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#SQUADGOALS: A RESPONSE TO SETH WAXMAN

AMELIA SMITH RINEHART¹

Former Solicitor General Seth Waxman’s recent remarks, framing our current age of patent law in the Supreme Court as “interesting times,” unquestionably captures the exhilaration of an active Supreme Court in this area of the law.² Waxman knows his way around patent cases decided by the Supreme Court—he presented arguments in four of the six patent cases in the 2016 Term³—but he also has an extensive appellate practice before the Court of Appeals for the Federal Circuit (“Federal Circuit”), which has exclusive appellate jurisdiction over patent cases.⁴ Given his substantial experience in patent appellate litigation, Waxman is a reliable observer of patent law and practice over the years, especially in the Supreme Court.

In his remarks, he suggests that the Supreme Court’s “attention to patents”⁵ of late has been marked by an increase in the number of cases that it selects for its docket, by the tendency of such cases to foster uncertainty, by the lack of robust dissent in its unanimous patent cases, and by its disconnection of meaningful context from the Federal Circuit, Congress, or lower courts from its decisions.⁶ The result, he claims, is a level of uncertainty particularly poisonous to patent law because of its utilitarian nature, where the entirety of the scheme is premised on investment *ex ante*.⁷ Fearing that this attention will continue “for the foreseeable future,” Waxman proposes that the Court pause its patent agenda and proceed cautiously to avoid unraveling more incentives for innovation.⁸

1. Professor of Law and Associate Dean for Faculty Research and Development, S. J. Quinney College of Law, the University of Utah. Many thanks to Paul Gugliuzza, Cathy Hwang, RonNell Andersen Jones, and Marc Rinehart for helpful suggestions and insight, and to Brandon Fuller and Carlos Quijada for research assistance. This research was made possible, in part, through generous support from the Albert and Elaine Borchard Fund for Faculty Excellence. Any errors are my own.

2. See generally Seth P. Waxman, *May You Live In Interesting Times: Patent Law In The Supreme Court*, 17 CHI.-KENT J. INTELL. PROP. 214 (2017).

3. Paul R. Gugliuzza, *How Much Has the Supreme Court Changed Patent Law?*, 16 CHI.-KENT J. INTELL. PROP. 330, 333 (2017).

4. See 28 U.S.C. § 1295 (2009).

5. Waxman, *supra* note 2, at 216.

6. Waxman, *supra* note 2, *passim*.

7. Waxman, *supra* note 2, at 225.

8. Waxman, *supra* note 2, at 225.

Waxman leaves it to the reader to conclude whether these times are a blessing or a curse, but his account of the past decade's "trends and themes" strikes a Chicken Little tone while highlighting a frenetic pace, substantial changes, uncertainty, skepticism, lopsidedness, and devaluation.⁹ In this response, I propose a more optimistic view. The problems that Waxman worries over are actually inherent to some of patent law's values, in good and bad ways, which will keep the times interesting. In exploring some of his themes below, I lean on baseball and popular neuroscience to reframe these conflicting values positively. In doing so, I propose recasting the institutional players in patent law, including the Supreme Court and the Federal Circuit, as cooperative rivals that render the patent system more robust (and, indeed, interesting) for our times.

I. ON CARDOZO, PERPLEXED RATS, & BASEBALL

When Waxman describes the heart of patent law as "about achieving balance," he summarizes two hundred and twenty-eight years (and counting) of the United States patent system in operation.¹⁰ The system rewards a private actor with limited exclusive rights (backed by our federal courts) in exchange for the disclosure of inventions into the public sphere.¹¹ These rights to exclude are presumably valuable, at least to some private actors,¹² and our methods of achieving balance—between the public progress the system intends to promote and the cost of exclusion in the form of administration and reduced competition—center around how inventors obtain patents in the first place and enforce them against infringers, although enforcement actions in

9. In the classic folktale, Chicken Little believes the world is ending when an acorn falls on her head. *See, e.g.*, GEORGE BRIDGE & BEA MORITZ, CHICKEN LITTLE (2017).

10. *See generally* Patent Act of 1790, ch. 7, 1 Stat. 109-112 (1790); *see also* Mayo Collaborative Serv. v. Prometheus Lab., Inc., 566 U.S. 66, 92 (2012) (describing patent protection as a two-edged sword, where private exclusive rights incentivize but also carry costs of exclusion, including reduced competition); Waxman, *supra* note 2, at 219.

11. For a summary of competing theories as to what exactly patents are meant to incentivize, see Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017, 1024 (1989). *See also* DAN L. BURK & MARK A. LEMLEY, THE PATENT CRISIS AND HOW COURTS CAN FIX IT 68-78 (describing basic theory as an exchange of investment in research and development for exclusive rights). Courts typically consider disclosure of the invention the primary goal of the patent system. *See, e.g.*, Grant v. Raymond, 31 U.S. 218, 247 (1832) (describing the patent disclosure as "the foundation of the power to issue the patent").

12. Bessen and Meurer describe how different industries value (and use) patents differently. JAMES BESSEN & MICHAEL MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 144-45 (2008). One notable modern example of patent rights being offered freely, Elon Musk, the chief executive officer of Tesla Motors, Inc., who has promised not to enforce his patents against anyone willing to follow Tesla's good faith guidelines. Musk's other company, SpaceX, has "virtually no patents." Jerry Hirshi & Tiffany Hsu, *Musk Offers Tesla Patents To All*, L.A. TIMES, June 13, 2014, at A1.

the courts raise questions of validity alongside liability ones. Free competition and technological progress, thus, present two important ideas always in some tension when considering patent policy.¹³

Waxman raises another important value in his remarks: certainty.¹⁴ The *quid pro quo* of the patent system requires that an erstwhile inventor (whether a person or a company) invests in research and development with the hopes eventually that she will succeed in reducing an invention to practice, that she will obtain a patent sufficiently broad to give her the right to exclude others from competing with her invention in the marketplace, and that she will reap the benefits of such exclusion either through revenue from commercialization partners like licensees or from manufacturing and sales.¹⁵ This premise suggests that quick and substantive changes in the law will render these rights to exclude less predictable and, accordingly, less valuable. As a result, our inventor will have less and less incentive to engage in the expensive upfront R&D.

But Waxman is not alone in asking whether we are doing enough by way of certainty in the law generally. Justice Benjamin Cardozo, after describing law as continually being pulled in the different directions of stability and progress, wrote, “The subject has a literature that takes us back to Aristotle and earlier.”¹⁶ Cardozo joined his successor on the Court, Justice Oliver Wendell Holmes, in viewing law as “a science of prediction *par excellence*”¹⁷—“The prophecies of what the courts will do in fact, and nothing more pretention,” says Holmes, “are what I mean by the law.”¹⁸ As such, in order to grow, the law must avoid two extremes: fixation and immutability, on the one hand, and an “isolated doom” of case-by-case *sui generis* determinations, on the other.¹⁹ Cardozo suggests that we embrace logic, history, custom, and sociology in judicial process to stay this course.²⁰ But his point can be taken more abstractly: those who clamor for more certainty are sure

13. Merges and Duffy trace this tension back to Aristotle. ROBERT P. MERGES & JOHN F. DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 4 (7th ed. 2016).

14. Waxman, *supra* note 2, at 225.

15. Obviously, this is a simplified view of a very complicated process. For a more nuanced take on patents as assets, see Colleen V. Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 *HASTINGS L. J.* 297 (2010). See also ROBIN FELDMAN, *RETHINKING PATENT LAW* 50–74 (2012) (explaining how patents can be used to commercialize the inventions they protect through a bargaining process).

16. BENJAMIN CARDOZO, *THE GROWTH OF THE LAW* 2, n.3 (1924).

17. CARDOZO, *supra* note 16, at 45 (quoting John C. H. Wu, *Juristic Philosophy of Mr. Justice Holmes*, 21 *MICH. L. REV.* 523, 530 (1923)).

18. CARDOZO, *supra* note 16, at 44–45.

19. CARDOZO, *supra* note 16, at 54–55.

20. CARDOZO, *supra* note 16, at 62.

to regret the lack of flexibility when it suits them, and those who bargain for vagueness will definitely dream wistfully of bright-line rules. Each has its place in the law generally, and in patent law in particular.

One useful frame for untangling the patent law puzzle has been labeled by psychologists as “approach-avoidance conflict,” where subjects are torn between a reward and a punishment such that they become immobilized when facing the two together (for example, rats might vacillate between approaching and avoiding a combination of food and shock).²¹ In his book, *Incognito: The Secret Lives of Brains*, popular neuroscientist David Eagleman points to this particular kind of experiment to explain how these poor “perplexed rats” parallel the conflict going on in our brains.²² In the rats, two systems are fighting to manage one goal: the rat’s behavior. In humans, our brains might be comprised of multiple conflicting systems, but economists have used a dual process model that works as well as any for conceptual framing.²³ In this model, human brains labor under a conflict between a rational system and an emotional one.²⁴ Just as Cardozo sets law between two extremes of rigidity and flexibility, so, too, human brains might navigate life between extremes of ration and emotion in overall decision-making. The neuroscience of all of this is poorly understood, but the perplexed rats (and humans) struggling with conflicting values are very real. The particular perplexing problem of patent law is that it forces decision-makers (courts, but also Congress and the USPTO) to balance not just stability and progress in the law, but as Waxman notes, the benefits to the public from patenting generally (technological progress and innovation) and the resultant loss of competition.²⁵

But patent law also must contend with the changing nature of technology itself. As technology moves incrementally forward, the legal mechanisms that we rely upon to determine patent subject matter eligibility, novelty, non-obviousness, direct infringement and secondary liability,

21. See, e.g., Neal E. Miller, *Experimental Studies of Conflict*, in PERSONALITY AND THE BEHAVIOR DISORDERS 431, 436–441 (Joseph McV. Hunt ed., 1944); see generally Eliot Hearst, *Oscillatory Behavior During Approach-Avoidance Conflict*, 10 J. EXPERIMENTAL ANALYSIS BEHAV. 75, 75–84 (1967).

22. DAVID EAGLEMAN, *INCOGNITO: THE SECRET LIVES OF BRAINS* 109 (2011).

23. EAGLEMAN, *supra* note 22, at 109.

24. This is also the premise behind many aspects of modern behavioral law and economics, including the work of Daniel Kahneman and Amos Tversky. Kahneman won the Nobel Prize for Economic Sciences in 2002 for this body of work. In his latest book, Kahneman describes human brain decision-making as using two systems, one fast, unconscious and emotional, the other slow, conscious, and deliberative. DANIEL KAHNEMAN, *THINKING, FAST AND SLOW* (2011).

25. Waxman, *supra* note 2, at 219.

equivalents infringement, and so on, necessarily must solve problems today yet remain open to accommodate things invented tomorrow.²⁶

All of this conflict makes for “interesting times,” to be sure, but some might say times have always been interesting in patent law. 1982 marks the beginning of the modern era, when Congress, after long consideration on reducing the dockets generally of circuit courts, created the Court of Appeals for the Federal Circuit to take on all appeals of patent cases (notably not just patent issues).²⁷ The experiment in a specialized court of appeals held out great promise for an expertise court that might chase the elusive certainty in patent law. As the court matured, the Supreme Court left it to its growth spurts, choosing to intervene in cases procedural in nature, not substantive.²⁸

Enter baseball. *Moneyball: The Art of Winning an Unfair Game*, Michael Lewis’s 2004 bestselling book, tells the story of Billy Beane, the Oakland Athletics’ General Manager, who used vast amounts of data to acquire undervalued players for his low payroll team to gain an advantage over wealthier teams relying on instinct and intuition, the values long utilized by traditional baseball scouts.²⁹ Oakland’s success was modest but compelling—when packaged into Lewis’s intense narrative centered on Beane,

26. Technology may change in important but disruptive ways, which introduces even more legal complexity. See Jack Wroldsen, *Creative Destructive Legal Conflict: Lawyers as Disruption Framers in Entrepreneurship*, 18 U. PA. J. BUS. L. 733, 734 (2016).

27. Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. REV. 1, 3–4 (1989) [hereinafter Dreyfuss, *Case Study*].

28. Rochelle Cooper Dreyfuss, *What the Federal Circuit Can Learn from the Supreme Court and Vice Versa*, 59 AM. U. L. REV. 787, 792 (2010) [hereinafter Dreyfuss, *Learning*]. Even in reference to recent cases, Paul Gugliuzza has described the Court’s docket as comprising cases in “with at least one of the following characteristics: (1) the case involves what might be called a ‘transsubstantive’ issue, that is, an issue that arises in all types of federal litigation, not just patent cases, such as issues of jurisdiction, procedure, and remedies; (2) the case presents the opportunity draw on or harmonize patent law with other areas of federal law; or (3) the case requires the Court to interpret a discrete provision of the patent statute.” Paul R. Gugliuzza, *How Much Has the Supreme Court Changed Patent Law?*, 16 CHI.-KENT J. INTELL. PROP. 330, 334–35 (2017). Importantly, Gugliuzza notes, the Court doesn’t generally decide “foundational” patent law cases. *Id.*

29. MICHAEL LEWIS, *MONEYBALL: THE ART OF WINNING AN UNFAIR GAME* (2004). Sabermetrics, the field of baseball statistics, had been around long before Lewis’s book made it a pop culture reference. The Society for American Baseball Research (SABR) was founded in 1971, but it wasn’t until the early 1980s that computers came along enough to be valuable for analysts. Richard Schell, *SABR, Baseball Statistics, and Computing: The Last Forty Years*, BASEBALL RESEARCH JOURNAL, (Oct. 2011), <http://sabr.org/research/sabr-baseball-statistics-and-computing-last-forty-years> (last visited Mar. 28, 2018). The term “sabermetrics” was coined by Bill James, author of *BASEBALL ABSTRACT: FEATURING 18 CATEGORIES OF STATISTICAL INFORMATION THAT YOU JUST CAN’T FIND ANYWHERE ELSE*, an annual compilation recognized as the bible of baseball statistics. See Ben McGrath, *The Professor of Baseball*, NEW YORKER (July 14, 2003), <https://www.newyorker.com/magazine/2003/07/14/the-professor-of-baseball> (last visited Mar. 3, 2018). The term is an acronym for SABR and, according to James, “denotes ‘the search for objective knowledge about baseball.’” *Id.*

“moneyball” became a well-known management style, in baseball and elsewhere.³⁰

By 2016, baseball analysts long had realized that moneyball analytics, now used by all of the professional teams, could provide no substantial competitive advantage.³¹ Yet, five years into moneyball guru Theo Epstein’s executive reign as President of Baseball Operations for the Chicago Cubs, those lovable losers won the 2016 World Series.³² Epstein recently acknowledged that he replaced a narrow focus on sabermetrics with a broader, human-centric approach to the game that analyzes both a player’s statistics and his character.³³ The latter requires instinct and intuition to assess, the same sort of old-school value eschewed by Beane and moneyball purists. Cubs manager, Joe Maddon, described this new twist on moneyball as “a balance between the sabermetric world and the real world. These are human beings and not computers.”³⁴

Moneyball’s compelling account of Billy Beane’s obsession with “relentless analytics” in baseball management and his David-like ability to slay Goliath teams with money to spend despite low rates of return on intuition and instinct made for a great book (and movie) plot.³⁵ But Beane’s teams never really hit the high marks required to define success in professional

30. Kevin Grier & Tyler Cowen, *The Economics of Moneyball*, GRANTLAND, <http://grantland.com/features/the-economics-moneyball> (last visited Mar. 28, 2018) (in baseball); Richard H. Thaler & Cass R. Sunstein, *Who’s On First*, THE NEW REPUBLIC, (Sept. 1, 2003), <https://newrepublic.com/article/61123/whos-first> (in labor markets); Cass Sunstein, *Regulatory Moneyball: What Washington Can Learn from Sports Geeks*, FOREIGN AFFAIRS, <https://www.foreignaffairs.com/articles/united-states/2013-03-27/regulatory-moneyball> (in government regulation); Michael J. Gaynor, *Can Big Data Predict Which Bills Will Pass Congress?*, WASH. POST, (Feb. 1, 2018), https://www.washingtonpost.com/lifestyle/magazine/can-big-data-predict-which-bills-will-pass-congress/2018/01/31/ffe6c162-f7c3-11e7-b34a-b85626af34ef_story.html?utm_term=.ae9fb760374b (in legislation).

31. Indeed, the Yankees and the Red Sox had been using sabermetrics before Oakland. See St. John, Allen, *Powered By Bill James And Friends, The Red Sox Win (Another) Moneyball World Series*, FORBES, (Oct. 31, 2013), <https://www.forbes.com/sites/allenstjohn/%202013/10/31/powered-by-bill-james-and-friends-the-red-sox-win-another-moneyball-world-series/#19d988297c64> (last visited Mar. 28, 2018).

32. Speaking of curses, the Cubs championship win in 2016 broke the most infamous curse in baseball, the Curse of the Billy Goat. See Laura Wagner, *Cubs’ Curse of the Billy Goat and Other Superstitious Sports Tales*, NPR, (Oct. 21, 2015), <https://www.npr.org/sections/thetwo-way/2015/10/21/448719944/cubs-curse-of-the-billy-goat-and-other-superstitious-sports-tales> (last visited Mar. 24, 2018).

33. *Theo Epstein at Yale Class Day: “Choose to Keep Your Heads Up,”* TIME, (May 22, 2017), <http://time.com/4787640/theo-epstein-cubs-yale-graduation-commencement/> (last visited Mar. 3, 2018).

34. Bill Pennington, *Cubs’ Theo Epstein is Making Lightning Strike Twice*, N.Y. TIMES, (Sept. 28, 2016) <https://www.nytimes.com/2016/10/02/sports/baseball/theo-epstein-chicago-cubs-boston-red-sox-world-series.html> (last visited Mar. 24, 2018).

35. Columbia Pictures released a movie in 2011 based upon the book, starring Brad Pitt as Billy Beane. MONEYBALL (Columbia Pictures 2011).

baseball—playoff wins and championships.³⁶ Beane could expect to win a lot of games (and win games more than Oakland had ever won before), but the quantitative data analysis could only take them so far. Treating players like computers failed to live up to the hype in Oakland.

When Ben Lindbergh and Sam Miller, a couple of data analysts from the FiveThirtyEight blog,³⁷ tried to apply moneyball management to the Sonoma Stompers, a minor league team with a much lower budget than major league teams like the Oakland A's, their “smart spreadsheet” approach also failed to generate much success.³⁸ They observed that their player-manager couldn't get on board with changing how he utilized critical pieces of the team and that the players didn't buy into the hard data on their particular advantages or disadvantages. Importantly, Lindbergh and Miller noticed that the vast amounts of data that they collected and crunched about players didn't produce one valuable piece of information: whether the player could or would improve (sometimes known as “coachability”).³⁹

Our first two decades with the Federal Circuit taught us a lot about specialized appellate courts (more on that below) and how developed expertise can be indispensable in patent law.⁴⁰ Without any meaningful oversight, however, it fell into the same traps as the A's and the Stompers—the Federal Circuit failed to see that subjective inputs like generalized legal standards or common sense safeguards should play a role alongside its technical and patent expertise to better tackle the balancing acts of patent law. Like quantitative analysts who become surprised when human nature intervenes in unpredictable ways with “smart spreadsheets,”⁴¹ the Federal Circuit's testing by the Supreme Court might have been somewhat surprising after so long, but in hindsight, the recent high rate of review might be a feature, rather than a bug, of conflicting systems working always toward some equipoise. The lingering question, then, is how much and what kind of intervention? Once patent law accepts it must keep balancing these several values for eternity, how

36. See DAVID PERKING, *FIVE- PLUS TOOLS: THE PAST, PRESENT, AND FUTURE OF BASEBALL THROUGHOUT THE EYES OF A SCOUT* 215 (2014).

37. Nate Silver's FiveThirtyEight blog uses statistical analysis to tell compelling stories about elections, politics, sports, science, economics and lifestyle. See generally FIVETHIRTYEIGHT, www.fivethirtyeight.com (last visited Mar. 24, 2018).

38. BEN LINDBERGH & SAM MILLER, *THE ONLY RULE IS IT HAS TO WORK: OUR WILD EXPERIMENT BUILDING A NEW KIND OF BASEBALL TEAM* 55 (BASEBALL TEAM (First ed. 2016).

39. Michael Schrage, *What A Minor League Moneyball Reveals About Predictive Analysis*, HARVARD BUS. REV., <https://hbr.org/2016/05/what-a-minor-league-moneyball-reveals-about-predictive-analytics> (last visited Mar. 24, 2018); see generally LINDBERGH & MILLER, *supra* note 38.

40. Dreyfuss, *Learning*, *supra* note 28, at 797; see also Dreyfuss, *Case Study*, *supra* note 27, at 24–25.

41. LINDBERGH & MILLER, *supra* note 38, at 337.

should it operate to minimize disruption and maximize growth? Is it coachable?

II. ON RIVALRY AND RELATIONSHIPS

At the 1860 Republican convention in Chicago, Abraham Lincoln's chances seemed slim—William Seward, Salmon P. Chase, and Edward Bates were just three among almost a dozen statesmen vying for the nomination.⁴² Thanks to some political maneuvering, Lincoln got the nomination on the third ballot and went on to a general election victory.⁴³ He decided quickly that all three former rivals, along with some Democrats and Southerners for good measure, should be placed on his cabinet to “stitch[] together the various factions of the Republican Party.”⁴⁴ Goodwin's book tells a rosy tale of cooperation among former rivals, each with a large personality and principled arguments often at odds with Lincoln (although, in reality, perhaps the situation nationally was more grim).⁴⁵ The Civil War presented a unique scenario that brought all Americans to a breaking point, so it may be no surprise that a common goal to maintain the Union at all cost would knit these principals together in some fashion.

In *Incognito*, Eagleman proposes that the brain is best understood as a team of rivals, turning Doris Kearns Goodwin's aphorism about President Lincoln's cabinet into a pithy description of the complex processes behind human behavior.⁴⁶ Lincoln wanted to turn his adversaries from the Republican nominating convention into allies for the common goals of his administration—namely, to keep the country from falling apart.⁴⁷ Mapping this messy real life example to human decision-making, Eagleman suggests that our brains have similar factions competing for the same goal of survival.⁴⁸ Multiple systems converge to solve similar problems, often in overlapping and rivalrous ways that serve a biological advantage.⁴⁹

Eagleman repackages the brain as a set of rivalrous systems working on the same task in overlapping and multi-nodal ways.⁵⁰ Patent cases and the

42. DORIS KEARNS GOODWIN, *TEAM OF RIVALRY: THE POLITICAL GENIUS OF ABRAHAM LINCOLN* 240–243 (Simon & Shuster Paperbacks ed. 2012).

43. GOODWIN, *supra* note 42, at 249.

44. GOODWIN, *supra* note 42, at 283.

45. *Id.*

46. EAGLEMAN, *supra* note 22, at 109.

47. GOODWIN, *supra* note 42, at 280, 318.

48. EAGLEMAN, *supra* note 22, at 109.

49. EAGLEMAN, *supra* note 22, at 147.

50. EAGLEMAN, *supra* note 22, at 110.

development of patent law over time and by various institutions present another messy real-life example. These institutions all claim to desire to promote innovation, but they approach this goal with different perspectives and processes. A team of rivals account is a relational one, and the critical relationship in patent law right now (and the one highlighted most by Waxman) is the relationship between the Federal Circuit and the Supreme Court. As for Seward and Lincoln, who became close friends and companions until Lincoln's death, optimism abounds.⁵¹

The establishment of the Federal Circuit to alleviate circuit court docket load was not without known risks, including tunnel vision, isolation, and boundary problems with the other appellate courts.⁵² Between Congress and early procedural cases in the Supreme Court, these risks appeared to have been mitigated through semi-specialization (the Federal Circuit hears all patent appeals but has a rich docket of other cases from the Court of Claims, veterans, and the like)⁵³ and case jurisdiction, which affords some benefit, described by Dreyfuss as “a somewhat broader perspective on innovation policy, while also creating an interchange with other national courts.”⁵⁴

After an initial two decades of light touch, though, the Supreme Court embarked on the frenetic pace of review and reversal highlighted by Waxman.⁵⁵ Dreyfuss argues that this heightened level of review should not be taken as a criticism, but that the two courts “have a great deal to learn from one another.”⁵⁶ In his remarks in this Journal last year, Judge Timothy Dyk, a member of the Federal Circuit, likewise positively noted that the Supreme Court's intense engagement with patent law of late was beneficial to his court.⁵⁷ Others are less cheerful. In response to Judge Dyk, Professor Tim Holbrook refers to the recent cases as “a mixed bag,” with the Court's decisions on patent eligible subject matter “hav[ing] simply gone off the rails.”⁵⁸

51. See GOODWIN, *supra* note 42, at 745 (quoting John Hay, Lincoln's secretary, as observing, “The history of governments . . . affords few instances of an official connection hallowed by a friendship so absolute and sincere as that which existed between these two magnanimous spirits . . .”).

52. Dreyfuss, *Learning*, *supra* note 28, at 790.

53. *Id.*; see also Gugliuzza, *supra* note 3, at 333 (2017); Paul R. Gugliuzza, *Rethinking Federal Circuit Jurisdiction*, 100 GEO. L.J. 1437, 1461–64 (2012).

54. Dreyfuss, *Learning*, *supra* note 28, at 791.

55. Waxman, *supra* note 2, at 219.

56. Dreyfuss, *Learning*, *supra* note 28, at 793.

57. Timothy B. Dyk, *Thoughts on the Relationship Between the Supreme Court and the Federal Circuit*, 16 CHI.-KENT J. INTELL. PROP. 67, 71 (2016).

58. Timothy R. Holbrook, *Is the Supreme Court Concerned with Patent Law, the Federal Circuit, or Both: A Response to Judge Timothy B. Dyk*, 16 CHI.-KENT J. INTELL. PROP. 313, 319 (2017).

Former Federal Circuit Chief Judge Paul Michel has argued previously that the Supreme Court “doesn’t really understand the case law.”⁵⁹

In the midst of this continuing conversation (the Court will decide two cases later this year from the October 2017 term),⁶⁰ Waxman frames the Roberts Court’s patent law jurisprudence as a reaction of sorts to the Federal Circuit’s caselaw. He refers to a “new mindset” skeptical of the lower court’s work in the area of patent law, with the Supreme Court having “a greater willingness to second guess the Federal Circuit.” What if, instead, we thought of the Federal Circuit and the Supreme Court not as two disconnected institutions, but related ones that seek to balance values and serve a single innovation goal?

Like the rational system in our brains and sabermetrics in baseball’s front offices, the Federal Circuit sits uniquely situated to bring its expertise in patent law and technology interfacing to influence both trial court practice and procedure in patent cases and substantive patent law doctrines.⁶¹ We should not fault the court for keeping to its task commendably. In doctrinal patent law cases like *KSR*,⁶² *Myriad*,⁶³ and *Festo*,⁶⁴ the Federal Circuit’s decisions reflect a court that spends much of its time considering how patent law cases are tried in lower courts, how technology influences decisions in this space, and how best to promote innovation while adhering to statutory and precedential constraints.⁶⁵ It is also possible that the Federal Circuit’s former rules were designed specifically for the USPTO, which has an examiner corps making patentability decisions on thousands of applications annually.⁶⁶ In the early days of the Federal Circuit, this may have seemed like

59. Paul Michel, *Lecture: Innovation, Incentives, Competition, and Patent Law Reform: Should Congress Fix the Patent Office and Leave Litigation Management to the Courts?*, 20 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1135 (2010); Greg Reilly, *How Can the Supreme Court Not “Understand” Patent Law?*, 16 CHI.-KENT J. INTELL. PROP. 292, 298 (2017).

60. *Oil States Energy Servs., LLC v. Greene’s Energy Grp.*, 639 Fed. Appx. 639 (Fed. Cir. 2016) *cert. granted*, 137 S. Ct. 2239 (U.S. June 21, 1992 (No. 16-712)); *SAS Inst., Inc. v. Complementsoft, LLC*, 825 F.3d 1341 (Fed. Cir. 2016), *cert. granted*, *SAS Institute, Inc. v. Lee*, 137 S. Ct. 2160 (U.S. May 22, 2017) (No. 16-969).

61. Dyk, *supra* note 57, at 82.

62. *See generally KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007) (finding too rigid the Federal Circuit’s rule for determining whether a skilled artisan had motivation to combine references).

63. *See generally Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107 (2013) (declaring isolated genetic sequences not eligible for patenting).

64. *See generally Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722 (2002) (finding too exclusive the Federal Circuit’s rule for determining equivalent based on prosecution history).

65. Dreyfuss, *Learning*, *supra* note 28, at 806.

66. Although it should have been obvious, I’m grateful to Paul Gugliuzza for pointing this out.

enough of a start to move beyond the chaotic appeals process and lack of uniformity that spurred creation of the expert court in the first place.⁶⁷

Over time, like Billy Bean's relentless analytics or the mythical perfectly rational actor, the expertise of the Federal Circuit, without meaningful review, began to seem one-sided and self-perpetuating.⁶⁸ By creating a specialized court at the intermediate level, Congress created a court with a great deal of power over lower courts yet still overseen by the Supreme Court in the same manner as the other circuit courts. It was only a matter of time before the Supreme Court (maybe pushed by the patent bar, as Waxman hints) decides to examine Federal Circuit rules like the *Seagate* test for willful infringement,⁶⁹ *Octane Fitness's* test for an exceptional patent case warranting fee shifting,⁷⁰ or even *KSR's* rules for determining non-obviousness.⁷¹ Moreover, as others have noted, the majority of the Supreme Court's cases, even at this heightened pace, involve very few questions of foundational patent law, they instead focus on statutory interpretation, harmonization of patent law with other areas of the law, and common federal litigation problems.⁷²

The Supreme Court, a generalized Court of last resort with control, for the most part, over its own docket, faces a very different task in its working day.⁷³ Judge Frank Easterbrook refers to it as "a regulator."⁷⁴ Professor Geoff Stone agrees in a sense, describing the court's role as one to "not merely decide the specific dispute between Joe and Mary, but to enunciate principles

67. Dreyfuss, *Learning*, *supra* note 28, at 801.

68. Indeed, as Holbrook has pointed out, the few cases during this era may have even facilitated the formalism that the Federal Circuit appeared to employ. Timothy R. Holbrook, *The Supreme Court's Complicity in Federal Circuit Formalism*, 20 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1, 2–6 (2003). Gugliuzza notes that the Federal Circuit may create doctrines to bolster its own position as an expert, to the exclusion of other institutions, including the USPTO. Paul R. Gugliuzza, *Saving the Federal Circuit*, 13 CHI.-KENT J. INTELL. PROP. 350, 370 (2014).

69. *Halo Elec., Inc. v. Pulse Elec., Inc.*, 136 S. Ct. 1923, 1928 (2016) (rejecting the Federal Circuit's test for treble damages as overly rigid).

70. *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1751 (2014) (rejecting the Federal Circuit's interpretation of 35 U.S.C. § 285 to determine an exceptional case for awarding attorney's fees in patent cases); *Highmark Inc. v. Allcare Health Management Sys., Inc.*, 134 S. Ct. 1744, 1745 (2014) (holding that the appellate court should use an abuse of discretion standard when applying 35 U.S.C. § 285 to determine an exceptional case).

71. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 426 (2007).

72. Gugliuzza, *supra* note 3, at 334–336 (2017).

73. See generally Frederick Schauer, *Is it Important to Be Important: Evaluating the Supreme Court's Case-Selection Process*, 119 YALE LAW J. ONLINE 77 (2010) (generally evaluating the Supreme Court's case-selection process).

74. Frank H. Easterbrook, *The Court and the Economic System*, 98 HARV. L. REV. 4, 4 (1984).

of law.”⁷⁵ Over the course of its history, the Court has built up its own expertise in the areas of constitutional law, statutory interpretation, and other generalized legal questions of great importance.⁷⁶ It’s reasonable to assume that the Court might disagree with the Federal Circuit in application of rules, principles, and precedent in patent law, as reasonable minds might disagree in garden-variety disputes or as the Supreme Court and the 9th Circuit might disagree in non-patent cases.

That these disagreements impact innovation and incentives by diminishing certainty and predictability for future inventors and patent owners presents a plausible basis for fretting over the Court’s interest in tinkering with the expertise of the Federal Circuit. But the Federal Circuit’s own business of patent law in the appellate trenches (not to mention trial courts and practitioners advising clients) need not be roiled by any of the Supreme Court’s decisions of late. Lincoln spent months debating emancipation with his cabinet of rivals and all of those involved worried that the war would be unending.⁷⁷ But it was Lincoln that ultimately made the decision to emancipate the slaves, calling his Cabinet together and informing them about the decision, and importantly, inviting them to offer input on execution. When Seward advised that he wait until victory to issue the proclamation, Lincoln did wait until Antietam to issue it, reflecting the importance of good relations even when disagreements arise.⁷⁸

To work well as cooperative rivals, the institutions themselves must do the hard work of putting aside their differences and focusing on their separate expertise as applied to the innovation goals we’ve set for the patent system. Advising clients remains difficult, but that is a function of the dynamic nature of common law adjudication itself. As Justice Oliver Wendell Holmes wisely and wryly wrote, “[T]he means do not exist for determinations that shall be good for all time.”⁷⁹ Waxman makes an excellent point about the changes coming too fast and too furious these days for many of us to keep up, but the better correction is not to eliminate one or the other of these institutions, but to foster better dialogue and cooperation between them. Assuming patent law, writ large, generates innovation and economic growth in ways that “promote progress,” the devil (as always) resides in the details and

75. Geoffrey R. Stone, *Chief Justice Roberts and the Role of the Supreme Court*, HUFF. POST, (Feb. 2, 2007), https://www.huffingtonpost.com/geoffrey-r-stone/chief-justice-roberts-and_b_40277.html (last visited Mar. 24, 2018).

76. Schauer, *supra* note 73, at 78.

77. GOODWIN, *supra* note 42, at 464–468.

78. *Id.*

79. Oliver Wendell Holmes, *The Path of the Law*, 110 HARV. L. REV. 991, 998 (1997).

in the work of many institutions, not just the Federal Circuit and the Supreme Court, including Congress, the USPTO, and district courts across the country.

Some attention should be paid to the role that technology plays in patent law, which impacts the relationships here. Part of the appeal of a specialized Federal Circuit having a final say on patent cases remains its willingness to tackle head on complex technological disputes.⁸⁰ But the real workhorses in patent disputes are trial courts on the ground, who labor to combine the cognitive load of understanding a complex area of the law and achieving some level of competence with a complex technology.⁸¹ The Federal Circuit does have a few judges with technical backgrounds,⁸² but query how useful these backgrounds are when the invention in dispute is far afield from those subject areas. There is no reason to believe that we should be less confident in the Federal Circuit or the Supreme Court over time based on technological background alone. The cases that make it to the Supreme Court often don't involve disputes as to technological facts,⁸³ and, in any event, the latest cases don't seem to implicate complicated technology, if judged on complexity of the patent claims alone. *Alice* or *Akamai* might be exceptions to this generalization,⁸⁴ but in both of those cases, the Federal Circuit and the Supreme Court capably described the technology well enough to present the legal issues for resolution.

The expertise of the Federal Circuit really lies in its understanding of how patent law works in practice—the moving parts associated with examination, appeals to the USPTO, district court practice, and its own appellate

80. See generally R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105 (2004).

81. See Judge James F. Holderman & Halley Guren, *The Patent Litigation Predicament in the United States*, 2007 U. ILL. J.L. TECH. & POL'Y 1, 1–4 (2007). To be fair, there are disputes involving technology not very complex in any sense of the word. I once litigated the gusseted feature in expandable luggage.

82. See *Judges*, U.S. CT. OF APPEALS FOR THE FED. CIR., <http://www.cafc.uscourts.gov/judges> (last visited Mar. 24, 2018) (For instance, Judge Chen, Judge Linn and Judge Stoll have B.S. degrees in Electrical Engineering, Judge Lourie has a Ph.D. in Chemistry, and Judge Moore has B.S. and M.S. degrees in Electrical Engineering). The court also hires technical assistants to aid in its decisions, and often the judges hire clerks with technical expertise in a variety of fields, so it is able to fill an important gap with this extra-judicial personnel.

83. Gugliuzza, *supra* note 3, at 338, 346.

84. *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2352 (2014) (invalidating claims directed to a computer-driven escrow service); *Limelight Networks v. Akamai Tech.*, 134 S. Ct. 2111, 2114 (2014) (reversing a finding of inducement liability under 35 U.S.C. §271(b) for an invention related to cloud computing).

jurisdiction.⁸⁵ Several of the cases reversed by the Supreme Court could be classified as cases where the Federal Circuit has created a bright-line rule that serves the value of predictability in the lower courts and on the front lines at the USPTO.⁸⁶ If the Federal Circuit had been more clear about why it assigns this or that practical rule for patent case management—willful infringement, exceptional cases, and the like—then the Supreme Court’s approach in review would almost certainly take this into account.

As Waxman argues that the Supreme Court has engaged in a “devaluing of context” problem for the Federal Circuit, he appears to mean that the Court, in its recent jurisprudence, adheres to its own rules of precedent and interpretation, but tends to ignore long-standing historical context that shaped the Federal Circuit decisions in this space.⁸⁷ Waxman uses *Kimble* as an example of the Court preferring to keep a settled rule in place rather than “upset the incentives for investment” by chasing the right rule of law. His point would be even stronger to contrast *Kimble* to another recent case, *Impression Products*, where the Court shuttered the Federal Circuit’s long-standing rule.⁸⁸ In *Kimble*, considered a patent misuse case but procedurally a contract case, the Court relied on stare decisis to keep in place a long-quested mode of rendering royalty provisions in patent license agreements unenforceable after the expiration of the patent.⁸⁹ In *Impression Products*, the Court overruled directly *Mallinckrodt*, a 1992 case affirmed repeatedly at the Federal Circuit despite criticism along the same lines as that of post-expiration royalties.⁹⁰ One might wonder why a long-standing Federal Circuit rule would not be afforded the same deference as an oft-slighted Warren Court one?

But this is another feature of the perspective, function, and relationship of the courts themselves. Where the Federal Circuit might miss the forest for the trees of patent law, the Supreme Court might miss the trees for the forest

85. R. Polk Wagner, *The Two Federal Circuits*, 43 LOY. L.A. L. REV. 785, 789 (2010) (describing the Federal Circuit as serving two functions related to patent law—determining whether cases have been decided correctly and being a “steward of the law,” to ensure stable and predictable patent law over time).

86. See Rochelle Cooper Dreyfuss, *In Search of Institutional Identity: The Federal Circuit Comes of Age*, 23 BERKELEY TECH. L.J. 787, 802–804 (2008). In several works about the Federal Circuit, Dreyfuss explains how the early Federal Circuit maximized its technical expertise in patent cases by declaring some issues questions of law. *Id.*

87. Waxman, *supra* note 2, at 222.

88. *Impression Prods., Inc. v. Lexmark Int’l, Inc.*, 137 S. Ct. 1523, 1535 (2017) (declaring a restriction on a sale unenforceable in patent law when the sale has been made by a patentee or a licensee operating within the confines of his license). By citing throughout *Quanta Computer, Inc. v. LG Electronics, Inc.*, the Court suggests that *Quanta* overruled *Mallinckrodt*, and the Federal Circuit, in not recognizing such, continued to rely on *Mallinckrodt* as precedent in *Impression Products*.

89. *Kimble v. Marvel Entm’t, LLC*, 135 S. Ct. 2298, 2301 (2015).

90. *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992), *abrogated by* *Impression Prod., Inc. v. Lexmark Int’l, Inc.*, 137 S. Ct. 1523 (2017).

of generalized law. In this way, it is less alarming (and almost comforting) that they have each other to rely upon to ensure that patent law is right-sized for innovation goals. Billy Beane's strategy to examine the micro-detail of his players' performance on the field will not achieve the highest levels of success without folding in the emotional intelligence and soft skills that Theo Epstein has learned to look for in assessing humans along with their statistics. But as with value tradeoffs like these, so, too, the competitive, rivalrous nature of these mechanisms in place might fuel the fire of innovation policy over the long term. Fretting over the rapid changes seems a bit like worrying over the lightning pace of technology in general. If we accept that technology moves quickly, it's hard to find the right ways to slow the pace without slowing the innovation we desire—so, too, with patent law. Welcoming the (maybe hopeful) idea that the Supreme Court is engaging with patent law in a meaningful way, I'd like to shift the conversation away from the sky falling and toward future examinations of cognitive load and expertise tradeoffs, so that we can learn more about how the relationship between the Federal Circuit and the Supreme Court facilitates legal development—they can be Swards of patent law together.

Moreover, I disagree with Waxman about the significance of lopsided opinions. The unanimity of the Supreme Court's cases need not add more gloom and doom.⁹¹ Chief Justice Roberts self-identifies as a consensus builder on the Court.⁹² Unanimous or less contentious decisions have been par for the course in most Roberts Courts cases, rather than some outlier for patent disputes. As it tries to reach consensus in more cases, the Court narrows its outcomes and slices older cases into smaller and smaller bites, distinguishing and distancing when possible.⁹³ Counter-intuitively, this may open the door more widely to the Federal Circuit to establish its own law and policy in these particular spaces, rather than telling some bigger story about dominance and power.

Another set of relationships of increasing importance to patent law lies within the Federal Circuit. Eight of eighteen judges have been appointed to the Federal Circuit since 2005, the opening year of the Roberts Court. The court has six judges with extensive patent law experience prior to their appointment to the bench, and twelve who have some patent law, civil and appellate, or international trade expertise in addition to general administrative

91. See Cass R. Sunstein, *Unanimity and Disagreement on the Supreme Court*, 100 CORNELL L. REV. 769, 770 (2015).

92. *Id.*

93. *Id.*

or appellate experience.⁹⁴ Coinciding with the higher number of reviews by the Supreme Court, the Federal Circuit appears to be developing factions. *Bilski*, the patent eligibility case, had one concurrence and three dissents.⁹⁵ *Alice*, on a similar question, was decided by a plurality, with three dissents-in-part and some “reflections” from former Chief Judge Randall Rader.⁹⁶ *Akamai*, an important case about multi-actor infringement, included a blistering dissent from Judge Bryson and *Lexmark* included one from Judge Dyk. Like a circuit split between other circuits, dissent within the Federal Circuit may serve as a regulating force that pushes both majority and dissenting groups to be more careful in drafting opinions such that positions and policy are delineated clearly.⁹⁷

Finally, the other *dramatis personae* in patent law cannot be ignored to focus solely on the relationship between the Federal Circuit and the Supreme Court. Waxman hints at the Supreme Court’s skepticism toward Congress and the USPTO and at Congress’s silence as a tacit acceptance of Federal Circuit policy.⁹⁸ Equally plausible, many different stakeholders might lobby Congress for reform or to prevent reform, including repeat patent litigation players who are often both patent plaintiffs and defendants. (Less generously, Congress’s extreme dysfunction could be to blame.⁹⁹)

The USPTO, on the other hand, is the executive agency that examines applications, tries appeals, and administers post-grant and inter partes reviews. It takes its task as an examining and technical agency seriously, but inevitably its means for achieving the ends of a happy and healthy innovation system will look and feel very differently from the courts or Congress. Post-grant reviews and *inter partes* reviews, added by the America Invents Act in 2011 to the agency’s ability to review issued patents using its Patent Trials and Appeals Board, have much to commend them with respect to shifting technical assessment back to the USPTO after grant and allowing for some

94. See *Judges*, U.S. CT. OF APPEALS FOR THE FED. CIR., <http://www.cafc.uscourts.gov/judges> (last visited Mar. 24, 2018).

95. *In Re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (with one concurrence and three dissents), *rev’d sub nom.*, *Bilski v. Kappos*, 561 U.S. 593 (2010).

96. *CLS Bank Int’l v. Alice Corp.*, 717 F.3d 1269 (2013) (with a plurality opinion, three additional opinions, and additional “reflections” from Judge Rader), *rev’d sub nom.* *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014). For a judge-by-judge analysis of the Federal Circuit’s post-*Alice* patent eligibility opinions, see Matthew B. Hershkowitz, *Patently Insane for Patents: A Judge-by-Judge Analysis of the Federal Circuit’s Post-Alice Patentable Subject Matter Eligibility of Abstract Ideas Jurisprudence*, 28 *FORDHAM INTELL. PROP. MEDIA & ENT. L.J.* 109, 114 (2017).

97. Dreyfuss, *Learning*, *supra* note 28, at 800; Wagner, *supra* note 80, at 1177–1178.

98. Waxman, *supra* note 2, at 223–224.

99. See Lawrence Baum, *Supreme Court Justices as Human Decision Makers*, 41 *OHIO N. U. LAW REV.* 567, 582 (2015).

adversarial participation in that process for less expense and time than litigation.¹⁰⁰ In the past five years, the invalidation rates have been markedly high and some worry that the benefits over litigation may be overstated.¹⁰¹ The Supreme Court will review the constitutionality of these reviews proceeding without Article III judges during this term.¹⁰² If they remain intact, they will continue to provide yet another avenue for institutional balancing of patent values like certainty and growth.

Given these exciting times and the dizzying pace of technology, optimism springs eternal that differing groups are up to the challenge of embracing value conflict within patent law and adapting itself to the goal of innovation. With the Supreme Court in the position to provide important oversight and generalized legal expertise, the Federal Circuit can continue to raise its voice to technical and patent law expertise, while district courts remain in the trenches doing the critical day-to-day work of resolving private patent disputes. With more guidance from these appellate courts as to precise policy drivers when bright line rules are disfavored, we should be able to have some confidence that, over time, the complexity underlying patent law's balancing act will be the key to a robust and enduring legacy of innovation.

100. See 37 C.F.R. § 42 (2012).

101. See Megan M. La Belle, *Public Enforcement of Patent Law*, 96 B.U. L. REV. 1865, 1893 (2016) (outlining debate about IPRs being "death squads"). La Belle points out early data reflecting a very high invalidation rate at the USPTO through IPRs and suggests conclusions would be hard to draw this early in the life of IPRs, which began to be instituted in 2012. See also Brian J. Love & Shawn Ambwani, *Inter Partes Review: An Early Look at the Numbers*, 81 U. CHI. L. REV. DIALOGUE 93, 93–94 (2014); Paul R. Gugliuzza, *(In)valid Patents*, 92 NOTRE DAME L. REV. 271, 295 (2016) (suggesting that IPRs have made litigation more expensive, rather than less, because often the two proceedings run concurrently).

102. *Oil States Energy Servs., LLC v. Greene's Energy Grp.*, 639 Fed. Appx. 639 (Fed. Cir. 2016) *cert. granted*, 137 S. Ct. 2239 (U.S. June 12, 2017) (No. 16-712).