



UNC  
SCHOOL OF LAW

## NORTH CAROLINA LAW REVIEW

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Volume 87

Number 5 *Frontiers in Empirical Patent Law  
Scholarship*

Article 3

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6-1-2009

# Keynote Address

S. Jay Plager

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### Recommended Citation

S. J. Plager, *Keynote Address*, 87 N.C. L. REV. 1323 (2009).

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# KEYNOTE ADDRESS\*

HON. S. JAY PLAGER\*\*

*Patent policy is too important to conduct without a thorough-going empirical evaluation of performance. Patents are a multibillion-dollar industry themselves, but, more important, they stand close to the centre of innovation in the modern economy and that is the source of the wealth of nations.<sup>1</sup>*

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\*\* Circuit Judge, United States Court of Appeals for the Federal Circuit. Judge Plager taught law at the University of Florida, the University of Illinois, and at Indiana University-Bloomington, where he served for seven years as dean of the law school. He later served in the Executive Office of the President of the United States in two administrations, and was appointed to the court in 1989.

This Article is a revised and expanded version of the keynote address given by Judge Plager at the opening of the Symposium, October 23, 2008. The views expressed are solely those of the author, and are not necessarily shared by his colleagues in academe or on the court. In particular, Judge Plager absolves the UNC Department of Philosophy, from which he graduated, from responsibility for any of the philosophical (or other) misunderstandings he displays in this essay. Included in that absolution is Professor Daniel N. Robinson, Oxford University, whose explication of the great ideas of philosophy has been a source of reflection and new insights, and to whom Judge Plager is indebted for the felicitous summaries of complex thought which Professor Robinson does so ably, and from which this essay benefits. Judge Plager also thanks his law clerk, Lynne Pettigrew, for assistance with this Article.

1. Craig Opperman, James Bessen & Michael J. Meurer, *The Patent System on Trial and Under Attack*, INTELL. ASSET MGMT., Oct.–Nov. 2008, at 36, 46 (responding to comments about Bessen and Meurer's book, PATENT FAILURE: HOW JUDGES, BUREAUCRATS AND LAWYERS PUT INNOVATORS AT RISK (2008)).

## INTRODUCTION

In thinking about the range of issues we confront in empirical legal research, including research into patent law and policy, it is well to begin with fundamentals. There are three inquiries that define what scholarship into the human condition cares about—knowledge, conduct, and governance. Typically, scholarship regarding patent law and policy is concerned with conduct—who has the right, and under what circumstances, to make, use, or sell an invention that has been given recognition under the Patent Act<sup>2</sup> (more technically, who has the right to exclude others from making, using, or selling the invention)? By contrast, empirical legal scholarship, including empirical studies of patent law, involves the process by which human knowledge is obtained—what we know and how we know it. And when called upon to adjudicate patent disputes, courts necessarily engage both the knowledge and conduct questions in the context of governance, read broadly.

The question of conduct, what is permitted or prohibited under the patent laws, is a subject of much learning, but it is not the question to be addressed here. Rather, our concern here is the question of knowledge, including some of the basic issues empirical scholarship confronts. And, because it is empirical studies of law that are our subject of inquiry, a relevant question is how, if at all, does empirical legal scholarship relate to the method of governance, and in particular to the judicial process and the ways in which judges decide cases?

## I. THE KNOWLEDGE QUESTION

*A. An On-Point Digression*

To begin, I will first digress. Digressing, even before one gets to the subject, reminds me of a story I was told about Professor Felix Frankfurter after he became a Supreme Court Justice. As an after-dinner speaker he had a propensity for loquaciousness. His wife, who sat through many of his after-dinner talks, noted that as a speaker he had two problems—he always strayed from the subject, and he often found his way back.

I discuss this business of empirical legal research with the benefit of some experience. When I was a young member of the Illinois law faculty, I was teaching among other things estates and trusts. Some of

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2. 35 U.S.C. §§ 1–376 (2000).

the participants in this Symposium, before they became patent law savants at the cutting edge of technology and the global economy, probably taught equally exciting subjects, like contracts and torts. At least I was teaching property law, the queen of subjects.

The question of why a surviving spouse was given something called a “forced share,” which enabled the survivor to take a piece of the decedent spouse’s estate different from that which the decedent had planned, intrigued me. A good bit of law school time—in estates and trusts and tax—was devoted to the ways and wherefores of the forced share concept. Its historical roots were in common law dower, but that was a form of social security before there was Social Security. Why now? Was it true that spouses got even for the slings and arrows of married life by dying angry and disowning their loved ones, thus upsetting carefully constructed estate plans?

I spent the better part of a year analyzing data gathered from New York, Wisconsin, and Illinois about estates and testamentary dispositions in the probate courts, extracting what I could from the available data and the little bit of empirical writing there was on the subject. This was, I am sad to say, at a time before public databases became available on the internet. My piece got published in the *University of Chicago Law Review* under the title of *The Spouse’s Nonbarrable Share: A Solution in Search of a Problem*.<sup>3</sup>

I learned something about empirical research. First of all, do not pick cute titles for your work—it gets lost in the indexing, and your colleagues in the field will not find it. Second, it is hard work; you give up the readily available fodder of noncopyrighted court opinions that you can make into casebooks, and from which you can earn royalties; worse, you may have to leave the comfort of your professorial office and deal with the real world. And if you need a tenure article or a thesis piece, there are a lot easier ways to get one than to poke around in odd collections of data or to try your hand—and mind—at regression analyses. Even so, I was not particularly discouraged. In later years, I participated in other empirical studies,<sup>4</sup> including a National Science Foundation-sponsored study of class-

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3. 33 U. CHI. L. REV. 681 (1966).

4. See, e.g., Roger W. Findley & Sheldon J. Plager, *State Regulation of Nontransportation Noise: Law and Technology*, 48 S. CAL. L. REV. 209 (1974) (considering noise abatement technologies in the regulatory context); Sheldon J. Plager & Joel F. Handler, *The Politics of Planning for Urban Redevelopment: Strategies in the Manipulation of Public Law*, 1966 WIS. L. REV. 724 (exploring case studies of urban renewal process).

action litigation,<sup>5</sup> which at least had the benefit of sending me to San Francisco for a summer.

In more recent years, having left the academy to work in the government and later on the court, I did not keep as close tabs on the academic side of empirical legal research as I had as a professor. As a prelude to this Symposium, I looked at some of the recent academic literature devoted to empirically-oriented studies. The resurgence of interest in that kind of work, the quantity of it, and indeed the creativity of much of it, is truly impressive.

Creative empirical study remains hard work, often slow work, and work not always appreciated by the dean. When I became dean of one of the Big Ten law schools, I tried to be appreciative. I encouraged my new faculty to think in terms of empirical testing of legal propositions, particularly those propositions that were long standing and “self-evident,” to see whether there was any reason to continue to believe our received wisdom. In this vein, I note with appreciation the goal stated by the editors of the recently-established *Journal of Empirical Legal Studies*: “Recognizing that many legal and policy debates hinge on assumptions about the operation of the legal system, the *Journal* seeks to encourage and promote the careful, dispassionate testing of these assumptions.”<sup>6</sup> As dean I helped bring to the school a number of double-discipline faculty—law and economics, of course, but also law and history as well as law and sociology. I was gratified to see that, in a published ranking of empirical legal scholarship schools, my old school still ranks respectably.<sup>7</sup>

Now I recite this personal history not to claim membership in the empirical scholarship club, or even sympathy for my errant youth, but to make clear that what I have to say about empirical research is not by way of disparaging or discouraging the empirical enterprise, but

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5. See Bryant G. Garth, Ilene H. Nagel & S. Jay Plager, *Empirical Research and the Shareholder Derivative Suit: Toward a Better-Informed Debate*, 48 LAW & CONTEMP. PROBS. 137 (1985); Bryant Garth, Ilene H. Nagel & S. Jay Plager, *The Institution of the Private Attorney General: Perspectives from an Empirical Study of Class Action Litigation*, 61 S. CAL. L. REV. 353 (1988).

6. *Journal of Empirical Legal Studies*, Aims and Scope, <http://www.wiley.com/bw/aims.asp?ref=1740-1453&site=1> (last visited Apr. 24, 2009). For further information on current topics in empirical legal studies, see generally Empirical Legal Studies Blog, <http://www.elsblog.org> (last visited Apr. 24, 2009) (featuring editorial supervision by several scholars from the fields of economics, political science, law, and business).

7. Tracey E. George, *An Empirical Study of Empirical Legal Scholarship: The Top Law Schools*, 81 IND. L.J. 141, 158 (2006).

rather is to remind of a bit of historical background to the enterprise, and to note some of the common issues that history reveals.

*B. A Bit of Philosophical History or Historical Philosophy*

An early proponent of experimental science and empirical studies was Sir Francis Bacon, a lawyer and royal court official who lived and wrote in the late 1500s and early 1600s, during the great Elizabethan Age. For reasons not relevant here, Elizabeth was not particularly kind to him, and beheaded his primary sponsor at court, Lord Essex, who happened also to be Elizabeth's lover. High government office to this day is not the most secure way to make a living, and, as before, one's sexual proclivities may not help; however, for better or worse, we have stopped beheading.

Sir Francis Bacon was the author of *The Elements of the Common Law of England*, published in 1597. More importantly, Sir Francis was an early force in the development of the modern scientific world view. He is often coupled with Sir Isaac Newton as among the first of the advocates of testing and reassessing the ignorances of the antique past.

In 1620, Bacon published his masterpiece, *Novum Organum*, the New Instrument. In this work he argued for the authority of experience over texts; he advocated the need to reject traditional thought if it did not hold up against what he considered light-shedding experiments—systematic studies of external events.<sup>8</sup> This was at a time when orthodoxy did not yield readily to the secular dimension of knowledge. Since the groundbreaking work of Bacon in social science and Newton in physical science, the history of science suggests some common concerns with empirical research as a method of inquiry.

One concern is a problem inherent in data collection itself. In the course of time, I spent a year as a research professor at the University of Wisconsin Law School—a law school whose faculty were known for their interest in studies of law and society and for doing empirical work, a faculty who were in the forefront of the legal realism movement, at that time a frontier of its own. The Wisconsin faculty were careful to avoid the error some early empirical researchers fell into—thinking that if you can pile the data high enough, out of the bottom would squeeze some juice of

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8. See FRANCIS BACON, *ADVANCEMENT OF LEARNING AND NOVUM ORGANUM* 351 (New York, The Colonial Press 1899).

understanding. Data-gathering is only the first step in doing useful empirical work—sometimes the easier step. More on this later.

A more practical problem, one with which we lawyers are familiar, is what can we really believe, what is factually true? We all know better than to accept at face value what someone tells us, unless it happens to be our mothers. But do we know enough not to believe what we think we know? The ultimate philosophical skeptic in that regard was a Frenchman named René Descartes.<sup>9</sup> He questioned everything. Do our senses lie to us? Even if they do not, do our minds process the information without distortion? Are we capable of processing scattered bits of sensory data into a cohesive picture—and if we are, can we see it? Can we communicate it to someone else, or do we lose it in the process? T.S. Eliot put it more poetically: “Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information?”<sup>10</sup>

Descartes even asked whether it was possible to prove that he actually existed. He convinced himself that he did exist, articulating his classic “*cogito ergo sum*”—“I think therefore I am.”<sup>11</sup> There is a joke about Descartes. He went into a bar and had a drink. The bartender then asked him if he would like another. He replied, “I think not”—and disappeared.

Of course, the joke in a way misapprehends Descartes’ point. He was not making only an ontological point—*I think, therefore I am*. He was also making an epistemological one—*I think, therefore I am*. It was the method of inquiry, the way to determine what is, that mattered. His “proof” of his existence is actually the base on which he would place all valid knowledge claims.

Some empiricists go further and argue that if something exists, it exists to some extent; if it exists to some extent, it is measurable; if it is not measurable, then it must not exist. Gottfried Leibniz responded to these empiricist arguments with a classic rationalist’s reply: you could build the largest machine ever, with equipment that gathered and recorded every possible bit of sensory data, and when

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9. Descartes (1596–1650) was law trained, fought as a mercenary, was an important contributor to the physical sciences and especially analytical geometry, in addition to being perhaps the most important figure in that branch of philosophy known as “philosophy of mind.” For a discussion on the life and philosophies of René Descartes, see generally ANDRE GOMBAY, *DESCARTES* (2007).

10. T.S. ELIOT, *Choruses from “The Rock,”* in *THE COMPLETE POEMS AND PLAYS: 1909–1950*, at 96, 96 (1952).

11. RENÉ DESCARTES, *PRINCIPLES OF PHILOSOPHY* 5 (Miller & Miller trans., 1983).

you got through, all you would have is an indigestible mass of detail.<sup>12</sup> You still need that ultimate god-or-nature-given mind that can synthesize data and have new ideas. Unless there is an organizing, self-reflecting power—the intellect—experience would count as nothing.

These fundamental questions that underlie human perception and understanding point to matters that necessarily have to be taken into account when assessing what we learn through empirical research. Among the great philosophers of this era, perhaps the one who would be closest to modern-day empirically focused law-educated scholars, is David Hume. He believed that it is the human condition that underlies all philosophical and scientific thought, and that such thought is necessarily limited and shaped by the ways of human nature and our habits of expression.<sup>13</sup> As Professor Robinson in describing Hume's thought put it, "What is 'essentially' human are just those features reliably associated with actual human beings as repeatedly observed."<sup>14</sup> Hume's writing on the concept of causation and how the mind works on the evidence gleaned by the senses remains critical to an understanding of this most basic of legal notions.

## II. GOVERNANCE AND THE JUDICIAL PROCESS

### A. *How Judges Do Their Work*

In terms of modern-day application, the question is what, if anything, does the empirical enterprise have to say about how judges do their work, and, if patent law and policy is our focus, how the judges of the Court of Appeals for the Federal Circuit do theirs? If it is not too immodest to note, this court, because of its exclusive jurisdiction over patent litigation, effectively is the overall arbiter of patent jurisprudence, not, as the saying goes, because we are right,

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12. See generally G.W. LEIBNIZ, NEW ESSAYS ON HUMAN UNDERSTANDING (Peter Remnant & Jonathan Bennett eds., 1981) (commenting on human notions, ideas, and knowledge). Gottfried Wilhelm von Leibniz (1646–1716) was a German philosopher, jurist, historian, and mathematician. *Id.* at xi–xxii.

13. David Hume (1711–1776) was a central figure in what came to be known as the Scottish Enlightenment, a period roughly between 1700 and 1850. See David Hume, *An Enquiry Concerning Human Understanding*, in *ESSENTIAL WORKS OF DAVID HUME* 44, 44–167 (Ralph Cohen ed., 1965).

14. Daniel N. Robinson, *On the Evident, the Self-Evident, and the (Merely) Factual*, 47 *AM. J. JURIS.* 197, 197 (2002).



but because we are final, at least until the Supreme Court chooses to participate in our work.<sup>15</sup>

When the Supreme Court justices join in, sometimes they address procedural concerns, and their point is to bring patent law, including Federal Circuit law, into conformity with the mainstream of American law.<sup>16</sup> This is a point with which I am in accord, and have been since going on the court.<sup>17</sup> On the other hand, sometimes the Supreme Court explores the substantive parts of patent law,<sup>18</sup> and there they may not always have the full picture of the way patent litigation develops and is conducted. An example—is “common sense,” an attribute hard to fault, a useful criterion for determining patent validity and nonobviousness?<sup>19</sup> Thomas Reid, one of the writers of the Scottish Enlightenment and known as the father of Common Sense Philosophy, wrote extensively about common sense, which meant to him notions that we are obligated to accept in the ordinary affairs of life.<sup>20</sup> Perhaps the writings of Thomas Reid are what the Supreme Court had in mind when common sense was lauded as an intellectual approach for determining the nonobviousness of a claimed invention. Be that as it may, our court takes pains to follow the law given us by the Supreme Court, even when we are a bit skeptical about it.

Now, among skeptics there is no group more skeptical than judges. Oliver Wendell Holmes said, “When the ignorant are taught to doubt, they do not know what they safely may believe.”<sup>21</sup> I am

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15. There is a lively debate about the desirability and scope of Supreme Court attention to patent matters. See, e.g., John M. Golden, *The Supreme Court as “Prime Percolator”: A Prescription for Appellate Review of Questions in Patent Law*, 56 UCLA L. REV. 657 (2009).

16. See, e.g., *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 126–28 (2007) (declaratory judgment jurisdiction); *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391–92 (2006) (test for permanent injunctive relief).

17. See, e.g., *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574 (Fed. Cir. 1990) (applying the same venue rules to patent cases that apply to civil cases generally). But see Patent Reform Act of 2007, S. 1145, 110th Cong. § 8 (as reported in Senate, Jan. 24, 2008) (proposing modification of venue rules for patent cases).

18. See, e.g., *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416–17 (2007) (nonobviousness); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732–33 (2002) (doctrine of equivalents).

19. *KSR*, 550 U.S. at 418.

20. See, e.g., THOMAS REID, *AN INQUIRY INTO THE HUMAN MIND ON THE PRINCIPLES OF COMMON SENSE 1* (Derek R. Brookes ed., Penn. State Univ. Press 2000) (1785). Reid (1710–1796) is enjoying a rehabilitation as a major figure in the Enlightenment. See *id.* at 32.

21. OLIVER WENDELL HOLMES, *Law and the Court*, in *COLLECTED LEGAL PAPERS* 291, 292 (1920).

confident he was not thinking about lawyers or professors, and certainly not other judges.

In an appellate court such as ours, many of the cases turn on purely legal questions, such as whether the trial court had subject matter jurisdiction, whether the trial court correctly interpreted and applied statutory and regulatory provisions, or whether the trial court allocated the burdens of proof correctly. Even so, and despite the necessary concern with legal rules and doctrines on which judges elaborate in our opinions and that constitute much of classroom teaching, what we often wrestle with in the decisional process is the truth of, or even a reasonable understanding of, the facts. One reason for this tension in the judging process is the same tension between the received wisdom of the past—precedents to which as a matter of law we are bound, and to which we look for guidance and predictability—as against our own sense of reality when we are confronted with conflicting versions of the facts, and, never totally out of sight, a notion about where justice resides. This tension between precedent and judicial experience is Bacon's seventeenth century struggle between orthodoxy and the secular dimension of knowledge, brought into the twenty-first century.

### *B. The Judicial Enterprise and Empirical Data*

How useful is empirical data when studying the work of the courts? One use of empirical data has been to develop pseudo-scientific methods for attempting to understand how different judges go about deciding cases, based on various types of analyses of our prior decisions. Sometimes that effort is focused on the Supreme Court. Not surprisingly, because the issues there lend themselves to the interplay of politics and ideology, it is an academic favorite to explain statistically how Justices Scalia or Breyer will come down in the next contentious case.<sup>22</sup>

On the other hand, in the courts of appeals where the vast majority of the federal appellate work is performed, the issues are likely to turn on more subtle behaviors—how a judge approaches statutory construction, or one's view of the legitimate range for distinguishing precedent based on somewhat different facts. At bottom, though there are notable exceptions, most of our appellate

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22. For one of the latest empirical studies of how the ideology of Supreme Court justices purportedly affects their voting, here focused on intellectual property cases, see Matthew Sag, Tonja Jacobi & Maxim Sytch, *Ideology and Exceptionalism in Intellectual Property—An Empirical Study*, 96 CAL. L. REV. (forthcoming 2009).

cases invoke relatively little ideological force; put another way, they are not often result-driven. This is certainly the case in the Federal Circuit.

There have been attempts to classify the judges on the Federal Circuit using various empirically-based descriptors derived from the way we vote or write.<sup>23</sup> I always seem to fall in the middle somewhere, perhaps indicating that my writing is not very clear or my voting is equally confused. Those of us who live and work with the judges might be helpful in these efforts by classifying colleagues using somewhat less scientific methods—perhaps indicating those who might be considered by some to be a bit stubborn, or occasionally wrong-headed, or most often brilliant (those are the ones who agree with us).

There are many frontiers of patent law scholarship that do not involve the courts, as the papers in this symposium attest. Nevertheless, because of its role in the patent system, the Federal Circuit gets its share of attention, both plaudits and criticisms. I hasten to add that I am not going to applaud or defend any particular decision we have issued. That would not be appropriate for a judge of the court. Rather, recognizing that in the literature about the court there is no shortage of critically treated topics,<sup>24</sup> I want to touch briefly on a couple of illustrative issues—claim construction and business method patents—and ask how and in what ways empirical examination is or could be useful.

*Claim construction.* It has been well said that the claims in a patent are the basic building blocks of the patent right, so what a claim means lies at the heart of the process. The fundamental problem with claims today is that they no longer describe inventions regarding machines or other physical objects which, if reasonable care is taken in the writing, can be more or less readily described and

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23. See R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105, 1111 (2004) (assessing judges on a spectrum from holistic to procedural); see also Lee Petherbridge, *Patent Law Uniformity?*, 22 HARV. J.L. & TECH. (forthcoming 2009) (examining statistically the proposition that patterns of patent case outcomes support the notion that there is substantial diversity among Federal Circuit judges in their judicial roles).

24. See, e.g., Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575 (2003); Rochelle Cooper Dreyfuss, *In Search of Institutional Identity: The Federal Circuit Comes of Age*, 23 BERKELEY TECH. L.J. 787 (2008); Kimberly A. Moore, *Markman Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231 (2005); Craig Allen Nard & John F. Duffy, *Rethinking Patent Law's Uniformity Principle*, 101 NW. U. L. REV. 1619 (2007).

understood.<sup>25</sup> How much more difficult it is today when many inventions involve complex software technologies or biochemical processes, or even how to conduct an online auction. Too often the problem is that words, the limitations of language, are such that trying to put the invention into English following the phrase “I claim . . .” is difficult, if not almost impossible, for even an adroit drafter.

The claim construction problem is not helped by the fact that claim drafters are not always adroit—perhaps more emphasis should be focused on the inventors and their lawyers who draft patents than on the lawyers who litigate their mistakes. And the problem is aided and abetted by a patent office process which, for lack of resources and trained examiners, among other things, results in less than rigorous reviews; I note in passing some nonhelpful claim-drafting conventions that grew up in simpler times, such as the rule that it is forbidden to use simple sentences in a claim.

In a recent opinion, one of our judges, writing for the court, started his opinion with:

When the complexities inherent in the English language meet the peculiarities of patent jargon, the result can be the bane of many unsuspecting patentees. While claim language is generally the product of the patentee alone, the patentee’s drafting efforts are sometimes aided by the examiner. Usually such collaborative efforts are constructive. On occasion, however, these efforts result in confusion, not clarity . . . . Careful and straightforward claim drafting by prosecuting attorneys and agents, and rigorous application by examiners of the statutory standard to particularly point out and distinctly claim the subject matter regarded to be the invention, *see* 35 U.S.C. § 112, ¶ 2 (2000), serve an important public notice function.<sup>26</sup>

At one time we dealt with this claim drafting conundrum by avoiding it. In an infringement suit, the jury would be told to apply its understanding of the claim to its understanding of the allegedly infringing widget, and tell us who wins. That worked fine, if you did not mind that the jury’s verdict was a black box, essentially

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25. *But see* *Nystrom v. Trex Co.*, 424 F.3d 1136, 1142 (Fed. Cir. 2005) (detailing the remarkable saga of what is a “board” to illustrate that even simple concepts can have complex meanings).

26. *Predicate Logic, Inc. v. Distributive Software, Inc.*, 544 F.3d 1298, 1300 (Fed. Cir. 2008).

unreviewable on appeal unless winning counsel was totally incompetent about getting some supporting evidence into the case.<sup>27</sup>

We became concerned that, as technology has become more complex and patent rights more central to the American economy, there was a concomitant need for clarity and transparency in the patent enforcement process. In *Markman v. Westview Instruments, Inc.*,<sup>28</sup> we took claim construction from the jury and gave it to the trial judges, whose articulated understandings then would be applied to the infringement question. We would then be able to review these claim construction determinations on appeal.

*Markman* left the door open to the possibility that we would review the trial judges' claim constructions with some degree of deference to the judges' determinations. Subsequently we closed that door firmly, and gave ourselves the final power of determination with no bow of deference to the trial judges.<sup>29</sup> That might have been the right answer but for the unintended consequences.

Put aside the creation of a new industry, called *Markman* hearings. It is what happens after the *Markman* hearings that seems so troubling. Many critics think that the current reversal rate of trial court claim constructions—depending on how one counts, some say as high as fifty percent—is indicative of a serious problem.<sup>30</sup> Among other consequences, it means that losing litigants have a good shot—perhaps as good as 50/50—in obtaining a reversal on appeal, with all that suggests.

Obviously one alternative to reduce the number of reversals would be to defer more to the trial judges' view of what the claims mean. But how much deference is a question, and to what aspects of the trial—fact or law or both—would deference extend? Ultimately, on what basis would we prefer one trial judge's view of an indeterminate claim's words over our own, and how would we distinguish a different judge's view that we do not prefer?

There is a substantial body of literature recently focused on these questions, some of it empirically-based and reflecting extensive

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27. The appellate standard of "substantial evidence" in the record for review of jury verdicts is among the lowest level threshold for affirming the judgment of a trial court. See *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1235 (Fed. Cir. 1989).

28. 52 F.3d 967 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996).

29. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc).

30. See, e.g., Moore, *supra* note 24, at 234–38 (reviewing empirical studies on claim construction reversal rates). But see Jeffrey A. Lefstin, *Claim Construction, Appeal, and the Predictability of Interpretive Regimes*, 61 U. MIAMI L. REV. 1033, 1037–39 (2007) (discussing problems with relying on statistics to conclude that reversal rates are "too high").

research and thought.<sup>31</sup> One study sought to determine whether increased experience at doing claim construction gave district judges, and in a companion study, International Trade Commission administrative law judges (“ALJs”), a better batting average in getting claims right, as measured by Federal Circuit agreement.<sup>32</sup> The notion was that perhaps claim construction could be shown to be a learnable skill, so that more experience meant better results.

The study concluded that there was no evidence that doing more claim constructions improved the ability of a trial judge or an ALJ to get them correct, at least as measured by whether the Federal Circuit agreed with the claim construction. The author hypothesized that the explanation is one of three things: (1) trial judges and ALJs cannot master claim construction, especially if without a technical background; (2) the Federal Circuit has failed to provide useful rules or other guidance from which trial judges can learn; or (3) claim construction is inherently indeterminate.

Candor requires that I recognize yet a fourth possibility: the Federal Circuit may not be, in any absolute sense, better at claim construction than the district judges and the ALJs, despite the fact that we get much more practice than any individual trial judge. If that is so, and if what we are after is some idea of “essential correctness,” then measuring the trial judges’ claim construction success rates by what we on the appellate court think about their claim constructions is not a useful test. The only advantage the appellate court has is that we have the last word.

There is not yet conclusive empirical evidence to prove or refute any of these hypotheses, but nineteen years of experience on the court suggests that none can be dismissed out of hand. Ultimately, however, it is the indeterminacy factor that most often lies at the heart of the problem. If so, what alternatives for betterment are there? One intriguing suggestion is to establish a *Chevron*-type deference regime.<sup>33</sup> Can further or different empirical studies provide better or different answers? (As an aside, I was interested to note that one empirical study of the *Markman* process concluded that a

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31. See, e.g., Lefstin, *supra* note 30; Moore, *supra* note 24.

32. David L. Schwartz, *An Empirical Study of Patent Claim Construction Comparing District Courts and the International Trade Commission*, 50 WM. & MARY L. REV. (forthcoming Apr. 2009); David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 259–60 (2008).

33. Thomas Chen, Note, *Patent Claim Construction: An Appeal for Chevron Deference*, 94 VA. L. REV. 1165, 1181 (2008).

consequence of *Markman* was to contribute to the fading away of the doctrine of equivalents.<sup>34</sup>)

*Business methods.* The data showing an enormous increase in patent applications following our *State Street*<sup>35</sup> opinion, attributed to business method “inventions,” are disturbing, if not distressing.<sup>36</sup> Should we have found the system claim in that case not to be patentable subject matter, on the theory that there was an understood rule against business method patents even when there was no statutory or judicially-supported basis for such a rule? At the time, we thought that renouncing the so-called rule against business method patents was what the law required, and a year later we applied the *State Street* rationale to a process claim in *AT&T*.<sup>37</sup> Is the surge in patent applications, largely attributed to the newly-claimed business method inventions, a fundamental distortion of the system, or just a management problem?<sup>38</sup> What can empirical studies tell us about this?

One criticism of the Federal Circuit that is a favorite among some is that we are not actively exercising our policy levers to ensure that patents today are doing the job today’s world needs. As one author put it, we are too concerned with whether the law is precise—that is, reproducible and predictable—and not concerned enough with whether it is accurate. The author explains that accurate means correct, which means “responsive to the philosophy of the Patent Act, to national competition policies, and to the needs of researchers and technology users.”<sup>39</sup>

In *State Street* we thought that, by extending patentability to the broad sweep of modern invention except as specifically limited by the Act itself, we were acting in full conformity with the philosophy of the Patent Act and responsively to the needs of technology users. Even so, a rather sweeping proposal by those who see the court as not sufficiently policy oriented is to do away with having a single court of

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34. John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 977–78 (2007).

35. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).

36. See, e.g., John R. Allison & Emerson H. Tiller, *The Business Method Patent Myth*, 18 BERKELEY TECH. L.J. 987, 991 n.10 (2003).

37. *AT&T Corp. v. Excel Commc’ns, Inc.*, 172 F.3d 1352, 1356–58 (Fed. Cir. 1999).

38. For differing views on this issue, see those expressed by Judges Newman, Mayer, and Rader, all dissenting from the majority opinion in *In re Bilski*, 545 F.3d 943, 976 (Fed. Cir. 2008) (en banc) (Newman, J., dissenting); *id.* at 998 (Mayer, J., dissenting); *id.* at 1011 (Rader, J., dissenting).

39. Dreyfuss, *supra* note 24, at 796.

appeals handle patent cases, and return to the old days of having multiple appellate courts, with multiple opportunities for forum shopping.<sup>40</sup> The argument is that this would make for a richer and more diverse jurisprudence, one more likely to address the underlying policy issues to which, in this view, the Federal Circuit seems unwilling to attend.

This is not the place for an extended discussion of the proper role of courts in a democratic society,<sup>41</sup> or of comparative institutional competence in policy-setting as between a legislature, an administrative agency, and a court.<sup>42</sup> More to the point of the topic of this symposium, is it important that there is an absence of any empirical support for the thesis that more courts and more judges will produce *better*, rather than simply *different*, results? Is that an empirically determinable proposition? Is it fair of us to criticize the proponents for not having the data to support their thesis, or are we left only with the rationalists' argument that right thinking people will know what is right?

A first cut at answering some of these questions with empirical evidence is being published this Spring (2009) in the *Harvard Journal of Law and Technology*.<sup>43</sup> The article sets out to test empirically the basic thesis noted above—that the current institutional arrangement in which patent appeals are heard by just one court of appeals has caused a lack of diversity in patent jurisprudence—and the thesis's conclusion that this has suppressed the policy determinations which the courts should be providing. On the basis of extensive analyses of data about the court over time, the author concludes that “the weight of the evidence . . . suggests the interpretation that federal circuit patent jurisprudence does not lack noticeable heterogeneity in its decisions.”<sup>44</sup> Observers of the court's work might find anecdotal support for this conclusion in our recent decision attempting to clarify

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40. Nard & Duffy, *supra* note 24, at 1651–55.

41. See THE FEDERALIST NO. 78 (Alexander Hamilton) (“The courts must declare the sense of the law; and if they should be disposed to exercise WILL instead of JUDGMENT, the consequence would equally be the substitution of their pleasure to that of the legislative body.”).

42. For an exchange of views on the proper role of courts in patent law policy-setting, compare Nard & Duffy, *supra* note 24, with S. Jay Plager & Lynne E. Pettigrew, *Rethinking Patent Law's Uniformity Principle: A Response to Nard & Duffy*, 101 NW. U. L. REV. 1735 (2007). See also Dennis D. Crouch, *The Patent Lottery: Exploiting Behavioral Economics for the Common Good*, 16 GEO. MASON L. REV. 141, 142–43 (2008) (discussing the policy levers inherent in the patent laws and the varying marginal impact resulting from making changes in the different levers).

43. Petherbridge, *supra* note 23.

44. *Id.* (manuscript at 8, on file with author).



the applicable policies governing what is a patentable invention under section 101, and setting forth the rules derived from that clarification.<sup>45</sup> The case demonstrates that the court is willing to tackle policy issues when cast in terms that courts properly may address, and that when doing so, there is hardly unanimity among the judges (see the lengthy dissenting views of three of the judges).<sup>46</sup>

### C. *The Judicial Enterprise and the Empirical Studies Literature*

A final observation about the academic literature and its uses. The academic commentary I have been discussing is a small sample of the extensive literature being produced about patent law.<sup>47</sup> A frequently heard comment about the court is that, based on the paucity of citation to this literature in the court's opinions, the judges seem either uninterested or unwilling to consider views other than their own (insular) ones. Though I appreciate the frustration that comes from feeling that insights derived from thorough research and scholarly writing are being ignored to the detriment of the society—a feeling I once shared in full measure—there are structural and jurisprudential problems that cannot be ignored.

As a structural matter, much of the scholarly research and writing, as thoughtful and useful as it may be in understanding the operation of the overall patent system, is not directly applicable to the work of the court, that is, to the deciding of cases. Some of the excellent papers presented in this Symposium are examples. Our institutional function is to decide the cases before us, not opine about the workings of the patent system in general, and certainly not to engage scholarly critiques of the court's work, even those that have merit.

As a jurisprudential matter, there is the question of whether judges should be influenced by, or even more, rely on, the propositions or conclusions reached by nonparties—including scholarly ones—in making decisions that determine the outcome of a case. At the least, if secondary literature is to play a significant role in the decisional process, should not the parties to a suit be given opportunity to review and comment upon the propositions propounded, just as we do with amicus briefs? Perhaps the academic community might be able to persuade counsel who litigate patent

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45. *In re Bilski*, 545 F.3d 943, 950–63 (Fed. Cir. 2008) (en banc).

46. *Id.* at 976 (Newman, J., dissenting); *id.* at 998 (Mayer, J., dissenting); *id.* at 1011 (Rader, J., dissenting).

47. A quick search for law review articles with the word “patent” in their titles revealed an average of more than 200 articles per year for the last three years.

cases to incorporate relevant secondary literature in their initial briefs. In that way the parties can highlight the material they think is important to their case, and the opposing party would be on notice of the material.

Finally, there is a practical problem with regard to judges keeping up with the current outpouring of scholarly writing on patent matters. In preparation for each monthly sitting, a judge may be faced with reading something between 2,600 and 3,600 pages of densely written briefs, involving twenty to thirty different appeals. That is before examination of the cases, statutes, appendices, and the record that the parties have cited or submitted. There is also the unceasing flow of material to be read and commented upon with regard to the cases heard in previous months. The bottom line is that studying the materials relating to the cases to be decided takes priority over all else, including reading for elucidation or just pleasure.

All of which is not to say that the important work of the academic community goes totally unnoticed. A judge may very well pick up a journal article or a book that catches her eye, especially if it is in an area of law of general interest to the judge. A diligent law clerk working on a difficult legal question may search the recent literature for something of particular relevance, and may call it to the judge's attention for consideration so long as it does not appear to be an effort to directly influence the outcome in a particular case. In short, judges may be more aware of the issues being addressed in the literature than the absence of specific citation might suggest.

#### CONCLUSION

I return to the point about whether we really know what we think we know. That is a conundrum that can be helped, but not necessarily solved, by empirical evidence. The skeptic might say that where one comes out on many of the difficult issues in patent law depends on how one views the known facts—the empirical evidence—in light of the assumptions with which one begins. As an optimist, and a one-time empirical researcher, I believe that imperfect but nevertheless useful information is still better than no useful information. As a judge, I have learned to live with both.

