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**Legal Scholarship and the United States Court of Appeals  
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# LEGAL SCHOLARSHIP AND THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT: AN EMPIRICAL STUDY OF A NATIONAL CIRCUIT

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## ABSTRACT

It is conventional wisdom that the United States Court of Appeals for the Federal Circuit, a court whose jurisdiction is defined by subject matter rather than by geography, is less likely than other circuit courts of appeals to use legal scholarship in its decisionmaking. This common belief is regularly used to substantiate a well-worn criticism of the Federal Circuit specifically, and of national courts generally; namely, that they are substantially more insular and somehow less intellectually curious than the regional circuit courts of appeals. We were therefore very surprised to find how little empirical support the conventional wisdom finds in legal literature. A review of the existing literature reveals that relatively little is known about the use of legal scholarship by the Federal Circuit—and by analogy courts whose jurisdiction is defined by subject matter rather than geography—and perhaps even less is known about how the Federal Circuit’s use of legal scholarship compares to that of the regional circuits.

The study reported in this Article contributes new and original information and analysis. It empirically compares the Federal Circuit’s use of legal scholarship with that of the regional circuit courts of appeals. Perhaps the most significant finding is that the Federal Circuit’s use of legal scholarship appears quite similar to that of the regional circuits, suggesting that the court is not the outlier that many presume. This finding places the conventional wisdom into serious doubt and has obvious implications for the evaluation of other proposals for subject matter-bounded courts.

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## I. INTRODUCTION

“[S]pecialized institutions have insular tendencies. For example, the Federal Circuit appears to rely less on independent scholarly analysis, even legal scholarship, than the regional generalist appeals courts.”<sup>1</sup>

The United States and many foreign nations have recently considered expanding the use of courts whose jurisdiction is primarily defined by subject matter rather than by geography. Many scholars have opposed the expansion of so-called “national courts” or “national circuit courts” on the argument that national circuit courts are more insular and less intellectually curious than are regional (geographically bound) circuit courts of appeals. The primary empirical basis for the argument rests on observations made of the United States’ national circuit court—the United States Court of Appeals for the Federal Circuit—and particularly on the empirical claim that the Federal Circuit is much less likely than other circuit courts of appeals to use legal scholarship in its decisionmaking. According to such scholars, the Federal Circuit’s lack of use of legal scholarship permits the clear inference that it and, by analogy, national circuits of all stripes are more insulated from the contributions and insights of legal scholarship and less intellectually curious than their geographically limited sister courts.

This chain of reasoning has achieved the status of conventional wisdom. It has been trumpeted loudly and frequently in the literature about the Federal Circuit, including in the famous report by the National Research Council of the National Academies<sup>2</sup> quoted above, which strongly influenced Congress’s decision to attempt to reform the patent laws.<sup>3</sup> The present study examines the Federal Circuit’s use of legal scholarship and finds, contrary to the literature, that the Federal Circuit’s use of scholarship is quite similar to that of her regional sister courts. Our results thus dramatically undercut the basis for the conventional wisdom and have significant implications for other proposals to expand the use of national circuit courts.

The Article proceeds in four additional Parts. The remainder of this Introduction provides basic background information about the Federal Circuit and describes the debate over the court’s use of legal scholarship. Part II describes the study design and methodology, including some of its basic

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1. NAT’L RESEARCH COUNCIL OF THE NAT’L ACADS. (NRC), A PATENT SYSTEM FOR THE 21ST CENTURY 86 (2004), available at [http://www.nap.edu/catalog.php?record\\_id=10976](http://www.nap.edu/catalog.php?record_id=10976) (footnote omitted).

2. See *id.* at 86–87 (“[S]pecialized institutions have insular tendencies.”).

3. See, e.g., H.R. REP. NO. 112-98, pt. 1, at 39 n.5 (2011) (citing the “authoritative” report by the National Academies Press on the need for patent reform).

assumptions and limitations. Part III provides the results and findings and offers a discussion of what we think they mean. Part IV offers some future directions for work, and the Article finishes with a brief conclusion.

A. A BRIEF INTRODUCTION TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

The Federal Circuit is a “national” circuit court and thus occupies a somewhat rare position among the U.S. circuit courts of appeals. Created by the Federal Courts Improvement Act of 1982,<sup>4</sup> the court has a jurisdiction that is defined by a broad grant of subject matter rather than by geography.<sup>5</sup> It is not, according to Congress, a “specialized court”<sup>6</sup>—although it is sometimes so described.<sup>7</sup>

Instead, the Federal Circuit represents the prototypical modern subject matter-bounded court. When Congress abolished the little known Temporary Emergency Court of Appeals<sup>8</sup>—transferring, it so happens, its jurisdiction to the Federal Circuit<sup>9</sup>—the Federal Circuit became the only non-regional

4. Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (codified as amended in scattered sections of 28 U.S.C.).

5. 28 U.S.C. § 1295 (2006) (providing that the court has jurisdiction over appeals involving, inter alia, patents (§ 1338), tax refund claims, civil actions against the United States (§ 1346) including claims not exceeding \$10,000 in amount, founded either upon the Constitution, or any Act of Congress, or any regulation of an executive department, or upon any express or implied contract with the United States, Indian claims, takings claims, trademark registrations, vaccine compensation claims, final decisions of the United States Court of International Trade, final determinations of the United States International Trade Commission, final decisions of the Merit Systems Protection Board, final decisions of agency boards of contract appeals, veterans benefit claims).

6. S. REP. NO. 97-275, at 6 (1981), *reprinted in* 1982 U.S.C.C.A.N. 16 (“The Court of Appeals for the Federal Circuit will not be a ‘specialized court,’ as that term is normally used. The court’s jurisdiction will not be limited to one type of case, or even two or three types of cases. . . . Rather, it will have a varied docket spanning a broad range of legal issues and types of cases.”).

7. *Compare* Rochelle Cooper Dreyfuss, *The Federal Circuit: A Continuing Experiment in Specialization*, 54 CASE W. RES. L. REV. 769, 770 (2004) (“The Federal Circuit is not specialized . . . .”) [hereinafter Dreyfuss, *Continuing Experiment*], *with* Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1 (1989) [hereinafter Dreyfuss, *Case Study*].

8. The court was established in 1971 to hear appeals from district courts arising under certain energy-related laws. Economic Stabilization Act Amendments of 1971, Pub. L. No. 92-210, sec. 2, § 211(b)(1), 85 Stat. 743, 749.

9. Federal Courts Administration Act of 1992, Pub. L. No. 102-572, § 102, 106 Stat. 4506.

appellate court in the federal system.<sup>10</sup> At least formally, specific grants of exclusive subject matter jurisdiction over certain agency action<sup>11</sup> provide the United States Court of Appeals for the District of Columbia Circuit a similar flavor, although that court is basically a regional court of geographically-defined jurisdiction.<sup>12</sup>

The Federal Circuit has been the subject of vigorous study since its creation,<sup>13</sup> and although ambivalence persists, assessments of the court's performance have on balance been quite positive.<sup>14</sup> Indeed, policymakers in the United States and abroad have been seriously considering the extension of the Federal Circuit model to other subject matters, including bankruptcy,

10. See S.J. Plager, *The United States Court of Appeals, The Federal Circuit, and the Non-regional Subject Matter Concept: Reflections on the Search for a Model*, 39 AM. U. L. REV. 853, 854 (1990).

11. The United States Court of Appeals for the District of Columbia has the smallest geographic jurisdiction of the U.S. circuit courts of appeals, but it has been given the responsibility for directly reviewing some forms of agency action and hears other administrative appeals based on the Administrative Procedure Act. Thus, like the Federal Circuit it, too, has a busy administrative docket; although perhaps not quite as busy. See Plager, *supra* note 10, at 861 (citing Peter H. Schuck & E. Donald Elliott, *To the Chevron Station: An Empirical Study of Federal Administrative Law*, 1990 DUKE L.J. 984, 1018) (reporting that the Federal Circuit's administrative caseload is the highest of all the circuits and three times that of the D.C. Circuit).

12. See 28 U.S.C. §§ 41, 1291 (2006). Others have argued that the D.C. Circuit is similar to the Federal Circuit and that lessons learned by the D.C. Circuit may extend to the Federal Circuit. See John M. Golden, *The Federal Circuit and the D.C. Circuit: Comparative Trials of Two Semi-specialized Courts*, 78 GEO. WASH. L. REV. 553 (2010).

13. Perhaps the seminal early work concerning the court is Dreyfuss, *Case Study*, *supra* note 7; see also Charles W. Adams, *The Court of Appeals for the Federal Circuit: More Than a National Patent Court*, 49 MO. L. REV. 43 (1984). The Federal Circuit's version of its history is also informative. See generally THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT: A HISTORY 1982–1990 (U.S. Judicial Conference Comm. on the Bicentennial of the Constitution of the U.S. 1991) (describing, inter alia, the political and economic circumstances surrounding the creation of the court). The vast amount of quality scholarship exploring the court's strengths and weaknesses is much too copious to list in a footnote.

14. See generally, e.g., Marcia Coyle, *Critics Target the Federal Circuit*, 29 NAT'L L.J. 1 (2006); Dreyfuss, *Continuing Experiment*, *supra* note 7, at 770–71 (2004) (reporting practitioner views); Donald R. Dunner, *The U.S. Court of Appeals for the Federal Circuit: Its Critical Role in the Revitalization of U.S. Patent Jurisprudence, Past, Present, and Future*, 43 LOY. L.A. L. REV. 775, 783 (2010) (“The bottom line at the conclusion of the first quarter century of the court's existence is that the court has more than delighted its early proponents and surprised its opponents with its high level of performance.”); Gerald Mossinghoff, *The Creation of the Federal Circuit*, in F. SCOTT KIEFF ET AL., PRINCIPLES OF PATENT LAW: CASES AND MATERIALS 31–32 (4th ed. 2008). As we note, however, ambivalence persists. See, e.g., Craig Allen Nard & John F. Duffy, *Rethinking Patent Law's Uniformity Principle*, 101 NW. U. L. REV. 1619 (2007) (offering some criticisms of the court). But see S. Jay Plager & Lynne E. Pettigrew, *Rethinking Patent Law's Uniformity Principle: A Response to Nard & Duffy*, 101 NW. U. L. REV. 1735 (2007).

tax, social security,<sup>15</sup> immigration,<sup>16</sup> and intellectual property.<sup>17</sup> The broad interest in emulating the Federal Circuit model has only intensified interest in questions such as “What subject matters are best administered by a national circuit court of appeals?” and “What are the strengths and weaknesses of subject matter-bounded tribunals?” The study reported here contributes to this debate, providing an empirical comparison of the Federal Circuit’s use of legal scholarship with regional circuits’ use of legal scholarship. As the next Section explains, this topic is of keen interest to the debate over the performance of the Federal Circuit.

B. THE DEBATE OVER THE FEDERAL CIRCUIT’S USE OF LEGAL SCHOLARSHIP

“It has been said that the [Federal Circuit] . . . has been less interested than other courts in considering the academic literature or incorporating the lessons of social science research into its decisionmaking . . . .”<sup>18</sup>

The note that accompanies Professor Dreyfuss’s above-quoted observation begins with the phrase: “Albeit, rarely for attribution,”<sup>19</sup> which, it turns out, our review of the literature confirms. Despite the obvious importance of empirical evidence to support such a claim, we found only a single work that substantially addresses the use of legal scholarship by the Federal Circuit, Craig Allen Nard’s *Toward a Cautious Approach to Obeisance: The Role of Scholarship in Federal Circuit Patent Law Jurisprudence*.<sup>20</sup> That work, a decade old now,<sup>21</sup> is perhaps more than anything else a call for the judges of the Federal Circuit to use more empirical<sup>22</sup> literature in the legal decisional process. Part of the study underlying *Toward a Cautious Approach to Obeisance*

15. See Dreyfuss, *Continuing Experiment*, *supra* note 7, at 771 n.10.

16. See Securing America’s Borders Act, S. 2454, 109th Cong. (2006).

17. See, e.g., Working Party on Litig., Eur. Patent Office, *Draft Agreement on the Establishment of a European Patent Litigation System* (2003), available at [http://documents.epo.org/projects/babylon/eponet.nsf/0/B3884BE403F0CD8FC125723D004ADD0A/\\$File/agreement\\_draft\\_en.pdf](http://documents.epo.org/projects/babylon/eponet.nsf/0/B3884BE403F0CD8FC125723D004ADD0A/$File/agreement_draft_en.pdf) (proposing a “European Patent Court,” a “European Patent Court of Appeal,” and a “European Patent Judiciary”).

18. Dreyfuss, *Continuing Experiment*, *supra* note 7, at 772.

19. *Id.* at 772 n.11 (noting that the “observations are largely based on informal discussions with patent practitioners and academics . . .”).

20. Craig Allen Nard, *Toward a Cautious Approach to Obeisance: The Role of Scholarship in Federal Circuit Patent Law Jurisprudence*, 39 HOUS. L. REV. 667 (2002).

21. See *id.* at 678 (“I reviewed every published Federal Circuit opinion from 1983 through 2000 to discern how often the court cites scholarship or a secondary source in its patent and non-patent opinions.”).

22. Professor Nard uses the term “empirical” to refer to “quantitative or statistical research and analyses that are based on observation.” *Id.* at 668 n.10.

involved comparing citation to legal scholarship in published Federal Circuit patent cases to citation to legal scholarship in published Second and Ninth Circuit trademark and copyright cases.<sup>23</sup> In the cases studied it was found that the Second and Ninth Circuits cited scholarship roughly four times as often as the Federal Circuit.<sup>24</sup>

Notably, Professor Nard cautioned against making broad inferences from the samples used in the study. For example, he observed that patent opinions of the Federal Circuit might be different than other types of opinions because the Federal Circuit writes so many of them.<sup>25</sup> His analysis implies that trademark and copyright opinions of the Second and Ninth Circuits might also be different than more run-of-the-mill opinions at the regional circuits.<sup>26</sup>

Notwithstanding the concerns expressed by Nard about the limits to the general inferences that might be made from his novel study, and notwithstanding the lack of any comparable study that might be used to bolster the claim,<sup>27</sup> the claim that the Federal Circuit uses academic work less often than other courts seems to have achieved mythical status. Professor John R. Thomas recently claimed that “empirical research has show[n] that the Federal Circuit is less likely than other courts to cite scholarship in its opinions.”<sup>28</sup> Similarly, in its influential publication, *A Patent System for the 21st Century*, the National Research Council of the National Academies claims: “[S]pecialized institutions have insular tendencies. For example, the Federal Circuit appears to rely less on independent scholarly analysis, even legal scholarship, than the regional generalist appeals courts.”<sup>29</sup>

The belief that the Federal Circuit uses legal scholarship in its decisionmaking less than other circuit courts of appeals has seeped into the discussion regarding the Federal Circuit’s performance as an institution, where the belief has almost uniformly been used to describe the court as insular, disconnected, and lacking in intellectual curiosity.<sup>30</sup> For example, in

23. *Id.* at 681–83.

24. *Id.* at 683.

25. *Id.* (speculating that the Federal Circuit may be “more familiar and comfortable with patent law than the Ninth and Second Circuits are with trademark and copyright law”).

26. *Id.*

27. Our findings accord with Professor Dreyfuss’s in this regard. See Dreyfuss, *Continuing Experiment*, *supra* note 7, at 781 (stating that “[t]here are no comparable studies to support Nard’s work”).

28. John R. Thomas, *Academics and the Federal Circuit: Is There a Gulf and How Do We Bridge It?*, 15 FED. CIR. B.J. 315, 315 (2005) (citing Nard’s work).

29. NRC, *supra* note 1, at 86 (footnote omitted).

30. See *infra* notes 31–33 and accompanying text.

his essay Professor Thomas lamented the Federal Circuit's engagement of legal scholarship and urged greater resort to scholarship to overcome the Federal Circuit's isolation.<sup>31</sup> The National Academies, using *Toward a Cautious Approach to Obeisance* as its source of authority, goes so far as to recommend that the Federal Circuit seek briefings that "draw upon insights from . . . legal scholarship on the patent system, and the growing body of patent-related economic literature."<sup>32</sup> Other commentators, also citing *Toward a Cautious Approach to Obeisance*, have expressed concern over the "reluctance [of the Federal Circuit] to engage the empirical and social sciences literature on patent law as a way to offset its relative institutional disconnectedness from the various technological communities its decisions affect."<sup>33</sup>

We think debate over the Federal Circuit's use of scholarship is important, but we are concerned that it may be clouded and dulled by the assumptions that appear to be drawn from the very limited empirical data available. In particular, we think that the literature reflects at least two claims about the Federal Circuit's use of scholarship: first, an empirical claim that the Federal Circuit uses scholarship less often than regional circuit courts of appeals; and second, a normative claim that the Federal Circuit uses legal scholarship less than it should.<sup>34</sup>

The existing literature has generally done a poor job of separately evaluating these claims. Notwithstanding the very limited empirical evidence, the first is used essentially unquestioningly as the core evidentiary support for the second, i.e., that the Federal Circuit does not use legal scholarship as much as it should because it does not use it as often as the regional circuit courts of appeals. While we have concerns with the logic of this argument, we accept, *arguendo*, that these claims might have an analytical relationship,

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31. Thomas, *supra* note 28, at 318–19 ("Allow me to close by observing that schools of thought, intellectual movements, and cultures rarely prosper when they are entirely self-referential. In the United States, the role of the university has been a dynamic one; but at its best the academy has served as the conscience of the community; as an honest arbiter of debate; and ultimately as a contributor to the establishment of just laws. In days yet to come, so it may be within the patent bar, and before this court.")

32. NRC, *supra* note 1, at 86 (recommending, *inter alia*, that the Federal Circuit encourage briefs that "draw upon insights from . . . legal scholarship on the patent system, and the growing body of patent-related economic literature").

33. *See* Nard & Duffy, *supra* note 14, at 1648. To be fair, some of the statements offered in the discussion within Nard's work might invite such claims and assumptions. *See, e.g.*, Nard, *supra* note 20, at 675 (expressing the desire that Federal Circuit judges be more receptive to scholarship in their published opinions); *id.* at 685 ("[T]he court verges on the abstract by failing to give adequate weight to empirical and economic scholarship.")

34. We have not found any arguments that the Federal Circuit is using legal scholarship too much, although we imagine there is a case to be made. Assuming there are proponents of this position they would appear to be in the minority of those who write legal literature.

e.g., the empirics of the first might inform an analysis of the second. Because the evidence for either claim is so lacking, however, due mostly to the fact that the study of the Federal Circuit's use of scholarship is at such an early stage, we think it is preferable to treat each claim independently. Normative debates are often sharpened and better enabled by empirical data.

Thus, the first broad contribution of this study is an empirical examination of the hypothesis that the Federal Circuit uses legal scholarship less than other federal appellate courts. The study uses a novel dataset that not only extends until 2008 (almost a decade later than Nard's), but also includes citations to legal scholarship by all of the U.S. circuit courts of appeals over the last twenty years.<sup>35</sup> It thus provides considerable new information and analysis.

The findings and observations include:

1. *The Federal Circuit's use of legal scholarship appears quite similar to that of the regional circuits, suggesting that the court is not the outlier that many presume.* This suggests the analogy that other subject matter-bounded tribunals built with parameters similar to those of the Federal Circuit might behave similarly, i.e., they might not be any more insular and disconnected when it comes to engaging with legal scholarship than the average circuit court of appeals. Consonant with this interpretation, the observed use of legal scholarship by the District of Columbia Circuit is also within a range defined by other regional circuits.
2. *The results essentially eviscerate a claim that the Federal Circuit does not use legal scholarship as much as it should because it does not use it as often as the regional circuit courts of appeals.* To be clear, we do not find that the Federal Circuit uses legal scholarship as much as it should; our study is not directed to answering that question. But we have substantially

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35. It should be clear by now that Professor Nard's study represents an important (as far as we can tell, the most important) contribution to this topic. But like all studies (the one reported here not excepted) it has limitations. For example, perhaps Federal Circuit opinions have changed since Nard's study, perhaps trademark and copyright opinions are different than more run-of-the-mill opinions at the regional circuits, or, as Professor Nard himself ventures, perhaps patent cases are different because the Federal Circuit hears so many of them. Nard, *supra* note 20, at 683 (speculating that the Federal Circuit may be "more familiar and comfortable with patent law than the Ninth and Second Circuits are with trademark law"). Even more importantly, however, empirical investigation into a topic should not be concluded by a single study. One of the strengths of the approach lies in different investigators taking different approaches to examine the same or similar hypotheses producing, eventually, a robust body of information that might better inform policy. It is from that perspective that we proceed.

clarified the issue: does a Federal Circuit that uses legal scholarship similarly to regional circuit courts of appeals use legal scholarship as much as it should? This finding we think is especially important because it suggests that future scholarship can now focus on the “merits” of the Federal Circuit’s use of scholarship. Rather than continuing to rely on the conventional wisdom that the Federal Circuit does not use legal scholarship as much as it should because it does not use it as often as the regional circuit courts of appeals, scholars can now be encouraged to investigate when and how the Federal Circuit uses legal scholarship, a study much more likely to provide a robust description of the Federal Circuit’s engagement with scholarly literature.

3. *The most evident difference between the Federal Circuit and some other circuit courts of appeals is that the Federal Circuit lacks one or two “super citers”—judges who are extreme users of legal scholarship in opinions.*
4. *The Federal Circuit uses legal scholarship in patent opinions slightly more than it uses legal scholarship in its entire body of opinions.*
5. *In view of the results here, the results presented in Toward a Cautious Approach to Obeisance might suggest that trademark and copyright cases in the regional circuits, rather than patent cases at the Federal Circuit, are the outliers in terms of use of scholarship. We therefore speculate: if regional circuits use scholarship more in these types of cases and do so because they are far behind the bar and academy when it comes to doctrine and policy then perhaps a “Federal Circuit” is needed for these areas of law. On the other hand, it is always possible that there is something about trademark and copyright cases (and relevant scholarship) or patent cases (and relevant scholarship) that argues for differential use of scholarship in these areas than is normative for other areas of law.*

The second broad contribution of this study is that it adds substantial new data and analysis useful to the study of national circuit courts generally. As noted above, the Federal Circuit is *the* prototypical subject matter-bounded court. Its successes have attracted the attention of policymakers at home and abroad, and further use of subject matter-bounded courts has been discussed and proposed. Scholars should therefore seek to develop a robust body of information when it comes to the merits and demerits of the Federal Circuit. Because it is the prototypical subject matter-bounded court, scholars should expect that information derived from the study of the performance of the Federal Circuit will play a crucial role in policymakers’ considerations of future subject matter-bounded courts.

Finally, a word of caution: this study represents a substantial contribution to the study of national circuit courts by providing new and original information, calling much recent commentary into question, and sharpening the debate over the Federal Circuit's use of scholarship. Nonetheless, it does not paint a complete picture of the Federal Circuit's use of legal scholarship. It would therefore be a mistake on par with the empirical myths this study confronts to conclude after reading this Article that "empirical research has shown the Federal Circuit uses legal scholarship as much as it should." The hope is that this Article pushes future scholarship to more seriously grapple with the answer to this second question.

## II. STUDY DESIGN AND METHODOLOGY

This Part sets out some very basic definitions and assumptions that underlie the study reported here. It then describes the techniques used to collect the data underlying the study and gives some description of the basic parameters of the dataset.

This study concerns the use of legal scholarship in decisional lawmaking, and particularly its use by the Federal Circuit as compared to the regional circuit courts of appeals. As used in this study, "legal scholarship" means law review and law journal articles, and we use the terms synonymously throughout.<sup>36</sup>

The term "use" of legal scholarship in this Article is meant in the limited sense that a court or judge "uses" legal scholarship when they cite to it in a reported judicial opinion. The reader should understand that it is almost indisputable that judges consider and are influenced by (and thus meet a more liberal meaning of the term "use") legal scholarship more often than we can detect using our methods. It seems obvious to us that legal scholarship may have a bearing on or connection with a judge's decisional process and the judge may not even be aware of it. Subconscious use is unlikely to generate a citation that observers can point to as evidence of the influence of the scholarship. It also seems likely that in many instances legal scholarship may have a bearing on or connection with a judge's decisional process and the judge knows about it, but for some reason the judge does not cite the

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36. Excluded from this definition are treatises, hornbooks, etc. Treatises and hornbooks are excluded not because they are unimportant forms of legal scholarship; in fact, we think they are important forms. Rather, they have been excluded because the Federal Circuit is not generally criticized for not using them.

scholarship in the opinion comprising the decision.<sup>37</sup> In both instances the evidence of the influence of scholarship is difficult to reliably obtain.<sup>38</sup>

One way to deal with what judges do not know, or do not tell, is to ignore it. This is the conventional approach taken in much of the empirical work examining judicial use of legal scholarship.<sup>39</sup> Because we have no reason to believe that Federal Circuit judges are more or less knowing or more or less forthcoming about their use of legal scholarship than judges from other circuits, we adopt this convention, assuming that legal scholarship is used when it is cited and not used when it is not cited.

One of the benefits of our methodology is that it measures use fairly directly. We examine the text of electronic versions of the documents judges author to communicate reported decisions. Reported decisions are precedential opinions and consequently are documents evidencing the law.<sup>40</sup> Citation to legal scholarship in such opinions brings the scholarship into close relationship with the law. Moreover, judges do not have to cite to legal

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37. See, e.g., Plager & Pettigrew, *supra* note 14, at 1751 (“It is quite likely that more [academic commentary] finds its way into judicial thought than the absence of specific citation suggests.”).

38. One could try to infer it, perhaps, by a close comparison of literature in an area with the legal documents of appellate cases in the same or similar areas. See, e.g., Dreyfuss, *Continuing Experiment*, *supra* note 7, at 780–81 (suggesting this general strategy).

39. See sources cited *infra* note 77 (collecting a number of studies that examine citation by courts to scholarship).

40. Our focus on the decisional lawmaking process requires, we think, the use of reported opinions. Other prominent studies of citation counts focus exclusively on reported opinions. See, e.g., William M. Landes et al., *Judicial Influence: A Citation Analysis of Federal Courts of Appeals Judges*, 27 J. LEGAL STUD. 271 (1998). Unreported (or nonprecedential) opinions are historically not recognized as part of the formal evidence of the decisional law. See FED. CIR. R. 47.6 (2006) (authorizing unreported opinions and explaining that “[a]n opinion or order which is designated as not to be cited as precedent is one unanimously determined by the panel issuing it as not adding significantly to the body of law”); *Porter v. Merit Sys. Prot. Bd.*, 210 Fed. Appx. 996 (Fed. Cir. 2006) (applying this rule); see also FED. CIR. R. 36 (2006) (authorizing judgments of affirmance without opinions and explaining: “The court may enter a judgment of affirmance without opinion, citing this rule, when it determines that . . . an opinion would have no precedential value”); *Waddoups v. Air Force*, 201 Fed. Appx. 995 (Fed. Cir. 2006) (deciding an appeal without a published opinion); FED. R. APP. P. 32 (introducing permission to cite to unreported opinions in briefing as of January 1, 2007, but not changing the precedential status of the cited opinion). This observation strongly suggests two things: first, while there may be reasons to study the judicial use of legal scholarship in unreported opinions, clumping unreported opinions in with reported opinions in a study examining the use of legal scholarship in the decisional lawmaking process will be more confounding than informative; second, it is strongly intuitive that judges should only very rarely use legal scholarship in unreported opinions since they are not intended to add to the law. To examine this second understanding we examined all unreported opinions in Westlaw for all of the circuits from 1950 to 2008, and we found that citation to legal scholarship in unreported opinions, while it does occasionally occur, is exceptionally rare.

scholarship, and the decision to cite to a piece of scholarship—even as a source of general authority for a proposition, or merely to criticize it—can be understood as having a connection with the decisional process—a part of the law, suggesting the interpretation that the cited work has relevance to the law.<sup>41</sup>

It must also be noted that some of the scholarship-focused critiques of the Federal Circuit are quite ambiguous when it comes to what kinds of scholarship they are talking about. Sometimes the word “scholarship” is used alone; sometimes it is preceded by “academic” or a synonym thereto. In other instances it is preceded by words like “empirical” or “social sciences.”<sup>42</sup> While the concept of legal scholarship clearly encompasses all of these forms, it is less clear whether the critical literature contemplates circuit judges consuming, critically evaluating, and applying to their decisionmaking peer-reviewed professional publications, i.e., primary literature from various scientific (e.g., molecular biology, particle physics), technical (e.g., electrical and chemical engineering), and social sciences (e.g., economics, psychology) fields. To the extent the criticism does contemplate such things, our study should be understood as at least somewhat tangential. We have developed a search algorithm that very effectively finds legal scholarship in the form of law review and law journal articles;<sup>43</sup> it is not constructed to identify citations to other types of publications.

When comparing this study to other scholarship-focused critiques of the Federal Circuit, another consideration is that some critiques may only be talking about patent cases. This study provides a much more holistic view,

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41. An esteemed reviewer of this study has suggested to us that judges may cite to legal scholarship in judicial opinions for decorative purposes only. To the extent this happens we are unable to account for it, although we suppose that if judges are using legal scholarship to decorate opinions they are still “using” it. It also seems possible that even decorative judicial use might still work benefits by broadening debate and suggesting receptiveness and intellectual curiosity on the part of a judge or court.

Similarly, measuring the use of legal scholarship by measuring citation leaves to inference the relationship between citation and the relevance of scholarship to judges and the law. Inferring relevance this way is, perhaps, most often valid. However, it seems not beyond the realm of possibility that judges might cite a law review article in an opinion without relying on, considering, or, perhaps, even understanding much of the substance of the article. Even so, the debate-broadening benefits may still apply.

42. See, e.g., Dreyfuss, *Continuing Experiment*, *supra* note 7, at 780–83; Nard & Duffy, *supra* note 14, at 1648.

43. See *infra* Section II.B (“The Dataset”); see also Iantha Haight, *Court Citation of Legal Scholarship on the Rise?*, COMPETITIVE EDGE: CORNELL L. LIBR. BLOG (Aug. 17, 2010, 3:10 PM), <http://blog.law.cornell.edu/library/2010/08/17/court-citation-of-legal-scholarship-on-the-rise/> (describing our query as “not perfect, but it is about as close as you can reasonably get”).

examining scholarship across the entirety of Federal Circuit jurisprudence of which patent cases make up just a fraction. Thus, unless we discuss patent cases specifically, our results and findings should be understood as considering the jurisprudence broadly.

As one considers the results, it will also be useful to keep in mind that there may be varying amounts of scholarship available depending on the area of law. As a contrived example, there might be a much greater volume of scholarship devoted to constitutional issues than to vaccine compensation claims. If that were true, a court whose docket consists of a substantial number of constitutional claims may have more opportunities to use scholarship than a court whose docket consists of few constitutional claims and more vaccine compensation claims. The results presented here do not shine much light on how the type of claims a circuit tends to hear and other such factors might impact a circuit court's use of scholarship, although, as we noted in the Introduction, the Federal Circuit has exclusive jurisdiction over a broad array of subject matter.<sup>44</sup>

#### A. CONTENT ANALYSIS OF JUDICIAL OPINIONS

The dataset used in this study was constructed using a well-accepted social sciences technique known as “content analysis.”<sup>45</sup> Content analysis describes a general methodological approach for collecting and analyzing information<sup>46</sup> representing the content of documents or other messages.

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44. See *supra* note 5.

45. See Mark A. Hall & Ronald F. Wright, *Systematic Content Analysis of Judicial Opinions*, 96 CALIF. L. REV. 63 (2008) (collecting many examples of content analysis applied to legal studies). For recent examples of legal scholarship that have used content analysis as an approach to examining judicial opinions, see, e.g., John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 956–57 (2007) (examining the impact of legal rules and legal procedure on case outcomes); Christopher A. Cotropia, *Nonobviousness and the Federal Circuit: An Empirical Analysis of Recent Case Law*, 82 NOTRE DAME L. REV. 911 (2007) (examining empirical claims about the nature of the nonobviousness requirement of patent law); Lee Petherbridge & R. Polk Wagner, *The Federal Circuit and Patentability: An Empirical Assessment of the Law of Obviousness*, 85 TEX. L. REV. 2051 (2007) (investigating empirical claims about the nature of nonobviousness doctrine); David L. Schwartz & Lee Petherbridge, *The Use of Legal Scholarship by the Federal Courts of Appeals: An Empirical Study*, 96 CORNELL L. REV. 1345 (2011) (applying content analysis to examine judicial use of scholarship in opinions); David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223 (2008) (studying claim construction appeals); R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105 (2004) (examining judicial claim construction methodology).

46. It is applied to judicial opinions in this study using three basic steps: first, the relevant opinions were selected; second, the selected opinions were coded; finally, data collected through coding were analyzed using statistical techniques.

Content analysis has often been applied to legal studies,<sup>47</sup> which serves to help scholars verify, analyze, and assess empirical claims about the content of the law.

The present study involves almost 120,000 judicial opinions and offers an excellent opportunity for the application of content analysis. It should be pointed out, however, that a content analysis approach presents concerns that should be kept in mind when interpreting and analyzing results. Our definition of “use” provided above implies the most prominent concerns: unobserved reasoning and strategic behavior. Thus, as noted above, the results and discussion we provide are subject to concerns that judges almost certainly “use” legal scholarship more than we can detect by measuring citation<sup>48</sup> and concerns that judges may elect to use *vel non* legal scholarship for reasons we do not attempt here to quantify.<sup>49</sup> Another general concern that flows from using judicial opinions to study the law is the concern of selection bias: perhaps cases that would most likely evince the use of legal scholarship are selected against—do not produce reported opinions—for some reason.<sup>50</sup>

Nonetheless, the current claims and conventional wisdom surrounding the use of legal scholarship by the Federal Circuit suggest a need to begin to systematically assess the topic. An important early step is for scholars to find

47. See sources cited *supra* note 45 (especially Hall & Wright).

48. Accord Paul L. Caron, *The Long Tail of Legal Scholarship*, 116 YALE L.J. ONLINE 38, 41 (2006) (“Citations reflect one particular end-use of an article; they do not measure how many times an article is read but not cited by a judge or professor.”).

49. For example, perhaps judges writing for the court strategically avoid citing legal scholarship so that rationales offered in an opinion have the appearance of flowing naturally from existing precedents, and, perhaps, judges writing alternative opinions strategically emphasize legal scholarship to bolster an argument for a change in law or to seek allies or support for a change.

50. We, however, think this is unlikely. As noted earlier, based on our examination of large numbers of unreported opinions, the overwhelming majority of citations to legal scholarship are found in reported opinions. See discussion and sources cited *supra* note 40. It thus appears at least that circuit judges are not saving the use of law reviews for unreported opinions. Nonetheless, readers may have concerns that cases likely to generate a citation are somehow more prone to settlement or disposition without an opinion. On selection bias generally, see George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1, 4, 16 (1984) (explaining that because so few cases reach an appellate judgment, such cases may not be representative of all lawsuits or disputes). On opinion publication, see Donald R. Songer, *Criteria for Publication of Opinions in the U.S. Courts of Appeals: Formal Rules Versus Empirical Reality*, 73 JUDICATURE 307 (1990) (describing some of the purposes to which judges put unpublished opinions); see also Michael Hannon, *A Closer Look at Unpublished Opinions in the United States Courts of Appeals*, 3 J. APP. PRAC. & PROCESS 199 (2001); Beth Z. Shaw, *Please Ignore This Case: An Empirical Study of Nonprecedential Opinions in the Federal Circuit*, 12 GEO. MASON L. REV. 1013 (2004).

objective ways to quantify and describe the Federal Circuit's use of scholarship. Content analysis, despite its limitations, presents a broadly understood and accepted means of approaching this important task.

## B. THE DATASET

The dataset built for this study includes information collected from all reported opinions<sup>51</sup> for all of the U.S. circuit courts of appeals. Coding was mechanical, employing two strategies.

The first relies on a query executed against each federal appellate court database for the years 1990–2008, individually.<sup>52</sup> Here, we counted each

51. Reported opinions mean those opinions in the Federal Reporters (i.e., F.2d and F.3d). To obtain count information on the raw number of reported decisions, we used the following Westlaw Circuit Court databases: CTA1R, CTA2R, CTA3R, CTA4R, CTA5R, CTA6R, CTA7R, CTA8R, CTA9R, CTA10R, CTA11R, CTADCR, and CTAFEDR. Westlaw's descriptions of each of these databases say they include "Reported cases from federal appellate decisions" and that coverage begins in 1945. The Eleventh and Federal Circuits were not created until well after that date. The Federal Circuit database appears empty before the Federal Circuit's creation in 1982. The Eleventh Circuit's database appears to replicate the Fifth Circuit's database before 1980, the year the Fifth Circuit was split into the Fifth and Eleventh Circuits. We excluded the duplicative Fifth and Eleventh Circuit data. We used Lexis to obtain the data relating to the citation of legal scholarship. Lexis provided superior results than Westlaw, as Westlaw's database apparently has an inconsistency that affects the results of a query for citations to legal scholarship. For more information about this Westlaw inconsistency, see Schwartz & Petherbridge, *supra* note 45, at 1357 n.48.

52. The electronic searches were developed over the course of several months. The searches were refined through several conversations with Westlaw and Lexis search specialists, and by trial and error. After testing numerous searches, the one that most accurately and completely captures citations to legal scholarship was selected and applied. The exact Lexis search for citations is "CITES(f.2d or f.3d) and (("L.J." or "L. J." or "L. REV." or "L.REV." or "J.L." or "LAW REVIEW" or "ct.rev." or "ct. rev.") w/15 (20\*\* or 19\*\* or 18\*\*) and not (("J.L." w/4 V. or name((J. w/2 L.) or LJ or JL or "L.J." or "J.L.") or (counsel(LJ or JL or "L.J." or "J.L.)) or ("NAT! L.J." or "NATIONAL LAW JOURNAL") or opinion("decision without published")))." The use of rev., review, and j. is meant to include as many law reviews and journals as possible. Of the top 100 law schools as ranked by U.S. News & World Report 2010 Law School Rankings, all of the flagship journals fall within this search. Of the top fifty journals using Washington & Lee's combined 2009 rankings (<http://lawlib.wlu.edu/lj/>), forty-eight of them fall within this search, and ninety-four of the top 100 are responsive. See *Law Journals: Submissions and Ranking*, WASH. & LEE U. SCH. L., <http://lawlib.wlu.edu/lj/indexOlderYears.aspx> (last visited Feb. 20, 2012) (check the box labeled "Comb." for "2009"; then click "Submit"). Excluded are *Supreme Court Review* (27); *Law & Contemporary Problems* (42); *Yale Journal on Regulation* (67); *The Business Lawyer* (68); *University of Chicago Legal Forum* (80); and *Supreme Court Economic Review* (97). See *id.* The false positive rate, i.e., coding a citation in error, is less than five percent. We ran additional searches in all circuits for all years to find citations to three specific journals—JPTOS (*The Journal of the Patent & Trademark Office Society*), AIPLA Q.J. (*The American Intellectual Property Law Association Quarterly Journal*), and the *Federal Circuit Bar Journal*. Citations to these journals were omitted from our preliminary results because the journals have non-traditional names

opinion that contained at least one citation to legal scholarship. Overall, this study involves nearly 120,000 judicial opinions from all of the circuit courts of appeals,<sup>53</sup> and about 8,150 of them evince the use of at least one piece of legal scholarship.

The second relies on a custom-made computer program capable of identifying citations to legal scholarship.<sup>54</sup> The program was executed on text files consisting of the opinions identified in the first search as evincing the use of legal scholarship, i.e., from the population of all reported opinions issued between 1990–2008, inclusive. Unlike the query defining the first strategy, the customized computer program was designed to detect full<sup>55</sup> citations to law review and law journal articles. The program could thus detect and record multiple uses per opinion. We also recorded the authoring judge for each opinion that used legal scholarship, and in the discussion these data are referred to as judge-specific data.

### III. RESULTS AND DISCUSSION

This Part begins by presenting evidence relating to the basic research question: is the conventional wisdom that the Federal Circuit uses legal scholarship less than the regional circuit courts of appeals correct? The analysis then moves to a discussion of what the results suggest about the use of legal scholarship by Federal Circuit judges, followed by an investigation of the use of scholarship in patent cases as compared to other kinds of cases. This Part includes a discussion of why, in the face of the existing empirical evidence, the claim that the Federal Circuit uses legal scholarship less than regional circuits might have been able to achieve the status of conventional wisdom.

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that when bluebooked have not always been responsive to our Lexis query. Because these three journals publish articles that may disproportionately be relevant to the Federal Circuit, and because specialty journals in other areas of law likely were already included in our preliminary results, we thought it appropriate to add this data. Nevertheless, the additional citations from these three journals did not materially affect the results or analysis.

53. The exact Westlaw search for opinions in each year YYYY is “date([YYYY]).” The word “court” is included because Westlaw prohibits date only searches. The word “court” is present in all opinions in the case caption. See Christopher A. Cotropia, *Determining Uniformity Within the Federal Circuit by Measuring Dissent and En Banc Review*, 43 LOY. L.A. L. REV. 801, 811 n.59 (2010).

54. For this we are especially grateful to Richard Tuminello and Daniel D’Addario.

55. Because it requires the full cite, however, it does not detect short form citation, e.g., “*Id.*”, “*see id.*”, etc.

A. THE FEDERAL CIRCUIT'S USE OF LEGAL SCHOLARSHIP IS SIMILAR TO THAT OF THE REGIONAL CIRCUITS

Table 1 compares the rate at which the Federal Circuit used legal scholarship over the last nineteen years to the rate at which the regional circuit courts of appeals used legal scholarship over the same period.

**Table 1: Proportion of Reported Opinions Using Legal Scholarship**<sup>56</sup>

Circuit	Proportion (x100)	Frequency (1 in)
3d	14.34%	6.97
D.C.	9.81%	10.20
2d	8.87%	11.28
1st	7.90%	12.67
7th	7.76%	12.89
6th	6.73%	14.87
4th	6.70%	14.92
10th	6.54%	15.28
9th	6.40%	15.62
5th	6.28%	15.93
Federal	5.07%	19.73
11th	4.79%	20.89
8th	2.41%	41.54

The proportion of Federal Circuit opinions using at least one piece of legal scholarship was 5.07%, or 1 in roughly 20 reported opinions. By this measure the Federal Circuit is within a range defined by all U.S. circuit courts of appeals (2.41% to 14.34%). The Federal Circuit uses legal scholarship in its opinions more frequently than the Eighth and Eleventh Circuits and less frequently than the Fifth Circuit.

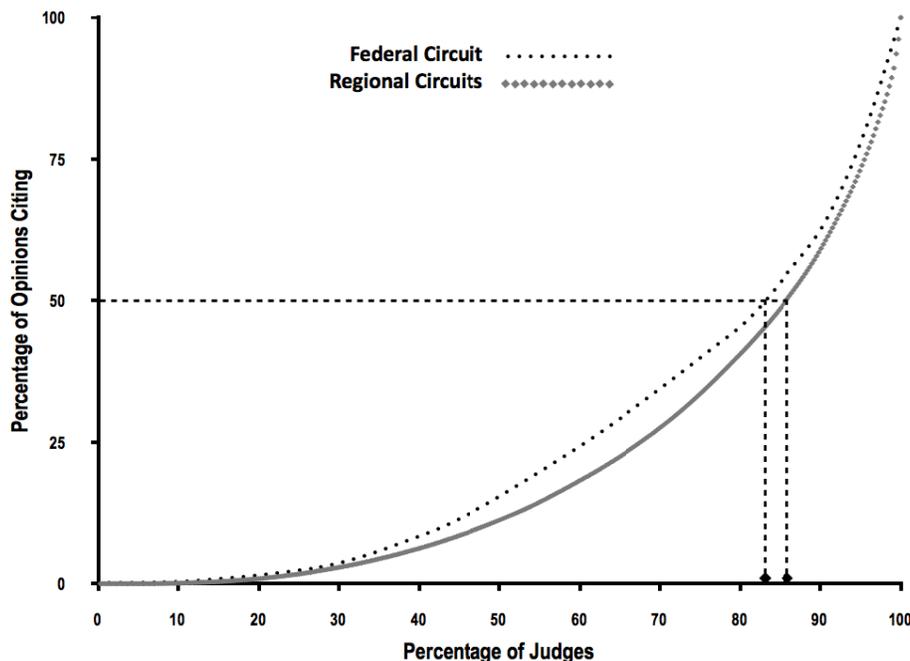
The proportional measure provides information helpful for comparing the use of legal scholarship by the Federal Circuit with the use of legal scholarship by the regional circuits. The measure is, however, rather general. To develop more specific information about the use of legal scholarship by the circuit courts of appeals, we collected judge-specific data. The judge-specific data allow us to observe how much a particular opinion author uses

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56. Table 1 compares the Federal Circuit's use of legal scholarship with that of the regional circuits. To standardize for differences in reported opinion output, proportions were used. The proportional measure is the proportion of reported opinions citing at least one piece of legal scholarship. To control for the impact of time period, all circuits were compared for the same time period; i.e., the proportion of reported opinions issued between 1990 and 2008, inclusive.

legal scholarship. In other words, we might observe that in all the opinions she authored, Judge X cited 27 law reviews. This count includes each use of a full cite but does not count short citations (e.g., “*id.*” or “*See id.*”). Figure 1 shows the cumulative distribution of judicial use of scholarship for the judges of the regional circuit courts of appeals (which include the numbered circuit courts and the D.C. Circuit) and, separately, for judges of the Federal Circuit.

Figure 1: Cumulative Distribution of Judicial Citation (1990–2008)<sup>57</sup>



57. Figure 1 shows the cumulative distributions of citation for circuit judges for all regional circuits (the lower line of gray diamond datapoints), and for the Federal Circuit (the higher, dotted line), from 1990–2008. On the abscissa the cumulative percentage of judges ( $n=356$  for the regional circuits,  $n=22$  for the Federal Circuit) moves from 0% on the left to 100% right. The ordinate shows the cumulative percentage of citations. Lines (dashed) are imposed on the graph to reveal the percentage of judges on either side of 50% of all citation to legal scholarship. The raw data point nearest 50% citations for the regional circuit judges is 50.27%, which corresponds to 85.96% of regional circuit judges. Thus, 14% (or fifty of the 356 regional circuit judges in the data) account for half of all citations to legal scholarship. The raw data point nearest 50% citations for the Federal Circuit judges is 46.37%, which corresponds to 81.82% (or 17 of 22) of Federal Circuit judges in the data. The next nearest data point is at 54.33%, which corresponds to 86.36% (or 18) of Federal Circuit judges in the data, leaving four judges who generate the remaining 45.67% of citations. The data reported here count full citations in opinions in the dataset (so one opinion may give rise to more than one counted citation). The graph was created using Numbers.

As is apparent, the cumulative distributions illustrated in Figure 1 each exhibit a tail to the left, encompassing a large cohort of judges. More specifically, for the regional circuits (represented by the lower line of gray diamond datapoints), 86% of the judges account for 50% of the citations; for the Federal Circuit (represented by the dotted line), 84% of the judges account for half of the citations. Figure 1 indicates that a small cohort of judges—a mere 14% of the regional circuit judges<sup>58</sup> and 16% of the Federal Circuit judges—account for the other half of the citations. The similarity in the pattern of use of legal scholarship suggests that Federal Circuit judges' propensity to use legal scholarship is much like that of regional circuit judges. This is consistent with Table 1, which finds that the Federal Circuit authors opinions using legal scholarship at a rate similar to some other circuit courts. Thus, the Federal Circuit is not an outlying court.<sup>59</sup>

The presence of a skewed distribution and what it implies—the presence of an outlying cohort of judges especially likely to cite legal scholarship—suggest that the proportional summary of citation in Table 1, while helpful, may not be entirely representative of a circuit's use of scholarship. In particular, the probability of outlying judges suggests that obtaining an accurate comparison of judicial use of legal scholarship between circuits requires a more robust estimator of the average. The basic concern is that one or two judges in a circuit who use lots of scholarship will distort the citation count for the circuit, making it appear that *all* of the judges on the circuit use scholarship more prolifically than they actually do.

We calculated two estimators of central tendency for judicial use of legal scholarship: the median and the mean. The median is robust<sup>60</sup> to the mean, so while both provide some information useful for describing judicial use of legal scholarship from a circuit-to-circuit perspective, given the distribution, perhaps the more useful measure of central tendency is the median. Table 2 summarizes the data, which is ordered about the median.

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58. While all of the regional circuit courts have been aggregated in Figure 1, most of the courts have a distribution including a small cohort responsible for most of the citing.

59. An "outlier" is an observation that lies an abnormal distance from the other values.

60. A robust statistic is resistant to errors in the results, produced by deviations from assumptions such as the assumption that the sample has a normal distribution. Even if the assumptions are only approximately satisfied, the robust estimator will be asymptotically unbiased and still have a reasonable efficiency and reasonably small bias.

Table 2: Median and Mean Citations per Judge<sup>61</sup>

Circuit	Median Citations/Judge	Mean Citations/Judge
7th	55	89.05
1st	43	70.31
3d	36.5	52.38
2d	32	44.58
10th	31	37.29
D.C.	24	49.38
5th	22	36.20
9th	21	35.14
Federal	18.5	22.59
8th	15.5	21.12
4th	14	22.29
6th	13	26.05
11th	13	21.78

Table 2 shows a range of medians from 13 to 55. The Federal Circuit (18.5) falls fairly close to the middle (22), suggesting the interpretation that the Federal Circuit is, again, pretty similar to other circuits in its use of legal scholarship. The median judge at the Federal Circuit uses legal scholarship somewhat less often than the median judge at the Ninth Circuit (compare 18.5 to 21), and somewhat more often than the median judge at the Eighth Circuit (compare 18.5 to 15.5). The median judges on the Fourth (14), Sixth (13), and Eleventh Circuits (13) use scholarship even less. Thus, Federal Circuit judges seem, on average (i.e., median), much like their counterparts in other circuits when it comes to use of legal scholarship.



In brief summary, the proportion of Federal Circuit opinions using legal scholarship is similar to that of the other circuit courts of appeals. The distribution of use across the judges of the Federal Circuit is similar to that of the other circuit courts of appeals. And, the median use of scholarship by

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61. Table 2 compares the average number of full citations to legal scholarship per judge in reported opinions issued between 1990 and 2008, inclusive. Two measures of “average” (or central tendency) are provided: the median, the middle number of citations for the judges of the circuit during the period; and the mean, the number obtained by summing all of the citations in the circuit for the period divided by the number of judges authoring opinions during the period. The circuits are ordered about the median. The data reported here counts full citations in opinions in the dataset (so one opinion may give rise to more than one counted citation).

Federal Circuit judges is similar to the median use of scholarship by the judges of other circuit courts of appeals (indeed, it is close to the median of the medians).<sup>62</sup> We think the results presented in this Part all point in the same direction: the Federal Circuit uses legal scholarship quite similarly to its sister circuits.

From the broader perspective of national circuits—those with national responsibility for certain subject matter—the performance of the D.C. Circuit is also telling. Table 1 shows that, like the Federal Circuit, the D.C. Circuit's use of scholarship is within a range defined by other U.S. circuit courts of appeals. Indeed, within that range, the proportion of reported D.C. Circuit opinions citing legal scholarship is second only to that of the Third Circuit. The D.C. Circuit is also sixth-highest among all circuit courts of appeals in terms of median citations per circuit judge, as shown in Table 2. Thus, the above data suggest that a claim that national circuit courts are insular, disconnected, and lacking in intellectual curiosity, based on observations about such courts' use of legal scholarship, is not particularly well founded.

Taken together, both in light of the current debate over the Federal Circuit's use of legal scholarship and in light of the development of information relevant to policymakers who may have future plans to create more subject matter-bounded courts, the results presented to this point provide a substantial advance in understanding over the existing literature. That said, this seems like a good place to emphasize that these results have not painted a complete picture of the Federal Circuit's (or any court's) use of legal scholarship. The level of development here is still fairly general.<sup>63</sup> Additional empirical work and theoretical analysis are needed. We offer some humble suggestions for potential future areas of work in Part IV, which follows Section III.B in which we hypothesize about the meaning of our findings.

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62. The median judge of all circuit courts used scholarship 23 times during the relevant time period.

63. For example, we think there are still other ways of empirically assessing use, e.g., measuring the quality of the use, measuring the subject matter of opinions in which scholarship is used, or perhaps in measuring the quality of the scholarship used, etc. that, if made the subject of an empirical investigation might, if well done, someday challenge our interpretation. In other words, there is, as is always the case, more to know.

## B. WHAT IS HAPPENING HERE?

1. *The Federal Circuit Is Short One (or Maybe Two) Legal Super Citers*

Table 2 is consistent with the interpretation that outlying judges contribute substantially to a circuit's use of legal scholarship. In nearly every circuit, the median and mean show substantial differences and in every such instance the mean is higher than the median. This suggests that circuits with very high mean numbers but more modest medians include one or some small number of judges—outliers—who use legal scholarship much more than the rest of their colleagues (and much more than most other circuit judges).

Indeed, the Federal Circuit is one of the few courts where both measures of central tendency appear somewhat closer together.<sup>64</sup> This observation leads to the intriguing suggestion that to the extent the Federal Circuit might differ from some of the regional circuits in terms of its mean citation count, a reason may be as simple as the lack of one, or maybe two, judges who are—to coin a phrase—“super citers” of legal scholarship. In other words, the only difference between the Federal Circuit and the other circuits may be that the Federal Circuit is short one or perhaps two judges who are extreme users of legal scholarship.<sup>65</sup>

In an attempt to illustrate this point, we “traded” the top two citing judges from the Ninth Circuit with the top two citing judges from the Federal Circuit. We expected to observe that the trades would increase the mean citations per judge at the Federal Circuit and decrease the mean citations per judge at the Ninth Circuit. Table 3 shows an impact on the mean judicial citation consistent with these expectations.

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64. *See supra* Table 2.

65. This is not to say that the lack of one or two super citers is analytically insignificant. As we explain in Section IV.A, future research into the effects of super citer judges should be explored.

**Table 3: Trading the Two Top Citing Judges on the Federal Circuit with the Two Top Citing Judges on the Ninth Circuit Produces a Federal Circuit with a Higher Mean Citations/Judge Than the Ninth Circuit<sup>66</sup>**

Circuit	Median Citations/Judge	Mean Citations/Judge	Pre-Trade Mean Citations/Judge
7th	55	89.05	Same
1st	43	70.31	Same
3d	36.5	52.38	Same
2d	32	44.58	Same
D.C.	24	43.38	Same
10th	31	37.29	Same
5th	22	36.20	Same
Federal	18.5	32.73 ( $\Delta +10.14$ )	22.59
9th	21	31.23 ( $\Delta -3.91$ )	35.14
6th	13	27.50	Same
4th	14	22.29	Same
11th	13	21.78	Same
8th	15.5	21.12	Same

Trading the top two citing judges from the Ninth Circuit with the top two citing judges from the Federal Circuit produces a marked increase in the mean citations per Federal Circuit judge (10.14 citations) and an appreciable decrease in the mean citations per judge at the Ninth Circuit ( $-3.91$  citations). Moreover, the trade with the Ninth Circuit actually gives the Federal Circuit a higher mean citation count per circuit judge than the Ninth Circuit (compare 32.73 with 31.23) and places the Federal Circuit at the mid-point of circuits in terms of mean citations. Overall, trading the top two citing judges moves the Federal Circuit up from tenth-most in terms of mean citations per judge to seventh-most, while the Ninth Circuit moves downward from eighth-most to ninth-most.<sup>67</sup>

66. Table 3 illustrates the impact on the observed medians and observed means (from Table 2) of trading the top two citing judges from the Federal Circuit (CTAF) with the top two citing judges from the Ninth Circuit (9th). The means calculated after the trades are reported with the change ( $\Delta$ ) in mean. For obvious reasons the medians remain the same. Notice that trading the top two citing judges from the Ninth Circuit with the top two citing judges from the Federal Circuit produces a marked increase in the mean citation per Federal Circuit judge and a marked decrease in the mean citations per judge at the Ninth Circuit. The top two citing judges at the Federal Circuit are Judges Plager and Newman. The top two citing judges at the Ninth Circuit are Judges Kozinski and Reinhardt.

67. We examined the trend in direction effected by trading the top two citing judges at the Federal Circuit with the top two citing judges at other circuits. While there is some variation in size of effect, generally speaking, trading the top two citing judges at the Federal

While we caution against the over-interpretation of Table 3, we do think that, taken together with the results presented in Section III.A, these data add support to the idea that the Federal Circuit is a lot like the other regional circuits in its citation to legal scholarship. To the extent the Federal Circuit can be said to differ from the other circuits, an important part of the explanation may be found in the absence on the Federal Circuit of just one to two judges who are legal scholarship super citers.

We think this observation reveals an opportunity for judicial entrepreneurship at the Federal Circuit (and some other circuits as well). To take advantage of it, all that needs to happen is for one or two judges now on the Federal Circuit (or other circuits) to become super citers, or—as there are likely to be several vacancies on the Federal Circuit over the next few years—for the President to appoint and the Senate to confirm some new circuit judges who are or may become legal scholarship super citers.

We address concerns about the desirability of such entrepreneurship in a moment, but we first note that some of the known legal scholarship super citers might be viewed by many as having an outsized influence on the development of the law.<sup>68</sup> Among the leading users of legal scholarship are judges that nearly all lawyers have heard of either from law school or from practice and it seems to us that they are generally held in high regard by the profession. These include Judges Posner (7th), Easterbrook (7th), Calabresi (2nd), Becker (3rd), and Kozinski (9th). Circuit judges who desire to build

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Circuit with the top two citing judges at any circuit that had a higher mean citations per judge than the Federal Circuit increased the mean citations per judge of the modified Federal Circuit when compared to pre-trade levels and decreased the mean citations per judge at the modified regional circuit compared to pre-trade levels. These findings are consonant with the interpretation that the Federal Circuit differs from other circuits in that it lacks one or two legal scholarship super citers.

68. We make no claim about super citers having such an influence because we have not performed the study necessary for this kind of empirical claim. A study assessing the impact of these and similar judges on American jurisprudence would be a substantial project and would need to be substantially resourced, but it seems logically possible. Even without the benefit of a study, we do think legal scholarship super citers are indisputably well-known judges whose writings, generally speaking, are well represented in materials used to teach students of the law. See, e.g., Mitu Gulati & Veronica Sanchez, *Giants in a World of Pygmies? Testing the Superstar Hypothesis with Judicial Opinions in Casebooks*, 87 IOWA L. REV. 1141, 1143 (2002) (analyzing the selection of cases for casebooks through the lens of the “superstar effect”). Whether this representation occurs because of the significance of their respective opinions to the development of doctrine and policy, due to a special relationship they might enjoy with those who teach law, or due to their relatively long tenures as judges in the federal appellate system is hard to say. However, it seems that each of these factors could contribute to their notoriety to some extent.

similar legacies could adopt similar behaviors, both citing to and authoring legal scholarship.

Is adding a prolific user of legal scholarship to the Federal Circuit (or to any circuit) a good idea? At bottom, we think this is an area for future study. We do, however, offer the suggestion that the answer might be “Yes.” The reason we think so is because super citers might encourage jurisprudential innovation by serving a disruptive function. Having a small number of judges (as opposed to all of the judges in a circuit) regularly study and use legal scholarship allows scholarship to make its way into the jurisprudence at a measured rate. Once in the jurisprudence, it can be mulled over and chewed on by the remaining judges who rely upon more traditional tools of developing the law: studying cases and doctrine and following the facts of the dispute at issue. This structure has the potentially salutary effect of introducing new ideas to the law while at the same time preserving the perception that appellate decisions flow fairly comfortably from established principles and precedents (and are not, therefore, random and unpredictable). A super citer may influence other judges—and thus the law—over time, but jurisprudential change could still occur gradually.

In any event, this Article describes a straightforward path by which the Federal Circuit might become a leading user of legal scholarship. Just one or perhaps two judges need to decide that it is worth using legal scholarship more regularly in opinions.

## 2. *What About the Patent Cases?*

*Toward a Cautious Approach to Obeisance*<sup>69</sup> found that the regional circuits cited scholarship in copyright and trademark opinions roughly four times as often between 1996 and 2000 as the Federal Circuit did in patent opinions.<sup>70</sup> Patent appeals, however, make up a substantial fraction of the Federal Circuit’s docket, while copyright and trademark cases make up a comparatively smaller fraction of the dockets of the Second and Ninth Circuits.<sup>71</sup> The difference in the frequency with which the Federal Circuit and the separate regional circuits experience these so-called “intellectual property” cases suggested to us that comparing the Federal Circuit’s use of legal scholarship in patent cases to the regional circuits’ use of legal

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69. See Nard, *supra* note 20.

70. *Id.* at 682–83.

71. The Federal Circuit may author more than an order of magnitude more patent opinions than the Second and Ninth Circuits (and, perhaps by analogy, other regional circuits) author copyright and trademark opinions. See *id.* at 683 n.55 (“The Federal Circuit decides about eleven patent cases to every one copyright and trademark case decided by the Second and Ninth Circuits.”).

scholarship in copyright and trademark cases might be misleading. More specifically, our concern is that an analysis focused on copyright and trademark cases may not represent an “apples to apples” comparison because such cases might be more exotic to the regional circuits than patent cases are to the Federal Circuit. It might, instead, be more correct to comprehend Federal Circuit patent opinions as analogous to regional circuit opinions that address categorical topics that are more regularly part of the dockets of the regional circuit courts of appeals. We therefore thought it important to compare the Federal Circuit’s use of legal scholarship in patent cases to the regional circuits’ use of legal scholarship across the docket. Table 4 summarizes the data, comparing the proportion of Federal Circuit patent opinions using legal scholarship with the proportion of all regional circuit opinions using legal scholarship and the proportion of all regional circuit civil opinions using legal scholarship.<sup>72</sup>

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72. We created a “civil only” comparison because we were concerned that criminal opinions might be less likely to use scholarship, and because the Federal Circuit does not have criminal jurisdiction.

**Table 4: Proportion of Federal Circuit Reported Patent Opinions Using Legal Scholarship Compared to Regional Circuit Reported Opinions<sup>73</sup>**

Circuit	All Reported		Civil Only Reported	
	Proportion (x100)	Frequency (1 in)	Proportion (x100)	Frequency (1 in)
3d	14.34%	6.97	15.23%	6.56
D.C.	9.81%	10.20	9.35%	10.70
2d	8.87%	11.28	9.78%	10.23
1st	7.90%	12.67	8.93%	11.20
7th	7.76%	12.89	9.23%	10.83
6th	6.73%	14.87	7.25%	13.80
4th	6.70%	14.92	7.22%	13.86
10th	6.54%	15.28	7.46%	13.41
9th	6.40%	15.62	6.83%	14.65
5th	6.28%	15.93	7.39%	13.53
Federal*	6.01%	16.64	6.01%	16.64
11th	4.79%	20.89	5.58%	17.93
8th	2.41%	41.54	2.80%	35.66

\* *patent opinions only*

Table 4 indicates that the Federal Circuit, again, uses scholarship more than some regional circuits and less than others,<sup>74</sup> a finding consistent with the idea that the Federal Circuit is not much of an outlier when it comes to engaging with legal scholarship. We think this result helps to frame the debate about the Federal Circuit's use of scholarship because it suggests that the Federal Circuit—at least in terms of use of legal scholarship—may be handling patent opinions like it and other circuits seem to handle many of their opinions.<sup>75</sup>

73. Table 4 compares the Federal Circuit's use of legal scholarship in reported patent opinions with that of the regional circuits in all reported opinions and in all reported opinions addressing civil disputes. To standardize for differences in reported opinion output, proportions were used. The proportional measure is the proportion of reported opinions citing at least one piece of legal scholarship. To control for the impact of time period, all circuits were compared for the same time period; i.e., the proportion of reported opinions issued between 1990 and 2008, inclusive.

74. Some of the people with whom we have shared this project suggest the possibility that patent cases are more complex than some of the civil cases heard by the regional circuits. Assuming this might be true, it is possible that the use of legal scholarship in patent cases might be fruitfully compared to the use of legal scholarship in some unknown subset of regional circuit civil cases.

75. A close observer will notice that the Federal Circuit modestly uses legal scholarship more often in patent cases than in their overall caseload. Compare Table 1 with Table 4. A crude search suggests that there is some heterogeneity in use of scholarship that depends on

We want to emphasize that we think our results are consistent with those presented in *Toward a Cautious Approach to Obeisance*.<sup>76</sup> We have no reason to think that empirics gathered there are incorrect in any way. We think, however, that the results presented here and the results presented in *Toward a Cautious Approach to Obeisance* suggest the possibility that patent opinions in the hands of the Federal Circuit might be more akin to criminal, employment, contract, and complex litigation opinions in the hands of the regional circuits. In other words, the Federal Circuit might handle its patent opinions like the various regional circuits handle opinions dealing with subject matter with which they have substantial experience. This suggests that the lesson of *Toward a Cautious Approach to Obeisance* might be that the Second and Ninth Circuits (and perhaps by analogy the other regional circuits) use legal scholarship more often when dealing with copyright and trademark opinions than when dealing with other areas of law. If so, it raises an interesting concern, which we develop more fully in Part IV, *infra*.

3. *How Did the Current Understanding That the Federal Circuit Uses Legal Scholarship Substantially Less Often Than the Regional Circuits Come To Be Conventional Wisdom?*

Overall, we think our results seriously raise the possibility that the Federal Circuit uses legal scholarship at a rate (and manner) similar to that of other regional circuits. Whether this observation will be confirmed by others, and whether it will ultimately translate into a finding that the Federal Circuit uses scholarship with as much depth as other courts, is a question for future study. But future work notwithstanding, we find it puzzling that the claim that the Federal Circuit uses legal scholarship less than other circuits achieved the status of conventional wisdom. This is especially so given the state of the empirical evidence leading into this study, Professor Nard's clear explanation for why the information presented in *Toward a Cautious Approach to Obeisance* should not be over-interpreted, and the relative ease of availability of the information we gathered. In short, why did not more people see the existing

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the subject matter of the opinions the court authors. For example, there are very few or no citations in appeals from Veterans Claims (no citations in 350 opinions, or 0.00%); the Merit System Review Board (5 citations in 536 opinions, or 0.93%); and Board of Contract Appeals (2 citations in 220 opinions, or 0.90%). Appeals from cases involving takings claims cited scholarship at higher levels, about 15.82%. Why the Federal Circuit uses scholarship slightly more in patent cases than in other types of cases is unclear, but one possible explanation is that Federal Circuit clerks might be more likely to possess technical backgrounds and come to the court especially knowledgeable about and interested in patent law, with heightened awareness of patent scholarship.

76. The two studies are also somewhat hard to compare as both studies count the use of legal scholarship differently.

information more like Professor Nard and Professor Dreyfuss did: as incomplete and in need of further study?

Here, we speculate as to how the claim that the Federal Circuit uses legal scholarship substantially less often than the regional circuits came to be conventional wisdom. As we describe in more detail below, the explanation involves an amalgamation of general academic discontent with judicial treatment of legal scholarship, some fairly harsh judicial comments about the value of legal scholarship, and some anecdotal information that suggests that some judges of the Federal Circuit have a view of legal scholarship similar to that of . . . well . . . judges on other circuit courts of appeals.

The debate about the Federal Circuit's use of legal scholarship fits within a broader debate about the role and use of legal scholarship by all courts. Some have argued, based on prior empirical studies, that the level of use of scholarship by all circuits is either moving downward or is less than expected.<sup>77</sup> Academics have complained that courts are ignoring the

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77. See, e.g., Michael McClintock, *The Declining Use of Legal Scholarship by Courts: An Empirical Study*, 51 OKLA. L. REV. 659, 660 (1998) (“This survey reveals a 47.35% decline in the use of legal scholarship by courts over the past two decades, the most notable decline occurring in the past ten years.”); Blake Rohrbacher, *Decline: Twenty-Five Years of Student Scholarship in Judicial Opinions*, 80 AM. BANKR. L.J. 553 (2006) (finding that “judicial citation of student notes has plunged since 1980”); Louis J. Sirico & Beth A. Drew, *The Citing of Law Reviews by the United States Courts of Appeals: An Empirical Analysis*, 45 U. MIAMI L. REV. 1051, 1052 (1991) (finding that the federal appellate courts “cite law reviews infrequently”); Louis J. Sirico, Jr. & Jeffrey B. Margulies, *The Citing of Law Reviews by the Supreme Court: An Empirical Study*, 34 UCLA L. REV. 131, 134 (1986) (finding a “substantial” decline in the Supreme Court’s citation to legal periodicals); see also David Hricik & Victoria S. Salzmann, *Why There Should Be Fewer Articles Like This One*, 38 SUFFOLK U. L. REV. 761, 778 (2005) (claiming an “already apparent” “trend” that law review articles are deemed “not merely unhelpful, but useless to the bench and bar”); Carissa Alden et al., Roundtable Discussion Paper, Trends in Federal Judicial Citations and Law Review Articles 2 (Court of Appeals for the Second Circuit: Roundtable Discussion, Benjamin N. Cardozo Sch. of Law, Mar. 8, 2007), available at [http://graphics8.nytimes.com/packages/pdf/national/20070319\\_federal\\_citations.pdf](http://graphics8.nytimes.com/packages/pdf/national/20070319_federal_citations.pdf) (finding that “[c]ourts cited law reviews more frequently in the 1970s and 1980s than they do today”); accord Gregory Scott Crespi, *The Influence of a Decade of Statutory Interpretation Scholarship on Judicial Rulings: An Empirical Analysis*, 53 SMU L. REV. 9, 11 (2000) (examining a subset of statutory interpretation articles and finding that “almost half of the articles published between 1988 and 1995 have been cited in at least one judicial opinion” but that this finding “is a relatively high figure” when compared with citation literature); Gregory Scott Crespi, *The Influence of Two Decades of Contract Law Scholarship on Judicial Rulings: An Empirical Analysis*, 57 SMU L. REV. 105, 111 (2004) (examining a subset of contract law articles and finding that 36.4% had been judicially cited). But see Schwartz & Petherbridge, *supra* note 45 (finding evidence of an increase in the citation of legal scholarship over time).

contributions of the legal academy,<sup>78</sup> and some circuit judges have pushed back in very forceful terms.<sup>79</sup>

Like their circuit court brethren, Federal Circuit judges have been part of this debate and their comments seem very similar to those offered by other judges: academic work is either not very useful, or is not normally appropriate to bring to bear on the judicial decisionmaking process.<sup>80</sup> Thus,

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78. We do not mean to suggest the debate is entirely one-sided. Some legal scholars argue that much legal scholarship is not worth judicial attention. *See, e.g.*, Hricik & Salzman, *supra* note 77 (positing that law professors write more for themselves and less for decisionmakers and arguing that law professors should write more for decisionmakers and less for themselves); Gerald F. Uelmen, *The Wit, Wisdom, and Worthlessness of Law Reviews*, CAL. LAW. (June 2010), <http://www.callawyer.com/story.cfm?eid=909875&evid=1>; *see also* Erik M. Jensen, *The Shortest Article in Law Review History*, 50 J. LEGAL EDUC. 156 (2000) (having as its entire text: “This is it.” and arguing that “it’s been a long time since law review articles had to have anything to do with anything” and that “[t]his article has as much content as the other stuff in this issue, doesn’t it?”).

79. *See, e.g.*, Thomas L. Ambro, *Citing Legal Articles in Judicial Opinions*, 80 AM. BANKR. L. J. 547, 549 (2006) (“When we [judges] do read the occasional article, we find it often not only unpersuasive, but even at times at odds with accepted means of analysis.”); Harry T. Edwards, *The Growing Disjunction Between Legal Education and Legal Scholarship*, 91 MICH. L. REV. 34, 35 (1992) (characterizing legal scholarship from “elite law faculties” as “abstract scholarship that has little relevance to concrete issues, or addresses concrete issues in a wholly theoretical manner” and offering the impression that “judges, administrators, legislators, and practitioners have little use for much of the scholarship . . . produced by members of the academy”); Judith S. Kaye, *One Judge’s View of Academic Law Review Writing*, 39 J. LEGAL EDUC. 313, 319 (1989) (“Prominent law reviews are increasingly dedicated to abstract, theoretical subjects . . . and less and less to practice and professional issues . . .”); *id.* at 320 (“I am disappointed not to find more in the law reviews that is of value and pertinence to our cases.”); Richard Posner, *Legal Scholarship Today*, 115 HARV. L. REV. 1314, 1320–21 (2002) (criticizing legal scholarship for lack of originality, obtuseness, and length). The disappointment jurists have shown for legal scholarship seems in some instances to have reached the level of disdain. *See, e.g.*, Jess Bravin, *Chief Justice Roberts on Obama, Justice Stevens, Law Reviews, More*, WALL ST. J. L. BLOG (Apr. 7, 2010, 7:20 PM), <http://blogs.wsj.com/law/2010/04/07/chief-justice-roberts-on-obama-justice-stevens-law-reviews-more/> (reporting Chief Justice Roberts’ statement that he does not pay much attention to academic legal writing and that law review articles are not “particularly helpful for practitioners and judges”); Adam Liptak, *When Rendering Decisions, Judges Are Finding Law Reviews Irrelevant*, N.Y. TIMES, Mar. 19, 2007, at A8 (quoting Chief Judge Dennis G. Jacobs: “I haven’t opened up a law review in years . . . . No one speaks of them. No one relies on them.”); *accord* United States v. Six Hundred Thirty-Nine Thousand Five Hundred and Fifty-Eight Dollars (\$639,558) in U.S. Currency, 955 F.2d 712, 722 (D.C. Cir. 1992) (Silberman, J., concurring) (“I suppose, now that many of our law reviews are dominated by rather exotic offerings of increasingly out-of-touch faculty members, the temptation for judges to write about issues that interest them—whether or not raised by the parties or constituting part of the logic of the decision—is even greater.”).

80. *See In re Fisher*, 421 F.3d 1365, 1378 (Fed. Cir. 2005) (refusing to consider arguments directed to the “practical implications” of the court’s legal doctrine because as public policy considerations they are “more appropriately directed to Congress as the

the specific debate over the Federal Circuit's use of scholarship seems largely to mirror the more general debate between judges and academics about the usefulness of legal scholarship to courts. On the one hand, Federal Circuit judges have complained that scholarship is often not useful to the decisional process. On the other hand, at least some patent academics are of the view that scholarship provides sufficiently important insights and fits comfortably enough within the accepted parameters of the legal decisional process that the Federal Circuit should<sup>81</sup> use legal scholarship more than it does (or at

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legislative branch of government, rather than this court as a judicial body responsible simply for interpreting and applying statutory law"); Marcia Coyle, *Critics Target Federal Circuit: Reversals Cast Patent Court in Harsh Light*, NAT'L L.J. (Oct. 16, 2006), <http://www.law.com/jsp/nlj/PubArticleNLJ.jsp?id=900005464916> (reporting Chief Judge Michel's statement that the Federal Circuit has "an extensive body of caselaw, and that and Supreme Court precedent is what we would mainly be citing"); Dreyfuss, *Continuing Experiment*, *supra* note 7, at 772 n.46 (citing materials reflecting Judge Lourie's rejection of legal scholarship criticizing the written description requirement); Plager & Pettigrew, *supra* note 14, at 1751 (expressing empathy for the concern of academics with whether courts cite academic commentary but pointing out that judges' use of accepted decisional processes likely limits the direct influence of much scholarship); Hon. Alan Lourie, Keynote Address at the Joint Patent Practice Seminar of the Connecticut, New York, New Jersey, and Philadelphia Intellectual Property Law Association (May 3, 2006), *in* 72 PAT. TRADEMARK & COPYRIGHT J. (BNA) 41, 41 (May 12, 2006) (remarking that the court is "not a debating society having debates with outside groups on what the law should be").

There is some indication that the patent bar too finds academic work to be of little use. *See* Dennis Crouch & Jason Rantanen, *Citation of Law Review Articles*, PATENTLY-O BLOG (Nov. 20, 2008, 11:26 PM), <http://www.patentlyo.com/patent/2008/11/citation-of-law.html> ("On a lark, I looked at the table of authorities for about two hundred party briefs filed in the past six months at the Federal Circuit. These briefs each cited many cases and statutes. Notably absent, however, were cites to law review articles. Out of the two hundred briefs, only two law review articles were cited . . ."). The view of patent scholarship implied by this anecdote, if representative, presents the interesting question of whether the situation exists because of the nature and purpose of patent scholarship, because of judges' views about the usefulness of the scholarship, or because of practitioner views about the usefulness of legal scholarship.

81. *See, e.g.*, NRC, *supra* note 1, at 86 (recommending, *inter alia*, that the Federal Circuit encourage briefs that "draw upon insights from . . . legal scholarship on the patent system, and the growing body of patent-related economic literature"); Nard, *supra* note 20, at 675 (expressing the desire that Federal Circuit judges be more receptive to scholarship in their published opinions); *id.* at 685 ("[T]he court verges on the abstract by failing to give adequate weight to empirical and economic scholarship."). Others are less strident but identify the issue of the Federal Circuit's use of academic work as one of concern. *See, e.g.*, Dreyfuss, *Continuing Experiment*, *supra* note 7, at 782 (expressing concern over the economic impacts of patents directed to biotechnological inventions and stating, "[t]hese are all issues that are being heavily investigated by legal and economic theorists, yet the court does not cite the literature these scholars have generated"). Others contend that the Federal Circuit should rely even more heavily on academic work than other courts. *See, e.g.*, Nard & Duffy, *supra* note 14, at 1648 (expressing concern over the "reluctance [of the Federal Circuit] to engage the empirical and social sciences literature on patent law as a way to offset its relative

least as it is generally believed to do).<sup>82</sup> As these two perspectives compete for dominance, it is only natural for adherents to seek evidence to support their claims. This encourages resort to empirical studies. But if someone seeking empirical guidance researched the literature the way we did, or the way Professor Dreyfuss did,<sup>83</sup> then that person should find that Professor Nard's is the only substantial study looking at the Federal Circuit's use of legal scholarship. In the context of the debate over the Federal Circuit's use of legal scholarship, that study's most relevant finding is that the Second and Ninth Circuits in trademark and copyright cases cited scholarship roughly four times as often as the Federal Circuit did in patent cases. If this finding could be extrapolated to broadly mean that the Federal Circuit is somehow more extreme in its (non)use of scholarship, it provides additional support for normative appetites favoring increased Federal Circuit use of scholarship. This, we think, might at least partially explain the empirical assumption that is the conventional wisdom.

#### IV. FUTURE DIRECTIONS FOR WORK

The discussion that follows is primarily theoretical. It identifies and analyzes questions revealed by this study and sketches out ideas for future work examining the use of legal scholarship by particularly the Federal Circuit, and by analogy other subject matter-bounded national circuits that legislators in the United States and abroad may seek to create.

##### A. WHAT FACTORS INFLUENCE THE FEDERAL CIRCUIT'S DECISION TO USE LEGAL SCHOLARSHIP?

It is clear that sometimes the federal circuit courts of appeals elect to use legal scholarship. It is less clear what distinguishes the situations in which the courts use legal scholarship from those in which they do not. We know more about the federal appellate courts in general, and less about the Federal Circuit (or another subject-matter bounded court) in particular, although the results of this study suggest the possibility that what is known about regional circuits might well apply to the Federal Circuit.

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institutional disconnectedness from the various technological communities its decisions affect").

82. Perhaps the most glaring difference between the Federal Circuit-specific debate and the more general debate is that the general debate includes a somewhat robust intra-academic debate over the usefulness of scholarship to judges; our research suggests that this perspective is mostly missing from the literature when it comes to academic work implicating Federal Circuit jurisprudence.

83. See Dreyfuss, *Continuing Experiment*, *supra* note 7, at 782.

Turning first to the federal circuit courts of appeals in general, we have previously empirically identified several variables that impact the use of legal scholarship.<sup>84</sup> These include (1) the workload of the courts,<sup>85</sup> (2) the number of constitutional cases a court hears,<sup>86</sup> (3) judicial identity,<sup>87</sup> and (4) judicial ideology.<sup>88</sup>

While we know some factors that influence court practices, other areas are still largely unknown. For example, we do not know the characteristics of the scholarship used by the courts. In other words, we have little information about whether the cited scholarship is doctrinal, law and economics, historical, empirical, or another type of legal scholarship.

Moving now to the Federal Circuit, while analogies may be appropriate, less is empirically known. For example, does the court's decision to use legal scholarship depend on the type of matter it is addressing? Another important question is whether the type of scholarship used by the Federal Circuit differs from the scholarship used by the regional circuits. Given a national court's presumed familiarity with doctrine for the areas of law it oversees, doctrinal scholarship may be of diminished usefulness, especially relative to a generalist court. Nonetheless, like all courts, the Federal Circuit presumably has limitations when it comes to acquiring and developing certain sorts of information, e.g., historical and empirical information about the patent system and the impact of doctrinal rules. Does the Federal Circuit especially look to scholarship that provides such information? Furthermore, a national court permits litigants and trade organizations to focus resources on a single court of appeal. Interested parties and trade organizations often submit amici briefs to the Federal Circuit, which may be quite helpful to the court and further diminish the need for or role of legal scholarship. Thus, can amici filings be linked to the court's use of scholarship? Finally, law professor culture and behavior may differ for those areas of law entrusted to the Federal Circuit. Patent scholars in particular may, for example, utilize amici filings more often, or write articles of more or less use to the court.

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84. Schwartz & Petherbridge, *supra* note 45.

85. *Id.* at 1366. The heavier the workload—for example an increased number of reported opinions issued per active judge—correlates with a reduced use of legal scholarship.

86. *Id.* at 1367. More constitutional cases predicts more use of scholarship.

87. *Id.* The study reported here adds to the understanding of the role of judicial identity, namely that some circuit judges appear to be super citers.

88. *Id.* at 1368. The more liberal a court is, as measured by Judicial Common Space Scores, the more frequently the court uses legal scholarship.

B. DOES THE FEDERAL CIRCUIT USE LEGAL SCHOLARSHIP AS MUCH AS IT SHOULD?: FOUR PILLARS

At this early stage in the study of the Federal Circuit's relationship to legal scholarship specifically (and national circuits' more generally), we think that the studies that might be provoked by our results could take several different styles. For example, some could be empirical with the goal of providing firmer ground from which to develop conceptual and theoretical models for how a national circuit should behave when it comes to legal scholarship. Simultaneously, some future work could be more purely normative, perhaps providing value by sharpening the focus of empiricists and theoreticians, or by translating the results of primary studies into forms suitable for use by policymakers.

In the remainder of this Part, we sketch out four pillars that represent basic areas for future work in the study of the Federal Circuit's relationship to legal scholarship. We think they have obvious implications for other national circuit courts structured similarly to the Federal Circuit.

1. *Does the Subject Matter Entrusted to the Federal Circuit Require a Greater Judicial Use of Scholarship?*

Congress assigned a broad array of subject matter to the Federal Circuit.<sup>89</sup> One area of future study is whether the various subject matters assigned to the court are all the same in their need for judicial attention to scholarship.<sup>90</sup> Similarly, is the need for judicial attention to scholarship the same between the areas of law the Federal Circuit oversees and the areas of law the regional circuits oversee? For example, one area of law entrusted to the Federal Circuit is the law of patents.<sup>91</sup> Are patent cases different than other types of cases, e.g., those heard by the regional circuits, like securities fraud cases, complex contract disputes, corporate law cases, or criminal cases? Does reviewing patent appeals for some reason require a greater use of scholarship by decisionmakers than reviewing these other types of appeals?

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89. 28 U.S.C. § 1338 (2006); *see also supra* note 5.

90. This suggestion assumes of course that judges might in some instances have a need for legal scholarship. We do not mean to overlook this concern, i.e., the possibility that it might not ever be the case, but it seems to us to be so broad as to be relatively unhelpful to those looking for ideas for future work.

91. § 1338.

2. *Does the Fact That the Federal Circuit Is a National Circuit Mean That It Needs To Use Scholarship More Than Other Circuits?*

Another area of future study is whether the Federal Circuit should use scholarship more than other circuits just because it is a national circuit.<sup>92</sup> The notion that it should has been stridently promoted by a few commentators, who base their argument in a very formalistic model of how ideas enter the judicial decisionmaking process—and hence the law.<sup>93</sup> This perspective emphasizes the claim that the Federal Circuit is structurally isolated, a situation—it is claimed—that fosters a culture of disconnectedness and limited intellectual curiosity among the court’s judges. Some work has challenged this claim, questioning the normative<sup>94</sup> and the explanatory force<sup>95</sup> of the model on which it is based.

But there is clearly more to be done in this area. The limited work available on this topic needs to be closely examined. The time may be ripe for a body of scholars to develop a robust and cooperative empirical and theoretical project to examine the jurisprudential and social impacts of the Federal Circuit.<sup>96</sup> Such a project might include, for example, comparative work examining how much and how well patent law has developed in comparison to other similar areas of law. An example of an area of law that seems suitable for comparison to some parts of Federal Circuit jurisprudence is copyright law, which finds its justification in the same constitutional clause as the Patent Act, shares the same normative underpinnings (e.g., optimizing

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92. See, e.g., Nard & Duffy, *supra* note 14. A counter argument is that the Federal Circuit should have less use for legal scholarship because of the fact that it is a national court. It hears a large number of patent appeals, for example, and consequently constantly considers numerous advanced issues by design. It does not need to learn the underlying patent law and policies to decide these cases, unlike a regional circuit, which hears fewer cases in any given area of law.

93. *Id.*

94. See Rochelle Cooper Dreyfuss, *In Search of Institutional Identity: The Federal Circuit Comes of Age*, 23 BERKELEY TECH. L.J. 787 (2008).

95. Lee Petherbridge, *Patent Law Uniformity?*, 22 HARV. J.L. & TECH. 421 (2009).

96. We are not alone in suggesting the need for this kind of work. See Lawrence Baum, *Probing the Effects of Judicial Specialization*, 58 DUKE L.J. 1667, 1683 (2009) (“[S]cholars could make a valuable contribution by adding to the body of empirical research on the impact of judicial specialization.”). Nor is this suggestion for future work meant to suggest that no work exists. See, e.g., S. Jay Plager, *The Federal Circuit as an Institution*, 43 LOY. L.A. L. REV. 749 (2010) (including empirical and theoretical work); Dreyfuss, *supra* note 94, at 792–95 (discussing some work directed to measuring the Federal Circuit’s performance); see also JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* (2008) (arguing that in many instances the costs of the patent system outweigh its benefits); accord Landes et al., *supra* note 40.

the production of a class of public goods), and is effected through a federally imposed property system that shares many analogies to patent law.<sup>97</sup>

### 3. *The Role of the Legal Academy: Is It Helping?*

The first two pillars have emphasized future work directed to the question of whether the Federal Circuit has a special need to use legal scholarship. This Section suggests that there are also ripe opportunities for future study in looking away from the Federal Circuit and looking at legal scholarship, and more specifically at that species of legal scholarship that might be useful to the Federal Circuit.<sup>98</sup> Noticeably missing from the claims that the Federal Circuit should use more scholarship are reference to any studies assessing the type and quality of scholarship available to the Federal Circuit. Put slightly differently, if the Federal Circuit needs a special kind of scholarship for its decisionmaking, are legal scholars producing much of it? If not, why not? Does the academy need special law professors to do it? Are the incentives that surround the production of legal scholarship conducive to creating scholarship that teaches novel and useful insights to national circuit judges within areas of a national court's special expertise?

In our own view, there is clearly some excellent scholarship surrounding the areas of law addressed by the Federal Circuit. However, there are a few important questions concerning institutional constraints on the legal academy that should be confronted: Are most law professors even qualified to make valid and reliable contributions to the topics specially addressed by the Federal Circuit?<sup>99</sup> Is there a greater need for advanced scientific and research training for law professors who might most meaningfully contribute to Federal Circuit decisionmaking? Would the availability of peer review make scholarly offerings more useful to Federal Circuit judges? Assuming they are qualified to do the work, are most law professors able to devote enough time to research to be able to meaningfully contribute to important questions implicated by the areas of law addressed by the Federal Circuit, or do publication frequency requirements, or teaching and service obligations not

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97. The Supreme Court has noted the close relationship between patent and copyright law. *See, e.g., Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 439 (1984) (“The closest analogy is provided by the patent law cases to which it is appropriate to refer because of the historic kinship between patent and copyright law.”)

98. It seems obvious enough that not all legal scholarship—perhaps not most legal scholarship—is even directed to judges and courts.

99. *See, e.g., Roger Milgrim, An Independent Invention Defense to Patent Infringement: The Academy Talking to Itself: Should Anyone Listen?*, 90 J. PAT. & TRADEMARK OFF. SOC'Y 295 (2008) (criticizing the work of “self referencing academics who publish novel theories unguided by either experience or pragmatic considerations” and arguing that academics may need “adult supervision”).

normally felt by research faculty in some other disciplines, significantly interfere with the utility of the scholarship produced? A similar concern is whether the limited research funding available to most law professors prohibits them from successfully executing projects that might be substantially useful to decisionmakers. If law professors are mostly limited to anecdotally-driven normative claims, doctrinal interpretations, and concept-driven empirical guesswork, how much value do such claims and interpretations add to the bodies of law entrusted to the Federal Circuit? These and similar questions are ripe for serious investigation in the context of national circuit courts.

Along these lines, perhaps the Federal Circuit especially needs to use empirical scholarship.<sup>100</sup> Assuming this is so, how are judges supposed to consume such work? Are they supposed to critically evaluate and apply to their decisionmaking peer-reviewed professional publications, i.e., primary literature from various scientific, technical, and social sciences fields? It seems possible that most judges (including but not limited to those sitting on the Federal Circuit)—and law professors for that matter—are not well equipped to engage primary literature in the areas that might be of special usefulness to a national circuit. In short, can the Federal Circuit or other courts really handle primary empirical literature? If not, can law professors reliably serve as translators?

One type of study that might be of interest to a court like the Federal Circuit—and might still be consumable by federal judges—is an investigation of the understandings of a person having ordinary skill in the relevant art. The person having ordinary skill in the relevant art is a construct through which many questions in patent law are resolved. For example, patent law's obviousness standard is driven by the construct of a person having ordinary skill in the relevant art. That is, an invention is unpatentable if, in view of the existing state of technology, it would have been obvious to a person having ordinary skill in the relevant art at the time the invention was made.<sup>101</sup> Thus, law professors might meaningfully advance the law and policy of patents by surveying persons of ordinary skill in the art concerning the obviousness of

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100. Craig Nard's article suggested that the Federal Circuit should use more empirical scholarship, and the presence of empirical scholarship in law reviews has rapidly increased since Nard performed his study. See Shari S. Diamond & Pam Mueller, *Empirical Legal Scholarship in Law Reviews*, 6 ANN. REV. L. & SOC. SCI. 581 (2010) (reporting that nearly half of a sample of law reviews from 1998–2008 had some empirical content). However, the Federal Circuit does not appear to have used much of it. From our evaluation of the content of the titles of the articles cited by the Federal Circuit, it appears that almost none of the scholarship cited by the Federal Circuit from 1990 until 2008 is empirical scholarship.

101. 35 U.S.C. § 103(a) (2006).

the application of technologies that are being widely applied, or might be widely applied.<sup>102</sup> For example, is the isolation and cloning of a cDNA sequence obvious when a partial protein sequence is known? If so, when did it become obvious? If the answer is sometimes, but not always, what factors improve a researcher's expectations for success? Even though obviousness in patent law is to be determined separately for each patent, parties and the Patent Office might be very interested in studies like this. Law professors, alone or in conjunction with academics in other relevant disciplines, might carry off such studies—although it is not a trivial effort—and such studies are likely to be consumable by judges in their own right.

#### 4. *Using Legal Scholarship in the Decisional Process*

How relevant is legal scholarship to the judicial decisional process? After all, it is Law 101 that the facts of a case are developed through an adversarial process that is supposed to define the information that informs a judicial decision. Thus, what role is legal scholarship to play anyway?

This concern is brought into sharper focus by the assertion that the Federal Circuit should use empirical scholarship more than it does, because empirical scholarship might present a special problem. Empirical scholarship may be especially useful to judges because it often compiles large volumes of information otherwise unavailable to the judges.<sup>103</sup> However, empirical scholarship is typically founded in observations of historical fact or, sometimes, predictions about future facts. But establishing historical facts as a matter of law is traditionally a role of the parties and their advocates (however realistic or unrealistic the conception). Assuming that traditional framework, can empirical data be as easily incorporated into case law as, for example, a norm-driven rant about the interpretation of a few words from one or a few cases? It is possible that the answer is “No” and that the target of empirical scholarship, like the molecular biology obviousness study suggested above, should instead be parties and legislators. Parties could introduce such a survey to the decisional process at the trial level using an expert. Legislators could use such a survey to enact legislation affecting the application of the substantive requirements for patentability, for example, as

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102. And, yes, one of us has sought support for this and similar studies, in vain, for the last several years.

103. Plager & Pettigrew, *supra* note 14, at 1750 (noting that empirical scholarship sometimes “illuminates aspects of the problem not likely to be revealed by the focused advocacy of the parties”).

the Leahy-Smith America Invents Act declares certain tax-related patents to be part of the prior art.<sup>104</sup>

The broader question here is: how does scholarship come to the attention of courts, and more specifically, how does it make its way into the adversarial process and into opinions? Is it cited in briefs (we have reason to think this is relatively unlikely)?<sup>105</sup> Do judges learn of it from library circulations? From attending conferences? From clerks? From reading blogs? The newspaper? Understanding the answers to these questions will help to build a greater empirical understanding of the role and utility of legal scholarship in the judicial decisionmaking process.

C. DO COPYRIGHT AND TRADEMARK NEED A FEDERAL  
(NATIONAL) CIRCUIT?

The results presented here raise the possibility that the differences in use of legal scholarship observed in *Toward a Cautious Approach to Obeisance* between patent opinions at the Federal Circuit and copyright and trademark opinions at the Second and Ninth Circuits have more to do with the latter types of appeals in the hands of the regional circuits, due perhaps to lack of familiarity or heightened interest in the subject matter, than they have to do with patent appeals in the hands of the Federal Circuit. In other words, perhaps the Second and Ninth Circuits use scholarship substantially more in their intellectual property opinions than in their opinions addressing more regularly experienced appeals. If this is true, it raises a number of interesting possibilities for future work, mostly surrounding the question of why this might be so.

Some potential explanations seem relatively innocuous. For example, perhaps the subject matter and relative novelty of copyright and trademark appeals at the Second and Ninth Circuits (and perhaps regional circuits more generally) make those kinds of appeals vastly more exciting to the judges of those courts than patent appeals are to Federal Circuit judges because the Federal Circuit, comparatively, hears so many more patent appeals.<sup>106</sup>

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104. Leahy-Smith America Invents Act of 2011, Pub. L. No. 112-29, § 14, 125 Stat. 284, 327.

105. Along these lines it is tempting to suggest a fifth pillar around which work might nucleate. Perhaps the patent bar is not carrying its weight when it comes to bringing new ideas to the courts; it is at least possible that an insular bar impacts the court's exposure to, and use of, legal scholarship.

106. See discussion *supra* note 71.

Another fairly boring explanation is that there is a larger volume of copyright and trademark scholarship available for the courts to cite.<sup>107</sup>

Some other explanations present more serious concerns. For example, perhaps Second and Ninth Circuit judges may feel that they need to review legal scholarship in intellectual property appeals because such appeals present complex issues of law and policy with which the judges lack expertise. Thus, in copyright and trademark law, some regional circuit judges might be using law review articles in an effort to learn enough about the topic to decide the appeal and write a reasonable opinion. By contrast, the number of patent appeals the Federal Circuit hears may be such that the judges of that court do not need as much supplementing of their understanding of the relevant law and policy. Indeed, it seems possible that, given how many patent appeals the Federal Circuit hears, the experienced judges of the court may have knowledge of the relevant law and policy that surpasses that of all but the most experienced practitioners and academics. If this latter explanation is correct, then the potentially substantially greater use of scholarship in the Second and Ninth Circuits could be a first piece of evidence that copyright and trademark law might benefit from giving a national circuit court of appeals jurisdiction over copyright and trademark cases.

#### D. JUDGES AND INSULARITY

This Article concludes by offering an even broader idea for future work, both with respect to the Federal Circuit specifically and with respect to national circuits generally. Many of the future directions laid out in this Article address a broader question—the extent to which national circuits might, possibly, be more insular than regional circuits and whether, if they are, that additional insularity is undesirable as a policy matter.

In this study we have only begun to scratch the surface of what might be known about the bench's relationship to scholarship. But beyond scholarship, there is the relatively unexplored territory of the broader level of engagement of courts (and judges)—national circuits or otherwise—with sources of information inputs that come from outside the legal decisional process, but which might still substantially impact judicial decisionmaking. Here, we refer not to the kinds of intrinsic personal-historical judicial

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107. This concern may, in fact, impact the more general results presented in this Article. Our study includes opinions starting from 1990, and if there were few patent scholars actively writing for law reviews at that time, the stock of patent law-directed articles from which the courts would have been able to choose could have been small relative to other areas of the law. Once one separated the wheat from the chaff, there may have been relatively little for the Federal Circuit to use.

characteristics that are more regularly studied, e.g., political affiliation, ideology, gender, religion and the like. Instead, we mean to highlight the potential impact of extrinsic factors that might work in a more immediate sense—in real time (or close to it)—to provide judges with new perspectives and insights on disputes and the legal questions they present. These include things like judicial attendance at conferences, symposia, CLE classes, Inns of Court, and “judge training” classes;<sup>108</sup> participation on an academic faculty;<sup>109</sup> and exposure to newspaper editorials, blogs, bestselling books, and sensational news or entertainment events—in other words, those information inputs that influence judicial decisionmaking by keeping judges up to date with, integrated into, and in touch with society.

Judicial exposure to and influence from these kinds of information inputs offers an important measure of judicial insularity, and provides, we think, a potentially rich area of future work for legal scholars interested in decisional lawmaking.

## V. CONCLUSION

The study reported here contributes new and original information and analysis. It empirically compares the Federal Circuit’s use of legal scholarship with that of the regional circuit courts of appeals. Perhaps the most significant finding of this study is that the Federal Circuit’s use of legal scholarship appears quite similar to that of the regional circuits, challenging conventional wisdom that the court is more insular and somehow less intellectually curious than the regional circuit courts of appeals. This finding and others discussed have obvious implications for the evaluation of other proposals for national circuit courts of appeals. The study also provides directions for future research into meta-questions about Federal Circuit decisionmaking specifically, and judicial decisionmaking more broadly.

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108. See, e.g., *Events and Activities: JEP Economics Institute for Judges Week 1*, MASONLEC.ORG.CTR., <http://www.masonlec.org/events/economics-institute-for-judges-week-1/> (last visited Jan. 25, 2012) (reporting an example of a judge training class).

109. See, e.g., *The Faculty: Richard A. Posner*, U. CHI. L. SCH., <http://www.law.uchicago.edu/faculty/posner-r> (last visited Jan. 25, 2012) (indicating that Judge Richard A. Posner is a Senior Lecturer in Law).