-pleaded facts.<sup>71</sup> The process then repeats for the remaining nineteen legal issues<sup>72</sup> discussed in the case, as identified by the West indexer.

The West digest is a powerful tool for legal researchers. It locates each legal issue in relation to a pre-determined matrix of legal issues known to the researcher. Once a researcher identifies a legal issue and jurisdiction of interest, the researcher can go to the appropriate digest for the jurisdiction,<sup>73</sup> find the key number most closely related to the issue in question, and begin the process of reading digest annotations to find an entry that seems to be related to the specific issue under research.

But in addition to its power, pre-indexing has many drawbacks for legal researchers. Despite the numerous safeguards West doubtless puts in place to maintain quality control, the process is, by its nature, “a difficult and error-prone enterprise.”<sup>74</sup> Mistakes in coding might be rare, but differences in expectation between the coder and the researcher mean that a researcher must first identify a legal issue and must then guess at how that issue might be described in West’s digesting nomenclature. Moreover, even were it possible to completely eliminate human error from the process, pre-indexing would still be limited by the thesaurus entries.<sup>75</sup> And there are some things which a digest search simply cannot accomplish, such as a search for how a particular judge has ruled when confronted with a specific issue, because those issues were not included in the thesaurus and were therefore not encoded when the case was analyzed by the indexer.

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<sup>71</sup> *Id.* Again, these are the designations and sub designations currently in use for pretrial procedure issues, not those in effect in 1942.

<sup>72</sup> *Id.* at 969-970. The case identifies a total of twenty legal issues, but there are thirty separate key numbered headnotes, indicating a number of issues that can be categorized in more than one way.

<sup>73</sup> West has even anticipated the possibility that the relevant digest will not be available, as sometimes happens in law schools during the intensive legal research instruction most first year law students undergo. Decennial and General Digests gather up the digest entries from the other digests and publish them. Although these publications are so compendious as to be somewhat unwieldy when searching for a specific issue and jurisdiction, they can be invaluable when other, more targeted, digests are unavailable. For a more complete description of these digests, *see*, Cohen *supra* n. 61, at 94-99.

<sup>74</sup> Dabney, *supra* n. 60, at 8.

<sup>75</sup> *Id.* (“Manual indexing is only as good as the ability of the indexer to anticipate questions to which the indexed document might be found relevant.”)

Most importantly, by imposing a classification system onto the potential chaos of court decisions, the digesting system placed constraints on the way legal researchers could conceive of the law. Its Langdellian categorization of the law into doctrinal boxes gave the West digesting system “determinative power”<sup>76</sup> and cabined the law within its tightly-controlled thesaurus. As a result, it can be difficult for lawyers to think about the law except in terms of the West digesting system.

Eventually classification decisions that were once based on the banal realities of constructing a workable sorting process transform that very process. Now this early decision becomes the only possible outcome; the result appears to be natural. Indeed, those using the system see no decision at all. Because those who use the system tend to conceptualize in terms of the system and, as a system matures, it becomes authoritative, the classification systems simply describes the universe. Researchers mature using it, organize their thoughts around it, and it then defines the world of “thinkable thoughts.”<sup>77</sup>

These limitations in the digesting system were long recognized by legal researchers who sought a different approach that would free them from the constraints imposed on them by West’s thesaurus selections and the interpretative problems inherent in translating legal issues into the thesaurus framework. Removing these constraints was one of the primary considerations when computer assisted legal research databases were in their developmental stages.<sup>78</sup> And the developers of what became the Lexis/Nexis database were quick to emphasize the freedom their new service would offer attorneys:

Traditional legal research procedures are rapidly proving inadequate to permit access to vast, continually expanding reservoirs of information. Based largely in the hierarchical organization of subject matter, manual research tools are effective only so long as the lawyer can easily tune in on the mental frequency of the person who indexed the information the lawyer seeks. While this system has previously been sufficient to meet most of lawyers’ research needs, it has grown too cumbersome, too expensive and too rigid to accommodate practically and efficiently either the continuous influx of routine material or such new precedent as lawyers and judges are now formulating in evolving areas of the law.<sup>79</sup>

The creators of the new Lexis database were aware of the practical effect of their work,<sup>80</sup> and remained confident of the value of this new approach to legal research, even in light of

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<sup>76</sup> Berring, *supra* n. 54 at 310.

<sup>77</sup> *Id.*, at 310-11.

<sup>78</sup> “Members of the Ohio Bar who worked to develop [Lexis-Nexis] defined what they wanted as a ‘nonindexed, full-text, on-line, interactive, computer-assisted legal research service.’” Jo McDermott, *Another Analysis of Full-Text Legal Document Retrieval*, 78 LAW LIBR. J. 337, 338 (1986)(quoting William G. Harrington, *A Brief History of Computer-Assisted Legal Research*, 77 LAW LIBR. J. 543 (1984-85)).

<sup>79</sup> Legal Research and the Computer (1975), *quoted in*, Dabney, *supra* n. 60, at 14, n. 13. Dabney describes this as “early promotional material from LEXIS.”

<sup>80</sup> “Boolean-logic searching, in effect, would allow each researcher to create an ad hoc index specific to the problem at hand. Harrington, *supra* n. 78, at 546.

concerns expressed by others.<sup>81</sup> In fact, though, while self-indexed legal research on Lexis/Nexis or Westlaw, which was introduced two years after Lexis,<sup>82</sup> opened up new possibilities for the researcher, it created some unanticipated problems as well.

## 2. Self-Indexed Research

The principle of self-indexing is familiar to almost any computer user. The researcher selects a database to be searched, then picks a term relevant to the legal issue under review, and then selects another term or terms that are related to the first term, determines some relational parameters that define the relationship between those terms the researcher believes will yield the most significant results,<sup>83</sup> and implements the search. The process is extraordinarily powerful, allowing a researcher to search a vast amount of information in very little time, and allows the researcher almost complete freedom to search for whatever terms or concepts the researcher believes to be relevant. But the process also creates some problems of which every legal researcher should be aware.

The first, and most obvious, problem with self-indexed research is that the results are dependent on accurate input from the researcher. If the researcher misspells a search term, for example, or if the court has misspelled the term in its opinion, the results will be meaningless.<sup>84</sup> And if the researcher enters a term to describe the legal question at issue that was not used by one or more courts in analyzing that issue, then the search will not disclose those opinions.<sup>85</sup> But if the researcher enters a term that is so common that every court might have used it, that search will return so many results as to be useless.<sup>86</sup>

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<sup>81</sup> “It is amusing today to recall the furor this proposition [of a non-indexed database] engendered when it was released for discussion. Self-anointed experts pronounced a nonindexed system a major error. Many law librarians were appalled to learn that the new concept of computer-assisted research would operate free of their dearly beloved, elaborate structures of digests and indexes. Some of them were intemperate in their scorn.” *Id.*, at 546.

<sup>82</sup> The LEXIS project started work in 1965 and was introduced to the legal community in 1973. For a discussion of the process that led to the creation of LEXIS, see Harrington, *supra* n. 78. Westlaw was unveiled by the West Company in 1975 as a competitor to LEXIS. *Id.* at 553.

<sup>83</sup> This describes the traditional Boolean-type searching offered by both Lexis/Nexis and Westlaw. Both services now also offer a form of “natural language” search in which the researcher, in essence, types a question and asks the computer to return cases related to that question. Although this type of search offers a more pleasing front to researchers who might be uncomfortable with constructing Boolean searches, they are, in effect, Boolean searches constructed by the computer. Using an algorithmic process, these natural language programs remove irrelevant words from the search (“the” and “and,” for example), translate the remaining search terms into a Boolean search, calculates the frequency of the results in each document, and ranks the results in descending order of frequency. See, Walter, *supra* n. 4, at 569, n.1.

<sup>84</sup> Research has shown that both the Lexis and Westlaw databases have numerous cases where terms are misspelled. See John Doyle, *Misspellings in LEXIS and WESTLAW: A Statistical Test*, 1 TRENDS L. LIBR. MGMT. & TECH. 5 (1989)(testing 350,000 cases in which a test word was used revealed 556 cases on Lexis in which word was misspelled and 276 cases on Westlaw). See also, Thomas Woxland, *More on Misspellings in CALR Databases*, 3 TRENDS L. LIBR. MGMT. & TECH. 1, 2 (1990)(suggesting that misspellings result in researcher missing up to 10 percent of relevant cases).

<sup>85</sup> This is why it is important for legal researchers, particularly those who are researching an area of the law with which they are unfamiliar, to use secondary sources to gain an understanding of the concepts and vocabulary used by the courts to analyze an issue before they attempt to search in primary sources. See, e.g., Sloan, *supra* n. 6, at 29 (“Secondary sources can give you the necessary background to generate search terms [when researching an area of law with which you are unfamiliar.]”); ROY M. MERSKY & DONALD J. DUNN,

So in order to be a successful self-indexing legal researcher, a researcher must correctly identify the right combination of words that a court might use to describe a specific, limited, legal question and predict the appropriate relationship between the selected terms. But to get a manageable number of relevant responses in response to a search of this type is not as easy as many lawyers and law students might believe.

The computer-assisted legal researcher is engaged in a delicate balancing act between relevance and precision. The researcher's goal is to recover all documents that are relevant to a search,<sup>87</sup> and to recover only relevant documents. The degree to which a search recovers relevant documents is the search's "recall,"<sup>88</sup> and the search's precision is measured by the percentage of retrieved documents that are relevant.<sup>89</sup> Unfortunately, "[a] well-known and well-documented rule of thumb in text retrieval is that increased recall is gained only at the expense of a loss of precision, and vice versa,"<sup>90</sup> meaning that a search that returns a large number of relevant documents will likely also find many irrelevant documents, and a search that finds only a few relevant documents is likely missing a number of relevant documents as well.

The results of this phenomenon have been summarized by Christopher and Jill Wren:

[S]uppose a database of 1,000 documents contains 100 documents you would consider relevant to your research problem. If your search request retrieves 60 of these 100 relevant documents, the recall measurement for your request would be 60 percent. If your search request also retrieves 180 irrelevant documents along with the 60 relevant documents (for a total of 240 retrieved documents), the precision measurement for your search request would be 25 percent – that is, 60 relevant documents out of 240 retrieved documents. Thus your search request would have a relatively high level of recall (retrieving 6 out of every 10 potentially relevant documents) and a relatively low level of precision (with only one out of every four documents retrieved being relevant).<sup>91</sup>

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FUNDAMENTALS OF LEGAL RESEARCH, 16 (8th ed. 2002) ("To assist in formulating issues, it is useful to consult general secondary sources for an overview of relevant subject areas").

<sup>86</sup> "A computer search for terms such as 'negligence' or 'equal protection' will probably retrieve too many documents to be useful because the computer will retrieve every document in the database that contains those terms." Sloan, *supra* n. 6, at 342.

<sup>87</sup> As Dabney notes, the concept of "relevance" in the context of a legal search can be tricky to nail down and is largely dependent on the subjective determination of the researcher. Dabney, *supra* n. 60, at 15. For our present purposes, I will use the term to mean a document the researcher believes – rightly or wrongly – to be helpful in resolving the legal question at issue.

<sup>88</sup> "The performance of a single research tool can be assessed according to its ability to select a greater or lesser percentage of relevant documents from the total number of relevant documents available ([the] *recall*). . . ." Scott F. Burson, A RECONSTRUCTION OF *THAMOS*: COMMENTS ON THE EVALUATION OF LEGAL INFORMATION RETRIEVAL SYSTEMS, 79 *Law Libr. J.* 133, 134 (1987).

<sup>89</sup> Dabney, *supra* n. 60, at 16.

<sup>90</sup> Jon Bing, PERFORMANCE OF LEGAL TEXT RETRIEVAL SYSTEMS: THE CURSE OF BOOLE, 79 *Law Libr. J.* 187, 196 (1987).

<sup>91</sup> CHRISTOPHER G. WREN AND JILL ROBINSON WREN, USING COMPUTERS IN LEGAL RESEARCH: A GUIDE TO LEXIS AND WESTLAW 767 (1994).

An often-discussed<sup>92</sup> 1985 study<sup>93</sup> placed the problems associated with computer-assisted legal research in stark relief. The researchers used a full-text legal information retrieval system – IBM’s SStorage And Information Retrieval System (“STAIRS”) – to evaluate the effectiveness of full-text information retrieval systems.<sup>94</sup> The study involved a database of just under 40,000 documents, representing approximately 350,000 pages of text;<sup>95</sup> a substantially smaller database than one containing the case law for any single jurisdiction. In the study, two lawyers engaged in a piece of litigation were asked to query the database of litigation documents relevant to the case.<sup>96</sup> The information gathering process was considered to be complete when the lawyers estimated that more than 75 percent of documents designated “vital,” “satisfactory,” or “marginally relevant” had been recovered.<sup>97</sup> The study revealed that while an average of 79 percent of the recovered documents were relevant, only an average of 20 percent of relevant documents were recovered, instead of the 75 percent the attorneys believed to have been recovered.<sup>98</sup> In short, the survey showed that searches developed by lawyers using computer-assisted research tools had a high level of precision but a low level of recall.<sup>99</sup>

The conclusion to be drawn from this study is that lawyers can tell with a great deal of accuracy how relevant the documents recovered by a search might be to a particular problem, and they can be sure that a substantial number of relevant documents remain undiscovered in the database. And when they recover a high number of relevant documents, they should also be prepared to read through a substantial number of irrelevant documents as well.

The danger of over-reliance on self-indexed researching is particularly significant if the researcher adopts an uncritical and passive approach to the information returned by the search. Yet this appears to be precisely the approach many law students and junior attorneys take during legal research assignments. Professor Molly Lien has noted that “students appear to equate the ability to access the material with mastery of the material. They view downloaded information as learned information.”<sup>100</sup> And a recent report reported that newer lawyers appear to be “more ready to rely inappropriately on questionable data sources,”<sup>101</sup> and that “today’s law students strongly favor ‘recall’ (comprehensiveness of

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<sup>92</sup> See, e.g., Dabney, *supra* n. 60, at 26-31; Burson, *supra* n. 88, at 136-140; Bing, *supra* n. 90, at 196-197.

<sup>93</sup> David C. Blair & M.E. Maron, *An Evaluation of Retrieval Effectiveness for a Full-Text Document Retrieval System*, 20 COMM. ASS’N. COMPUTING MACHINERY 289 (1985).

<sup>94</sup> *Id.* at 289.

<sup>95</sup> *Id.* at 290.

<sup>96</sup> *Id.* at 291. The researchers were, therefore, thoroughly familiar with the subject matter of the case and with the scope and content of the database, placing them on at an advantage over most legal researchers, who usually interrogate a legal information database with, at best, only a general understanding of the contents of the database that might be relevant to their inquiry.

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

<sup>99</sup> The conclusions drawn from the Blair and Maron study by Dabney and others were hotly disputed by both Lexis (Jo McDermott, *Another Analysis of Full-Text Legal Document Retrieval* 78 LAW LIBR. J. 337 (1986)) and Westlaw (Craig E. Runde & William H. Linberg, *The Curse of Thamos: A Response* 78 LAW LIBR. J. 345 (1986)). Dabney then responded to the responses. Daniel Dabney, *A Reply to West Publishing Company and Mead Data Central on The Curse of Thamos*, 78 LAW LIBR. J. 349 (1986).

<sup>100</sup> Molly Lien, *Technocentrism and the Soul of the Common Law Lawyer*, 48 AM. U. L. REV. 85, 118 (1998).

<sup>101</sup> Gene Koo, *New Skills, New Learnings: Legal Education and the Promise of Technology*, 6 (Berkman Center for Internet & Society at Harvard Law School 2007).

search results) over ‘precision’ (narrowly tailored search results), often stopping with a satisfactory rather than best answer to the search question.”<sup>102</sup>

Legal researchers who employ a blend of techniques to find the results to their queries are less likely to miss crucial information. As Burson notes,

[r]elevant cases not retrieved using the full-text search capability of LEXIS or WESTLAW may still be found through citators, annotations, digests, law review articles, and other research tools. In fact, it is quite customary for a legal researcher to expect to consult a variety of tools in the search for information: what should seem strange is the expectation that a single tool might serve as a dispositive source for resolving research issues.<sup>103</sup>

Even though this is not the approach many law students and new lawyers appear to be taking,<sup>104</sup> they at least have the option of using both pre-indexed and self-indexed approaches to legal research in order to achieve as complete and comprehensive a result as possible. When pre-indexed research aids are no longer available in book form, however, this option will only be available to those who can afford Lexis/Nexis and Westlaw.

Creating and maintaining a new thesaurus of the law, without any reference to the West digest system,<sup>105</sup> in order to facilitate pre-indexed searching of the law seems to be an impossible task; the cost<sup>106</sup> alone of developing such an approach would be prohibitive, even were it possible to categorize the law sufficiently differently from the way West categorizes the law to withstand the inevitable legal challenge from West. And in any case, such an approach would simply substitute one set of restrictive categories for another. As Robert Berring has noted, what is needed instead is for the legal community to “reconceptualize the structure of legal information”<sup>107</sup> so that we can take the “great mess of conflicting customs and cases and . . . knit them into a coherent fabric.”<sup>108</sup> One possible form this reconceptualization might take is to consider the law’s social network as a way of understanding the relationship between cases and the development of legal doctrine. This approach would lack the value-added analysis brought to legal research by West’s digesters, would be limited in its coverage, and might have other drawbacks as well.

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<sup>102</sup> *Id.* Troubling though this finding is, its opposite – that newer lawyers favored precision over recall – would be equally problematic.

<sup>103</sup> Burson, *supra* n. 88, at 137.

<sup>104</sup> Anecdotal evidence certainly suggests that law students are, or are becoming, unwilling or unable to use print resources to aid them in their research. *See, e.g.*, Theodor Potter, *A New Twist on an Old Plot: Legal Research is a Strategy, Not a Format*, 92 LAW LIBR. J. 287,287 (2000)(quoting student, on being assigned to use a legal encyclopedia, as saying “I can’t make this work to complete my assignment; I’m a computer person.”); Erica V. Wayne & J. Paul Lomio, *Book Lovers Beware: A Survey of Online Research Habits of Stanford Law Students*, 14-15 (Robert Crown Law Library Legal Research Paper Series, Research Paper No. 2)(2005)(when assigned to use “library resources” to find statute of limitations for fraud in California, one group of students went directly to computers housed in library and “Googled” their way to the answer.)

<sup>105</sup> There can be no question that West’s key number digesting system is proprietary and copyrighted.

<sup>106</sup> Measured both in terms of developing the thesaurus, and therefore a new way of dividing the law into searchable segments, and also in terms of the salaries of the army of indexers necessary to analyze every opinion written by the federal and state courts.

<sup>107</sup> Berring, *supra* n. 54 at 315.

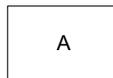
<sup>108</sup> *Id.*

But the information necessary to trace the relationship between cases and the development of doctrine is already freely available in the texts of the opinions being studied, making this a relatively inexpensive way of identifying a pre-indexing process that has taken place as the opinion was being written.

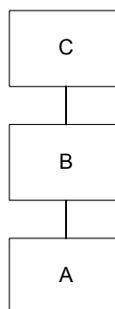
### III. Researching A Social Network

The concept of a social network is familiar to anyone who has a group of friends. Put one way, our friends and family are the people who have helped make us who we are and understanding who they are is an important step in understanding how we became the people we are. The recent development of popular internet sites such as Facebook<sup>109</sup> and MySpace<sup>110</sup> have provided a way of making information about our social networks publicly available. And while the notion of the law having a social network that can be mapped and used to conduct legal research might at first appear outlandish, there is in fact little conceptual difference between the development of an individual and legal social network and the way in which that development can be mapped.

The development of an individual's social network is easily diagrammed. Assume a law student, "A," comes to law school in a new city and state from where A has lived previously. A knows no one in the new city or state, and is therefore entirely alone on the first day of orientation. A's social network, or lack thereof, can be presented graphically<sup>111</sup> as follows:



At orientation, A meets two fellow students – "B" and "C" – with whom A becomes fast friends. B and C both live in the state where A's law school is located, and met each other because of their relationship with A. A's social network has become more complex, and can now be represented as follows:



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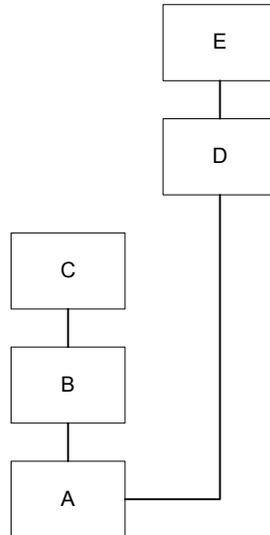
<sup>109</sup> Available at <http://www.facebook.com/> (accessed October 2, 2007).

<sup>110</sup> Available at <http://www.myspace.com/> (accessed October 2, 2007).

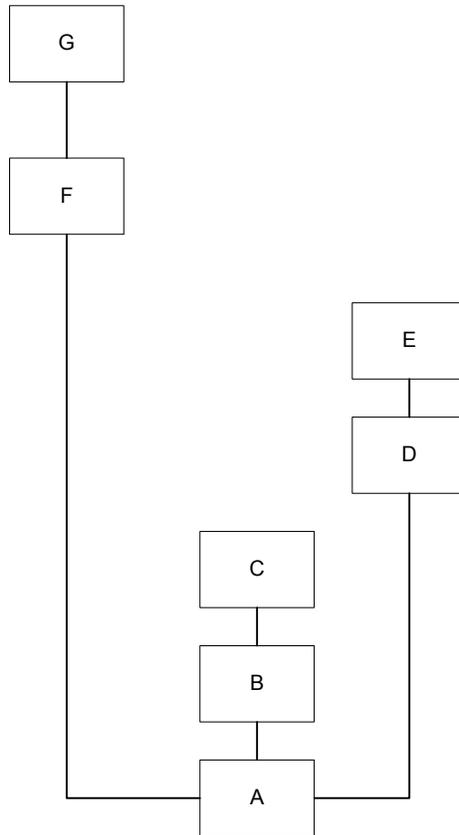
<sup>111</sup> All diagrams in this article were created using Microsoft Visio and are for intended only as a demonstration of the possibilities of this approach. They are limited by the author's profound lack of graphic skill and should in no way be taken as a definitive representation of what a final version of legal social network mapping might look like.

The diagram suggests both chronology – A met B first and C second – and geography; B and C are aligned with A because they all live in the same state.

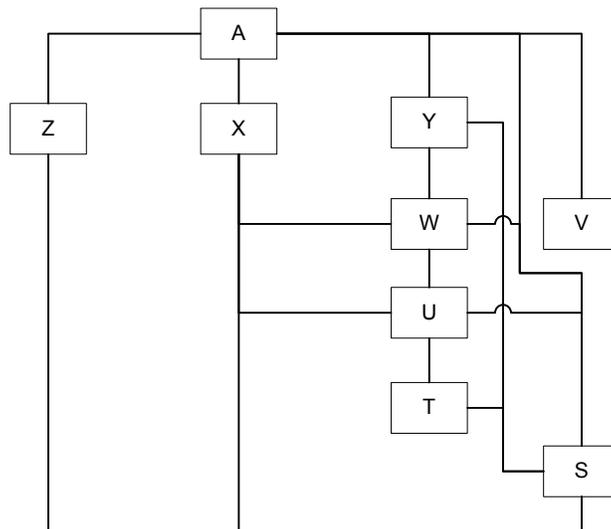
During the summer between A’s first and second year of law school, A takes a summer position at a law firm in a new city and state. During the course of the summer, A makes two more friends – “D” and “E” – with whom A remains in touch after returning for the second year of school. D and E both live in the state in which the law firm is located, and neither D nor E knows B or C. Making adjustments for chronology and geography, A’s social network now can be represented as follows:



Finally, during the summer between A’s second and third year of law school, A takes a summer associate position with a law firm in yet another different city and state. Once again, A makes new friends – “F” and “G” – who live in the state in which this new law firm is located, and once again, A’s new friends do not know any of his previous friends. With additional modifications, A’s social network now can be represented as follows:



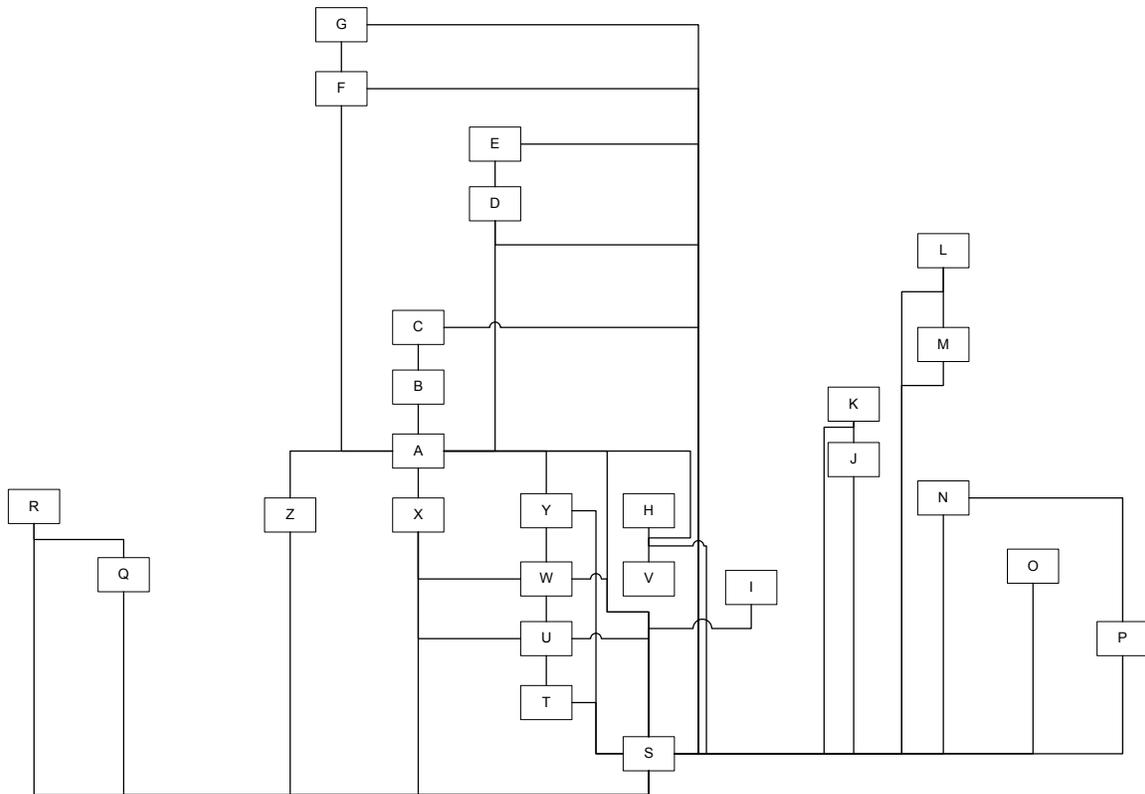
But this is, of course, only half the story. Our student likely did not come to law school as a solitary individual; rather, A likely had an active social network already in place before coming to school. And we can map A's pre law-school social network as readily as we can map A's law school social network. If we assume that A came to law school with a pre-established social network of eight friends – S to Z – and that some of these friends also knew each other, a map of A's pre law-school network might be represented as follows:



In this diagram, all the participants in A's social network are related to A and, as we can see, some are related to each other as well; X is connected to W and U, and almost all the participants in the network are also connected to S. Indeed, only V in this particular network is only connected to A.

A researcher studying this diagram in order to investigate A's social network might be satisfied with this representation. This map displays A's social connections, as well as their temporal and geographical locations in connection to A, and the interconnections between the participants in A's social network. But a researcher looking to understand the significance of the various relationships depicted in this map would recognize that S's role in this network appears to be almost as significant as A's, and that a wider perspective might reveal that S's role in the network is, in fact, more significant than that of A. Such a researcher might have used A as an entry point to the study of the network, but might be less interested in A's individual social progress than in an understanding of the network as a whole.

Were this the case, the researcher might chose to re-focus attention onto S, and redraw the map of the social network with S as the focal point. The resulting network map might then look like this:



By looking at this final version of the map, the researcher can see that while A is an important figure in this broader social network, A’s role is secondary to that of S, who is the true hub of the network. All nodes<sup>112</sup> in the network link back to S, even though they might also connect with other members of the network as well. S’s primacy can also be seen by chronological position on the map. No node is identified as preceding S in time, and therefore S is not only the most connected node but also the first.

Researching a social network is substantially less straightforward than finding information about a single individual, and the same is true of the law. But while the details of researching the law are sufficiently arcane to warrant their own textbooks<sup>113</sup> and law school courses,<sup>114</sup>

<sup>112</sup> Network analysts refer to “nodes” as representing information within a network and “links” as the connections between nodes. See, e.g., James H. Fowler, et al, *Network Analysis and the Law: Measuring the Importance of Supreme Court Precedents*, available at <http://ssrn.com/abstract=906827> (accessed September 4, 2007).

<sup>113</sup> Legal research is an area blessed with many texts. Aspen Publishers lists eleven legal research textbooks, including workbooks and specialist texts to international students and paralegals seeking to conduct legal research (<http://www.aspenpublishers.com/search.asp?Mode=SEARCH&keyword=research&ISBN=&Author=&Sort=DEFAULT&profitcenter=30>); Foundation Press lists ten research textbooks (<http://www.westacademic.com/Professors/ProductSearchResults.aspx?tab=2&publisher=5&subject=98&searchtypeasstring=ADVANCED-SEARCH>); West (which also owns Foundation, but which publishes its own series of law school textbooks separately) lists seven research books and one set of DVDs in

the basic concepts are familiar to almost everyone who has looked for contact information for an individual, and the same is true of researching a social network.

One method of accomplishing this task would be to use a telephone book to find a person's address and telephone number.<sup>115</sup> In a sense, the telephone book occupies a similar place in the world of personal information as the digest occupies in legal information; the book<sup>116</sup> is stacked, or pre-coordinated, in a less complex, but nonetheless identifiable way<sup>117</sup> and allows a researcher armed with some basic information to refine the search until the desired individual's contact information is located.

The internet offers an alternative to this book-based approach. And while the results can be obtained more quickly,<sup>118</sup> this form of research poses some of the same problems as does internet-based legal research.<sup>119</sup> So while a researcher might find the internet a useful tool

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its catalog ([http://www.westacademic.com/pdf/wls\\_2007\\_catalog.pdf](http://www.westacademic.com/pdf/wls_2007_catalog.pdf)); and Lexis lists five research books ([http://bookstore.lexis.com/bookstore/catalog?action=prodlist&cat\\_id=T&pcat\\_id=89](http://bookstore.lexis.com/bookstore/catalog?action=prodlist&cat_id=T&pcat_id=89) (all accessed September 26, 2007)).

<sup>114</sup> Legal research has been identified as a fundamental lawyering skill by the MacCrate Report (ABA Section on Legal Education and Admissions to the Bar, *Legal Education and Professional Development: An Educational Continuum* 157 (1992)), and all law schools in the country have some form of legal research education for their students.

<sup>115</sup> It is a sign of the times that this is only true of people of a certain age. Telephone books are familiar to those of us who grew up in a pre-cell phone world, where telephones were devices tethered to walls and all telephone users were registered in telephone books. As cell phones become increasingly the standard method of distance communication, the notion of a book in which contact information is stored will likely become increasingly anachronistic and, perhaps more ominously, the techniques used for extracting this information will become increasingly unfamiliar.

<sup>116</sup> There is no one national telephone book, of course, that is the equivalent of West's General, Decennial, or Century Digests, but the geographical division of the telephone directory, albeit in significantly narrower slices, mirrors the geographical divisions in the regional digests published by West.

<sup>117</sup> The stacking in the telephone book is so obvious, and so familiar, as to be rendered almost invisible. My local telephone book, for example, contains the names of those who live within a discrete geographical area, who have purchased telephone service, and who have agreed to have their contact information published. All these are pre-coordinated elements that any user of the telephone book will assume without reflection. The information selected for inclusion in the telephone book is then organized in alphabetical order, last name first, and each identical last name is then organized alphabetically by initial letter of first name, each identical first letter is organized alphabetically by second initial, and so on.

<sup>118</sup> At least, more quickly when calculated in chronological time. As we have seen, however, a more relevant measure of time from a lawyer's perspective is the "law time" unit of billable time. See, *infra*, n. 59.

<sup>119</sup> Although the internet can return accurate and relevant information very quickly, it can also return accurate but irrelevant information just as quickly. A Google search for my name suggests that I could be a law professor at Syracuse University, (<http://www.law.syr.edu/faculty/facultymember.asp?fac=136>), a jeweler and diamond merchant in Stirling, Scotland, (<http://www.iangallacher.com/>), a computer game designer (<http://www.mobygames.com/developer/sheet/view/developerId,33440/>), a pastry chef ([http://www.georgebrown.ca/Marketing/FTCal-Jan/chefschoo/H411\\_Ian\\_Gallacher.aspx](http://www.georgebrown.ca/Marketing/FTCal-Jan/chefschoo/H411_Ian_Gallacher.aspx)), or an actor in the movie "Knightriders" (<http://www.showbizdata.com/credits/410797/Ian-Gallacher>). [http://www.google.com/search?sourceid=navclient&ie=UTF-8&rlz=1T4DMUS\\_enUS207US207&q=percent22ian+gallacher percent22](http://www.google.com/search?sourceid=navclient&ie=UTF-8&rlz=1T4DMUS_enUS207US207&q=percent22ian+gallacher percent22). And someone who entered a common misspelling of my name (believing it to be spelled "Gallagher" instead of "Gallacher"), might be surprised to learn that I am either a New Jersey-based performer of "Irish, Oldies, Standards, Rock&Roll, [and] Disco" who is "not your typical Irish singer" but is rather "a crooner with a clear jazz sensibility" (<http://www.iangallagher.com/BAND.html>), or a fictional character in the Channel 4 series "Shameless." [http://en.wikipedia.org/wiki/Ian\\_Gallagher](http://en.wikipedia.org/wiki/Ian_Gallagher). [http://www.google.com/search?sourceid=navclient&ie=UTF-8&rlz=1T4DMUS\\_enUS207US207&q=percent22ian+gallagher percent22](http://www.google.com/search?sourceid=navclient&ie=UTF-8&rlz=1T4DMUS_enUS207US207&q=percent22ian+gallagher percent22) (all accessed September 26, 2007).

for some types of information gathering, it is not a panacea that can solve all information queries.

But significantly, for our purposes, neither the telephone book nor the internet can allow a researcher to research, and therefore map, an individual's social network in the way described above. The telephone book is not precoordinated with that information, and unless a person has appeared in the same document as a member of the person's social network the internet will not reveal that connection either.

Instead, in order to examine the individual's social network, the researcher will have to gain access to the individual's address book.<sup>120</sup> All the information in the address book, or its digital equivalent, is likely available in the relevant telephone book or somewhere on the internet, but the connection between the individual and the network member is only revealed in a source that exposes network relationships.

The same is true for the law. All court opinions are digested<sup>121</sup> and all are searchable on internet-based legal information databases, but in the same way as contact information available in telephone books or on the internet, the relationships between those cases cannot be readily identified by traditional research methods. Yet if there was a way to reveal the relationship between one case and another, that approach might prove to be a powerful alternative method of legal research.

#### IV. Mapping The Law's Social Network

Court opinions have their own social networks and their existence is revealed in judicial opinions. Each case decided by a court stands on the shoulders of previous decisions that have articulated relevant rules or doctrinal approaches and courts are careful to provide citations to these influential prior decisions. Indeed, one of the hallmarks of the American judicial discourse community is the extent to which court opinions set forth the court's reasoning in reaching its decision. As Thomas Baker has noted,

[a] deciding [appellate] panel participates in a dialogue that is both backward and forward looking, both inwardly and outwardly directed, and both upwardly and downwardly important. . . . A decision builds on past decisions and shapes future decisions. An appellate judgment decides a particular controversy and guides the resolution of later controversies. The court of appeals reviews the district court and is reviewed, in turn, by the Supreme Court. In all these relationships, the court of appeals must record and communicate its reasoning to perform its essential role. An expression of

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Any researcher would be confused by the plethora of possibilities uncovered by these two quick searches and, without more information, would find it difficult to separate the mundane me from my other possible, and substantially more interesting, personas -- my "Googlegängers," in a contemporary, although perhaps transitory, coinage. For the record, I am two of the "Ian Gallacher" or "Ian Gallagher"s described above.

<sup>120</sup> Or, in these technological times, the individual's Blackberry, cell phone, or "Facebook" account.

<sup>121</sup> It is more correct to say that all published opinions, or those existing in the netherworld between published and unpublished occupied by those opinions printed in West's "Federal Appendix" reporter are digested.

reasoning will always contribute to the body of precedent or useful inform the other courts, including the Supreme Court.<sup>122</sup>

Part of this process of setting out its synthesis of fact and previously-decided law that will lead to a decision in the present case includes the court's extensive citation to previous authority. This reliance on citation to previous authority, which can make court opinions turgid and at times almost impenetrable to the inexperienced reader, is a crucial feature of the American judicial style – an attempt to achieve logical transparency and not, as some reading their first opinion might think, an attempt to render the meaning as opaque as possible.<sup>123</sup>

As all practicing lawyers know, this writing style means that in addition to their inherent value as sources of doctrinal rules, cases also make valuable finding tools which the researcher can use to locate the opinions relied on by the courts in order to reach their decisions.<sup>124</sup> In a sense, then, an opinion written in this style reveals the social network of cases that led to the court's decision and lawyers already use this tool to aid in their research.

Lawyers are, however, more familiar with forward-looking legal social networks, and have been for a long time although they do not necessarily think of the concept in those terms. In fact, any lawyer who used a Shepard's<sup>125</sup> or KeyCite<sup>126</sup> citator<sup>127</sup> to check on the future development of a legal doctrine expressed in a court opinion<sup>128</sup> has, in effect, been tracing the development of the opinion's social network from the date the opinion was decided.

This legal social network can be mapped in the same way as an individual's social network, as can be seen by a simple change to the previously discussed law school network map:

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<sup>122</sup> Thomas E. Baker, *Intramural Reforms: How the U.S. Courts of Appeals Have Helped Themselves*, 22 FLA. ST. U. L. REV. 913, 927 (1995).

<sup>123</sup> See, e.g., Donna D. Adler, *A Conversational Approach to Statutory Analysis: Say What You Mean & Mean What You Say*, 66 MISS. L.J. 37, 54 (1996) (“Opinions are drafted not only to display the courts’ logic but also to set out the evidence of legal authority that led to the decision”).

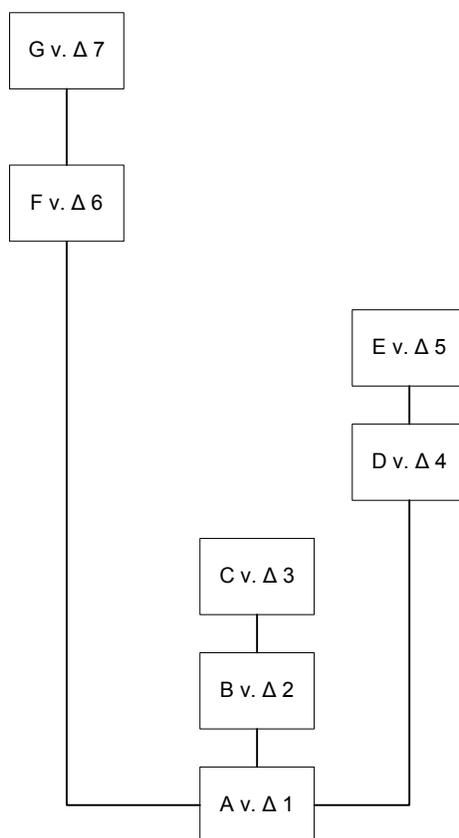
<sup>124</sup> See, e.g., Laurel Currie Oates & Anne Enquist, JUST RESEARCH, 22 (2005) (identifying cases in chart of “finding tools” because of the “[r]eferences to cases in other cases . . .”).

<sup>125</sup> Frank Shepard's “annotation pasters” – the forerunner to the present Shepard's citator – first appeared in 1873. Lynn Foster & Bruce Kennedy, *The Evolution of Research: Technological Developments in Legal Research*, 2 J. APP. PRAC. & PROCESS 275, 277, n.7 (2000), citing Thomas A. Woxland & Patti J. Ogden, *Landmarks in American Legal Publishing* 43 (1990). Reed Elsevier, the owner of the LexisNexis service, bought Shepard's in 1996. Svengalis, *supra* n. 10, at 88.

<sup>126</sup> West's KeyCite service is West's citator service, apparently created in response to Shepard's purchase by Reed Elsevier. *Id.*

<sup>127</sup> A citator's function is to “catalog cases and secondary sources, analyzing what they say about the authorities they cite.” Sloan, *supra* n. 6, at 129.

<sup>128</sup> It should go without saying that having found a case on which a lawyer might wish to rely, it is crucial for that lawyer to then check the development of that case using a citator. “You must check every case on which you rely to answer a legal question to make sure it is still good law. In general, you will want to use Shepard's or another citator early in your research, after you have identified what appear to be a few key cases, to make sure you do not build your analysis on authority that is no longer valid. Using a citator at this stage will also help direct you to other relevant authorities.” Sloan, *supra* n. 6, at 130.



Viewed in this way, the focus case, A v. Δ 1, was cited to by two later cases – B v. Δ 2 and C v. Δ 3 – within the same jurisdiction that decided A v. Δ 1, and four cases – D v. Δ 4 and E v. Δ 5 in one state, and F v. Δ 6 and G v. Δ 7, in another. Just as with A’s social network, the diagram locates subsequent decisions by chronology and geography. Indeed, this form of diagram can be seen as a graphical representation of at least part of a citator’s function,<sup>129</sup> and KeyCite’s graphical view – a feature of the West’s KeyCite citator service – already provides much this type of map upon request by the researcher.

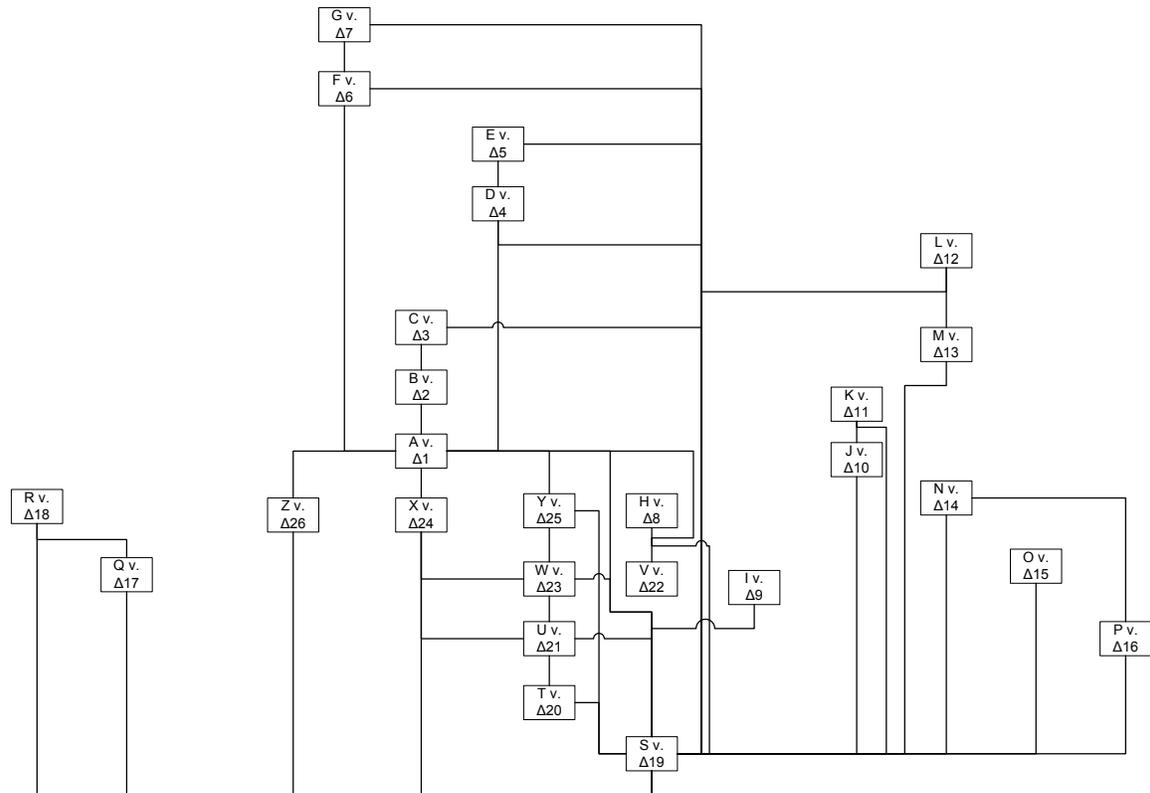
Although citators are a crucial part of the research process, they are inherently limited because they can only provide a forward-looking view of a case’s development; they can list all cases that have cited to the case since it was decided, but they provide no insight into how the case came to be decided. And just as A, the law student, almost certainly came to law school with an already-established social network that contributed to A’s maturation, so we know that legal authority does not emerge full-blown from the head of the deciding judge or

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<sup>129</sup> Missing, of course, from this representation is the editorial content that makes a citator like Shepards or KeyCite so crucial for lawyers. Put in social networking terms, the diagram can indicate when and where A’s friends were when A met them, but it cannot show whether A and C, for example, remain friends today or whether they had a falling-out some time after they met. Whether or not a case remains good law is vital information for lawyers seeking to cite a case as authority for a position. Yet most research experts will caution against over-reliance on the editorial features of citator services and will recommend that the prudent attorney read and evaluate subsequent authority before citing to the target case. *See, e.g.*, Sloan, *supra* n. 6, at 142 (“Always research the Shepard’s entry and review the citing sources carefully to satisfy yourself about the status of a case.”)

judges, but rather builds incrementally on decisions that preceded it and that are revealed in the court’s written opinion.

In this sense, a researcher a legal researcher seeking to understand the genesis of a legal doctrine<sup>130</sup> would be in much the same position as a researcher looking for a retroactive social network. Having identified a case relevant to the doctrine (A), the researcher follows the doctrine’s progress back in time until a seminal authority is identified by the network’s nodal relationships.<sup>131</sup> The researcher would then re-focus the search on S to see if that case is, indeed, the true center of the identified network, and would then use a citator to proceed forward and update the network in order to gain an understanding of the doctrine’s origins and progress. Represented graphically, the final map of the doctrine’s development might look much like the final social network map.



This map reveals the same connections between opinions as did the social network map on which it is based. The map displays the opinions in geographical and chronological order,

<sup>130</sup> It would likely be necessary to research doctrinal issues rather than cases in their entirety. The sheer volume of information generated by an entire case would be so great as to swamp any useful information the researcher might derive from the search. Limiting searches to specific issues would minimize (although perhaps not completely eliminate) the danger of information overload.

<sup>131</sup> “In general, . . . you will know that you have come full circle in your research when, after following a comprehensive research path through a variety of sources, the authorities you locate start to refer back to each other and the new sources you consult fail to reveal significant information.” Sloan, *supra*, n. 6, at 345-6.

and suggests that *S v. Δ 19*<sup>132</sup> is a seminal case to which all the other cases in the network are directly or indirectly related. Having identified this information, the legal researcher could confirm that the doctrine articulated in *S v. Δ 19* is still in effect<sup>133</sup> and then read the related cases to determine if they help in developing an argument.

A legal information database that could offer a network map of this type – in essence, extending the familiar prospective citator-type information into a retrospective look at the authority that caused the court to rule as it did, and presenting that information in graphic form – would be offering a form of pre-indexed research. It would not, of course, be offering the results of editorial pre-indexing, but would rather be using the court’s selection of significant authority and using that as its indexing tool. Such a map would not be precoordinated, in the sense of a traditional digest, and would not be stacked in the same way as a West digest entry or even the telephone book. It would, however, allow the researcher to see the cases the court believed were most important to its decision on a particular issue and would permit the researcher to understand the relationships that exist between cases as they contribute to the development of a piece of legal doctrine.

## V. The Legal Social Network Map In Practice

The concept of using network relationships to serve as a legal research tool is perhaps better understood in the context of actual court opinions than in hypothetical examples. The case of *Abram v. San Joaquin Cotton Oil Company* discussed earlier<sup>134</sup> offers some valuable insight into the benefits and limitations of this approach.

The first legal doctrine announced in the case was the concept that, for purposes of a motion to dismiss, all well-pleaded facts in the complaint should be assumed to be true and

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<sup>132</sup> The numbering of the various hypothetical opinions is not related to the chronological order of the opinions.

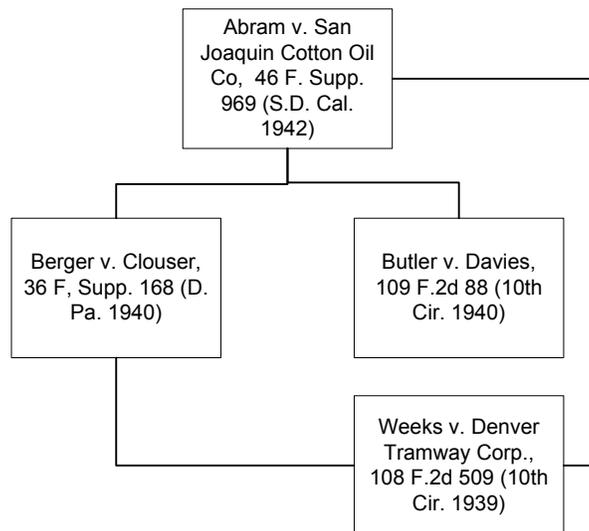
<sup>133</sup> The researcher could do this by finding the most recent case in the relevant jurisdiction and reading the opinion. This is not the same as determining whether the case is still “good law,” something fledgling legal researchers are instructed to do. *See, e.g.*, Sloan, *supra*, n. 6, at 130 (“You must check every case on which you rely to answer a legal question to make sure that it is still good law.”) This advice is, of course, both absolutely correct and slightly misleading: while it is important to know if the case itself is still “good law”, it is even more important for the researcher to know that the opinion’s discussion of a particular doctrine is still valid. As Sloan notes, “a case with a negative Shepard’s Signal . . . may no longer be good law for one of its points, but it may continue to be authoritative on other points.” *Id.*, at 141-42. The network map of an opinion, therefore, can provide the essential information necessary to a researcher seeking to rely on that opinion, but will not provide the depth of analysis offered by a citator like Shepards or KeyCite. Were a network map such as the one described above to be offered as part of a legal information database, it is possible that some enhancements could be provided that would make the interpretation of subsequent citing cases somewhat simpler for the researcher. Loislaw, for example, offers “GlobalCite,” a listing of all documents indexed in the Loislaw databases that cite to the target opinion. <http://www.loislaw.com/snp/fpopwind.htm> (accessed September 27, 2007). Loislaw’s promotional material suggests, somewhat optimistically perhaps, that, to a large extent, this service “replaces the annotations that often accompany printed editions of primary law.” *Id.* The search engine used by Loislaw to generate the “GlobalCite” list marks the text of the found documents in yellow whenever they refer to the target case and “renders ‘case treatment terms [such as ‘reverse,’ ‘remand,’ ‘affirm,’ etc.] in blue font.” *Id.* Similar enhancements could doubtless be added to a search engine that could generate a network map for court opinions.

<sup>134</sup> 46 F.Supp. 969 (S.D. Cal. 1942). *Supra*, nn. 64-71 and accompanying text.

correct.<sup>135</sup> No subsequent cases have cited the opinion specifically for this proposition, meaning that the prospective social network map for this case would look much like the solitary law student before making new friends in law school:

Abram v. San  
Joaquin Cotton Oil  
Co, 46 F. Supp.  
969 (S.D. Cal.  
1942)

The court did, however, cite to three cases in support of its conclusion: *Berger v. Clouser*,<sup>136</sup> *Butler v. Davies*,<sup>137</sup> and *Weeks v. Denver Tramway Corp.*<sup>138</sup> This retrospective network relationship can be represented graphically as follows:<sup>139</sup>



Looking more closely at the relationship between these cases, and between these cases and the opinions on which their courts relied to reach their decisions, the researcher would

<sup>135</sup> 46 F.Supp. at 972.

<sup>136</sup> 36 F.Supp 168 (D.Pa. 1940).

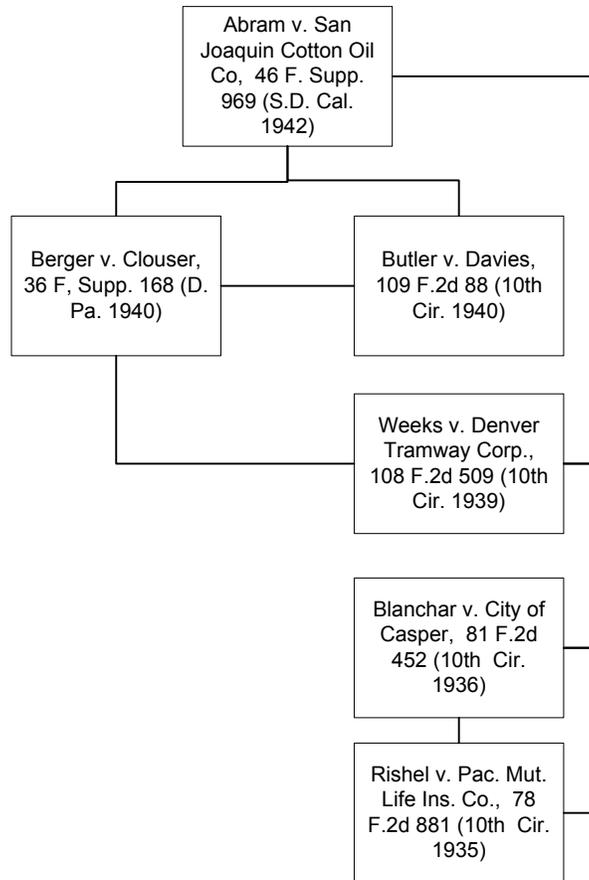
<sup>137</sup> 109 F.2d 88 (10th Cir. 1940).

<sup>138</sup> 108 F.2d 509 (19th Cir. 1939).

<sup>139</sup> Interestingly, the network relationship approach to legal research reveals a connection between these four cases that might not be immediately apparent to researchers using the more traditional pre-indexed approach. As noted *supra*, at n. 71, the Abrams court's decision on this issue was assigned two key numbers – 170Ak1835 and 307Ak687 – by West's digest editors. The same issue was assigned three different key numbers in the three cases relied on by the Abrams court to reach its decision: 302k214(1) in Butler; 302k214 (2) in Weeks; and 302k360 in Berger. While a careful and diligent legal researcher would doubtless have uncovered these additional key numbers, and would therefore have expanded the search to include them, it is salutary to note the degree to which the same or very similar issue can be assigned different key numbers even by careful editors. The network mapping approach would disclose the relationship between the cases, but a researcher using more traditional methods would have to be more assiduous in following up the various research options than experience suggests most legal researchers are.

discover that Berger also cited to Butler, and that Weeks cited to two federal additional cases,<sup>140</sup> *Blanchar v. City of Casper*<sup>141</sup> and *Rishel v. Pacific Life Ins. Co. of California*.<sup>142</sup>

These additional relationships could be mapped as follows:



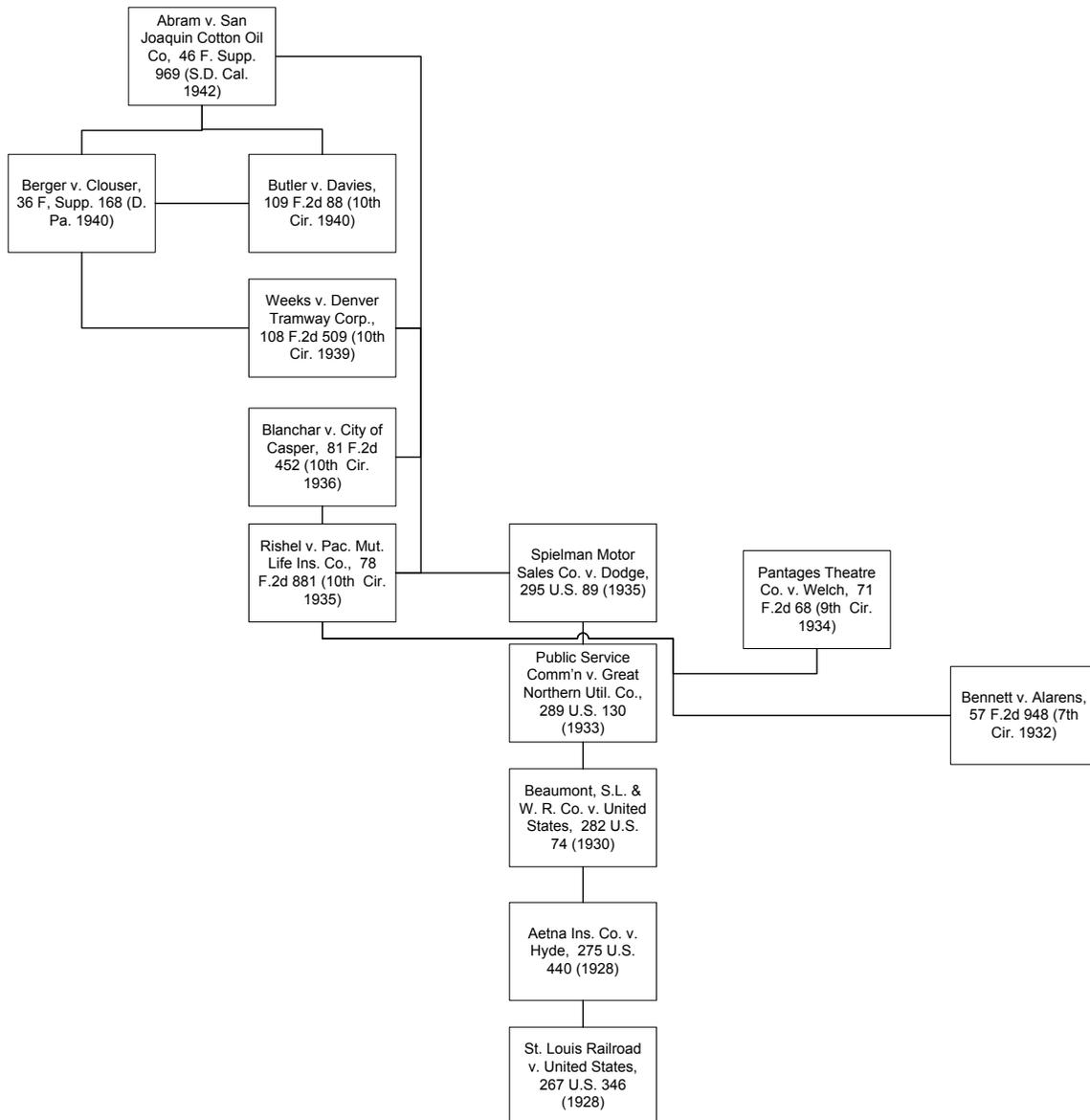
The researcher might chose to take one more step in exploring the social network that led to the Abrams’ court’s decision, and would discover that the Rishel opinion cited to five Supreme Court opinions,<sup>143</sup> one Ninth Circuit opinion, and one Seventh Circuit opinion in reaching its decision that the facts in a well-pleaded complaint must be assumed to be true for purposes of a motion to dismiss. The final network map could therefore be represented as follows:

<sup>140</sup> For the sake of simplicity and space, I have limited the search to federal cases decided in the twentieth century. Without this restriction, the researcher would learn that the Weeks opinion cited to five state court opinions as well: *Los Animas Consol. Canal Co. v. Hinderlieder*, 100 Colo. 508, 68 P.2d 564 (1937); *People v. Hadfield’s Estate*, 98 Colo. 206, 56 P.2d 25 (1936); *Slusser v. First Nat’l Bank of Denver*, 93 Colo. 219, 25 P.2d 183 (1933); *Armstrong v. Johnson Storage & Moving Co.*, 84 Colo. 142, 268 P. 978 (1928); and *International State Bank of Trinidad v. Trinidad Bean & Elevator Co.*, 79 Colo. 286, 245 P. 489 (1926).

<sup>141</sup> 81 F.2d 452 (10th Cir. 1936).

<sup>142</sup> 78 F.2d 881 (10th Cir. 1935).

<sup>143</sup> In fact, the case cites to six Supreme Court opinions but one of them – *Pullman-Palace Car Co. v. Missouri Pacific R. Co.*, 115 U.S. 587 (1885) – falls outside the restriction of federal cases decided in the twentieth century.



The researcher would be thwarted in a continuation of the search for network relationships; none of the cases cited by Rishel cite to any previous opinions in support of their holding on the issue of the standard to apply to well-pleaded facts for purposes of a motion to dismiss or demurrer.

And this, of course, the first and most obvious limitation to the network map approach to legal research. As opposed to West's pre-indexed digest approach, which would uncover every case that discussed this issue in every federal jurisdiction,<sup>144</sup> the network approach is limited to the cases used by the courts to reach their decisions. Where, as here, a series of

<sup>144</sup> Although, as we have seen, the pre-indexed digest approach is limited by the decisions of the editor reviewing the case, and the assignment of a different Key number would mean that some of these cases would not be revealed in at least an initial search of this topic.

courts fail to cite to previous authority in support of their decision, the mapping cannot continue.<sup>145</sup>

While this is an inherent limitation to this approach, however, it might not be as serious as this example suggests. Because cases decided in recent times tend to be more reliable in supporting the legal propositions they assert,<sup>146</sup> it is likely that a more recent case would generate a more complete map of the issue. Indeed, perhaps the more limited response to the research topic might be, for some researchers at least, a preferable result: the limited number of cases returned is more manageable than the vast number of cases returned by a search of the various key numbers assigned to the topic by West editors,<sup>147</sup> and the researcher seeking to explore this topic, upon seeing the limited response, might feel that a case decided in 1942 might not be the most reliable source of information and might be prompted to refocus the search on more recent cases.

It is possible, of course, that the response would not be limited at all, and the researcher might be presented with a map that is a jumble of opinions and connecting lines. The limited result in the Abram example shows how quickly a map like this could become difficult to interpret. A search of all the opinions a target case cites, all the opinions those cases cite, and all the opinions those cases cite, could generate more, and more confusing, information than a key number search. At least three possible solutions suggest themselves to counteract this possible danger.

First, researchers should be cautioned to select only designated passages from an opinion for mapping; rather than attempting to establish every connection for every case cited in an opinion, the researcher should attempt only to search discrete issues within a case. This approach mirrors the approach adopted by researchers using digests, and should make the mapping results substantially more simple to understand and interpret.

Second, it should be relatively simple to incorporate graphic elements – such as colored lines, the thickness of lines connecting cases, and the shapes of boxes enclosing cases – as a means of clarifying the relationship between cases. These graphic clues should make it apparent when, for example, multiple cases refer back to a single case.<sup>148</sup>

And third, even when these refinements are in place, it is possible that research might generate a long and complex map that would be difficult to interpret. The problem here is similar to the complexity of trying to derive driving instructions from a map that provides street-level information for an entire geographical region. And as with such maps, a

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<sup>145</sup> Another, though rarer, problem would arise where a court, by accident or on purpose, misstates the holding of a previous case in order to support its own decision. But even this could provide relevant information for a researcher, and would suggest that the target case is not the strongest on which to base an argument.

<sup>146</sup> See, discussion *supra* at nn. 122-123 and accompanying text.

<sup>147</sup> A conscientious researcher who researched all key numbers assigned in these cases to this topic would discover the following: a search for key number “170Ak1835” in Westlaw’s “AllFeds” database on October 1, 2007 returned 3,682 cases; a search for “307Ak687” returned 6 cases; a search for “302k214(1)” returned 59 cases; a search for 302k214(2) returned 40 cases; and a search for “302k360” returned 188 cases.

<sup>148</sup> The examples of mapping used to illustrate this article have no such refinements, in part because they were created by an author with no skill in graphic design, and in part because they were designed to accompany an article that will be reproduced in black and white, not color.

focusing tool, much like those available in internet mapping programs like MapQuest,<sup>149</sup> would allow the researcher to navigate through the map with relative ease, narrowing in on areas of interest while still having the freedom to pull back at any time and appreciate the overall view as well.

Another potential failing of the network mapping approach to legal research is its inability to discriminate between opinions that are still valid and ones that have been overruled or superseded in some way. This is, of course, also a failing of the digest research method; there is no subsequent treatment in the digests to suggest that a case one is researching was overruled by a later case, which is why researchers must use citators in order to update their research. And again, the network mapping approach might have some advantages over other forms of legal research in that updating, albeit not with full citator analysis,<sup>150</sup> would be an integral part of the search and the map generated as a result of that search.

A final limitation of the mapping approach to legal research is that, by its nature, it is a secondary, not primary approach to research. Put simply, in order to map a case, one must have a case to map, meaning that a researcher employing this approach must first have conducted some preliminary research in order to find a case that seems sufficiently relevant to the topic at issue that the researcher would wish to see the issue's social network. This is potentially different from the digest approach, where a researcher can begin research by using West's descriptive word index in order to locate relevant key numbers or else go

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<sup>149</sup> Available at <http://mapquest.com> (accessed October 2, 2007). A search for "Syracuse New York" on this program resulted in a map locating Syracuse in the central region of New York state. <http://www.mapquest.com/maps/map.adp?formtype=address&country=US&popflag=0&latitude=&longitude=&name=&phone=&level=&addtohistory=&cat=&address=&city=syracuse&state=ny&zipcode=> (accessed October 2, 2007). In the corner of the map is an indicator with the four cardinal compass points and a "plus" and "minus" indicator. By clicking on "north," "south," "east," or "west," the user can reorient the map, always keeping the original target location in view. *Id.* By clicking on the "minus" button, the view expands incrementally by one of five levels: at first, the map broadens out to display substantially more of New York state; the next level shows a substantial portion of the east coast of the United States, with Washington D.C. in the south and Cleveland in the west and a large part of the eastern portion of Canada; the next level shows even more of both countries, with Savannah, Georgia in the south and Cedar Rapids, Iowa in the west; the next level shows Syracuse in relation to the entire United States and Canada; and the last level shows the location of Syracuse in relation to the North and South American continents, Europe and Africa. *Id.* Going up the scale from the initial setting provides increasingly detailed information until one is looking at a street map of the city. *Id.*

<sup>150</sup> This is one area where a community-based approach to legal information might prove helpful. While some automatic features, such as detecting key words like "overruled," "superseded," "reversed," or "vacated" in subsequent opinions, might provide some hints to the researcher about a case's viability, more sophisticated analysis would be reliant on human analysis, something that would be cost-prohibitive were editors to be hired especially for that purpose. But were it possible for a researcher who reads a case and concludes that it overrules, or affirms, or in some other way affects, a previous case, to annotate that result, such information could be used to build up a more complete citator-like service over time. Such an approach could either work automatically, as, for instance, does the reCAPTCHA method of deciphering text (*see*, <http://news.bbc.co.uk/2/hi/technology/7023627.stm> (accessed October 2, 2007)(image of indistinct word sent to two different people and results compared in order to determine accuracy of response)), or through some form of mediated Wikipedia, in which members of the community could submit case analysis but an editor would vet the submissions before attaching them to cases on the website. Such an approach would inevitably leave gaps in treatment, but would allow the analysis of at least some of the cases on the site to become deeper and richer over time.

directly to the topic that corresponds most directly with the issue under review.<sup>151</sup> Using the network mapping approach, a researcher would best be advised to conduct secondary source research in order to become acquainted with the vocabulary and concepts relevant to the topic, then use a Boolean-based search to identify on-point cases in the relevant jurisdiction, and then use the mapping approach to expand and deepen the research.

This difference between more traditional forms of research and the mapping approach is, however, less significant than at first it might appear. Most legal research instructors recommend that researchers who are unfamiliar with an area spend some time exploring the topic in secondary sources before conducting primary source research<sup>152</sup> and all researchers must verify the continued vitality of an opinion before using it to support legal analysis.<sup>153</sup> And while using a network map to continue research is not the same as using a citator, the type of information presented to the researcher is sufficiently similar<sup>154</sup> that a researcher could not afford to omit this stage in the research process. Moreover, as already noted, cautious legal researchers should use a combination of self and pre-indexed research strategies in order to find relevant case law.<sup>155</sup>

By employing a simple-to-understand interface with results that should be intuitively clear to most researchers, whether or not they have been trained in legal research, the social network mapping research process would also present some distinct advantages over more traditional approaches. Both digest and Boolean-based legal research present challenges for even experienced researchers, and these problems would be exacerbated when untrained researchers – those who are perhaps most likely to take advantage of an open-access legal information site – would seek to interrogate a database. A network map, although limited in its scope to those cases relied on by the court to support its analysis of a particular issue, would reveal the evolution of that issue in the narrow confines of the case under review,<sup>156</sup> or, perhaps more commonly, the static nature of an established piece of doctrine that was decided some time ago. And researchers – especially untrained researchers who might not be as sensitive to the dangers posed by headnotes – would be required to read cases, or portions of case, in their entirety rather than relying on editorial condensations of a court’s analysis which can sometimes be misleading.<sup>157</sup>

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<sup>151</sup> See, Sloan, *supra* n. 6, at 89-90. Sloan also notes, however, that “[t]he easiest way to find relevant topics and key numbers is to use the headnotes in a case that you have already determined is relevant to your research” *Id.* at 89.

<sup>152</sup> See, e.g., Oates & Enquist, *supra* n. 124, at 188 (“Step 1: Spend 30 to 60 minutes doing background reading in a state practice manual or book, a hornbook, or *Nutshell*, or a legal encyclopedia.”)

<sup>153</sup> *Id.* (“Step 3: Cite check the cases that you plan to use to make sure that they are still good law.”)

<sup>154</sup> In fact, of course, the network map provides the researcher with more information, because it explores the development of an issue retroactively as well as prospectively.

<sup>155</sup> See, Sloan *infra* n. 6, at 340 (combination of print and electronic resources necessary “for accurate and efficient research.”)

<sup>156</sup> This approach would also allow the researcher to refocus the research on another case when that appeared to be a more profitable approach.

<sup>157</sup> “[H]eadnotes are . . . merely finding aids and should not be cited or relied upon as authoritative.” Cohen *et al.*, *supra* n. 61 at 25. As the Eastern District of New York has noted, headnotes and annotations in legal research are “where research starts, not where it ends.” *Amorgianos v. Nat’l R.R. Passenger Corp.*, 137 F.Supp. 2d 147, 189 (E.D.N.Y. 2001). Over-reliance on headnotes has caused attorneys to get into trouble with courts. See, e.g., *Pileri Indus., Inc. v. Consolidated Indus., Inc.*, 740 So. 2d 1108, 1109-10 (Ala. Civ.App. 1999) (“[T]here are deficiencies in Pileri’s brief. Throughout, Pileri’s brief cited headnotes from West’s *Southern Reporter*. A headnote is not legal authority; rather, it is a publisher’s interpretation of what the particular court

## VI. Conclusion

While the advent of the internet has changed the location of the information used by many lawyers to conduct legal research, the tools they use to conduct that research have remained relatively static; digest research has remained essentially the same since it was introduced over one hundred years ago, and Boolean research uses the same concepts as it has since it was introduced by Lexis in 1973. And while both approaches remain valid and practical, both also have inherent limitations, the most significant of which, perhaps, is that the only comprehensive legal information sites containing information that can be researched using these methods are controlled by for-profit organizations that charge a substantial amount for access to their materials.

The internet's promise of open access to information has not been realized when it comes to legal information. And while many public libraries are able, at present, to afford the cost of buying and housing reporters, making that failure less significant in the short term, it seems unlikely that they will be able to maintain this service for much longer, either because the escalating costs of the books and their storage makes them too pricey for libraries to afford or because the publisher will discontinue publication.

It is time, therefore, to consider alternatives to the present ways of storing and retrieving legal information. And as we consider how to develop an open and free access site for American legal information, we must also consider how to make that information available to researchers who will not be able to use traditional pre-indexed research tools to conduct legal research on an open access site.

Using a mapping approach to reveal the relationship between cases decided before and after the subject case is one approach that appears to have some promise. Although it has certain limitations, and is certainly in no way intended to be a replacement for the substantially more comprehensive pre-indexing available from commercial vendors like West and LexisNexis, it has the advantage of using pre-existing information embedded into the text of an opinion as the indexing tool that can allow a researcher to delve into the evolution of a legal issue.

Such an approach would be relatively easy for all researchers, even those untrained in legal research, to use and understand, and would generate meaningful results which, although neither as focused as pre-indexed research or as comprehensive and free form as self-indexed research, would nonetheless serve as a viable alternative to these approaches. And by focusing on the court's selection of relevant authority, rather than an editor's interpretation of the issues in a case or requiring a researcher to predict the vocabulary used by courts to analyze an issue, it is a research approach that also could make a claim to be more organically related to the way the law actually develops than more traditional research techniques.

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stated, and it should not be relied upon to convey the precise case holding. A headnote is intended solely for the convenience of the public and the Bar as a research and indexing aid."); *Barber v. Motor Vessel "Blue Cat,"* 372 F.2d 626, 629 n.7 (5th Cir. 1967)(quotation of a headnote as though it were the words of a court is "abomination of appellate advocacy").

Most significantly, social network mapping is an economically feasible way to provide a form of pre-indexed legal research to researchers using an open access legal information site. It might be the key that unlocks the vault in which legal information vendors have stored the law, liberating it for everyone to read and use.