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John F. Duffy

George Washington University Law School

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THE THIRTEENTH ANNUAL
HONORABLE HELEN WILSON NIES
MEMORIAL LECTURE IN INTELLECTUAL
PROPERTY LAW[†]

INNOVATION AND RECOVERY

JOHN F. DUFFY*

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I. INTRODUCTION

I would like to thank Dean Joseph Kearney and Professor Kali Murray, who invited me to give this lecture, and also the faculty of Marquette Law School for hosting me these few days.

I especially appreciate being given the chance to deliver a lecture

[†] Audio of the Thirteenth Annual Honorable Helen Wilson Nies Memorial Lecture in Intellectual Property Law, delivered at Marquette University Law School on October 21, 2009, is available at <http://law.marquette.edu/cgi-bin/site.pl?2130&pageID=919>. This lecture is delivered each year by a nationally recognized scholar in the field of intellectual property law. The remarks have been edited to reflect subsequent developments.

* Oswald Symister Colclough Research Professor of Law, George Washington University Law School.

named in honor of Judge Helen Nies, as I am a great fan of her work in the patent area.¹ Indeed, a recent article² of mine traces the Supreme Court's reengagement in the patent area to the Court's grant of certiorari in *American Airlines v. Lockwood*,³ in which Judge Nies wrote a marvelous dissenting opinion at the Court of Appeals. Her dissent reads very much like a thoughtful and considered brief that was trying to attract Supreme Court review. She focused on a split in circuit authority on the issue in the case and articulated with great expertise the reasons why the issue was important.⁴ In a subsequent law review article, Judge Nies explicitly stated her belief that dissents from Federal Circuit opinions could "provide[] an impetus for Supreme Court review," as "[j]udges disputing a point more likely will pique the Court's interest than lawyers disputing a point."⁵ She also defended the value of dissenting opinions, stating her conviction that "a judge who disagrees with the majority must make the effort to write a dissent, especially here at the Federal Circuit where dissents are virtually the sole means by which contradicting positions on the law are presented fully and without personal bias to the Supreme Court."⁶

Judge Nies's dissent in *Lockwood* was a signal moment in modern patent law, as it marked a watershed in the Federal Circuit's relationship to the Supreme Court. The Court's decision in 1994 to

1. During her time as an active sitting Federal Judge from 1980–1994, Judge Nies authored more than 100 opinions on patent related matters. She also wrote a number of law review articles related to intellectual property matters including: *Secondary Meaning: An Historical Note*, 64 TRADEMARK REP. 247 (1974); *The Federal Circuit: A Court for the Future*, 41 AM. U.L. REV. 571 (1992); and *Dissents at the Federal Circuit and Supreme Court Review*, 45 AM. U.L. REV. 1519 (1996) [hereinafter Nies, *Dissents at the Federal Circuit*]. I am also a fan of Judge Nies's choice in law clerks. Her former clerk Craig Nard, now a professor at Case Western but once a professor here at Marquette (see the faculty profile for Craig A. Nard at the Case Western Reserve University School of Law, <http://law.case.edu/FacultyResearch/MeetOurFaculty/FacultyDetail.aspx?id=139> (last visited Dec. 8, 2009)), is a fine scholar and an excellent co-author. See, e.g., Craig Allen Nard & John F. Duffy, *Rethinking Patent Law's Uniformity Principle*, 101 NW. U. L. REV. 1619 (2007); Thomas G. Field, Jr., Craig Allen Nard & John F. Duffy, *Dickinson v. Zurko: An Amicus Brief*, 4 MARQ. INTELL. PROP. L. REV. 49 (2000).

2. John F. Duffy, *The Federal Circuit in the Shadow of the Solicitor General*, 78 GEO. WASH. L. REV. 518, 523 (2010) [hereinafter Duffy, *Federal Circuit*].

3. See *American Airlines v. Lockwood*, 515 U.S. 1211 (1995) (order granting certiorari); 515 U.S. 1182 (1995) (order vacating the Federal Circuit's decision and remanding the case to the district court).

4. *In re Lockwood*, 50 F.3d 966, 980 (Fed. Cir. 1995) (Nies, J., dissenting from denial of en banc rehearing).

5. Nies, *Dissents at the Federal Circuit*, *supra* note 1, at 1520.

6. *Id.* at 1527.

grant certiorari in *Lockwood* ushered in a period of renewed interest by the high court on patent law issues. In the first twelve years after the creation of the Federal Circuit (1982–1994), the Supreme Court heard only five patent cases, and those cases were only tangentially related to substantive patent issues.⁷ Starting in 1994 and continuing to the present day, the Supreme Court has considered, on average, at least one patent law case per term, with the majority of the cases involving core matters of patent policy.⁸

I have devoted attention to Judge Nies's dissent in *Lockwood* not merely because it is appropriate to recall the great jurist after whom this lecture was named, but also because my lecture today may be viewed as a dissent to some of the current approaches in modern patent law. Like Judge Nies, I too believe in the inherent value of dissent. While agreement can be signified with mere silence, disagreement imposes a responsibility to speak and to write, for only then can “contradicting positions” be fully and carefully presented.

The title for my lecture today is “Innovation and Recovery.” The lecture is premised on the undeniable fact that our nation has recently

7. See Duffy, *Federal Circuit*, *supra* note 2, at 522; John F. Duffy, *The Festo Decision and the Return of the Supreme Court to the Bar of Patents*, 2002 SUP. CT. REV. 273, 297 (2002).

8. See Duffy, *Federal Circuit*, *supra* note 2, at 523–24. Ironically, although Judge Nies's dissent in *Lockwood* was successful in attracting the Supreme Court's attention to patent issues, she was ultimately unsuccessful in having the Court review the issue on which she dissented. The issue in *Lockwood* concerned the allocation of power between judge and jury in deciding issues of patent validity. The patentee *Lockwood* sued American Airlines for patent infringement and demanded a jury trial. See *Lockwood*, 50 F.3d at 968. American Airlines counterclaimed for a declaratory judgment of patent invalidity. See *id.* The district court granted American's motion for summary judgment as to *Lockwood*'s patent infringement claims. With the issue of patent validity the only dispute remaining, the district court denied *Lockwood*'s demand for a jury trial, holding that “the remaining claims are equitable in nature [and] the plaintiff [*Lockwood*] is not entitled to a trial by jury as a matter of right.” *Id.* at 969 (quoting the district court's ruling). After *Lockwood* obtained a reversal of the district court's ruling, American Airlines successfully petitioned for certiorari on the issue whether the right to a jury trial applies in such circumstances. *Lockwood* then withdrew his demand for a jury trial. The issue on which the Court had granted certiorari had thus become moot, and the Court merely vacated the Federal Circuit's decision and remanded the case to the district court. See 515 U.S. 1182 (1995). In the fifteen years since *Lockwood*, the Supreme Court has never again granted certiorari on any of the important issues surrounding the jury's role in determining patent validity, though the Court has had the opportunity to do so. See, e.g., Petition for a Writ of Certiorari in *Medela AG v. Kinetic Concepts*, No. 09-198 (filed Aug. 13, 2009), available at http://www.patentlyo.com/medela_20v._20kinetic_20petition_20for_20cert_20final.pdf; *Medela AG v. Kinetic Concepts*, 130 S. Ct. 624 (2009) (order denying certiorari). Hopefully, the Supreme Court will eventually resolve the split in authority that gave rise to Judge Nies's dissent.

suffered a recession. We now hope for recovery.⁹ Yet despite all the difficulties imposed by a recession, and despite our strongest desires to have it retreat into history, a recession also has great value to society. This value goes beyond mere clichéd paraphrases of the famous advice attributed to Nicolo Machiavelli, “Never waste the opportunities offered by a good crisis.”¹⁰ The opportunities afforded by a recession are not merely the chance to seize power or to achieve other political objectives. Recession provides the chance to learn and to change. Most importantly, recession provides a lesson in the fallibility of human knowledge and in the need for continued improvement.

Recession is failure. It is a failure of existing ways of doing things. Regulatory structures fail; businesses fail; and individuals fail to maintain their productivity and to meet their responsibilities. Precisely because existing practices have failed, the way out of a recession is the new, the changed, the innovative. Recovery from recession demands new practices and new organizations for governments, businesses, and individuals, and those reorganizations and reemployments are often quite different from what came before. Recovery thus demands innovation to rebuild society—to rebuild it a little bit better and, hopefully, a little bit more carefully.

Innovation is therefore a natural response to a crisis.¹¹ In good times, it makes sense to follow worn paths. If current methods are yielding good results, it makes perfect sense to continue in those ways. Not so in times of crisis. The innovation necessary for an economic recovery is, to be sure, not just the innovation that goes on inside a laboratory or a research facility. It can be bigger and more dramatic—like the reorganization of an entire industry’s business and regulatory practices. It can be smaller and more incremental, as when a single individual decides to change careers or to open a new business.

9. See, e.g., *Recovery Remains Fragile, Fed Chief Says*, N.Y. TIMES, Dec. 8, 2009, at B7; Neil Irwin & Renae Merle, *Economy Limping Back to Strength; ‘Slow-Motion Recovery’ Fed: Return to Normal May Take 5 or 6 Years*, WASH. POST, Nov. 25, 2009, at A1; *Good News From Near and Far Boosts Stocks*, WASH. POST, Dec. 6, 2009, at G5.

10. Katharine Q. Seelye, *A Different Emanuel for One Church*, N.Y. TIMES, Mar. 17, 2009, available at <http://thecaucus.blogs.nytimes.com/2009/03/17/a-different-emanuel-for-one-church/> (attributing the quote to Machiavelli). This quote became famous in 2008 and 2009 because two of President Obama’s advisors employed paraphrases of it. See *id.* (quoting Rahm Emanuel and Hillary Clinton as employing slightly different paraphrases of the original).

11. See Timothy Hay, *Investors See Crisis Ebbing*, WALL ST. J., Nov. 11, 2009 (relating the comments of a venture capitalist that invention has not slowed in spite of the recession).

Examining the innovation necessary for recovery yields two important insights into the nature of innovation. First, innovation is wildly diverse; it spans the full breadth of human activities and human creativity. Second, innovation—or at least the innovation most ardently sought as the path for recovery—is intensely practical. My thesis in this lecture is that these two insights, though derived from our broader experience, are essential in obtaining recovery for our chief legal mechanism that is designed to foster innovation, the patent system.

II. INNOVATION FOR RECOVERY

Many patented innovations are incremental advances that build on pre-existing technologies in relatively standard ways. Recognizing this truth does not denigrate the value of those innovations and certainly does not suggest that they should be denied patent protection. Even on the forefront of scientific research, “normal science” usually dominates, with valuable but incremental additions to existing structures.¹² The most innovative of advances—changes that are truly “outside the box” in the sense that they reject pre-existing notions—are rare and episodic. Yet it is precisely those sorts of transformative changes, both large and small, that are the most necessary to generate a recovery from economic failure. The crisis of economic failure makes complete rejection of old ways easier, and the desire for recovery spurs creation of the boldly new.

The period during which recession turns to recovery is thus an optimal time to reconsider the nature and desirability of innovation, and great insight can be won by considering the types of innovations sought in time of crisis. These innovations are distinguished by their diversity but unified by their practicality. These two qualities—diversity and practicality—will provide my overarching themes.

A. *The Diversity of Innovation*

Recession and recovery remind us of the extreme diversity among innovations. That diversity spans much more than advances in engines, semi-conductor chips, chemicals, pharmaceuticals and computer software. Such industrial diversity may be a common proxy for representing the diversity of innovation,¹³ but it covers only a part of innovation. Innovation extends beyond the research laboratory; it

12. See THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (1962).

13. See, e.g., Brian Kahin, *Patents and Diversity in Innovation*, 13 MICH. TELECOMM. TECH. L. REV. 389, 394 (2007).

ranges from the individual home, to the corporate boardroom, and, yes, even to inside the Beltway. Here, I will consider three types of innovation that are often neglected in discussions about innovation but yet are vital parts of the innovation needed for recovery.

1. Economic Innovation

First, let us consider the full scope of economic innovation. As I have suggested, economic failure is an invitation to innovate. Failed businesses recover through reorganizations of assets.¹⁴ Indeed, modern corporate bankruptcy law is often not called bankruptcy, but corporate reorganization.¹⁵ That name is accurate precisely because business failure creates the opportunity to take assets being used in one way, which was unproductive, and put them to a new and hopefully productive use.¹⁶ Such a common and seemingly trivial change demands innovation in the sense that at least those specific assets are put to a use that is new.

Innovation is present not only in any corporate reorganization, but also in any individual's search for reemployment. For the unemployed in a recession, especially the newly unemployed, the job market often seems bleak. Yet the lesson of a foreboding job market—and it is no doubt a hard lesson on a personal level—is a lesson in the essential need for innovation. When traditional career paths are no longer open and promising, job seekers must be more creative. They must consider new ways to work. They must search for new opportunities because the old opportunities are diminished or gone altogether. It is common in our society to admire the innovator and the entrepreneur. Yet the unemployed share a common bond with innovators. For both, creativity is essential, but the path is as difficult and fraught with failure as it is essential.

Finally, any discussion of economic innovation is incomplete without also considering those who are not bankrupt or unemployed, but who instead have assets or capital despite the recession. It might seem at

14. See, e.g., MARK D. ROE, *CORPORATE REORGANIZATION AND BANKRUPTCY* 18 (2000) (noting that under Chapter 11 of the Bankruptcy Code, a corporate reorganization allows “the ownership interests in the [company] will be reallocated.”); Robert C. Clark, *The Interdisciplinary Study of Legal Evolution*, 90 YALE L.J. 1238, 1250–54 (1981) (tracing the development of corporate reorganizations under bankruptcy laws).

15. See, e.g., Lucian Arye Bebchuk, *A New Approach to Corporate Reorganizations*, 101 HARV. L. REV. 775, 775–77 (1988); Douglas G. Baird, *The Uneasy Case for Corporate Reorganizations*, 15 J. LEGAL STUDIES 127, 138–39 (1986).

16. See, e.g., MICHAEL A. GERBER, *BUSINESS REORGANIZATIONS* 597–607 (2d ed. Lexis pub. 2000) (providing a brief overview of a Chapter 11 reorganization plan procedure).

first blush that these individuals and corporations should shun risk during recessionary times; they should “play it safe.” But this is not so. For those with assets, a recession is also a challenge, and a challenge to innovate. For the well-off, recession also brings opportunity. Corporate reorganizations bring the opportunity to purchase properties at substantial discounts. Unemployment brings the opportunity to hire previously unavailable talent that is now looking for new employment, new directions, and new things to do.

This discussion should make clear the full scope of economic innovation revealed by the process of recession and recovery. Innovation ranges from the small—for example, a new shop on one particular corner in Milwaukee, or a new career path for a single individual—to the large—such as an entirely new business model, a new product or pioneering technology. Economic innovation presents a large continuum from the very smallest changes to the very largest path-breaking developments.

2. Regulatory Innovation

Regulatory innovation is a second class of innovation that, though often overlooked in general discussions on innovation, gains due attention during a period of recession. By “regulatory innovation,” I refer not merely to governmental regulation but instead to the vast swath of mechanisms by which public and private institutions organize and regulate human productivity. For the advocates of governmental ordering—the champions of the Beltway—the recession is (or at least should be) a challenge to existing assumptions about governmental regulation because the existing machinery of government may have failed. So too, for the advocates of private order, recession presents the possibility that the existing institutional machinery of the private sphere may have failed.

The need for recovery, and hope for avoiding calamity in the future, thus typically prompts calls for public and private regulatory innovation. In Washington, this innovative impulse may take the form of new legislation or new administrative initiatives.¹⁷ Change is not, however,

17. See, e.g., S. 3217, 111th Cong., 2nd Sess. (2010) (April 29, 2010 version), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:s3217as.txt.pdf (financial reform legislation proposed by Senator Dodd in response to the financial crisis); Securities and Exchange Commission, *Amendments to Regulation SHO*, 75 Fed. Reg. 11232, 11233 (2010) (announcing amendments to “short sale” rules and justifying the rules partly on the basis of recent “market turmoil” including “the subprime mortgage crisis and credit crisis in 2007”);

limited to the public sphere. Private firms must also evaluate the causes of failure and seek worthwhile innovations. The private order must also discover or invent new ways to make sure that firms seek productivity and profit and not court risk and disaster.

3. Governmental Innovation

The final and highest level of innovation that I will discuss is governmental innovation. It is now fashionable in Washington to talk about Government 2.0.¹⁸ The name derives directly from an analogy to the latest internet innovations, often called web 2.0.¹⁹ The driving theory behind Government 2.0 is that innovative information technologies have the power to transform government—to create government anew. The movement was recently the subject of a major conference in Washington,²⁰ and the new administration is a big fan.²¹ Thus, inside the Beltway, the topic has become as ubiquitous as it is notorious.

The current fascination with Government 2.0 should not, however, obscure the long tradition from which the movement descends. The

Securities and Exchange Commission, *Concept Release on Equity Market Structure*, 75 Fed. Reg. 3594, 3594 (2010) (announcing “a broad review of the current equity market structure” with the goal of “determin[ing] whether regulatory initiatives to improve the current equity market structure are needed”).

18. See, e.g., John D. Sutter, *Cities Embrace Mobile Apps, ‘Gov 2.0,’* CNN.COM, Dec. 29, 2009, available at <http://www.cnn.com/2009/TECH/12/28/government.web.apps/index.html> (discussing the Government 2.0 movement); *Connect with Government*, USA.GOV, Dec. 22, 2009, available at <http://www.usa.gov/Topics/Multimedia.shtml> (providing a directory of websites allowing the public to access governmental blogs, twitter posting, YouTube videos, RSS feeds, etc.).

19. See, e.g., *Social Media and Web 2.0 in Government*, WEBCONTENT.GOV, Sept. 24, 2009, available at http://www.usa.gov/webcontent/technology/other_tech.shtml (listing the social media and new web content materials available to government agencies to make their agency’s websites more publicly interactive).

20. See Gov 2.0 Summit, *About Gov 2.0 Summit*, <http://www.gov2summit.com/gov2009/public/content/about> (last accessed Dec. 9, 2009).

21. See, e.g., Danielle Keats Citron, *Fulfilling Government 2.0’s Promise with Robust Privacy Protections*, 78 GEO. WASH. L. REV. ARGUENDO A-101 (2010), available at http://groups.law.gwu.edu/LR/ArticlePDF/Arguendo_Citron.pdf (providing examples of the Obama administration’s enthusiasm for “Government 2.0”); Charles Homans, *The Geekdom of Crowds: The Obama Administration Experiments with Data-Driven Democracy*, WASH. MONTHLY, July 1, 2009, at 13 (noting how Obama has been a “prominent champion” of Government 2.0); Daniel Lyons & Daniel Stone, *President 2.0*, NEWSWEEK, Dec. 1, 2008, at 40; Micah L. Sifry & Andrew Rasiej, *The Rise of Government 2.0*, POLITICO.COM, May 7, 2009, available at <http://www.politico.com/news/stories/0509/22185.html>; David Herbert, *Poll Gives E-Government Highest Marks Ever*, NATIONAL JOURNAL, Feb. 3, 2009, available at http://www.nationaljournal.com/njonline/no_20090203_9690.php.

longing for improved, innovative government has deep roots in our society. The slogans may change with each generation, but the underlying aspiration remains to achieve progress similar to that observed in technologies that have grown out of the physical sciences. A decade and a half ago, Al Gore championed the “reinvention of government”²²—a name adopted from the public management book by David Osborne and Ted Gaebler that expressly invoked the “breathtaking change” in our current “information society” as the catalyst for reforming governmental structures and practices.²³ In an earlier era as well, Justice Brandeis relied on technological metaphor to defend federalism as a means for providing “laborator[ies]” in which citizens could “try novel social and economic experiments.”²⁴ Brandeis was, in turn, following in the tradition of the Progressive Era, which relied on the vast technological changes in the nineteenth century to justify the introduction of legal innovations at both the state and federal levels.²⁵ Indeed, the intellectual roots of the Progressive tradition can be traced back to Woodrow Wilson, a prominent academic who later became influential in politics. Wilson established the intellectual foundation for the development of an innovative “science of administration” by pointing to the profound technological and social changes that had occurred since the framing of the Constitution.²⁶

22. See, e.g., *Fewer Costs, Fewer Offices in Government ‘Reinvention,’* USA TODAY, Oct. 14, 1994, at A4; National Archives and Records Administration, *Remarks of Vice President Al Gore, Opening Session of International Rego Conference*, Jan. 14, 1999, available at <http://clinton2.nara.gov/WH/EOP/OVP/speeches/interego.html>.

We are here at this extraordinary international gathering, the very first of its kind, to talk about a subject that lies at the very heart of economic growth and productivity—and even basic political legitimacy—for the 21st Century: reforming and reinventing government so that it is smaller, smarter, and more responsive to change in this fast-changing Information Age.

Id.

23. See DAVID OSBORNE & TED GAEBLER, *REINVENTING GOVERNMENT: HOW THE ENTREPRENEURIAL SPIRIT IS TRANSFORMING THE PUBLIC SECTOR* 15 (1992) (arguing that the “bureaucratic institutions developed during the industrial era . . . increasingly fail us” because “[w]e live in an era of breathtaking change” that has produced “an information society, in which people get access to information almost as fast as their leaders do”).

24. *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) (“It is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.”).

25. See, e.g., John F. Duffy, *The FCC and the Patent System: Progressive Ideals, Jacksonian Realism, and the Technology of Regulation*, 71 U. COLO. L. REV. 1071, 1081–84 (2000).

26. Woodrow Wilson, *The Study of Administration*, 2 POL. SCI. QUAR. 197, 200 (1887). To explain “the reason why we are having now what we never had before, a science

In pursuing governmental innovation to change existing constitutional structures, the Progressives were themselves carrying forward the more general tradition of innovation that dates back to the time of the framing of the Constitution. The constitutional framers were facing one of the greatest crises of our nation, as the very structure of the then-existing government established under the Articles of Confederation was failing badly.²⁷ That was a crisis of much greater magnitude than the economic crisis currently faced by our nation,²⁸ and the greater crisis produced monumental innovation. Indeed, the framers of our Constitution were not shy about telling the world that they were experimenting. For example, James Madison, in *Federalist* 39, talked about the “bold and radical innovation[s]” that he was defending,

of administration,” Wilson pointed to “difficulties of governmental action,” which had been “gathering in other centuries” and were “culminating in our own.” Wilson argued that, in earlier times, “[t]he functions of government were simple, because life itself was simple.” *Id.* at 199. In his prior work, WOODROW WILSON, CONGRESSIONAL GOVERNMENT: A STUDY IN AMERICAN POLITICS (1885), Wilson also relied on the changes brought by the past hundred years as the basis for reconsidering constitutional structures. *See id.* at 53–54 (arguing for a greater centralization of governmental power than was contemplated when the Constitution was adopted because “[t]he Constitution was adopted when it was six days’ hard traveling from New York to Boston; when to cross the East River was a to venture a perilous voyage; when men were thankful for weekly mails; . . . when there were no telegraph lines, and no monster corporations”).

27. *See, e.g.*, CAROL BERKIN, A BRILLIANT SOLUTION: INVENTING THE AMERICAN CONSTITUTION 11–22 (2002) (recounting that in the years following the Declaration of Independence, the United States confronted major difficulties due to a weak and ineffective federal government that was unable to address rising economic discontent, to manage the repayment of war time loans, or to resolve political disputes among the individual states). *See also* GORDON S. WOOD, REVOLUTIONARY CHARACTERS: WHAT MADE THE FOUNDERS DIFFERENT 145–46 (2006). Wood noted that the “Articles of Confederation . . . had not created a real government” since it vested and reserved many substantive powers to the individual states. *Id.* Specifically, the Articles of Confederation lacked the “crucial powers of commercial regulation and taxation—indeed all final ordinary law making authority.” *Id.* at 146. *See also* JOSEPH J. ELLIS, AMERICAN CREATION: TRIUMPHS AND TRAGEDIES AT THE FOUNDING OF THE REPUBLIC 91 (2007) (relating that George Washington “had grown convinced that . . . the government established under the Articles of Confederation had proved itself ‘a rope of sand’ and was now lurching from mere incompetence to complete dissolution.”); SEAN WILENTZ, THE RISE OF THE AMERICAN DEMOCRACY 31 (2005) (noting that “the national government, under the loosely knit Articles of Confederation, was so feeble that it had become nearly impossible to conduct a foreign policy, secure the nation’s defense and complete commercial treaties, let alone settle the leftover debts from the Revolution”).

28. *See* ELLIS, *supra* note 27, at 93 (noting that Madison was concerned that continued inactivity regarding reforms to the Articles of Confederation would lead to “anarchy,” and the potential for “utter chaos, widespread violence, possible civil war between or among the states, and the likely intervention of several European powers eager to exploit the political disarray for their own imperial purposes” in the fledging nation).

in arguing for the adoption of the new constitution.²⁹ And in *Federalist* 37, again, Madison also said that the act of the Constitutional Convention had recommended so many important changes and innovations that great care was required to understand them all and to evaluate them.³⁰

While the recent economic crisis has not produced—and is not likely to produce—dramatic constitutional innovation, it has spurred some proposals for incremental innovation in governmental institutions. For example, the currently proposed financial reform legislation would authorize the creation of a new “Bureau of Consumer Financial Protection” that (i) would be part of the Federal Reserve System (the “Fed”),³¹ (ii) would be funded from the Fed’s revenues,³² (iii) would be capable of receiving delegations of power from the Fed’s Board of Governors,³³ and yet (iv) would be independent from any substantive oversight by the Fed.³⁴ Thus, the proposed new Bureau is innovative in that, while it is statutorily created as a part of another independent agency (the Fed) and indeed receives its funding from that other agency, it nevertheless retains a seemingly complete independence even from that agency. The new Bureau would be an extension of the model of a “doubly independent” agency, which involves placing an independent agency within a larger, parent independent agency. That structure was pioneered with the Public Company Accounting Oversight Board (“PCAOB”), which Congress created as part of the Sarbanes-Oxley legislation in 2002 and which remains subject to a constitutional

29. *The Conformity of the Plan to Republican Principles*, THE FEDERALIST NO. 39 (James Madison).

30. *Concerning the Difficulties of the Convention in Devising a Proper Form of Government*, THE FEDERALIST NO. 37 (James Madison).

It is a misfortune, inseparable from human affairs, that public measures are rarely investigated with that spirit of moderation which is essential to a just estimate of their real tendency to advance or obstruct the public good; and that this spirit is more apt to be diminished than promoted, by those occasions which require an unusual exercise of it. To those who have been led by experience to attend to this consideration, it could not appear surprising, that the act of the convention, which recommends so many important changes and innovations, which may be viewed in so many lights and relations, and which touches the springs of so many passions and interests, should find or excite dispositions unfriendly, both on one side and on the other, to a fair discussion and accurate judgment of its merits.

Id.

31. See S. 3217, *supra* note 17, § 1011(a).

32. See *id.* § 1017(a).

33. See *id.* § 1012(c)(1).

34. See *id.* § 1012(c)(2), (3) & (4).

challenge now pending before the Supreme Court.³⁵ Yet the proposed new Bureau goes beyond even the PCAOB, which is subject to some degree of supervision by its parent agency, the Securities and Exchange Commission.

In tracing this continuing tradition of governmental innovations, I do not mean to suggest that such innovations are desirable. Innovation is well known to be a highly risky endeavor. Though a few innovations are wildly successful, most are failures. So too with governmental innovations. While the governmental structure in the U.S. Constitution has been a tremendously successful innovation, other attempts to produce innovative governance have not been enduring. The overarching point, however, is that the creative impulse to innovate defies narrow categorization. Where social needs are great, as in a recession, innovation is seen across numerous fields. Thus, the crisis of recession reveals the full scope of human creativity and innovation.

B. Pragmatic Innovation

The second theme concerns innovation and pragmatism. It is common for patent attorneys and scholars to believe that innovation is directed toward pragmatic or utilitarian goals.³⁶ Yet innovation does not necessarily have to be pragmatic or useful. Pragmatic application is absent even from many inventions that have received patents, including for example, such novelties as the automatic hat tipper (patented in 1896)³⁷ or the wearable hamster cage (patented 1999).³⁸ Innovative forms of artwork, dance, music or humor might be pleasing and socially desirable, but they are distinct from the pragmatic innovations that solve pressing problems or fulfill practical needs.

35. See *Free Enter. Fund v. Public Co. Accounting Oversight Bd.*, cert. granted, 129 S. Ct. 2378 (No. 08-861) (May 18, 2009).

36. See, e.g., FEDERAL TRADE COMMISSION, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*, Executive Summary, 1 (October 2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf> (“Innovation benefits consumers through the development of new and improved goods, services, and processes Technological breakthroughs such as automobiles, airplanes, the personal computer, the Internet, television, telephones, and modern pharmaceuticals illustrate the power of innovation to increase prosperity and improve the quality of our lives.”).

37. See U.S. Patent No. 556,248 (1896) (disclosing a “novel device for automatically effecting polite salutations by the elevation and rotation of the hat on the head of the saluting party when said person bows to the person or person saluted, the actuation of the hat being produced by mechanism therein and without the use of the hands in any manner”).

38. See U.S. Patent No. 5,901,666 (1999) (disclosing “pet display clothing” consisting of a wearable “vest or belt . . . with tubular, pet receiving passageways [that are] are transparent so that a pet moving along the passageways can be seen by a spectator”).

Recessions refocus attention on practical concerns. Indeed, recessions frequently begin with a pragmatic and essential, but often overlooked, form of innovation: firms lay off some portion of their employees. Though greater unemployment is not often seen as welcome news, it is a crucial part of the innovation that leads to recovery. In reducing their workforces, firms are attempting to continue production while using fewer resources or to eliminate unproductive activities. Layoffs are thus best seen as an intensely practical type of process innovation; they are attempts by firms to become more efficient in their operations.

The desire for recovery is nothing more nor less than a hope that innovation and change will improve people's lives and make society better off in measurable ways. Layoffs, bankruptcies, and other economic failures are the necessary predicates toward the innovations associated with recovery—new employments, new businesses, and new successes. Recessions free labor and capital goods from unproductive activities so that they can be directed toward new and more productive uses.

In both recession and recovery, the innovations most ardently sought by workers, firms and governments are intensely practical. In some respects, this focus on the practical reinforces my first theme about the diversity of innovation. In difficult times, individuals and firms look for innovations of all sorts provided that they will yield useful results. But the point is larger still. Recession is a time to assess the standard practices that were yesterday's innovations, and the assessment is uncompromisingly pragmatic because firms must ask: Are these current practices, operations or lines of business as efficient as possible? Are they even worth continuing? Recovery begins when the current inefficiencies have been eliminated, thereby freeing resources to be employed in new pursuits.

The intense pragmatism fostered by recession is, I will argue, an approach that is urgently needed in reevaluating the legal doctrine associated with our nation's patent system. Just as periodic recessions trigger coldly practical assessments of economic practices, so too our standard legal practices should regularly undergo such uncompromising assessments. Now is a good time for one in the patent field.

III. RECOVERY AND INNOVATION

The remainder of my talk will focus on the patent system. For you who are aficionados of the patent system, here is your part of the lecture.

The first part of this talk set the stage for an evaluation of the patent system not only because the patent system is designed to foster the innovation that can be so crucial to economic recovery and growth, but also because the patent system itself is now widely viewed as being in crisis. Recent books on the patent system come under titles such as “Innovation and its Discontents”³⁹ or “Patent Failure.”⁴⁰ These books do not praise the current direction of the patent system, but instead question whether the system needs dramatic reform.⁴¹

Dissatisfaction with the status quo in the patent system is not limited to the pages of academic books and articles. For the better part of the last decade, Congress has continually been considering major patent reform legislation.⁴² While nothing has yet been enacted,⁴³ the new

39. ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT* (2004).

40. JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* (2008). Bessen and Meurer’s book has inspired significant scholarship, with an issue of the *Journal of Intellectual Property Law* dedicated solely to publishing academic responses to the book’s conclusions. See 16 J. INTELL. PROP. L., vol. 1 (2008).

41. See *Recent Publications*, 122 HARV. L. REV. 835, 836 (2008) (summarizing “Patent Failure”); Sandra Chartrand, *In a Forthcoming Book, Two Professors Make Suggestions on Reinventing the Patent System*, N.Y. TIMES, Sept. 27, 2004, at C4 (discussing “Innovation and its Discontents”).

42. Congress has proposed at least eight versions of patent reform in the past five years. See, e.g., *Patent Reform Act of 2009*, S. 515, 111th Cong. (Mar. 3, 2009); *Patent Reform Act of 2009*, S. 610, 111th Cong. (Mar. 17, 2009); *Patent Reform Act of 2009*, H.R. 1260, 111th Cong. (Mar. 3, 2009); *Patent Reform Act of 2008*, S. 3600, 110th Cong. (Sept. 25, 2008); *Patent Reform Act of 2007*, S. 1145, 110th Cong. (Apr. 18, 2007); *Patent Reform Act of 2007*, H.R. 1908, 110th Cong. (Apr. 18, 2007); *Patent Reform Act of 2006*, S. 3818, 109th Cong. (Aug. 3, 2006); *Patent Reform Act of 2005*, H.R. 2795, 109th Cong. (June 8, 2005).

43. Patent reform was closest to reality in 2007, when the House of Representatives passed its version of the Patent Reform Act of 2007 (H.R. 1908). See Lisa Friedman, *House Passes Patent Reforms; Bill Supported by Tech Industry*, DAILY NEWS (LOS ANGELES), Sept. 8, 2007, at B1; Tom Ramstack, *Firms Call Patent Reform Bill Too Weak; Say It Increases Incentive to Steal Inventions*, WASH. TIMES, Sept. 14, 2007, at C9. Despite having S. 525 calendared for debate, ultimately the Senate was unable to pass their version of patent reform prior to the conclusion of the 110th session of Congress, leaving proponents of substantive revisions to the existing Patent Laws to start the process over again. See Michael J. Schallop, *Hedging on the Scope of Patentable Subject Matter for Business Methods—The Potential Broader Implications of In re Bilski*, INTELL. PROP. TODAY, July 2008, at 36; *Methods and Madness; America’s Patent System*, THE ECONOMIST, May 10, 2008.

administration is promising to do all it can to end that inaction relatively soon.⁴⁴

Unlike in Congress, patent reform has become a reality at the Supreme Court. In the last half decade, the Court has also been reevaluating and changing the status quo in patent law.⁴⁵ *KSR v. Teleflex*, a case I had some involvement in,⁴⁶ overturned a quarter of century of lower court precedent on the standard of patentability and, by endorsing a more capacious obviousness doctrine,⁴⁷ made it somewhat more difficult to obtain a patent.⁴⁸ In *Medimmune v. Genentech*, the Supreme Court ruled that more than two decades worth of Federal Circuit case law had overly restricted the ability of parties to bring declaratory judgment actions to challenge patents.⁴⁹ Similarly,

44. See George Best, Stephen B. Maebius, Jeanne M. Gills, Philip G. Kiko & Jonathan W. Dudas, *The Obama Administration Weighs In On Patent Reform Legislation: Will The Logjam Break?*, MONDAQ BUS. BRIEFING, Oct. 14, 2009; Gary Locke, *Opinion: Congress Must Pass Patent Reform*, SAN JOSE MERCURY NEWS, Oct. 7, 2009.

45. See, e.g., *Quanta Computer, Inc. v. LG Elecs., Inc.*, 128 S. Ct. 2109 (2008); *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007); *KSR Int'l v. Teleflex*, 550 U.S. 398 (2007); *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 137 (2007); *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006); *Merck KGaA v. Integra Lifesciences I, Ltd.*, 545 U.S. 193 (2005).

46. *KSR*, 550 U.S. at 404 (listing counsel in the case for petitioner KSR); see also John F. Duffy, *KSR v. Teleflex: Predictable Reform of Patent Substance and Procedure in the Judiciary*, 106 MICH. L. REV. FIRST IMPRESSIONS 34, 35–36 (2007), available at <http://www.michiganlawreview.org/firstimpressions/vol106/duffy.pdf> (discussing the author's involvement in *KSR*).

47. The Supreme Court in *KSR* rejected Federal Circuit precedents, which required a rigid framework, in favor of “an expansive and flexible approach” in determining whether an invention was obvious in light of the prior art. *KSR*, 550 U.S. at 415–18. Previously, the Federal Circuit, had required that a determination of obviousness based on a combination of existing prior art references should include a “teaching motivation or suggestion” to combine such references. See, e.g., *Pro-Mold v. Great Lakes Plastics*, 75 F.3d 1568, 1573 (Fed. Cir. 1996) (“It is well-established that before a conclusion of obviousness may be made based on a combination of references, there must have been a reason, suggestion, or motivation to lead an inventor to combine those references.”); *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984).

48. See, e.g., *Leapfrog Enters. v. Fisher-Price, Inc.*, 485 F.3d 1157 (Fed. Cir. 2007) (affirming the use of a common sense, flexible approach to find obviousness); *Ball Aerosol & Specialty Container, Inc. v. Limited Brands, Inc.*, 555 F.3d 984 (Fed. Cir. 2009) (applying *KSR*'s rationale in affirming the district court's finding that the patent at issue was an obvious combination of existing features). See also Joshua D. Sarnoff & Christopher M. Holman, *Recent Developments Affecting the Enforcement, Procurement, and Licensing of Research Tool Patents*, 23 BERKELEY TECH. L.J. 1299, 1343–46 (2008) (noting that the Supreme Court's *KSR* opinion and the flexible approach for determining obviousness may make it easier for the USPTO to reject patentability of many inventions).

49. See *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 132 n.11 (2007) (rejecting Federal Circuit case law that had required parties challenging patents in Declaratory

eBay v. MercExchange held that longstanding Federal Circuit standards for awarding injunctive relief were improperly slanted toward patentees.⁵⁰

While some of these Supreme Court cases have focused on procedural, jurisdictional and remedial issues, the cases are united in their rejection of Federal Circuit rulings held to be overly favorable to patent holders. It would be wrong, however, to assume that the dissatisfaction with the status quo and the movement for patent reform are grounded in hostility to patents and the patent system. Rather, current legal doctrine has bred dissatisfaction because the law has lost its focus on two traditional values of the patent system: generous accommodation for the extreme diversity of innovation and uncompromising pragmatism in building and refining patent law's doctrines. Below I set forth four examples as illustrations.

A. Claim Interpretation

My first example involves a highly technical issue, patent claim interpretation. A patent claim is a single sentence at the very end of the patent document that tries to define, with some degree of precision, the scope of the intellectual property rights encompassed within the patent.⁵¹ Claims are now commonly called the “metes and bounds” of

Judgment Actions to establish that they had a “reasonable apprehension of suit”). *See also* SanDisk Corp. v. STMicroelectronics, Inc., 480 F.3d 1372, 1379 (Fed. Cir. 2007) (acknowledging that the Supreme Court’s decision in *MedImmune* had rejected the circuit’s longstanding rule requiring a “reasonable apprehension of suit” as a prerequisite to declaratory judgment jurisdiction); *Jervis B. Webb Co. v. Southern Systems, Inc.*, 742 F.2d 1388, 1398 (Fed. Cir. 1984) (early case articulating the “reasonable apprehension” of suit as a requirement for declaratory judgment jurisdiction).

50. The Court rejected a “‘general rule,’ unique to patent disputes, ‘that a permanent injunction will issue once infringement and validity have been adjudged.’” 547 U.S. at 394 (disapproving of the analysis in *MercExchange, LLC v. eBay, Inc.*, 401 F.3d 1323, 1338 (Fed. Cir. 2005)). Instead, “the decision whether to grant or deny injunctive relief . . . must be exercised consistent with traditional principles of equity, in patent disputes no less than in other cases governed by such standards.” *Id.* at 394.

51. *See* 35 U.S.C. § 112, ¶ 2 (2006) (“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”). *See also* U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 608.01(m) (8th ed. rev. 7 2008) (“While there is no set statutory form for claims, the present Office practice is to insist that each claim must be the object of a sentence.”); *Fressola v. Manbeck*, 36 U.S.P.Q.2d (BNA) 1211, 1214–15 (D.D.C. 1995) (holding that the PTO’s requirement that claims must be written in one sentence format was procedural in nature and thus was a limitation that could be imposed by the PTO). *See also* *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996) (recognizing the claim as “the portion of the patent document that defines the scope of the patentee’s rights”).

the property rights conferred by the patent.⁵²

In the last two decades, a theory has arisen that I believe to be quite pernicious. It was best articulated by a colleague of Judge Nies, Judge Giles Rich of the Federal Circuit. He said: “[t]he name of the game is the claim.”⁵³ In other words, the whole “game” in patent law (or perhaps more narrowly, patent infringement law) is the set of words written into the sentence of the patent document called the claim.

Though many professors have cited it to emphasize the importance of patent claims,⁵⁴ Judge Rich’s catchy slogan is, I believe, dead wrong. The name of the game in patent law should always be innovation, not some legalistic construct such as claims. Claims are for lawyers, and lawyers should be the servants of the innovators, not the masters. Judge Rich’s slogan is a perfect example of how our current patent system has departed from an unswervingly pragmatic focus on the proper goal of the entire patent system—innovation—and instead has become overly concerned with legalisms for legalisms sake.

Returning the law to a more pragmatic focus on encouraging innovation will require a major theoretical shift in patent law. It is, however, a shift worth making and actually requires nothing more radical than reviving more traditional approaches such as that embraced by the Supreme Court in its 1923 decision *Eibel Process Co. v. Minnesota & Ontario Paper Co.*⁵⁵ In that case, the Court emphasized that, to determine the proper scope of a patent, courts should “first look[] into the art to find out what the real merit of the alleged discovery or invention is.”⁵⁶ I love that approach. *Merit*—judged not by

52. See, e.g., *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989). The analogy to the “metes and bounds” of a property deed may be unfortunate because it suggests a degree of precision that is demonstrably not obtainable in defining the scope of most patents.

53. Hon. Giles S. Rich, *The Extent of the Protection of and Interpretation of Claims—American Perspectives*, 21 INT’L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990).

54. See, e.g., F. Scott Kieff, *The Case for Registering Patents and the Law and Economics of Present Patent-Obtaining Rules*, 45 B.C. L. REV. 55, 102 (2003); Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101, 102 (2005); Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV. J. LAW & TECH. 2, 3 (2000); Kristen Osenga, *Linguistics and Patent Claim Construction*, 38 RUTGERS L.J. 61, 63 (2006).

55. 261 U.S. 45 (1923).

56. *Id.* at 63. The complete quotation reads:

In administering the patent law the court first looks into the art to find what the real merit of the alleged discovery or invention is and whether it has advanced the art substantially. If it has done so, then the court is liberal in its construction of the patent to secure to the inventor the reward he deserves. If what he has done works only a slight step forward and that which he says is a discovery is on the border line

legalisms but by the degree of real inventive accomplishment in the art—is, or at least should be, the name of the game in patent law.

The *Eibel* Court's approach is thoroughly pragmatic in that it focuses on the ultimate goal sought be accomplished in patent law. *Eibel* instructs courts first to look to the art, not to the claim, and then to determine the real merit of the invention. Only after that inquiry is complete can a court construe the legal limits of the patent rights. In other words, the legal analysis should be subservient to a pragmatic inquiry into real merit—not, as it so often seems today, the other way around.

A corollary of *Eibel*'s approach is that courts should always try to construe a patent claim to save its validity.⁵⁷ The theory behind this canon is consistent with *Eibel*'s focus on real merit. If an inventor has made a meritorious contribution, then all of claim interpretation should be directed to protecting that contribution, with courts doing whatever they can in construing the ambiguities of the claim to save its validity. In recent years, however, the Federal Circuit has said that this canon of construction is “a last resort, not a first principle.”⁵⁸ While that demotion of one canon of claim construction may seem to be a minor “down-in-the-weeds” change to patent doctrine, it is a perfect example of the more fundamental problem: recent patent doctrine is losing the traditional, pragmatic focus on inventive merit and replacing it with an unproductive emphasis on legalisms. An excellent and eminently achievable reform of current patent law—one that would help in patent law's recovery—would be to restore the traditional emphasis on interpreting patents to save validity and to capture the merit of the innovation.

between mere mechanical change and real invention, then his patent, if sustained, will be given a narrow scope and infringement will be found only in approximate copies of the new device.

Id.

57. See, e.g., *Turrill v. Michigan Southern & Northern Indiana Railroad*, 68 U.S. 491, 510 (1863) (holding that claims “are, if practicable, to be so interpreted as to uphold and not to destroy the right of the inventor”); *Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999) (acknowledging this canon of claim interpretation).

58. See, e.g., *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1332 (Fed. Cir. 2007) (“[V]alidity construction should be used as a last resort, not a first principle: ‘we have limited the maxim [that claims are to be construed to preserve validity] to cases in which the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous.’”); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1327 (Fed. Cir. 2005) (“While we have acknowledged the maxim that claims should be construed to preserve their validity, we have not applied that principle broadly, and we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction.”).

Another example of the same problem is the recent hostility of the lower courts to the doctrine of equivalents. In patent infringement suits, our country's traditional approach was that, if a claim had some literalistic problem, courts would permit patentees to rely on the "doctrine of equivalents" to cover as infringements those things that were equivalent, if not literally identical, to what was claimed.⁵⁹ In other words, the courts applied a pragmatic rule of forgiveness in interpreting claims.⁶⁰ To be sure, the rule was not perfectly forgiving, but it nonetheless permitted some degree of forgiveness to account for the realistic difficulties associated with drafting language to cover the new and nonobvious.

The most dramatic attempt to restrict the doctrine of equivalents came in the Federal Circuit's en banc ruling in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, which purported to make the doctrine of equivalents inapplicable to all amended claim elements.⁶¹ The Supreme Court's decision in *Festo* rejected that "rigid" rule and also warned against the dangers of excessive "literalism" in patent law.⁶² Yet even after the Supreme Court's *Festo* decision, the Federal Circuit has continued to constrict the doctrine of equivalents.⁶³ Now, more than

59. See *Winans v. Denmead*, 56 U.S. 330, 343 (1854).

Patentees sometimes add to their claims an express declaration, to the effect that the claim extends to the thing patented, however its form or proportions may be varied. But this is unnecessary. The law so interprets the claim without the addition of these words. The exclusive right to the thing patented is not secured, if the public are at liberty to make substantial copies of it, varying its form or proportions.

Id.; *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608–09 (1950) (noting the history and development of the doctrine of equivalents); *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 28 (1997) ("The lengthy history of the doctrine of equivalents strongly supports adherence to our refusal in *Graver Tank* to find that the Patent Act conflicts with that doctrine.").

60. See, e.g., *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 946 (Fed. Cir. 1987) (remarking that the "equitable doctrine of equivalents . . . 'has been consistently applied by [the Supreme Court] and the lower federal courts . . . when the proper circumstances for its application arise.' (citation omitted) . . . In these more than 130 years of jurisprudence there have indeed arisen instances of judicial interpretation of claims beyond their literal boundaries, in the interest of justice. The view that such judicial flexibility should not exist is contrary to these decades of decisions, and appears to be contrary to that good judgment which underlies our precedents.").

61. 234 F.3d 558, 563–64 (Fed. Cir. 2000) (en banc) (setting forth the court's holding), *rev'd*, 535 U.S. 722 (2002).

62. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 738 (2002).

63. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1364–66 (Fed. Cir. 2008) (interpreting the doctrine of prosecution history estoppel broadly to foreclose application of the doctrine of equivalents); *Honeywell Int'l v. Hamilton Sundstrand Corp.*, 370 F.3d 1131 (Fed. Cir. 2004) (en banc) (same); *Johnson & Johnston Assocs. v. R.E. Serv.*

seven years after the Supreme Court's decision in *Festo*, it is common knowledge among patent practitioners and scholars that the doctrine of equivalents has been effectively eradicated.⁶⁴

The demise of the doctrine of equivalents is a shame, for it is another step toward the fallacy that the "name of the game" should be what the lawyer writes in a claim and not what the inventor does in a laboratory. The natural reaction to restrictions on equivalents analysis has been to add more claims to patents.⁶⁵ If courts will not interpret patents in a reasonably forgiving manner to protect inventions of real merit—if semantic nuances can cost inventors effective protection over their inventions—then inventors' lawyers will try to compensate by drafting more and more claims to cover a wide variety of possible semantic permutations.⁶⁶

This is not a positive development in patent law. It means more work for lawyers drafting patent applications, as they will spend time drafting dozens and perhaps even hundreds of claims per patent application. The abundance of claims will not, however, increase the certainty of the intellectual property rights. The chief criticism against the doctrine of equivalents has long been that the doctrine makes patent infringement analysis somewhat amorphous and therefore somewhat less predictable.⁶⁷ Yet applying the doctrine of equivalents to a small

Co., 285 F.3d 1046, 1055 (Fed. Cir. 2002) (en banc) (holding that the doctrine of equivalents cannot be applied to cover equivalents that were "disclosed but unclaimed" in the patent).

64. See John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 958 (2007) (empirically documenting the death of the doctrine of equivalents); Charles W. Adams, *The Doctrine of Equivalents: Becoming a Derelict on the Waters of Patent Law*, 84 NEB. L. REV. 1113 (2006); John R. Thomas, *Claim Re-Construction: The Doctrine of Equivalents in the Post-Markman Era*, 9 LEWIS & CLARK L. REV. 153, 154 (2005) (recognizing "the increasing disdain with which the Federal Circuit has viewed arguments of equivalent infringement").

65. See Mark R. Hull, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.: A Fog Between the Bars*, 37 AKRON L. REV. 339, 371–72 (2004) ("As a result [of the limitations on the doctrine of equivalents], the cost to the patentee will increase as patent lawyers must consider drafting narrow claims, drafting longer claims to cover all foreseeable equivalents, and spending more time researching the technology and fine tuning language.").

66. See, e.g., *Festo Corp.*, 234 F.3d at 624 (Rader, J., dissenting) (noting that the en banc court's new limitation on the doctrine of equivalents "will substantially increase the cost of obtaining patent protection, and may in fact become prohibitively high for individual inventors and start-up companies . . . [since it would] require applicants to file in an original application numerous 'narrow' claims."). See also, Glen P. Belvis, *An Analysis of the En Banc Decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. and the Doctrine of Equivalents*, 11 FED. CIR. B.J. 59, 101 (2001) (noting that, as the doctrine of equivalents is narrowed, patent attorneys would respond by drafting patents containing "claims of as many different types, styles, and scopes as is practical.").

67. *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512, 1538 (Fed. Cir.

number of claims may produce more certainty than applying rigidly literal interpretations to hundreds of claims, which can be the situation that litigants face today. More importantly, the multiplication of claims directs attention away from the merits of the underlying invention.

In sum, the slogan “the name of the game is the claim” is an excellent illustration of how current patent doctrine has lost its traditional, pragmatic focus on meritorious invention. The path toward recovery offers a different slogan: “the name of game is invention.”

B. The Paper Patent Doctrine

My second example also involves a modern development that has taken the patent system away from its traditional pragmatism by distancing it from important business realities. There used to be a doctrine in patent law known as the “paper patent” doctrine. This neat little doctrine is now an historical remnant.⁶⁸ It has been buried by the courts, mostly in the last half-century.⁶⁹ Yet this doctrine was based on the realistic view that, if an alleged invention has been merely disclosed in a patent specification but never actually implemented in the real

1995) (Plager, J., dissenting) (arguing that the doctrine of equivalents would have the effect of disrupting the public disclosure requirement and the underlying policy doctrines associated with this requirement would all “thrown into disarray by this unpredictable aspect of current patent litigation”). See also Martin J. Adelman, *The New World of Patents Created by the Court of Appeals for the Federal Circuit*, 20 U. MICH. J.L. REFORM 979, 996 (1987) (noting that the doctrine of equivalents “has the potential to overwhelm the peripheral claiming system . . . [would result in] no way to determine with reliability prior to suit whether or not one is infringing another’s patent.”); M. Scott Boone, *Defining and Refining the Doctrine of Equivalents: Notice and Prior Art, Language and Fraud*, 43 IDEA 645, 658 (2003) (“The doctrine of equivalents has been criticized on several related grounds: the unpredictability caused by the lack of a precise linguistic framework for the doctrine; the harm that the doctrine causes the notice function of the claims; the unpredictable results reached by juries that decide the issue of equivalents.”).

68. See Michael Abramowicz & John F. Duffy, *Intellectual Property for Market Experimentation*, 83 N.Y.U. L. REV. 337, 401–02 (2008) (noting that “the paper patent doctrine has fallen out of favor”).

69. For instance, since the creation of the Federal Circuit in 1982, the term “paper patent” appears in only two published decisions. See *UMC Elec. Co. v. U.S.*, 816 F.2d 647, 664–65 (Fed. Cir. 1987); *In re Johnson*, 747 F.2d 1456, 1461 (Fed. Cir. 1984). In the past thirty years, only seven district court cases mentioning the paper patent doctrine have been published in the Federal Supplement Reporter. See *Wooster Brush Co. v. Newell Operating Co.*, 46 F. Supp. 2d 713, 721–22 (N.D. Ohio 1999); *Monovis, Inc. v. Aquino*, 905 F. Supp. 1205, 1226 (W.D.N.Y. 1994); *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 639 F. Supp. 937, 951 (E.D. Tenn. 1986); *Carella v. Starlight Archery*, 595 F. Supp. 613, 617 (E.D. Mich. 1984); *Johns-Manville Corp. v. Guardian Indus. Corp.*, 586 F. Supp. 1034, 1068 (E.D. Mich. 1983); *Studiengesellschaft Kohle mbH v. Dart Indus., Inc.*, 549 F. Supp. 716, 757 (D. Del. 1982); *Wycoff v. Motorola, Inc.*, 502 F. Supp. 77, 92 (N.D. Ill. 1980).

world, then it remains only a piece of paper.⁷⁰ The courts would look upon that such a patent with some degree of skepticism, almost as if the invention were half complete. The doctrine did not, however, mean that courts would never hold paper patents to be valid, but they were more likely to construe such patents narrowly or, at times, to hold them invalid.⁷¹ In this respect, the paper patent doctrine could be seen as somewhat anti-patent because it would create difficulties for some patentees who were trying to enforce such patents.

The doctrine had another face too, one that favored patentees. For those who held more than just a paper patent—for those who had gone out in the real world and built a business around an invention—the paper patent doctrine was a great help in sustaining the validity of the patent. If a competitor tried to invalidate such a patent based on older patents that had never been implemented, then the paper patent doctrine could be used to discount those older patents and limit the extent that they would be viewed as potentially invalidating prior art.⁷²

70. 4 ANTHONY DELLER, *DELLER'S WALKER ON PATENTS*, § 229, at 78 (2d ed. 1965) (recognizing that “[n]on-use of a patented invention may result in . . . the patent [being] declared a mere ‘paper’ patent and entitled to a narrow interpretation”); Abramowicz & Duffy, *supra* note 68, at 401–03 (“Under the ‘paper patent’ doctrine, U.S. courts have in the past distinguished between patents that remain merely pieces of paper issued by a government agency and those that are made into commercial products.”).

71. *Thompson v. Dernell Potato Prods. Co. v. Snelling*, 38 F.2d 788, 789 (2d Cir. 1930) (“The appellant’s patent has not been put to commercial use, and therefore it is not entitled to a construction of any broader scope than it is clearly required to be given.”); *Dillon Co. v. Cont’l Supply Co.*, 98 F.2d 581, 587 (10th Cir. 1938).

[N]either Dillon nor his assignee nor anyone by their consent during those nine years had used, made or sold a patented device constructed in accordance with his specification, claims and patent drawings That has been said to render the patent a mere paper patent, entitled to a narrow interpretation when thereafter sued on for infringement.

Id.; *Richard Irvin & Co. v. Westinghouse Air Brake Co.*, 121 F.2d 429, 430 (2d Cir. 1941) (“The patent has never gone into use; manual pressure retaining valves are still part of the equipment of the A.B. Brake; and we should not be warranted in giving the claims any but the most meager range of equivalents.”).

72. *Kings County Raisin v. U.S. Consol.*, 182 F. 59, 62–63 (9th Cir. 1910).

The Crosby invention undoubtedly anticipates . . . [and] describes the whole theory of the Pettit patent; but it does not appear ever to have been put to use, and there is no evidence that any machine was ever constructed under it It would seem that it was one of those unsuccessful and abandoned inventions which are held to have no place in the art to which they relate.

Id.; *Wahl Clipper Corp. v. Andis Clipper Co.*, 66 F.2d 162, 165 (7th Cir. 1933) (“It is more important to study those developments of the art which are bright with use in the channels of trade than to delve into abandoned scrap heaps and dust-covered books which tell of hopes unrealized and flashes of genius quite forgotten.”). *See also The Paper Patent Rule in the Patent Office*, 29 J. PAT. OFF. SOC’Y. 599 (1947).

One result of the modern demise of the paper patent doctrine has been the rising controversy concerning what are known as “patent trolls” or, in less derogatory terms, “non-practicing entities,” which are patentees that have never commercially implemented their technology but that are suing others who have taken the business risk to implement the technology.⁷³ A revival of the paper patent doctrine would be poison to patent trolls, but good news for patent holders who actually changed things in the real world. The old paper patent doctrine recognized the enormous business risks firms take in commercializing new technologies, and it made that risk-taking count for something in the patent system. That approach was eminently reasonable and pragmatic. True patent reform would revitalize the doctrine.

C. Diversity of Innovation and Accommodation of Pioneers

My last two examples show ways in which current legal doctrine has lost the traditional ability of patent law to accommodate the extreme diversity of innovation. In the past, courts used to discuss whether an invention should be considered a “pioneer” invention or “mere improvement.”⁷⁴ That distinction was important to the courts precisely because they were trying to discern the real merit of the contribution by

73. See, e.g., David W. Opderbeck, *Patent Damages Reform and the Shape of Patent Law*, 89 B.U. L. REV. 127, 130 (2009) (defining the concept of “a non-practicing entity, or ‘patent troll,’ [to be a firm] that has no business model except to collect and license patents”). The term “patent troll” has even migrated into the mainstream press. See, e.g., Joe Nocera, *Tired of Trolls, A Feisty Chief Fights Back*, N.Y. TIMES, Sept. 16, 2008, at C1 (noting that the patent troll’s typical business model involves “acquir[ing] patents, often from bankrupt companies—and often overly broad patents that should never have been issued by the United States Patent and Trademark Office in the first place . . . [and instead] of using them to build a commercial product, they extract licensing fees from companies that are making and selling real products.”).

74. See, e.g., *Westinghouse v. Boyden Power Brake Co.*, 170 U.S. 537, 561 (1898).

To what liberality of construction these claims are entitled depends to a certain extent upon the character of the invention, and whether it is what is termed in ordinary parlance a “pioneer.” This word, although used somewhat loosely, is commonly understood to denote a patent covering a function never before performed, a wholly novel device, or one of such novelty and importance as to mark a distinct step in the progress of the art, as distinguished from a mere improvement or perfection of what had gone before.

Id.; *Doble Eng’g Co. v. Leeds & Northrup Co.*, 134 F.2d 78, 84 (1st Cir. 1943) (“A patent covering what is called a pioneer invention, that is, one covering a wholly novel device, or one of such novelty and importance as to mark a long step forward in the progress of the art to which it appertains, is to be construed liberally.”); *Swanson v. Unarco Indus., Inc.*, 479 F.2d 664, 669 (10th Cir. 1973) (“[A] pioneer or primary patent . . . must be given a broad and liberal construction which should not be limited to the precise device and instrumentality shown.”).

the inventor.⁷⁵

While the distinction between pioneering and incremental inventions was frequently used by the Supreme Court and by lower courts in the nineteenth century and in the earlier part of the twentieth century, it has all but disappeared from modern jurisprudence, particularly at the Federal Circuit.⁷⁶ This is a real loss because, if the courts do not know what the true merit of the invention is, they will have great difficulty applying the patent system fairly. The distinction between pioneering and incremental inventions recognizes the full breadth of diversity in inventions. Some inventions are larger, more difficult, and more path-breaking than others.

A great example of the proper use of the “pioneer” concept comes in *Wright v. Paulhan*.⁷⁷ The case involved a suit by the Wright Brothers to enforce their famous patent on a flying machine. The opinion was written by Judge Learned Hand, one of the greatest judges in the

75. See, e.g., *Sessions v. Romadka*, 145 U.S. 29, 45 (1892) (“In view of the fact that . . . [the patentee] was a pioneer in the art of making a practical metallic trunk fastener, and invented a principle which has gone into almost universal use in this country, we think he is entitled to a liberal construction of his claim.”); *Cimiotti Unhairing Co. v. Am. Fur Refining Co.*, 198 U.S. 399, 406 (1905).

It is well settled that a greater degree of liberality and a wider range of equivalents are permitted where the patent is of a pioneer character than when the invention is simply an improvement, may be the last and successful step, in the art theretofore partially developed by other inventors in the same field.

Id.; *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405, 415 (1908) (noting that while pioneer patents were to be given wider latitude under the doctrine of equivalents, the extent to which the inventor contributed to the relevant art was also a significant factor in determining the scope of invention); *Black, Sivalls & Bryson, Inc. v. Nat’l Tank Co.*, 445 F.2d 922, 925 (10th Cir. 1971) (holding that “infringement is not a mere matter of words . . . [but rather] the test is whether the accused device and the device covered by the patent do the same work in substantially the same way to accomplish substantially the same result A primary or pioneer patent . . . is to be given a broad and liberal construction and, also, a broad and liberal range of equivalence and it is not to be limited to the precise device and instrumentality disclosed.”).

76. The Federal Circuit’s view seems to be that courts do not need to consider the distinction because pioneers can draft broader claims, while incremental improvers will have to keep their claims narrow to avoid prior art. See *Augustine Med., Inc. v. Gaymar Indus.*, 181 F.3d 1291, 1301 (Fed. Cir. 1999).

Pioneers enjoy the benefits of their contribution to the art in the form of broader claims. Without extensive prior art to confine and cabin their claims, pioneers acquire broader claims than non-pioneers who must craft narrow claims to evade the strictures of a crowded art field. Thus, claim scope itself generally supplies broader exclusive entitlements to the pioneer.

Id. Once again, this approach tends to emphasize the literal scope of the claims, and to deemphasize the traditional inquiry into the merits of the invention.

77. *Wright Co. v. Paulhan*, 177 F. 261 (C.C.S.D.N.Y. 1910) [hereinafter *Wright Co.*].

twentieth century and also one of the greatest patent judges ever.⁷⁸ A key issue in the case was whether the Wright Brothers' patent covered aircraft that were more modern than ones created and patented by the Wrights.

The Wrights had discovered and patented an aircraft with a particular type of system to "balance" the aircraft and thereby to achieve stability in flight. Under the Wrights' system, an aircraft could be stabilized, in part, by warping the aircraft's wings—i.e., by "moving the lateral portions [of the wing] into different angular relations to the normal plane of the [wing]."⁷⁹ That balancing act was not all that needed to be done. The Wrights also realized that, when an aircraft did this balancing act—i.e., when a portion of the wing on one side of the aircraft was bent down and a portion of the wing on the other side of the craft was bent up to rebalance the aircraft dynamically—the aircraft also needed to make a rudder correction.⁸⁰ If the rudder correction was not made, the aircraft would go into a tailspin and crash.⁸¹ The rudder correction was an important part of the Wrights' aircraft design and was essential for maintaining stability in the aircraft.

The legal issue arose because, as disclosed in their patent, the Wrights' aircraft design used a rope and pulley system that would automatically make the necessary rudder correction every time the wings were warped. Thus, under the Wrights' claimed system, the pilot would concentrate on warping the wings to balance the aircraft, while the rudder would automatically make the proper correction. The

78. *Id.* at 261. See also KATHRYN GRIFFITH, JUDGE LEARNED HAND AND THE ROLE OF THE FEDERAL JUDICIARY 5–13 (1973) (noting Learned Hand's judicial record and accolades); Hon. Henry F. Friendly, *Learned Hand: An Expression from the Second Circuit*, 29 BROOKLYN L. REV. 6 (1962) ("No oracular gifts are required for the prophecy that when the history of American law in the first half of this century comes to be written, four Judges will tower above the rest—Holmes, Brandeis, Cardozo and Learned Hand."); James Oakes, *Special Book Section: Personal Reflections on Learned Hand and the Second Circuit*, 47 STAN. L. REV. 387 (1995). For evaluations of Learned Hand's prowess as a patent judge, see MARVIN SCHICK, LEARNED HAND'S COURT 166 (1970) (noting that Judge Hand "perhaps had no peer" in the field of patent law); GERALD GUNTHER, LEARNED HAND: THE MAN AND THE JUDGE 138, 306–07 (1994) (noting how Judge Hand's opinions on patent matters "before long achieved [him] a reputation as one of the nation's great patent judges"); Stephen H. Philbin, *Judge Learned Hand and the Law of Patents and Copyrights*, 60 HARV. L. REV. 394 (1947) ("To say that Judge Learned Hand is a great patent, copyright or common-law judge is simple tautology—his abilities do not vary with the kind of case before him.").

79. *Wright Co.*, 177 F. at 262 (quoting claim 7 from the Wrights' patent, U.S. Patent No. 821,393 (1906)).

80. See *id.* at 263–64 (describing the automatic rudder correction disclosed in the patent).

81. See *id.*

airplane of the accused infringer lacked such an automatic system.⁸²

The automatic rudder correction system had been eliminated after the Wrights' work because later airplane developers realized an automatic system was unnecessary. Pilots could balance the craft and also make appropriate rudder corrections. In fact, there were some advantages to eliminating the automatic rudder correction system because the pilot of the aircraft then had more freedom to control the rudder for other maneuvers. Thus, aircraft designers after the Wrights simply gave the airplane pilot independent control over both the wings and the rudder. Pilots knew that if they changed the aerodynamic profile of the aircraft's wing to rebalance the aircraft, they also had to make the rudder correction that the Wrights had discovered to be essential for stability. Learning that technique was part of learning to fly.

For purposes of patent law, however, the elimination of the automatic rudder control system raised a very hard question. The patent claim at issue in the Wrights' suit included as an element a "means" for performing the function of causing the rudder to move in the proper way to account for the aerodynamic changes to the wings.⁸³ Under settled law then (as is true now), such means-plus-function claims are construed to cover the corresponding structures disclosed in the patent specification and equivalents. The question on infringement thus boiled down to whether the structure disclosed by the Wright Brothers, a rope and pulley system for making rudder corrections automatically, was equivalent to the system of later aircraft, which required the pilot to make the necessary rudder adjustments. In short, the question was whether a human pilot could be viewed as equivalent to a set of ropes and pulleys.⁸⁴

The issue initially seems like one in which the Wrights could never expect to win. No one would ordinarily think that a set of ropes and pulleys is equivalent to a human being. If the law reached that conclusion, however, then the Wright Brothers would have gotten

82. *Id.* at 262 ("The defendant says that he does not infringe the patent because he does not use a device which automatically always presents to the wind that side of the rudder nearer the angle of lesser incidence.").

83. *Id.* at 262 (setting forth claim 7 of the Wrights' patent, which included as an element a "means whereby said rudder is caused to present to the wind that side thereof nearest the side of the aeroplane having the smaller angle of incidence and offering the least resistance to the atmosphere").

84. ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 821, 824–25 (4th ed. LexisNexis 2007).

nothing from their patent, because no one was building airplanes the way they had built their first aircraft. Conversely, if the human pilot is an equivalent, then the Wrights' patent would cover essentially the entire aircraft industry. The stakes were enormously high, and there was no real middle ground.

Learned Hand concluded that, although it relied on the pilot, the subsequent rudder correction system was an equivalent.⁸⁵ That conclusion is very difficult to reach as matter of linguistics or logic. Modern doctrine, as currently applied in the lower courts, might very well reach the opposite conclusion, which would have left the Wright Brothers with nothing from their famous patent. Learned Hand was able to reach a conclusion favoring the Wrights because he took into account the pioneering quality of the Wrights' work.⁸⁶ Indeed, the pioneering work of the Wrights serves as the polestar of Hand's opinion, for he candidly acknowledges that, even with identical claim language, the result would have been different if the Wrights' contribution had been less significant.⁸⁷

Modern law would be improved if courts followed Learned Hand's example and looked more directly and more thoroughly at the merits of the invention in deciding how to interpret patents. Hand's approach is essential because patented inventions are so enormously diverse—some are big and some are small. A reformed patent system would expend more effort trying to figure out which is which, and those efforts would necessarily have to look beyond on claim language to the underlying merit of the invention.

D. Patentable Subject Matter

My fourth and final example concerns what may be the most important patent case of the century, *Bilski v. Kappos*, which involves patentable subject matter.⁸⁸ This is a sort of a natural ending point for

85. *Wright Co.*, 177 F. at 264 (concluding that it was “a fair equivalent to operate the tiller ropes independently by a mechanism under the direct control of the aviator”).

86. *Id.* at 264, 267 (describing the Wright patent as a “pioneer” patent).

87. *Id.* at 264 (noting that “were the invention an advance over a prior art which had progressed already to the combination without any automatic movement of the rudder, then the claim must have been limited to the precise specifications”).

88. See *Bilski v. Doll*, 545 F.3d 943, 951 (2008) (en banc), *cert. granted*, 129 S. Ct. 2735 (2009). The case was argued as *Bilski v. Kappos*, No. 08-964, on Nov. 9, 2009. See Journal of the Supreme Court of the United States, Oct. Term 2009, at 296 (2009), available at <http://www.supremecourt.gov/orders/journal/jnl09.pdf>.

[This] appeal turns on whether Applicants' invention as claimed meets the requirements set forth in § 101 The statute thus recites four categories of

my lecture because this case touches upon both pragmatism and the diversity of innovation.

The issue in the Supreme Court case is whether practical business processes may be eligible for patenting even if they are not tied to a particular machine and do not transform matter into a different state or thing.⁸⁹ This seemingly simple question raises many other issues, and there are a variety of different approaches to analyzing the case. For example, the case can be considered as an interesting test of the Court's methodology for statutory interpretation. The relevant statutory text states that "any new and useful process" may be the subject of a patent, and it also expressly defines "process" to include "process, art, or method."⁹⁰ The government, however, argues that business processes and methods are nonetheless outside the intended scope of the statute if they are not tied to a particular machine and do not transform matter to a different state.⁹¹ The government is essentially trying to impose onto the statute a gloss not found anywhere in the statutory text, and not recognized by the courts in two hundred years. The case can thus be viewed as an interesting test of whether a textualist approach to

patent-eligible subject matter: processes, machines, manufactures, and compositions of matter. It is undisputed that Applicants' claims are not directed to a machine, manufacture, or composition of matter. Thus, the issue before us involves what the term "process" in § 101 means, and how to determine whether a given claim . . . is a "new and useful process."

Id.

89. The Federal Circuit's *en banc* opinion in *Bilski* stated that a "claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." *Bilski*, 545 F.3d at 954 (citing *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972) and *Diamond v. Diehr*, 450 U.S. 175, 192 (1981)). The *en banc* court held that processes and methods failing to meet either of those two alternatives are generally unpatentable. At the Supreme Court, the Petitioners in *Bilski* are challenging the *en banc* court's test, which is generally referred to as the "machine-or-transformation test." For the questions presented to the Supreme Court in the case, see <http://origin.www.supremecourtus.gov/qp/08-00964qp.pdf>.

90. 35 U.S.C. §§ 101, 100(b). See also *Bilski*, 545 F.3d at 951–52.

As several amici have argued, the term "process" is ordinarily broad in meaning, at least in general lay usage. In 1952, at the time Congress amended § 101 to include "process," the ordinary meaning of the term was: "[a] procedure . . . [a] series of actions, motions, or operations definitely conducting to an end, whether voluntary or involuntary."

Id.

91. Brief for the Respondent, *Bilski v. Kappos*, 2009 U.S. S. Ct. Briefs LEXIS 953, at **50 (2008) (No. 08-964). The government's brief also articulates the class of inventions it views as unpatentable to be "methods of organizing human activity that are untethered to technology." *Id.* at 19. It is unclear whether these different formulations are meant to be separate or identical restrictions on patentable subject matter.

statutory interpretation will be applied to the Patent Act.

Rather than focusing matters of statutory interpretation and other jurisprudential issues, I want to consider the *Bilski* case in light of the themes of this lecture. First, let us consider the theme of diversity in innovation. One major argument against the modern appearance of business method patents is that few such patents were issued in the nineteenth and early twentieth centuries.⁹² Yet if the patent system has traditionally been accommodating of a wide and diverse range of innovations, limiting patentable subject matter to historical categories of innovation is highly problematic. Indeed, the approach seems exceptionally bad, for it invites the courts to look not to the governing text of the statute (which Congress wisely drafted in sufficiently broad terms to cover a diverse range of innovations), but to historical examples of things that were patented in the past. Yet today's innovations are not supposed to fit yesterday's molds. The very best of innovations break down our preexisting conceptions and pioneer whole new fields. The patent law should be welcoming of new and diverse forms of innovations.

My other theme has been the patent system's traditionally pragmatic approach to the building of legal doctrine. The overarching tradition in the field has been to favor the innovations that produce practical benefits in the real world. That approach seems to be in deep tension with the government's hostility to patenting "methods of organizing human activity that are untethered to technology."⁹³ First of all, the government's argument suffers from a significant degree of incoherence, for technological processes are always about ways of arranging the productive activities of humans. Indeed, natural processes have long been held *not* to be patentable.⁹⁴

More importantly, even if the category of "methods of organizing human activity" could be defined, the question remains why the patent system should attempt to target that category of innovations for exclusion. If a new process is practically useful,⁹⁵ if it "would not be disclosed or devised but for the inducement of a patent,"⁹⁶ and if it can

92. *Id.* at **36–42 (arguing that few "patents directed to the organization of human activities" issued in past centuries).

93. *Id.* at **9.

94. See *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (noting that Newton and Einstein could not have patented natural laws such as gravity and $E=mc^2$).

95. See 35 U.S.C. § 101 (requiring that patented inventions be "useful").

96. *Graham v. John Deere Co.*, 383 U.S. 1, 11 (1966) (interpreting the nonobviousness requirement in 35 U.S.C. §103).

be defined with sufficient definiteness and clarity necessary to construct stable property rights,⁹⁷ then it is very difficult to understand the practical case for imposing a categorical exclusion to bar the process from patent eligibility. A more pragmatic approach would care less about whether an inventive new process fits into some preconceived notion of what patentable inventions should look like, and more about whether the prospect of patenting would produce practical benefits for society.

IV. CONCLUSION

I would like to conclude by taking a look back to another Learned Hand opinion. The case is *Parke-Davis & Co. v. H. K. Mulford Co.*, a decision that, while still controversial today, has nonetheless stood the test of time and now provides a basic pillar for many biotechnology patents.⁹⁸

The question in *Parke-Davis* was whether a substance naturally occurring in the human body can be patented by someone who has succeeded in extracting it from the body, isolating it, and purifying it.⁹⁹ That was a difficult, cutting-edge legal question, with some significant authority suggesting that even a purified natural substance should be

97. 35 U.S.C. § 112 (requiring the disclosure of an invention “in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same” and also requiring that patent applicants “particularly pointing out and distinctly claiming the subject matter which [they] regard[] as [their] invention[s]”).

98. *Parke-Davis & Co. v. H. K. Mulford Co.*, 189 F. 95 (C.C.D.N.Y. 1911), *aff’d*, 196 F. 496 (2d Cir. 1912). For sources recognizing the modern importance of *Parke-Davis*, see, e.g., Thomas F. Cotter, *A Burkean Perspective on Patent Eligibility*, 22 BERKELEY TECH L.J. 855, 860 n.14 (2007) (acknowledging that due to the holding in *Parke-Davis*, “[p]roducts of nature that have been isolated and refined from their naturally-occurring state . . . have been viewed as patentable”); Rebecca S. Eisenberg, *Genetics and the Law: Patenting the Human Genome*, 39 EMORY L.J. 721, 727 & n.27 (1990) (recognizing *Parke-Davis* as providing part of the foundation for the patentability of purified and isolated DNA sequences); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 903 (1990) (noting that the *Parke-Davis* decision affects modern biotechnology, particularly on the patentability of synthetic versions of naturally occurring substances); John M. Golden, *Biotechnology, Technology Policy, and Patentability: Natural Products and Invention in the American System*, 50 EMORY L.J. 101, 105 n.18 (2001) (also citing *Parke-Davis* as providing the foundation for patents on purified versions of naturally occurring organic molecules). The controversial nature of *Parke-Davis* is well illustrated by the recent district court decision by Judge Sweet, *Ass’n for Molecular Pathology v. United States PTO*, 2010 U.S. Dist. LEXIS 35418 (April 2, 2010), which rejected Learned Hand’s reasoning in *Parke-Davis* and held unpatentable isolated DNA sequences. *See id.* at *126–27.

99. *Parke-Davis*, 189 F. at 103 (considering and rejecting the argument that a patent may not issue on a substance distinguished by its degree of purity).

viewed as identical to the naturally occurring substance and therefore unpatentable.¹⁰⁰ The substance at stake was adrenalin,¹⁰¹ which, of course, naturally occurs in human bodies. The inventor, Jokichi Takamine, extracted and purified adrenalin, and his patent claimed this purified product.

Judge Hand held purified adrenalin to be patentable,¹⁰² but more important than the result is Hand's reasoning. Consistent with the then-emerging approach of the legal realists, Judge Hand admonished that "[t]he line between different substances and degrees of the same substance"—i.e., between the patentable and the unpatentable—"is to be drawn rather from the common usages of men than from nice considerations of dialectic."¹⁰³ In evaluating the actual "usages"—the real practicalities of the case—Hand found clarity. "Whatever confusion the intricacy of the subject-matter causes," Judge Hand explained, "one fact stands out, which no one ought fairly to forget."¹⁰⁴ He continued:

Before Takamine's discovery the best experts were trying to get a practicable form of the active principle. The uses of the gland were so great that it became a part of the usual therapy in the best form which was accessible. As soon as Takamine put out his discovery, other uses practically disappeared; by that I do not mean absolutely, but that the enormous proportion of use now is of Takamine's products. There has been no successful dispute as to that; hardly indeed any dispute at all. What use remains is, so far as the evidence shows, of the old dried glands, which every one concedes to have been dangerous, at least for intravenous use. All this ought to count greatly for the validity of the patent,

100. See, e.g., *Am. Wood Paper Co. v. Fibre Disintegrating Co.*, 90 U.S. 566, 593–94 (1874).

There are many things well known and valuable in medicine or in the arts which may be extracted from divers substances. But the extract is the same, no matter from what it has been taken. A process to obtain it from a subject from which it has never been taken may be the creature of invention, but the thing itself when obtained cannot be called a new manufacture.

Id.; *Ex parte Latimer*, 1889 Dec. Com. Pat. 123 (rejecting a claim for the natural qualities of a pine needle on the basis that the applicant was seeking to patent the discovery of these properties).

101. *Parke-Davis & Co.*, 189 F. at 97.

102. *Id.* at 103 (holding that "even if [the claimed invention] were merely an extracted product without change, there is no rule that such products are not patentable").

103. *Id.*

104. *Id.* at 114.

and Takamine has a great start, so to speak, from such facts [T]his is a case where he should be entitled to a lenient construction, for he has been author of a valuable invention and has succeeded where the most expert have failed.¹⁰⁵

Hand's opinion in *Parke-Davis* is a perfect example of the right approach to patent law. The opinion focuses on the practical effects and merits of the invention. Those realities—not “nice considerations of dialectic”—are what guided Hand in crafting the law. The opinion is rightly famous because it resolves a seemingly difficult issue of patent law by slicing through indeterminate, sterile legalisms, focusing on the pragmatics of the case, and refusing to constrict the diversity of human innovation sought to be encouraged by our patent system. Our current patent system could use more of that approach, for it could show us the way out of crisis and toward recovery.

Thank you.

105. *Id.* at 114–15.