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## Formalism at the Federal Circuit

John R. Thomas

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## Formalism at the Federal Circuit

## ARTICLES

## FORMALISM AT THE FEDERAL CIRCUIT

JOHN R. THOMAS\*

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\* Professor of Law, *Georgetown University*. Thanks to Mark Lemley for his perceptive observations on this piece.

## INTRODUCTION

The U.S. Court of Appeals for the Federal Circuit (“Federal Circuit”) has long been viewed as a promoter of the patent system.<sup>1</sup> Two decades of experience offer much evidence to support this view. The subject matter judged amenable to patenting has expanded from traditional technologies to the entire range of human endeavor.<sup>2</sup> The consequences of infringement have been made more severe.<sup>3</sup> The court has held a circumspect view of antitrust, misuse, and other principles that might allay the exclusive rights associated with granted patents.<sup>4</sup> By virtually any measure, patents are more prominent than a generation ago.<sup>5</sup> Judge Richard Posner’s recent observation that specialized courts become boosters of their specialty would seem to have a great deal of support.<sup>6</sup>

Yet in recent years, the view that the Federal Circuit serves as a patent law proponent has become oversimplified. In a series of unexpected developments, the court has laid siege against the doctrine of equivalents.<sup>7</sup> Such devices as prosecution history estoppel<sup>8</sup> and the newly minted public dedication doctrine<sup>9</sup> have

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1. See Bruce Rubinstein, *A Little History*, 7 CORP. LEGAL TIMES 38 n.63 (Feb. 1997) (stating that “[t]he Court’s tilt is demonstrably in favor of patent holder . . .”); Nancy Rivera Brooks, *Invention is Often the Mother of Litigation*, L.A. TIMES, Feb. 20, 1990, at 1 (reporting Professor John Wiley’s view that the Federal Circuit is a “strongly pro-patent court”).

2. See generally John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139 (1999) [hereinafter Thomas, *The Patenting of the Liberal Professions*] (suggesting that few restraints now bind the sorts of subject matter that may be appropriated via the patent system).

3. See generally Robert D. Taylor, *Twenty Years of the Federal Circuit: An Overview*, 716 PLI/PAT 16-19 (2002) (discussing the available infringement remedies for the Federal Circuit); William A. Morrison, *The Impact of the Creation of the Court of Appeals for the Federal Circuit on the Availability of Preliminary Injunctive Relief Against Patent Infringement*, 23 IND. L. REV. 169 (1990) (examining the various standards for preliminary relief in injunction cases).

4. See, e.g., Peter M. Boyle et al., *Antitrust Law at the Federal Circuit: Red Light or Green Light at the IP-Antitrust Intersection?*, 69 ANTITRUST L.J. 739, 739 (2002) (noting references by the Federal Circuit in its recent jurisprudence to “a broad antitrust immunity enjoyed by patent owners”).

5. See Taylor, *supra* note 3, at 12.

6. See Declan McCullagh, *Left Gets Nod From Right On Copyright Law*, CNETNews.com (Nov. 20, 2002), at <http://news.com.com/2100-1023-966595.html> (reporting observations of Judge Richard Posner during a November 2002 lecture, including his statement that “[a] specialized court tends to see itself as a booster of its specialty.”).

7. See Scott J. Fields, *Another Coffin Nail in the Doctrine of Equivalents*, 27 PA. L. WEEKLY, June 24, 2002, at S5 (examining the Federal Circuit’s recent treatment of the doctrine).

8. See R. Polk Wagner, *Reconsidering Estoppel: Patent Administration and the Failure of Festo*, 151 U. PA. L. REV. 159 (2002).

9. See *Johnson & Johnston Assocs. v. R.E. Serv. Co.*, 285 F.3d 1046, 62

constrained the doctrine of equivalents to an extent not seen during the history of the Federal Circuit. We lack experience with these sudden changes to our patent jurisprudence, but suspicion is afoot that recent Federal Circuit thinking will increase the cost of patent acquisition, augment the burdens of patent administration, and encourage free riders—trends that make both the patent system, and the process of innovation, less attractive alternatives.<sup>10</sup>

Developments in the law of nonobviousness present mixed results.<sup>11</sup> By increasing the evidentiary showing needed to demonstrate a motivation to combine references, the Federal Circuit has continued its trend of lowering the standard of nonobviousness.<sup>12</sup> A lenient view of nonobviousness is ordinarily seen as inventor-friendly and pro-patent. But this trend allows the patenting of marginal inventions, increasing the possibility that primary inventors will have to share the rewards of their pioneering inventions with follow-on inventors of improvements. A diminished nonobviousness standard cuts both ways for innovators.

At first blush, these divergent strands of Federal Circuit patent jurisprudence seem to resist a unifying explanation. But closer inspection shows that in all of them runs a common thread: the drift toward simple rules. Where the Federal Circuit once resolved issues based upon “all the facts and circumstances,” it now more often applies a discrete list of factors.<sup>13</sup> Where the court once employed standards, it now employs rules.<sup>14</sup> Where the court once had dense

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U.S.P.Q.2d (BNA) 1225 (Fed. Cir. 2001) (en banc) (establishing the rule that subject matter that is disclosed, but not claimed in a patent, is dedicated to the public domain).

10. See, e.g., Kelly L. MORRIS, *Supreme Court's Ruling Will Likely Increase Costs of Patent Litigation*, METRO. CORP. COUNSEL 5 (July 2002) (discussing a projected increase in the cost of patent litigation stemming from the Supreme Court's *Festo* decision); Kin-Wah Tong & Robert M. Brush, *Patent Prosecution in Light of Festo*, 11 N.J. LAWYER 1507 (2002) (expanding on the increased costs of patent litigation post-*Festo*). See generally *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 56 U.S.P.Q.2d (BNA) 1865 (Fed. Cir. 2000) (en banc), *vacated by* 535 U.S. 722, 62 U.S.P.Q.2d (BNA) 1785 (2002).

11. See generally Robert Desmond, *Nothing Seems "Obvious" to the Court of Appeals for the Federal Circuit: The Federal Circuit, Unchecked by the Supreme Court, Transforms the Standard of Obviousness Under the Patent Law*, 26 LOY. L.A. L. REV. 455, 465-83 (1993) (providing an historical overview of the changing definition of “obviousness” prior to and after the creation of the Federal Circuit).

12. See generally John R. Thomas, *The Responsibility of the Rulemaker: Comparative Approaches to Patent Administration Reform*, 17 BERKELEY TECH L.J. 727, 728-44 (2002).

13. See *Pfaff v. Wells Elec., Inc.*, 525 U.S. 55, 48 U.S.P.Q.2d (BNA) 1641 (1998) (acknowledging that the totality of the circumstances test is unnecessarily vague and thus should be rejected).

14. See, e.g., *Johnson & Johnston Assocs.*, 285 F.3d 1046, 62 U.S.P.Q.2d (BNA) 1225 (Fed. Cir. 2001) (en banc) (adding public dedication doctrine to the set of rules, including prosecution history estoppel, prior art limitations, and the all limitations

rules, they have become leaner.<sup>15</sup> In short, the Federal Circuit has embraced an increasingly formal jurisprudence.

The term “formalism” is not necessarily a pejorative.<sup>16</sup> Advocates of formally realized rules argue that they reduce judicial discretion, lead to more certain outcomes and provide private actors with the certainty necessary to order their affairs in an efficient fashion.<sup>17</sup> The judge-made law governing the doctrine of equivalents provides a striking example. Once a ruleless determination dominated by vague standards and jury verdicts, equivalent infringement has become far more predictable under the stewardship of the Federal Circuit.<sup>18</sup>

Yet formalism brings familiar criticisms as well. Bright-line rules may prevent the fine-tuning needed to reach individualized judgments and instead encourage behavior to the boundaries of prohibited conduct.<sup>19</sup> In an era where the doctrine of equivalents has become increasingly cabined, for example, competitors may permissibly practice to the limit of the precise wordings of patent claims.<sup>20</sup> The drive to formalism may also distance the patent law from innovation policy. When deciding whether inventions from a particular sphere of endeavor should be patented, for example, the Federal Circuit does not query into that field’s pace of innovation, need for interoperability, or industrial structure. The court merely asks whether the invention is minimally useful.<sup>21</sup> When resolving

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rule, that constrain the doctrine of equivalents).

15. See *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 47 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1998) (rejecting the *Freeman-Walter-Abele* utility standard); see also *infra* notes 100-01 and accompanying text (defining the *Freeman-Walter-Abele* standard, which was used to deny software patents for mathematical formulas that lacked physical applications).

16. See Robert S. Summers, *How Law is Formal and Why it Matters*, 82 CORNELL L. REV. 1165, 1225-27 (1997) (arguing that inventive aspects of the law contribute beneficially to the creation of new varieties of social and civil life, and that formalism is vital to this process).

17. See Frank I. Michelman, *A Brief Anatomy of Adjudicative Rule-Formalism*, 66 U. CHI. L. REV. 934, 934 (1999) (asserting that the certainty derived from formally-realized rules promotes fairness and economic efficiency, while remaining relatively impervious to elements of coercion).

18. See Christina Y. Lai, Comment, *A Dysfunctional Formalism: How Modern Courts Are Undermining the Doctrine of Equivalents*, 44 UCLA L. REV. 2031, 2034 (1997) (commenting on judicial application of the doctrine of equivalents and the uncertainty that ensued).

19. See generally Pierre Schlag, *Rules and Standards*, 33 UCLA L. REV. 379 (1985) (clarifying the debate between rules and standards by outlining the advantages and disadvantages of each).

20. See *Graver Tank v. Linde Air Prods. Co.*, 339 U.S. 605, 607, 85 U.S.P.Q. (BNA) 328, 330 (1950) (observing that “[o]utright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form.”).

21. See *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373, 47 U.S.P.Q.2d (BNA) 1596, 1601 (Fed. Cir. 1998) (holding that an invention is

issues under the doctrine of equivalents, the court does not weigh improvement and imitation. The court instead looks to see whether an accused equivalent infringement is foreseeable or dedicated to the public.<sup>22</sup> We can imagine a patent law as dynamic as the innovative industries it is said to support, but an orientation towards rules threatens to make the patent law hidebound and unresponsive to changing conditions.

This Article considers the prevailing trend in Federal Circuit patent jurisprudence towards formalism. In Part I, this Article provides a brief background into adjudicative rule formalism and the rules-standards debate. Applying these concepts to the patent law, Part II reviews these trends in five areas of the Federal Circuit's patent jurisprudence: the on-sale bar, patent eligibility, the public dedication doctrine, prosecution history estoppel and obviousness. Part III of this Article offers explanations for the Federal Circuit's formalist turn in view of the court's history, structure and the nature of its jurisdiction.

Part IV of this Article casts a wary glance at the prevailing trend towards adjudicative rule formalism in the patent law. Although prompted by laudable goals and encouraged by the patent bar, the Federal Circuit's increasing orientation towards rulemaking may negatively impact innovation policy, lead to heavy burdens upon patent administration, and fail to realize the goals of certainty and predictability so often ascribed to adjudicative rule formalism. This Article closes with a few cautious predictions about the trend towards formalism at the Federal Circuit.

### I. ADJUDICATIVE RULE FORMALISM

The term "formalism" is not one of precision. Judicial formalism seems to come in many flavors.<sup>23</sup> A law that neither rich nor poor can spend the night on a bench in Lafayette Square might be termed formalist.<sup>24</sup> So might the view that formal reasoning can deduce a

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eligible for patenting if it achieves a useful, concrete, and tangible result).

22. See *Johnson & Johnston Assocs. v. R.E. Serv. Co.*, 285 F.3d 1046, 1051, 62 U.S.P.Q.2d (BNA) 1225, 1230 (Fed. Cir. 2001) (en banc) (establishing the "public dedication doctrine"); see also *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1424-25, 44 U.S.P.Q.2d (BNA) 1103, 1105-06 (1997) (rejecting use of the doctrine of equivalents where patentee should have foreseen the limitations of its narrowly drafted claims).

23. See generally Richard H. Pildes, *Forms of Formalism*, 66 U. CHI. L. REV. 607 (1999) (identifying several modes of modern legal formalism).

24. Lafayette Square is a small park in downtown Washington, D.C., across from the White House. It is adjacent to the Howard T. Markey Building, which houses the Federal Circuit.

needed principle from existing legal norms within a logically coherent system. It is formalist, theorists say, to determine the validity of law by examining its pedigree and procedural correctness, rather than its substantive content.<sup>25</sup>

The belief that legal norms should be formally realized wherever possible is another sort of formalism. This so-called “adjudicative rule formalism” is a prescriptive doctrine that encourages public officials to specify the law in advance of its application. Adjudicative rule formalism counsels that lawmakers should, where possible, stipulate bright-line rules instead of vague standards.<sup>26</sup> The commandment not to drive in excess of fifty-five miles per hour is a familiar rule, while a possible alternative, a prohibition not to drive at excessive speed, is an exemplary standard. The range of legal commands may be placed on a continuum from the most rulelike, where judicial discretion is cabined, to the most standards-oriented, where judicial discretion is encouraged.<sup>27</sup>

Proponents of adjudicative rule formalism explain that a “law of rules” yields many benefits. Bright-line rules are said to lower the costs of decision-making and ensure the similar treatment of similarly situated individuals.<sup>28</sup> Rules offer sharp boundaries of conduct that is permissible or forbidden, advocates contend, providing private parties with the certainty they require to engage in value-maximizing activities, including investment and marketplace transactions.<sup>29</sup> In contrast, supporters of standards assert that they provide the flexibility needed for individualized judgments. Standards are said to be most appropriate in dynamic environments, where new and unforeseen situations can arise. Standards also avoid the negative consequences of rules, including the encouragement of disfavored behavior on the cusp of the prohibited activity.<sup>30</sup>

The value of debate over adjudicative rule formalism has been roundly disputed. The arguments in favor of rules or standards have become repetitive and routine, stated quickly in a variety of contexts

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25. See Michelman, *supra* note 17, at 936-37 (asserting that adjudicative rule formalism directs judges to “make rules not standards” and to “treat the law as consisting only of express, positive legal norms”).

26. See generally Cass R. Sunstein, *Must Formalism Be Defended Empirically?*, 66 U. CHI. L. REV. 636 (1999) (outlining arguments for and against rule formalism based upon a perceived need for flexibility).

27. See Edward Lee, *Rules and Standards for Cyberspace*, 77 NOTRE DAME L. REV. 1275, 1294-95 (2002).

28. See ANTONIN SCALIA, A MATTER OF INTERPRETATION 136-40 (1997).

29. See Michelman, *supra* note 17, at 934 (asserting that economic efficiency underlies the certainty of rule formalism).

30. See Schlag, *supra* note 19, at 384.

but failing to lead to productive discourse.<sup>31</sup> The rules versus standard debate nonetheless remains a traditional lens for viewing the law, and the patent law in particular.<sup>32</sup> Perhaps this is so because patent law is the most heavily structured of intellectual property disciplines. Patents arise only through a ponderous acquisition proceeding, and their scope is bounded by precisely worded claims. No wonder, then, that the debate over rules and standards in the patent law has a long history.<sup>33</sup>

Like most succinct explanations, the formalist turn does not answer all questions about our two decades of experience with the Federal Circuit. The Federal Circuit has yet to waive its *Wands* factors concerning the enablement requirement, for example, in favor of a more discrete rule.<sup>34</sup> Other lists of factors and subjective inquiries, most notably the notorious written description requirement<sup>35</sup> and nascent doctrine of prosecution laches,<sup>36</sup> also still dot the terrain of patent jurisprudence. Yet there is little doubt a formalist movement is afoot and potentially holds dramatic consequences for the patent system. These accelerating trends lend the traditional rules-standards debate a renewed vitality for assessing prevailing trends of contemporary patent law.

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31. See *id.* (noting that it is generally possible to argue both that deterrence is best served by both rules and standards).

32. See Thomas K. Landry, *Certainty and Discretion in Patent Law: The On Sale Bar, the Doctrine of Equivalents, and Judicial Power in the Federal Circuit*, 67 S. CAL. L. REV. 1151, 1158-69 (1994) (identifying doctrinal areas in which the Federal Circuit should take into account the value of having a settled rule).

33. See generally William Macomber, *Judicial Discretion in Patent Causes*, 24 YALE L.J. 99 (1914) (providing an example of early debates over doctrinal authority in patent law).

34. See *Ex parte Forman*, 230 U.S.P.Q. (BNA) 546, 546 (Bd. Pat. App. & Int. 1986) (establishing eight factors for determining whether data disclosed in a patent application enabled practice of the invention without undue experimentation: (1) the breadth of the claims; (2) the unpredictability of the art; (3) the amount of experimentation; (4) the extent of guidance presented; (5) the presence of working examples; (6) the nature of the invention; (7) the state of the prior art; and (8) the relative skill of those in the field to be considered in determining undue experimentation); see also *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q.2d (BNA) 1400, 1406 (Fed. Cir. 1988) (adopting explicitly the factors established in *Ex parte Forman*).

35. See *Enzo Biochem, Inc. v. Gen-Probe Inc.*, 2002 WL 1592885, 63 U.S.P.Q.2d (BNA) 1618 (Fed. Cir. 2002) (collecting opinions relating to the denial of a petition for rehearing en banc suggesting deep disagreement over the written description requirement).

36. See *Symbol Techs., Inc. v. Lemelson Med.*, 277 F.3d 1361, 61 U.S.P.Q.2d (BNA) 1515 (Fed. Cir. 2002) (discussing doctrine of prosecution laches).

## II. FIVE EASIER PIECES OF PATENT JURISPRUDENCE

In a 1992 dissent from an *en banc* majority, Judge Plager found support from the familiar Shaker song extolling the virtue of simplicity. “‘Tis the gift to be simple,” he quoted, a notion that in his view was particularly applicable to legal principles.<sup>37</sup> Judge Plager’s position did not carry the majority that day, but his promotion of rules at the expense of standards proved more enduring. During the second decade of the Federal Circuit’s existence, patent jurisprudence has become increasingly oriented towards simple rules. This Article next offers five examples of the trend towards adjudicative rule formalism within the patent law.

### A. *The On-Sale Bar*

Section 102(b) of the Patent Act in part provides that if an invention is “on sale” more than one year before an application is filed concerning that invention, then no patent should issue.<sup>38</sup> The on-sale bar encourages inventors to file patent applications in a timely fashion, a sound incentive with a number of policy promptings.<sup>39</sup> Punctual filings maintain the integrity of a patent term that ordinarily extends twenty years from the date the application is filed. They also stimulate the seasonable disclosure of information through published patent documentation. In addition, timely filings diminish the possibility that members of the public might come to believe that proprietary technologies actually lie in the public domain, and rely upon that belief to their detriment. The one-year period also allows inventors time to decide whether to enter the patent system or not, and to prepare applications if they choose to do so.

Determination of whether particular commercial activities triggered the on-sale bar has sometimes proven a subtle affair. During its first decade and well into its second, the Federal Circuit employed a “totality of the circumstances” standard to determine whether an inventor’s commercial activity had triggered the on-sale

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37. *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1047, 22 U.S.P.Q.2d (BNA) 1321, 1340 (Fed. Cir. 1992) (Plager, J., concurring in part and dissenting in part).

38. 35 U.S.C. § 102(b) (2000) (providing that “[a] person shall be entitled to a patent unless . . . (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States . . .”).

39. *See Gen. Elec. Co. v. United States*, 654 F.2d 55, 61, 211 U.S.P.Q. (BNA) 867, 873 (Ct. Cl. 1981) (reviewing the legislative history and case law that establish the policies underlying the on-sale bar).

bar.<sup>40</sup> Believing that the on-sale bar “does not lend itself to formulation into a set of precise requirements,”<sup>41</sup> the court instead embarked upon a policy-driven analysis in on-sale bar cases.<sup>42</sup> Such considerations as the inventor’s intent, the completeness of the invention and the nature of the transaction between inventor and purchaser were weighed in light of section 102(b) policies to decide whether the circumstances prevented the grant of a patent.<sup>43</sup>

Robust debate proceeded over the wisdom of the Federal Circuit approach, most of it along the familiar lines of the rules-standards debate. On one hand, the standard allowed the direct invocation of innovation policies—“the purposes of the on-sale bar, in effect, define its terms,” the court explained<sup>44</sup>—and provided the flexibility to do justice in particular cases. On the other, the Federal Circuit itself observed that a totality of the circumstances standard had been criticized as “unnecessarily vague.”<sup>45</sup> Some observers believed that the lack of predictability regarding the on-sale bar made it difficult for inventors and competitors alike to assess the validity of issued patents.<sup>46</sup> The totality of the circumstances approach was characterized as an *ad hoc*, after-the-fact determination that could be obtained only after a costly trial and appeal.<sup>47</sup>

The 1998 Supreme Court opinion in *Pfaff v. Wells Electronics*<sup>48</sup> marked a wholesale shift in on-sale bar principles from standards into rules.<sup>49</sup> *Pfaff* was the named inventor on a patent directed towards a

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40. See, e.g., *Micro Chem., Inc. v. Great Plains Chem. Co.*, 103 F.3d 1538, 1544, 41 U.S.P.Q.2d (BNA) 1238, 1243 (Fed. Cir. 1997) (explaining that determining whether an invention was on sale requires a consideration of all the circumstances surrounding a sale or offer to sell, including the stage of development and the nature of the invention).

41. See *UMC Elecs. Co. v. United States*, 816 F.2d 647, 656, 2 U.S.P.Q.2d (BNA) 1465, 1472 (Fed. Cir. 1987) (explaining that “reduction to practice” is not an absolute requirement to the on-sale bar, but is an important factor in considering all the circumstances of a sale or an offer to sell).

42. See *id.*, 2 U.S.P.Q.2d (BNA) at 1472.

43. See *id.*, 2 U.S.P.Q.2d (BNA) at 1472; see also David W. Carstens & Craig Allen Nard, *Conception and the “On Sale” Bar*, 34 WM. & MARY L. REV. 393, 412 (1993).

44. *J.A. LaPorte, Inc. v. Norfolk Dredging Co.*, 787 F.2d 1577, 1582, 229 U.S.P.Q. (BNA) 435, 438 (Fed. Cir. 1986).

45. See *Seal-Flex, Inc. v. Athletic Track & Court Const.*, 98 F.3d 1318, 1323 n.2, 40 U.S.P.Q.2d (BNA) 1450, 1453 n.2 (Fed. Cir. 1996).

46. See Vincent J. Allen, *The On Sale Bar: When Will Inventors Receive Some Guidance?*, 51 BAYLOR L. REV. 125, 132-33 (1999) (arguing that the many different standards used in applying the on-sale bar has created confusion for inventors and practitioners).

47. See Timothy R. Holbrook, *The More Things Change, the More They Stay the Same: Implications of Pfaff v. Wells Electronics, Inc. and the Quest for Predictability in the On-Sale Bar*, 15 BERKELEY TECH. L.J. 933, 942-45 (2000) (stating that balancing policy considerations was problematic because it required a factual inquiry for each case).

48. 525 U.S. 55, 48 U.S.P.Q.2d (BNA) 1641 (1998).

49. *Id.* at 68-69, 48 U.S.P.Q.2d (BNA) at 1647.

computer chip socket. Prior to the critical date, Pfaff presented his inventive concept to representatives of Texas Instruments. Although Pfaff had not yet constructed even a single prototype, the Texas Instruments representatives nonetheless placed a purchase order for a number of sockets. A third-party manufacturer ultimately produced a working embodiment of the invention after the critical date. Following the issuance of the chip socket patent, Pfaff brought suit against a competitor, which argued that the claims were invalid due to the on-sale bar.<sup>50</sup>

The Court agreed with the defendant that the on-sale bar applied. Discarding the prevailing Federal Circuit standard, Justice Stevens set forth a two-part rule to determine whether an invention was “on sale” within the meaning of section 102(b).<sup>51</sup> First, the Court explained, the product must be “the subject of a commercial offer for sale.”<sup>52</sup> The Court believed that this test satisfied the inventive community’s desire for certainty, because inventors should be able to choose the time at which they commence commercial marketing of their inventions.<sup>53</sup>

The second part of the test was that “the invention must be ready for patenting.”<sup>54</sup> The Court recognized at least two ways to satisfy this condition. The invention may have been physically constructed: an “actual reduction to practice” in the language of the patent law.<sup>55</sup> Alternatively, “drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention” would also suffice.<sup>56</sup> Applying its newly crafted rule, the Court recognized that Pfaff had both accepted a purchase order and delivered detailed engineering specifications and diagrams to his contracting partner more than one year before the critical date.<sup>57</sup> The Court concluded that Pfaff had triggered the on-sale bar, and therefore his patent was invalid.<sup>58</sup>

The Supreme Court decision to intervene in the *Pfaff* litigation puzzled some observers. Even among patent specialists of the mid-1990s, resolution of the finer points of the on-sale bar would not have ranked high on anyone’s list of issues most in need of High Court

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50. *Id.* at 59, 48 U.S.P.Q.2d (BNA) at 1643.

51. *Id.* at 67, 48 U.S.P.Q.2d (BNA) at 1647.

52. *Id.*, 48 U.S.P.Q.2d (BNA) at 1646.

53. *Id.* at 66, 48 U.S.P.Q.2d (BNA) at 1646.

54. *Id.* at 67, 48 U.S.P.Q.2d (BNA) at 1647.

55. *Id.*, 48 U.S.P.Q.2d (BNA) at 1647.

56. *Id.* at 67-68, 48 U.S.P.Q.2d (BNA) at 1647.

57. *Id.* at 68, 48 U.S.P.Q.2d (BNA) at 1647.

58. *Id.*, 48 U.S.P.Q.2d (BNA) at 1647.

resolution. Yet the *Pfaff* decision may have been more influential than commonly assumed. The Court's decided preference for rules over standards appears to have sent strong signals to the Federal Circuit. It is perhaps not a coincidence that adjudicative rule formalism achieved an upswing in Federal Circuit jurisprudence in the late 1990s following the issuance of *Pfaff*. No patent law doctrine has been more significantly and surprisingly touched by a rules-oriented approach than the doctrine of equivalents, a topic this Article turns to next.

### B. *The Public Dedication Doctrine*

The recent ferment in the Federal Circuit's jurisprudence concerning the doctrine of equivalents has reflected a movement towards bright-line rules. The doctrine of equivalents was effectively in a state of rulelessness, dominated by a vague function-way-result standard, expert testimony, and jury verdicts.<sup>59</sup> Today more certainty prevails with equivalent infringement, principally because the circumstances in which the doctrine will apply have been narrowly cabined.<sup>60</sup>

The newly forged "public dedication" doctrine forms a primary example. Sometimes the claims of a patent are not as broad as the technical disclosure contained in that patent's written description. Proprietors of such patents have occasionally charged competitors with infringement even though they practice subject matter that has been disclosed but not claimed. For example, a patent might describe the use of all rare earth elements as one component of the invention, but recite only the use of cerium in its claims. If a competitor employs another rare earth element, such as thulium, the question arises whether that competitor should be held to infringe under the doctrine of equivalents. Resolution of this recurring issue has also centered upon the rules versus standards debate.

At one extreme, as represented by the 1996 Federal Circuit decision in *Maxwell v. J. Baker, Inc.*,<sup>61</sup> is the rule that subject matter disclosed but not claimed in a patent application is, as a matter of

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59. See ROGER E. SCHECHTER & JOHN R. THOMAS, INTELLECTUAL PROPERTY: THE LAW OF COPYRIGHTS, PATENTS AND TRADEMARKS 480 (2003) (explaining that under the doctrine of equivalents, the scope of patent protection may be expanded beyond the literal wording of a patent's claim to accused infringements that are not substantially different from the claimed invention).

60. See Lai, *supra* note 18, at 2056-57 (1997) (discussing how the Supreme Court's application of prosecution history estoppel limited reliance on the doctrine of equivalents).

61. 86 F.3d 1098, 39 U.S.P.Q.2d (BNA) 1001 (Fed. Cir. 1999).

law, dedicated to the public.<sup>62</sup> Under this view, by failing to claim the full extent of the disclosed subject matter, an applicant deprives the Patent and Trademark Office (“Patent Office”) of the opportunity to consider whether this subject matter is patentable.<sup>63</sup> Allowing an applicant to obtain narrow claims from the Patent Office, and then assert broader protection for unclaimed alternatives described in the specification, would defeat the fundamental principle that a patent’s claims define its scope of proprietary rights.<sup>64</sup>

The other end of the spectrum, adopted by the 1998 Federal Circuit opinion in *YBM Magnex, Inc. v. International Trade Commission*,<sup>65</sup> was that no *per se* rule should dictate whether subject matter included in the written description, but not claimed, is equivalent to the claimed invention.<sup>66</sup> Proponents of this standard emphasized that “the doctrine of equivalents seeks to establish a just balance between the purpose of claims to define and give notice of what is patented, and the judicial responsibility to avoid a ‘fraud on the patent’ based on insubstantial changes from the patented invention.”<sup>67</sup> Whether the accused infringement was disclosed but not claimed in the asserted patent simply formed one of many factors to consider in the equivalency determination.

Faced with a conflict in its precedents, the Federal Circuit eventually opted for the rule of *Maxwell* over the *YBM Magnex* standard.<sup>68</sup> In its 2002 decision in *Johnson & Johnston Associates, Inc. v. R.E. Service Co., Inc.*,<sup>69</sup> the *en banc* court announced a “public dedication doctrine.”<sup>70</sup> Under this unwavering principle, subject matter that is disclosed in a patent, but not claimed, may not be appropriated through the doctrine of equivalents.<sup>71</sup>

Those familiar with the rules-standards debate would find much of its rhetoric in the Federal Circuit’s reasoning. The claims alone should serve as the measure of the patent’s propriety rights, the majority explained, providing appropriate notice to the Patent Office and interested competitors alike.<sup>72</sup> Judge Newman’s dissenting

62. *Id.* at 1108, 39 U.S.P.Q.2d (BNA) at 1007.

63. *See id.*, 39 U.S.P.Q.2d (BNA) at 1007 (discussing the purpose of the public dedication rule).

64. *Id.*, 39 U.S.P.Q.2d (BNA) at 1007.

65. 145 F.3d 1317, 46 U.S.P.Q.2d (BNA) 1843 (Fed. Cir. 1998).

66. *Id.* at 1322, 46 U.S.P.Q.2d (BNA) at 1847.

67. *Id.*, 46 U.S.P.Q.2d (BNA) at 1847.

68. *See Johnson & Johnston Assocs. v. R.E. Serv. Co.*, 285 F.3d 1046, 62 U.S.P.Q.2d (BNA) 1225 (Fed. Cir. 2001) (*en banc*).

69. *Id.*, 62 U.S.P.Q.2d (BNA) at 1225.

70. *Id.* at 1054, 62 U.S.P.Q.2d (BNA) at 1230.

71. *Id.* at 1055, 62 U.S.P.Q.2d (BNA) at 1231.

72. *Id.* at 1054, 62 U.S.P.Q.2d (BNA) at 1230.

opinion instead found merit in a “more sensitive legal framework than the bludgeon of a *per se* rule.”<sup>73</sup> Given the diversity of technological circumstances and claiming practices within the modern patent system, she reasoned, a flexible standard would better serve innovation policy and the patent community.<sup>74</sup> Adjudicative rule formalism would continue to prevail within the law of the doctrine of equivalents, however, as demonstrated by contemporaneous developments at the Federal Circuit concerning the doctrine of prosecution history estoppel.

### C. *Prosecution History Estoppel*

Prosecution history estoppel precludes a patentee from obtaining a claim construction before a court that would include subject matter surrendered at the Patent Office during prosecution.<sup>75</sup> It is named for the “prosecution history” or “file wrapper,” the publicly available papers that document the dialogue between the inventor and examiner during the patent acquisition. If the court concludes that an applicant relinquished certain subject matter in order to secure the allowance of her claims, then as a patentee she may not employ the doctrine of equivalents to recapture the renounced subject matter.<sup>76</sup>

Courts have struggled over the extent to which prosecution history estoppel impacts the doctrine of equivalents. The following example, using dated technology, illustrates these difficulties. Suppose that, prior to the invention of the transistor, an inventor presents a claim reciting a computer that in part uses an “electric switch.” The Patent Office examiner rejects the claim based upon prior art. The inventor then narrows the claim by deleting the term “electric switch” and replacing it with the term “vacuum tube.” The Patent Office examiner then approves the claim. Subsequently, near the end of the patent’s term, the inventor brings suit against a competitor that manufactures computers using a new, state-of-the-art device—the transistor.

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73. *Id.* at 1067, 62 U.S.P.Q.2d (BNA) at 1240 (Newman, J., dissenting).

74. *Id.*, 62 U.S.P.Q.2d (BNA) at 1240 (stating that *per se* rules are only appropriate when “the policy is so clear and the outcome is so inevitable”).

75. *See* *Pharmacia & UpJohn Co. v. Mylan Pharms., Inc.*, 170 F.3d 1373, 1376-77, 50 U.S.P.Q.2d (BNA) 1033, 1036 (Fed. Cir. 1999); *see also* *Lai*, *supra* note 18, at 2057 (explaining that prosecution history estoppel bars application of the doctrine of equivalents to claims that were amended during prosecution).

76. *See, e.g.*, *Loral Fairchild Corp. v. Sony Corp.*, 181 F.3d 1313, 1328-29, 50 U.S.P.Q.2d (BNA) 1865, 1875 (Fed. Cir. 1999).

The rules-standard debate has again controlled the judicial dialogue regarding the scope of equivalents left to an amended claim limitation. Under the rule, known here as the “strict bar” approach, if a claim limitation has been amended during prosecution, then no range of equivalents exists for that amended limitation.<sup>77</sup> Continuing the example noted above, because transistors can act as electric switches, the patentee is deemed to have confined his invention to vacuum tubes and purposefully disclaimed transistors. Prosecution history estoppel would therefore completely defeat the patentee’s charge of infringement.

In contrast, courts applying a standard would assess the reason for the claim amendment to determine the remaining scope of the doctrine of equivalents. This “flexible bar” standard was more lenient to patentees.<sup>78</sup> Prosecution history estoppel would apply only where the court concluded that a person skilled in the art would reasonably believe that the patentee had surrendered subject matter during prosecution.<sup>79</sup> To continue the previous example, no reasonable competitor would believe that the patentee had surrendered subject matter by amending the claims. At the time the patentee made the amendment, the transistor had yet to be invented! As a result, the court would likely hold that prosecution history estoppel did not apply, and proceed to the doctrine of equivalents analysis.

The Federal Circuit has traditionally employed a flexible bar approach. In its *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*<sup>80</sup> decision, however, the Federal Circuit abruptly announced its shift to a strict bar approach.<sup>81</sup> Here the plaintiff, Festo, owned the Stoll and Carroll patents.<sup>82</sup> Each patent concerned magnetic rodless

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77. See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 56 U.S.P.Q.2d (BNA) 1865 (Fed. Cir. 2000) (en banc) (comparing the “complete bar” and the “flexible bar” approaches), *vacated by* 535 U.S. 722, 62 U.S.P.Q.2d (BNA) 1705 (2002). According to the *Festo* court, the complete bar serves the public because it provides notice as to the scope of a patent, eliminates public speculation as to the subject matter surrendered by an amendment, and provides certainty to the process of determining a patent’s scope. 234 F.3d at 576-77, 56 U.S.P.Q.2d (BNA) at 1878-79.

78. See *Festo*, 234 F.3d at 576-77, 56 U.S.P.Q.2d (BNA) at 1878-79 (arguing that the uncertainty inherent in the flexible bar approach is an obstacle to satisfying the policy objectives of the Patent Act).

79. See *id.*, 56 U.S.P.Q.2d (BNA) at 1879 (criticizing the “flexible bar” approach because under that standard, only the prior art marks the limits of a claim’s scope, which makes the range of equivalents unascertainable).

80. *Id.* at 558, 56 U.S.P.Q.2d (BNA) at 1865.

81. *Id.* at 575, 56 U.S.P.Q.2d (BNA) at 1877.

82. *Id.* at 579, 56 U.S.P.Q.2d (BNA) at 1882.

cylinders.<sup>83</sup> During prosecution, the claims of both patents were amended to require a pair of sealing rings.<sup>84</sup> The Carroll patent was additionally amended to require a sleeve made of magnetizable material. The accused infringer, SMC, produced a device employing a single, two-way sealing ring and a sleeve made of non-magnetizable material.<sup>85</sup> Although the Stoll and Carroll patents were not literally infringed, Festo argued that infringement existed under the doctrine of equivalents.<sup>86</sup> SMC in turn contended that prosecution history estoppel barred Festo from resorting to the doctrine.<sup>87</sup>

The Federal Circuit applied the strict bar rule and held that prosecution history estoppel creates a complete bar to the doctrine of equivalents.<sup>88</sup> “When a claim amendment creates prosecution history estoppel with regard to a claim element, there is no range of equivalents available for the amended claim element,” the court explained.<sup>89</sup> The Federal Circuit’s reasoning again appealed to the rhetoric of the rules-standard debate. The court judged that certainty as to the scope of patent protection was paramount. According to the Federal Circuit, amendments should be treated as disclaimers and construed against the inventor.<sup>90</sup>

Interestingly, a Supreme Court that had seemingly spawned the patent law’s movement away from standards this time decided the Federal Circuit had gone too far.<sup>91</sup> Vacating and remanding the case, the Supreme Court rejected the Federal Circuit “strict bar” rule. Justice Kennedy instead confirmed statements from an earlier doctrine of equivalents decision, *Warner-Jenkinson v. Hilton Davis*,<sup>92</sup> that had established a presumption regarding the doctrine of equivalents. According to the Court, when subject matter has been limited via claim amendment, the patentee is presumed to have surrendered the asserted equivalent.<sup>93</sup> Patentees could rebut this presumption by showing that at the time of the amendment, one

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83. *Id.*, 56 U.S.P.Q.2d (BNA) at 1882.

84. *Id.* at 582, 56 U.S.P.Q.2d (BNA) at 1884.

85. *Id.*, 56 U.S.P.Q.2d (BNA) at 1884.

86. *Id.* at 578, 56 U.S.P.Q.2d (BNA) at 1882.

87. *Id.* at 584, 56 U.S.P.Q.2d (BNA) at 1885.

88. *Id.* at 574, 56 U.S.P.Q.2d (BNA) at 1877.

89. *Id.* at 564, 56 U.S.P.Q.2d (BNA) at 1868.

90. *Id.* at 575-76, 56 U.S.P.Q.2d (BNA) at 1878.

91. See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 62 U.S.P.Q.2d (BNA) 1705 (2002) (holding that an amendment is not an absolute bar to the doctrine of equivalents).

92. 520 U.S. 17, 41 U.S.P.Q.2d 1865 (1997).

93. *Festo Corp.*, 535 U.S. at 722, 62 U.S.P.Q.2d (BNA) at 1705.

skilled in the art could not reasonably be expected to have drafted a claim that would literally encompass the alleged equivalent.<sup>94</sup>

Although *Festo* at first blush seems to move in the opposite direction from *Pfaff*, the Supreme Court in fact fell far short of returning to a “flexible bar” standard.<sup>95</sup> Indeed, the Supreme Court’s decision largely vindicates increasingly restrictive Federal Circuit practices regarding the doctrine of equivalents. The Supreme Court left only three slender opportunities for overcoming prosecution history estoppel: that the equivalent was unforeseeable at the time the patentee drafted the amendment; that the rationale underlying the amendment bore no more than a tangential relationship to the equivalent in question; or that some other reason suggested that the patentee could not have been expected to have described the asserted equivalent in question.<sup>96</sup> The facts of this case demonstrate that these are narrow rules indeed. It is difficult to see how *Festo* can prevail in this litigation, for a two-way seal was probably foreseeable, and *Festo*’s amendments were likely more than tangential to a two-way seal. Even following the Supreme Court’s *Festo* opinion, then, the doctrine of prosecution history estoppel remains far more rulebound than it was just a few years earlier.

#### D. Patent Eligibility

Determination of the sorts of inventions eligible for patenting was traditionally governed by a number of murky rules. Laws of Nature—whoever Nature is, and whatever her laws are—were held not to be patentable.<sup>97</sup> Under the so-called “mental steps” rule,<sup>98</sup> an invention that was principally a matter of human selection, interpretation or decision-making was not patentable. The “printed matter” doctrine<sup>99</sup>

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94. *Id.*, 62 U.S.P.Q.2d (BNA) at 1705.

95. See Tony Mauro & Brenda Sandberg, *Supremes Give Leeway in Festo’ Case*, THE RECORDER, May 29, 2002, at 1 (discussing how *Festo* makes patents harder to enforce because it creates a rebuttable presumption that “an amendment was intended to narrow the claim,” in which case, the doctrine of equivalents would no longer provide protection).

96. *Festo Corp.*, 535 U.S. at 722, 62 U.S.P.Q.2d (BNA) at 1705.

97. See, e.g., *Funk Bros. Seed Co. v. Kalo Inoculants Co.*, 333 U.S. 127, 130, 76 U.S.P.Q. (BNA) 280, 281 (1947) (holding that “[h]e who discovers a hitherto unknown phenomenon of nature has no claim to a monopoly of it which the law recognizes.”).

98. See *In re Heritage*, 150 F.2d 554, 556, 66 U.S.P.Q. (BNA) 217, 220 (C.C.P.A. 1945) (holding that “purely mental acts are not proper subject matter for protection under the patent statutes”).

99. See, e.g., *In re Gulack*, 703 F.2d 1381, 1385, 217 U.S.P.Q.2d (BNA) 401, 404 (Fed. Cir. 1983) (finding that “[w]here the printed matter is not functionally related to the substrate, the printed matter will not distinguish the invention from prior art in terms of patentability.”).

held that information inscribed upon a substrate for purposes of presentation was held outside the scope of section 101—unless a functional relationship existed between the substrate and written material. The awkwardly named *Freeman-Walter-Abele* test<sup>100</sup> mandated that software-related inventions were not patent-eligible if the claimed invention was no more than mathematics, or not applied to an otherwise statutory process claim.<sup>101</sup> Pedagogical techniques and business methods were not patentable either, as Judge Rich explained in 1959:

Of course, not every kind of invention can be patented. Invaluable though it may be to individuals, the public, and the national defense, the invention of a more effective organization of the materials in, and the techniques of teaching a course in physics, chemistry, or Russian is not a patentable invention because it is outside of the enumerated [statutory] categories . . . . Also outside that group is one of the greatest inventions of our times, the diaper service.<sup>102</sup>

The Federal Circuit finally replaced this morass with a blunt rule in *State Street Bank v. Signature Financial Group*.<sup>103</sup> There, the court held that a data processing system for managing a mutual fund constituted patentable subject matter.<sup>104</sup> Rejecting the venerable “business methods” exception to patentability,<sup>105</sup> the Federal Circuit concluded that the key inquiry concerning statutory subject matter involves “the essential characteristics of the subject matter, in particular, its practical utility.”<sup>106</sup> The court stated that an invention achieving a “useful, concrete and tangible result,”<sup>107</sup> rather than being merely an

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100. See *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1058, 22 U.S.P.Q.2d (BNA) 1033, 1037 (Fed. Cir. 1992) (explaining the origin of this test). The test’s name comes from the name of the three cases that established the standard: *In re Abele*, 684 F.2d 902, 214 U.S.P.Q. (BNA) 682 (C.C.P.A. 1982), *In re Walter*, 618 F.2d 758, 205 U.S.P.Q. (BNA) 397 (C.C.P.A. 1980), and *In re Freeman*, 573 F.2d 1237, 197 U.S.P.Q. (BNA) 464 (C.C.P.A. 1978).

101. See *Arrhythmia Research*, 958 F.2d at 1058, 22 U.S.P.Q.2d (BNA) at 1037 (citing the claim in *Abele* that algorithms applied to specific processes or apparatuses, so long as they are necessary to the solution process and not merely dictated by the field of activity present statutory subject matter).

102. See Giles S. Rich, *Principles of Patentability*, 28 GEO. WASH. L. REV. 393, 393-94 (1960) (discussing the bases for determining which inventions are patentable).

103. 149 F.3d 1368, 47 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1998).

104. *Id.* at 1377, 47 U.S.P.Q.2d (BNA) at 1604.

105. See *id.* at 1375-77, 47 U.S.P.Q.2d (BNA) at 1602-04 (explaining that prior patent applications purportedly rejected by the Federal Circuit or the Court of Customs and Patent Appeals were actually rejected on other, statutorily derived grounds). According to the *State Street* court, the “business methods” exception “represented the application of some general, but no longer applicable legal principle,” and needed to be put “to rest.” *Id.*, 47 U.S.P.Q.2d (BNA) at 1602-04.

106. *Id.* at 1375, 47 U.S.P.Q.2d (BNA) at 1602.

107. *Id.*, 47 U.S.P.Q.2d (BNA) at 1602 (quoting *In re Alappat*, 33 F.3d 1526, 1544,

abstract concept, would be eligible for patenting.<sup>108</sup> By collapsing the statutory subject matter test into a more lenient utility requirement, *State Street Bank* opened the patent system to inventions from the entire range of human endeavor.<sup>109</sup>

The rule that a patent-eligible invention need only achieve a “useful, concrete and tangible result” has a lot of adjectives, but it is essentially a blunt test that has supplanted a more complex scheme of predecessor principles.<sup>110</sup> In keeping with this approach, other exclusionary principles besides the business methods exception are approaching abrogation or have already met their demise. The printed matter doctrine stands on “questionable legal and logical footing,”<sup>111</sup> the Federal Circuit has explained,<sup>112</sup> and little, if anything is left of *Freeman-Walter-Abele*.<sup>113</sup> Following *State Street Bank*, the Federal Circuit has admitted that “virtually anything is patentable.”<sup>114</sup> It is difficult to imagine a more simple rule governing patent-eligible subject matter.

Although the stated reasoning of the *State Street Bank* decision does not track the dialogue of rules and standards, the perceived attractions of adjudicative rule formalism nonetheless played a role in the Federal Circuit’s evolving stance on statutory subject matter. The text of the *State Street Bank* opinion focused upon the judicial, statutory and administrative precedent that governed the subject matter appropriate for patenting.<sup>115</sup> Yet earlier cases made the court

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31 U.S.P.Q.2d (BNA) 1545, 1557 (Fed. Cir. 1994)).

108. See *id.*, 47 U.S.P.Q.2d (BNA) at 1602 (noting that this criteria is determinative “even if the useful result is expressed in numbers”).

109. See Thomas, *The Patenting of the Liberal Professions*, *supra* note 2; see also Arti Rai, *Addressing the Patent Gold Rush: The Role of Deference to PTO Patent Denials*, WASH. U. J.L. & POL’Y 199, 211 (2000) (noting that the number of patents and patent filings on methods of doing business over the Internet rose dramatically after *State Street*).

110. See Rai, *supra* note 109 (arguing that the *State Street* decision “essentially collapsed the patentable subject matter requirement into the utility requirement”); see also John R. Thomas, *The Post-Industrial Patent System*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 3, 21 (1999) (describing the physicality requirement of the old *Freeman-Walter-Abele* test as “little more than a charade”).

111. *In re Gulack*, 703 F.2d 1381, 1385 n.8, 217 U.S.P.Q.2d (BNA) 401, 404 n.8 (Fed. Cir. 1983).

112. See *id.* (explaining that “the description of an element of an invention as printed matter tells nothing about the differences between the invention and prior art . . .”).

113. See *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1359-60, 50 U.S.P.Q.2d (BNA) 1447, 1452-53 (Fed. Cir. 1999) (eliminating conclusively the “physical limitations” requirement of the *Freeman-Walter-Abele* test).

114. *Hughes Aircraft Co. v. United States*, 148 F.3d 1384, 1385, 47 U.S.P.Q.2d (BNA) 1542, 1544 (Fed. Cir. 1998) (Clevenger, J., dissenting from the Order declining the suggestion for rehearing en banc).

115. See *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373-77, 47 U.S.P.Q.2d (BNA) 1596, 1600-04 (Fed. Cir. 1998) (surveying the language of Section 101 itself, as well as the administrative and judicial precedent

painfully aware that patent applicants often resorted to contorted claim-drafting techniques in order to avoid the exclusionary rules of patent eligibility.<sup>116</sup> The Federal Circuit analogized these rules as the byzantine strands forming a Gordian knot,<sup>117</sup> finding them easier to sever than to untie.<sup>118</sup> Simpler rules were perceived as being easier for Patent Office examiners to apply and likely to result in patent instruments that were more readily understood, while working few effective changes upon the subject matter a persistent applicant could patent. As with its other recent doctrinal shifts in patent law, the Federal Circuit's move to a streamlined, porous standard of patent eligibility reflected the perceived benefits of adjudicative rule formalism.

#### *E. Nonobviousness*

The fundamental gatekeeper to patenting, the so-called "nonobviousness" requirement,<sup>119</sup> has also grown more rulebound in recent years. The inelegant term "nonobviousness" identifies the statutory requirement that to be patentable, an invention must not have been within the capabilities of a skilled artisan at the time it was made.<sup>120</sup> In contrast to the more narrowly cabined novelty requirement, which requires that a single prior patent, publication, or other teaching wholly anticipate the claimed invention, nonobviousness more broadly reflects the entirety of teachings of the state of the art.<sup>121</sup>

A conclusion of nonobviousness may be based upon a single prior art reference,<sup>122</sup> but most often a patent challenger must employ

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surrounding the provision of Title 35).

116. See, e.g., *In re Iwahashi*, 888 F.2d 1370, 1375, 12 U.S.P.Q.2d (BNA) 1908, 1912 (Fed. Cir. 1989) (describing a read-only memory as a "specific piece of apparatus" and holding that a claimed "auto-correlation unit" was patent eligible); *In re Grams*, 888 F.2d 835, 840, 12 U.S.P.Q.2d (BNA) 1824, 1828 (Fed. Cir. 1989) (rejecting patent claim where the sole physical process in one step of plaintiff's claim was a series of clinical tests on individuals used to collect data for use in the algorithm at issue).

117. See *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1061, 22 U.S.P.Q.2d (BNA) 1033, 1039-40 (Fed. Cir. 1992) (Rader, J., concurring) (describing pre-*State Street* law on this issue as a "twisted knot of precedent").

118. See *State St.*, 149 F.3d at 1374, 12 U.S.P.Q.2d (BNA) at 1601 (deciding to eliminate this precedent by holding that "the *Freeman-Walter-Abele* test has little, if any, applicability to determining the presence of statutory subject matter").

119. See generally ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 644 (3d ed. 2002).

120. See 35 U.S.C. § 103 (2000).

121. See Glynn S. Lunney, *E-Commerce: Defining the Proper Scope of Internet Patents Symposium: E-Obviousness*, 7 MICH. TELECOMM. & TECH. L. REV. 363, 392-93 (2000).

122. See generally Joseph P. Meara, Note, *Just Who is the Person Having Ordinary Skill in the Art? Patent Law's Mysterious Personage*, 77 WASH. L. REV. 267, 275 (2002).

multiple references in order to locate all the elements of the claimed invention.<sup>123</sup> Suppose, for example, that a patent application claims the combination of a speaker and an amplifier. A prior art search reveals that no single prior art reference teaches this combination. However, one journal article describes the speaker, and another the amplifier. The issue arises whether it would have been within the capabilities of a skilled artisan to combine these teachings to produce the claimed invention.

Here, too, the patent law has once more moved from a reflexive, standards-oriented combination of prior art references into a more formally articulated, rules-based approach. Early law on the combination of references employed a standards approach. The most notorious example, emanating from the Federal Circuit's predecessor court, was the decision of the Court of Customs and Patent Appeals in *In re Winslow*.<sup>124</sup> That opinion called for the patent challenger to picture "the inventor as working in his shop with the prior art references—which he is presumed to know—hanging on the walls around him."<sup>125</sup> The decision maker would then select the necessary references from his workshop walls, combining them in order to achieve the claimed subject matter.<sup>126</sup>

The difficulty with the *Winslow* image, however compelling and readily visualized, is that it provided no precise guidance on how a person of skill in the art would unite disparate teachings from the prior art in order to achieve the claimed combination. At its worst, *Winslow* could be viewed as depicting inventors as being in physical possession of the most pertinent prior art. The patent instrument would then become a blueprint for choosing from among a vast number of prior art references, making the conclusion of nonobviousness all too readily reached.<sup>127</sup> Judge Rich recognized this difficulty in *Kimberly-Clark Corp. v. Johnson & Johnson*,<sup>128</sup> where he noted that the *Winslow* tableau could not convey that helpful references would be interspersed alongside numerous unhelpful sources, and perhaps even references that taught away from the

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123. See C. Edward Polk & Jonathan R. Spivey, *Patent Law Basics: Understanding the United States Patent System*, NAT'L BAR ASS'N MAG., Mar./Apr. 2001, at 16 (observing that the "nonobviousness" inquiry "looks to the totality of the prior art rather than a single reference").

124. 365 F.2d 1017, 1020, 151 U.S.P.Q. (BNA) 48, 50-51 (C.C.P.A. 1966).

125. *Id.*, 151 U.S.P.Q. (BNA) at 51.

126. *Id.*, 151 U.S.P.Q. (BNA) at 51.

127. *Id.* at 1021, 151 U.S.P.Q. (BNA) at 52 (Smith, J., dissenting) (criticizing the majority in *Winslow* for its "hindsight reasoning" in denying *Winslow*'s claims).

128. 745 F.2d 1437, 223 U.S.P.Q. (BNA) 603 (Fed. Cir. 1984).

solution.<sup>129</sup> Articulated in the fashion of the rules-standards debate, the flexibility of the *Winslow* tableau left too much discretion to the decision maker, rendered the results of the nonobviousness uncertain, and held the potential to deny similarly situated individuals equal treatment under the laws.

Again becoming more rules-oriented, patent doctrine has placed increasing emphasis upon the circumstances under which references can be appropriately combined during the nonobviousness inquiry. The Federal Circuit has stressed that it is not enough that all the teachings of the claimed invention can be found in the prior art. Instead a conclusion of nonobviousness is appropriate only where a person of ordinary skill in the art would have been stimulated to combine these references to achieve the claimed invention.<sup>130</sup> This inquiry ordinarily centers upon the presence of a teaching, motivation, or suggestion in the prior art to select and combine pertinent prior art references.<sup>131</sup>

The 2002 decision *In re Sang Su Lee*<sup>132</sup> presents the Federal Circuit's latest thinking on the requirement of a motivation to combine. In *Lee*, the Patent Office Board rejected an application claiming a method of automatically displaying functions of a video display device. The method instructed users to select and adjust functions in order to facilitate their responses. The Board rejected the application based on two references: a television monitor with adjustments to facilitate viewing, along with a handbook for a video game that taught adjustments to expedite playing the game. As to the combination of the two references, the board explained that the "conclusion of obviousness may be made from common knowledge and common sense of a person of ordinary skill in the art without any specific hint or suggestion in a particular reference."<sup>133</sup>

Following an appeal, the Federal Circuit vacated the Board's decision. According to the court, the Board had not adequately demonstrated that a skilled artisan would have been motivated to select and combine the two references in order to achieve the claimed invention.<sup>134</sup> Instead of undertaking a thorough, searching

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129. *Id.* at 1453, 223 U.S.P.Q. (BNA) at 613 (likening the *Winslow* tableau to a "noxious weed" in need of reform).

130. *In re Geiger*, 815 F.2d 686, 688, 2 U.S.P.Q.2d (BNA) 1276 (Fed. Cir. 1987).

131. *See id.*, 2 U.S.P.Q.2d (BNA) at 1278 (requiring "some teaching suggestion or incentive," in addition to the evidence of prior art, to support a claim for obviousness); *see also In re Sernaker*, 702 F.2d 989, 994, 217 U.S.P.Q. (BNA) 1, 5 (Fed. Cir. 1983) (considering these factors as well).

132. 277 F.3d 1338, 61 U.S.P.Q.2d (BNA) 1430 (Fed. Cir. 2002).

133. *Id.* at 1341, 61 U.S.P.Q.2d (BNA) at 1432.

134. *See id.* at 1343-44, 61 U.S.P.Q.2d (BNA) at 1434 (chiding the Board for using

inquiry of the state of the art, the Federal Circuit explained, the Board's invocation of "common knowledge and common sense" relied upon "subjective belief and unknown authority."<sup>135</sup> In the court's view, both the Administrative Procedure Act and Federal Circuit precedent obligated the Patent Office to identify specific, objective evidence demonstrating that a skilled artisan would have been led to combine the cited references.<sup>136</sup> Reliance upon assumed expertise and unsupported statements was deemed "both legal error and arbitrary agency action."<sup>137</sup>

*Lee* and its associated case law have come a long way from *Winslow*. The Federal Circuit has effectively established a rule obliging the Patent Office to generate a specific factual finding of a motivation to combine references during its nonobviousness determinations.<sup>138</sup> The court has also required the Patent Office to state its conclusions in a fully articulated fashion.<sup>139</sup> Although subsequent case law has arguably put some play in the joints of *Lee*,<sup>140</sup> there can be little doubt that a showing of a motivation to combine cited references has become increasingly formalized and rule-like. In nonobviousness, as with other areas of patent jurisprudence, adjudicative rule formalism has recently been a powerful influence.

### III. THE FORMALIST TURN AT THE FEDERAL CIRCUIT

Patent jurisprudence increasingly reflects a trend towards adjudicative rule formalism. Some of the most prominent principles of the patent law, governing the subject matter that can be patented, rights acquisition, and the scope of protection, have become more rulebound.<sup>141</sup> It is not enough to say that two decades of the court's

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"that which the inventor taught against its teacher") (quoting *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 U.S.P.Q. (BNA) 303, 312-13 (Fed. Cir. 1983)).

135. *Id.* at 1344, 61 U.S.P.Q.2d (BNA) at 1434.

136. *Id.*, 61 U.S.P.Q.2d (BNA) at 1434.

137. *Id.*, 61 U.S.P.Q.2d (BNA) at 1434.

138. *Id.* at 1343-44, 61 U.S.P.Q.2d (BNA) at 1433-34.

139. *Id.* at 1344, 61 U.S.P.Q.2d (BNA) at 1434.

140. *See, e.g., In re Peterson*, 315 F.3d 1325, 65 U.S.P.Q.2d (BNA) 1379 (Fed. Cir. 2003) (holding that the "normal" desire of scientists to improve known inventions provides sufficient motivation to determine a motive to combine); *Novo Nordisk v. Becton Dickinson & Co.*, 304 F.3d 1216, 64 U.S.P.Q.2d (BNA) 1524 (Fed. Cir. 2002) (holding that expert testimony sufficed to show that practitioners possessed the motivation to combine certain teachings to produce a claimed invention).

141. *See generally* Lai, *supra* note 18, at 2031 (criticizing the Federal Circuit's formalist turn in the context of its jurisprudence regarding the doctrine of equivalents); *see also* Conrad J. Dewitte, Jr., Comment, *Festo Change-O? No Way! Why the Supreme Court Should Reverse the Federal Circuit's Attack on the Doctrine of Equivalents*, 51 CATH. U. L. REV. 1323, 1335-36, 1340-53 (2002) (pointing out potential problems caused by the Federal Circuit's formalist approach); Christopher T. Kent, Casenote, *Reducing the Scope of Patent Protection and Incentives for Innovation Through Unfair*

existence have now passed, the precedents are piling up, and a few modest rules have inevitably emerged. The Federal Circuit seems ever more prone to the pronouncement of categorical rules meant to govern future patent disputes.

An understanding of the reasons for this trend is essential to assessing the work of the court and projecting its future. Fortunately, explanations become apparent upon examining the Federal Circuit's history, structure, jurisdiction, and the practitioners that appear before it. Each of these influences suggests a preference for rules over standards. In view of this environment, the recent triumph of adjudicative rule formalism within the patent law appears not merely predictable. It seems inevitable.

Despite the passing of two decades, the legislative purpose underlying the creation of the Federal Circuit continues to shape the work of the court. In the memorable words of Judge Young, Congress established a "court with a mission" when it approved the Federal Courts Improvement Act.<sup>142</sup> The Federal Circuit was charged with providing more consistent guidance to innovative industry, the Patent Office, and others impacted by the patent system.<sup>143</sup> That Federal Circuit opinions cite this dated congressional mandate with continued enthusiasm may be due in part to the absence of legislative involvement with the most crucial questions in patent law.<sup>144</sup> The Supreme Court called for assistance on patenting biotechnology and software decades ago, for example,<sup>145</sup> and more recently suggested an appropriate response to the doctrine of equivalents.<sup>146</sup> Congress has

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*Application of Prosecution History Estoppel and the Recapture Rule*, 10 GEO. MASON L. REV. 595, 616-17 (2002) (explaining the Federal Circuit's decision to set forth bright line rules in this area of the law).

142. See *Control Res., Inc. v. Delta Elec., Inc.*, 133 F. Supp. 2d 121, 123, 59 U.S.P.Q.2d (BNA) 1177, 1177-78 (Fed. Cir. 2001) (describing the Federal Circuit as "different" and "a specialized court").

143. S. REP. NO. 97-275, at 7 (1981), *reprinted in* 1982 U.S.C.C.A.N. 11, 12.

144. See, e.g., *Hunter Douglas, Inc. v. Harmonic Design, Inc.*, 153 F.3d 1318, 1331, 47 U.S.P.Q.2d (BNA) 1769, 1778 (Fed. Cir. 1998) (holding that Congress intended the Federal Circuit to stabilize patent litigation, improve business planning, and spur new innovations in science and technology), *overruled on other grounds by* *Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1359, 50 U.S.P.Q.2d (BNA) 1672, 1675 (Fed. Cir. 1999) (holding that "one of the principal purposes" of the Federal Circuit was to "promote uniformity in the law with regard to" patent law); *In re Zurko*, 142 F.3d 1447, 1456, 46 U.S.P.Q.2d (BNA) 1691, 1699 (Fed. Cir. 1998), *rev'd on other grounds by* *Dickinson v. Zurko*, 527 U.S. 150, 50 U.S.P.Q.2d 1930 (1999) (stating that "an expressed purpose" for creating the Federal Circuit was "to increase uniformity of decision making in patent cases").

145. See *Diamond v. Chakrabarty*, 447 U.S. 303, 318, 206 U.S.P.Q. (BNA) 193, 210 (1980) (noting that Congress could alter Section 101 of the Patent Law to reflect concerns about patenting organisms produced by genetic engineering if it wished).

146. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 28 (1997) (holding that "Congress can legislate the doctrine of equivalents out of existence any

so far failed to respond. In view of the powerful mandate that accompanied its creation, and in the absence of more recent legislative activity, the Federal Circuit continues to serve as a maker of substantive patent policy.

In its salad days, the Federal Circuit addressed this mandate by attempting to resolve inconsistencies in the nation's collective patent jurisprudence.<sup>147</sup> Now that the initial housecleaning has come to a close, the court's mission has a different flavor. Certainty and predictability have become the watchwords of the day.<sup>148</sup> Today it is quite clear that an antitrust claim at the Federal Circuit will fail, that few innovations will fail to comprise patentable subject matter, and that a plaintiff-patentee basing his or her infringement theory solely on the doctrine of equivalents ought to reconsider its case.<sup>149</sup> The Federal Circuit's continuing drive for doctrinal stability within the patent law has been advanced largely through the mechanism of adjudicative rule formalism.

The expectations of an increasingly outspoken patent bar remain in accord with congressional purposes twenty years ago. Patent lawyers prefer rules. Patent lawyers draft the exclusionary rules that are patent claims, and then subject those rules to high-stakes litigation. They also bear the consequences when the rules are imprecise or of inappropriate scope. No wonder, then, that the patent bar has long demanded more rules and fewer standards in judicial decision-making. No small number has expressed this view to the Federal Circuit, sometimes in strongly worded language.<sup>150</sup> The persistent presentation of these views has had a felt impact upon the nation's patent jurisprudence.

The diversity and growing complexity of the subject matter within the Federal Circuit's jurisdiction might also prompt a movement

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time it chooses.”).

147. See Howard T. Markey, *The Federal Circuit and Congressional Intent*, 2 FED. CIR. B.J. 303, 303 (1992) (describing Congress's "expert intent" that the Federal Circuit "contribute to increased uniformity and reliability in the field of patent law").

148. See Kent, *supra* note 141, at 623 (characterizing the Federal Circuit's recent jurisprudence as favoring predictability over fairness).

149. See generally Taylor, *supra* note 3.

150. See, e.g., Russell B. Hill & Frank P. Cote, *Ending the Federal Circuit Crapshoot: Emphasizing Plain Meaning in Patent Claim Interpretation*, 42 IDEA 1 (2002); William C. Rooklidge & Matthew F. Weil, *Judicial Hyperactivity: The Federal Circuit's Discomfort with its Appellate Role*, 15 BERKELEY TECH. L.J. 725 (2000); Ted D. Lee & Michelle Evan, *The Charade: Trying a Patent Case to All "Three" Juries*, 8 TEX. INTELL. PROP. L.J. 1 (1999); Victorial Slind-Flor, *Federal Circuit Judged Flawed*, NAT'L L.J., Aug. 3, 1998, at A1; Matthew F. Weil & William C. Rooklidge, *Stare Un-Decisis: The Sometimes Rough Treatment of Precedent in Federal Circuit Decision-Making*, 80 J. PAT. & TRADEMARK OFF. SOC'Y 791 (1998); Larsen E. Whipsnade & J. Cheever Loophole, *Responsible Advocacy and Responsible Opinions at the Federal Circuit*, 35 IDEA 331 (1995).

towards adjudicative rule formalism. Outside of the patent field, the Federal Circuit must address numerous statutes of formidable length and intricacy.<sup>151</sup> No single practitioner could be expected to master this uneven assortment of legislation and the case law accompanying it.<sup>152</sup> The patent system too has become increasingly complex.<sup>153</sup> Patent acquisition procedures have become more convoluted, statutory amendments bring ever more subtle provisions into the Patent Act, and high technology inventions in such fields as pharmaceuticals and biotechnology are often of mind-numbing perplexity. Simple rules might be seen as providing a well-meaning judiciary with a thread through the labyrinth.

The sometimes-strained relationships between the Federal Circuit and the tribunals it oversees also seem to counsel rules.<sup>154</sup> District court judges have occasionally been outspoken over the Federal Circuit's high reversal rate and perceived intrusiveness into trial procedures.<sup>155</sup> Such issues as the interpretation of means-plus-function claims<sup>156</sup> and the standard of review<sup>157</sup> have led to simmering disputes between the Federal Circuit and the Patent Office as well. Given this history, the Federal Circuit may have developed an interest in promulgating simple rules that other actors within the patent system may more easily apply.

The decision-making environment of the Patent Office also weighs in favor of simple rules. Because rules may be more mechanically

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151. See Paul R. Michel, *Foreword: The Court of Appeals for the Federal Circuit Must Evolve to Meet the Challenge Ahead*, 48 AM. U. L. REV. 1177, 1181 (1999) (observing an increase both in the number of cases filed in the Federal Circuit and the difficulty of the average case).

152. See Ellen Sward & Rodney F. Page, *The Federal Courts Improvement Act: A Practitioner's Perspective*, 33 AM. U. L. REV. 385, 398 (1984) (describing the "mix of subject matter jurisdiction" at the Federal Circuit as "uncomfortable" because the various specialties do not necessarily relate to each other).

153. See generally John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. REV. 77 (2002) (investigating the causes of patent law's increasing complexity).

154. See Kimberly A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 12 FED. CIR. B.J. 1 (2002) (relating that district court judges misconstrue one-third of all patent claims appealed to the Federal Circuit).

155. See *id.* at 22 (quoting Chief Judge William G. Young as stating that seven of his nine cases appealed to the Federal Circuit were reversed, and that he is "not proud of that").

156. See, e.g., *In re Donaldson Co., Inc.*, 16 F.3d 1193-94, 29 U.S.P.Q.2d (BNA) 1845, 1849-50 (Fed. Cir. 1994) (disagreeing with the position taken by the Patent and Trademark Office Commissioner over the applicability of section 112, paragraph six of the Patent Act to the PTO).

157. See, e.g., *In re Zurko*, 142 F.3d 1447, 1449-50, 46 U.S.P.Q.2d (BNA) 1691, 1693-94 (Fed. Cir. 1998) (disagreeing with the position taken by the Patent and Trademark Office Commissioner regarding the appropriate standard for review for decisions of the PTO concerning patentability of claimed inventions).

applied than standards, they are said to decrease discretion and increase the likelihood that similarly situated individuals will be treated similarly.<sup>158</sup> This advantage looms largest in decentralized administrative agencies such as the Patent Office.<sup>159</sup> The patent-examining corps consists of many hundreds of examiners, many with “full signatory” authority that effectively allows them to serve as one-person patent offices.<sup>160</sup> The presence of many different decision makers, and the absence of centralized oversight of patentability determinations, further suggests the desirability of rules over standards.

#### IV. CONSEQUENCES OF FORMALISM IN PATENT LAW

Many factors have contributed to the rise of adjudicative rule formalism within the patent law. Judging by the tenor of the patent community, these new rules have for the large part been favorably received. It seems that the hoped-for predictability promised by increasing Federal Circuit rulemaking has ranked quite high among the values of the patent bar. Although concerns over the retracting doctrine of equivalents abound,<sup>161</sup> patent professionals seem largely to have approved of the trend towards adjudicative rule formalism in patent law.<sup>162</sup>

This Article sounds a cautionary note about the prevailing trend. In our rush to make the patent law more rulebound, we ought to consider the consequences more fully. Certainty, predictability, and stability are high values indeed for any legal system, but they are not the only ones. Innovation policy incorporates other values that present an uneasy fit with the Federal Circuit’s chosen rules. Rules may be promulgated with the aim of decreasing burdens upon other

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158. See Landry, *supra* note 32.

159. See John R. Thomas, *The Responsibility of the Rulemaker: Comparative Approaches to Patent Administration Reform*, 17 BERKELEY TECH. L.J. 727, 759 (2002) (describing the Patent and Trademark Office as a “Balkanized” group of “technology-based subdivisions”).

160. See *id.* (noting the autonomy and lack of uniformity within the Patent Office, and the difficulty in applying a single standard to differently served fields).

161. See Fields, *supra* note 7, at S5 (asserting that the degradation of the doctrine will incite “patent drafting and prosecution problems,” resulting in the reduced ability of small entities and individual entities to minimize costs).

162. See, e.g., Ronald Abramson, *Ruling Promotes Certainty in Evaluation of Patents*, N.J. L.J., Apr. 1997, at 37 (approving of recent trend towards limiting the doctrine of equivalents); Juan C. Gonzalez, *The On-Sale Bar to Patentability: The U.S. Supreme Court Sheds Some Light*, 40 IDEA 83, 103 (2000) (“*Pfaff* is welcome relief after years of confusion . . .”); Jeffrey R. Kuester & Lawrence E. Thompson, *Risks Associated with Restricting Business Method and E-Commerce Patents*, 17 GA. ST. U. L. REV. 657, 661-62 (2001) (“The *State Street* decision is generally accepted as sound legal analysis and result . . .”).

decision makers, but a closer analysis suggests that they might actually increase burdens upon the Patent Office in a dramatic fashion. And, given what history teaches about the workings of the Federal Circuit, serious doubt should remain over whether the benefits of predictability and certainty can practically be achieved. This Article next considers the potentially unattractive consequences of the recent spate of adjudicative rule formalism.

A. *Formalism and Innovation Policy*

1. *Contract law and innovation policy*

The patent system has sometimes been analogized to the contract law.<sup>163</sup> Inventors file applications and disclose inventions in exchange for the government's grant of a proprietary interest.<sup>164</sup> But beyond this simple likening, the patent law traditionally has borrowed little from contracts. Exemplary is the Federal Circuit's refusal to borrow perhaps the most apparent analogy, the construction of contracts, when constructing its *Markman* interpretational protocol for patents.<sup>165</sup> This traditional stance seems appropriate. It is not altogether clear why the legal mechanisms by which a promise is judged to be binding ought to control innovation policy.

Yet in its *Pfaff* decision, the Supreme Court suddenly made the contract law much more salient to patents. Recall that the Supreme Court declared that the on-sale bar is triggered when (1) the product is the subject of a commercial offer for sale and (2) the invention is ready for patenting.<sup>166</sup> Interestingly, while the facts of *Pfaff* provided the Court ample opportunity to consider the second part of the test,

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163. See, e.g., Orin S. Kerr, *Rethinking Patent Law in the Administrative State*, 42 WM. & MARY L. REV. 127, 135-36 (2000) (arguing that the private law doctrine of contract can illuminate the operation of the patent system). See generally William T. Kryger, *The Doctrine of Equivalents Into the Year 2000: The Line is Becoming Brighter for Some But Remains Dim for Others*, 3 MARQ. INTELL. PROP. L. REV. 203, 216-18 (1999) (analyzing the contract law and statutory law analogies developed to deal with the lack of patent law precedent).

164. See Kerr, *supra* note 163, at 134 (explaining that the patent laws represent an offer by Congress, the filing of a patent application corresponds to an acceptance of the offer by an inventor, and the government's quid pro quo is the extension of a patent to the inventor).

165. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 985-86, 34 U.S.P.Q.2d (BNA) 1321, 1334-35 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461 (1996) (stating that while extrinsic evidence and the subjective intent of the parties may be used to construe the terms of a contract, it would be inappropriate and impossible to use either in the patent context).

166. *Pfaff v. Wells Elec., Inc.*, 525 U.S. 55, 67-68, 48 U.S.P.Q.2d (BNA) 1641, 1647 (1998); see also *supra* notes 48-50 and accompanying text (surveying the facts and ruling in *Pfaff*).

there was little need to discuss the first.<sup>167</sup> In the circumstances presented to the Supreme Court, Pfaff had sold sockets before he fabricated even a single prototype of his invention, not to mention tested them to see whether they were functional or practical.<sup>168</sup> Pfaff's remarkable technical abilities, as well as the confidence of his contracting partner, gave the Court ample opportunity to discuss whether an invention was "ready for patenting" when it had yet to advance beyond a sketch pad.<sup>169</sup>

The facts of *Pfaff* provided far less fertile ground for discussing the new requirement that the product must be the subject of a commercial offer for sale. There was no question that Pfaff had accepted a purchase order prior to the critical date.<sup>170</sup> The Supreme Court announced its holding and quickly moved to the patentability issue.<sup>171</sup> The *Pfaff* decision is notable for its absence of discussion of conflicting Federal Circuit case law that suggested the opposite holding: that commercial activity not rising to the level of a formal offer for sale could nonetheless trigger the on-sale bar.<sup>172</sup>

Subsequent decisions have suggested that the requirement of a commercial offer for sale has fallen prone to a common critique of rules: promoting strategic behavior that extends just to the limit of the rule.<sup>173</sup> In the context of the on-sale bar, the *Pfaff* holding seems to encourage inventors to skirt the policies of the on-sale bar by engaging in any number of activities that fall just short of a formal offer for sale.

In one subsequent case, the inventor of an integrated circuit had, prior to the critical date, distributed advertisements, data sheets, and promotional information to customers, and had also received requests from sales representatives for product samples.<sup>174</sup> The

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167. See *Linear Tech. Corp. v. Micrel Inc.*, 275 F.3d 1040, 1048, 61 U.S.P.Q.2d (BNA) 1225, 1229 (Fed. Cir. 2001).

168. *Pfaff*, 525 U.S. at 58, 48 U.S.P.Q.2d (BNA) at 1643 (remarking that Pfaff regularly offered to sell new devices in commercial quantities before making or testing prototypes of the devices).

169. *Id.*, 48 U.S.P.Q.2d (BNA) at 1643 (noting that at the time Pfaff offered to sell his invention in commercial quantities, he had only created "detailed engineering drawings that described the design, the dimensions, and the materials to be used" in producing his invention).

170. *Id.* at 67, 48 U.S.P.Q.2d (BNA) at 1647 (observing that the acceptance of the purchase order before the critical date made it clear that a commercial offer had been made before the critical date).

171. *Id.*, 48 U.S.P.Q.2d (BNA) at 1647.

172. See, e.g., *RCA Corp. v. Data Gen. Corp.*, 887 F.2d 1056, 1062, 12 U.S.P.Q.2d (BNA) 1449, 1454 (Fed. Cir. 1989) (noting that the requirement of a definite offer does not mandate "a definite offer in the contract sense," but merely excludes "indefinite or nebulous discussions about a possible sale").

173. See Schlag, *supra* note 19, at 384.

174. See *Linear Tech. Corp. v. Micrel Inc.*, 275 F.3d 1040, 1044, 61 U.S.P.Q.2d

Federal Circuit held these activities did not trigger the on-sale bar because none of them constituted an offer for sale.<sup>175</sup> Surely these activities implicated the policies underlying the on-sale bar, in particular concern for manipulation of patent term and the reliance interest of competitors.<sup>176</sup> Yet adherents to the *Pfaff* test cannot consider them. Simple as the *Pfaff* rule is, by failing to probe into the broader circumstances under which an invention can be injected into the public domain, the *Pfaff* test slights the innovation policies that should inform a sound patent law.

## 2. *Consequences of the patent blunderbuss*

It is difficult to imagine a regulatory environment more dynamic than that of innovative industry. Technological, industrial, and marketplace conditions change at a dizzying pace in modern life. Making matters worse, the patent system is a blunderbuss. The same Patent Act applies with equal force to all manner of inventions, no matter what the discipline in which they arose.

These realities suggest two aspirations for decision-making within the patent system. First, imposition of the patent system upon a particular industry calls for a careful judgment. Among other factors, our desire for patent-induced innovation, the degree of concentration within a particular industry, our capacity to assess different sorts of innovations within the parameters of the patent law, and the ability of participants in particular industries to appropriate the benefits of their invention through non-legal mechanisms, should play a part in determinations of patent eligibility.<sup>177</sup> Second, once a particular sphere of endeavor has been exposed to the patent system, it may be desirable to tailor patent doctrine to the ever-changing conditions of different industries. It is apparent that standards, not rules, would offer courts sufficient flexibility to best achieve these goals. A danger of adjudicative rule formalism is the rejection of tools necessary to adjust innovation policy to the specific circumstances of particular cases.

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(BNA) 1225, 1226-27 (Fed. Cir. 2001).

175. See *id.* at 1050-52, 61 U.S.P.Q.2d (BNA) at 1230-32 (stating that the requests for samples may show that sales representatives were in contact with customers but do not prove that any offers were made, and that the promotional and other materials may have been preparing the market for future offers but did “not reveal the requisite intent to be bound, a *sine qua non* of an offer”).

176. See *Pfaff*, 525 U.S. at 65, 48 U.S.P.Q.2d (BNA) at 1648.

177. See Richard H. Stern, *Scope-of-Protection Problems with Patents and Copyrights on Methods of Doing Business*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 105, 109-10, 138, 154-55 (1999).

Contemporary case law fails to reflect these aspirations. The *State Street Bank* holding that anything useful is patentable<sup>178</sup> surely presents a rule that is straightforward to apply, easy to predict, and evenhanded in its treatment of innovators in distinct fields of endeavor. Yet the Federal Circuit, with its focus upon old judicial precedents and legislation, seemed disinterested in considering whether the patenting of business methods and other post-industrial inventions presents sound innovation policy. As an increasing number of unlikely disciplines are awkwardly exposed to the patent system,<sup>179</sup> the disadvantages of adjudicative rule formalism become more apparent.

The interaction of the *Johnson & Johnston* public dedication rule with the patent law's enablement requirement also demonstrates that rules often display too dull an edge.<sup>180</sup> In order to obtain a patent, the Patent Act requires inventors to provide a technical disclosure sufficiently detailed such that others can practice the invention.<sup>181</sup> The enablement requirement theoretically applies with equal force to all inventions, but in fact is the subject of distinct administrative practices for different sorts of inventions. A wholly-written description fulfills this enablement requirement for many sorts of inventions. Knowledgeable persons may readily obtain components and compounds on the market and combine them to achieve patented machines, circuits, and chemical compositions.

When an invention depends upon the use of living materials such as microorganisms or cultured cells, however, the enablement requirement becomes more difficult to fulfill. A mere written account may not suffice to enable others conveniently to make and use the invention. A sample of the biological materials is needed. In such cases the patent applicant must submit these materials to one of a number of recognized biological repositories. The case law recognizes that such deposits, accessible by interested members of the public, suffice to fulfill the enablement requirement.<sup>182</sup>

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178. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373, 47 U.S.P.Q.2d (BNA) 1596, 1601 (Fed. Cir. 1998).

179. See John R. Thomas, *Liberty and Property in the Patent Law*, 39 HOUS. L. REV. 569, 573 (2002) (listing insurance, financial services, advertising, art, athletics, architecture, and macroeconomics as disciplines that may be difficult to analyze under existing rules).

180. See *Johnson & Johnston Assocs. v. R.E. Serv. Co.*, 285 F.3d 1046, 1054, 62 U.S.P.Q.2d (BNA) 1225, 1230 (Fed. Cir. 2001) (en banc) (holding that a patentee cannot invoke the doctrine of equivalents to recapture subject matter that was disclosed to the public but not claimed).

181. 35 U.S.C. § 112 (2000).

182. *Enzo Biochem, Inc. v. Gen-Probe Inc.*, 296 F.3d 1316, 1325, 63 U.S.P.Q.2d (BNA) 1609, 1613 (Fed. Cir. 2002).

Innovators from all disciplines keenly felt the public dedication doctrine of *Johnson & Johnston*, but in particular the biotechnology industry has been heavily impacted. Inventors from the chemical, electrical, and mechanical arts may selectively draft written descriptions that claim just one component of a larger product or process. In these fields, the effective requirement of *Johnson & Johnston*, that inventors claim all aspects of their invention, is less harsh. Because the disclosure may not encompass a selected portion of a particular technology, drafting claims to the invention's full breadth is more plausible.

Inventors of biotechnological inventions fare less well under *Johnson & Johnston*. In order to fulfill the patent law's disclosure requirements they must place a sample of the invention in a public repository. In light of the public disclosure doctrine, they must now also have the wherewithal to claim each and every aspect of that invention or be held to have disclaimed it. Presenting a more selective disclosure and claim set is simply not an option. A more flexible standard for the doctrine of equivalents would be able to account for the distinct disclosure obligations faced by biotechnologists. Given the burdens it places upon an industry where the need for technological properties is said to be paramount,<sup>183</sup> a rule of public dedication may simply be too blunt to present sound innovation policy.

### 3. *Common sense and the person of ordinary skill in the art*

With the statutory subject matter, novelty, and utility requirements presenting quite lenient patentability standards, nonobviousness remains the patent law's most robust guardian of the public domain. Commentators have identified nonobviousness as serving several policy objectives.<sup>184</sup> Among them is that nonobviousness ensures "a 'patent-free' zone around the state of the art, allowing skilled technicians to complete routine work such as the straightforward substitution of materials, the ordinary streamlining of parts and technical processes, and the usual marginal improvements which occur as a technology matures."<sup>185</sup> Nonobviousness ensures that ordinary practitioners may practice their trade without interference

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183. See Dan L. Burk, *Biotechnology and the Patent Law: Fitting Innovation to the Procrustean Bed*, 17 RUTGERS COMPUTER & TECH. L.J. 1, 22-23 (1991).

184. See Edmund W. Kitch, *Graham v. John Deere Co.: New Standards for Patents*, 1966 SUP. CT. REV. 293, 301 (1966) (asserting that the nonobviousness test encourages innovation and limits the costs imposed on customers by patents).

185. MARTIN J. ADELMAN ET AL., *CASES AND MATERIALS ON PATENT LAW* 310 (2d ed. 2003).

from the patent system.

To this end, a sound nonobviousness standard should reflect the capabilities of actual practitioners active in the field. Although the nonobviousness standard has long been founded not upon the capabilities of an actual person, but of a hypothetical “person of ‘ordinary skill in the art,’”<sup>186</sup> that fictitious practitioner should be as closely akin to the capabilities of skilled artisans as possible. Otherwise, the nonobviousness standards will fall short of its policy objectives and inappropriately restrict the public domain.

By instructing the Patent Office to avoid reliance upon “common knowledge and common sense” in its decision making, the Federal Circuit risks unduly diminishing the nonobviousness requirement.<sup>187</sup> Trained scientists, engineers and other practitioners are seldom so dull-witted as to unvaryingly require the specific, step-by-step combination of elements from the prior art. Indeed, it is not uncommon for the Federal Circuit to cite to common sense in its opinions, regarding such varied issues as claim interpretation,<sup>188</sup> indirect infringement,<sup>189</sup> and reduction to practice.<sup>190</sup> A more nuanced standard, accounting for the level of ordinary skill in the art, the predictability of the art, and other salient factors would better account for the technical environment in which inventors and ordinary artisans alike find themselves. But the stringent rule of *Lee* threatens to make nonobviousness a mechanical determination, too closely akin to the novelty standard and too ineffective to protect the public domain.

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186. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 697, 218 U.S.P.Q. (BNA) 865, 868-69 (Fed. Cir. 1983).

187. *In re Lee*, 277 F.3d 1338, 1345, 61 U.S.P.Q.2d (BNA) 1430, 1435 (Fed. Cir. 2002) (holding that determinations of patentability must be based on evidence, that Board of Patent Appeals and Interferences decisions must be based on “objective analysis, proper authority, and reasoned findings,” and that “common knowledge and common sense” are not substitutes for either requirement).

188. *See Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971-72, 50 U.S.P.Q.2d (BNA) 1465, 1468 (Fed. Cir. 1999) (holding that the doctrine of claim differentiation is grounded in the common sense notion that when different claims use different words and phrases, the claims were intended to have different meanings and scope).

189. *See Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1365, 65 U.S.P.Q.2d (BNA) 1481, 1496 (Fed. Cir. 2003) (finding an alleged infringer not liable under an inducement of infringement theory because it would have defied common sense for the defendant to have induced the infringing acts).

190. *See Scott v. Finney*, 34 F.3d 1058, 1063, 32 U.S.P.Q.2d (BNA) 1115, 1119 (Fed. Cir. 1994) (explaining that the level of testing required to demonstrate reduction to practice is based on the common sense approach of requiring more testing in situations with many uncertainties and allowing less testing when fewer variables are involved).

*B. Formalism and Patent Administration*

The Patent Office has at last admitted that it is under siege.<sup>191</sup> In 1991, inventors presented 177,830 applications to the Patent Office.<sup>192</sup> By 2001 this number had increased to 345,732 applications,<sup>193</sup> and substantial increases are projected for the foreseeable future.<sup>194</sup> As worrying as these figures are, they do not fully convey the troubling environment in which our patent administrators operate. As technology has advanced, applications increasingly concern inventions of extraordinary complexity.<sup>195</sup> An ever more sophisticated patent bar has also adopted more elaborate prosecution strategies, as evidenced by the growing number of patents that incorporate dozens and sometimes hundreds of claims.<sup>196</sup> The Patent Office has also faced difficult financial circumstances. Congress has increasingly diverted Patent Office revenue in order to address shortfalls in the general budget.<sup>197</sup> The result has been an increase in the pendency of applications, persistent accounts claiming that patent quality has suffered, and calls for a dramatic rethinking of the manner in which patents are examined and approved.<sup>198</sup>

In light of these difficulties, concern for patent administration would seem an especially appropriate consideration for intellectual property policy makers. Indeed, the simple rules now favored by the Federal Circuit may appear to be an appropriate response to the

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191. See U.S. Patent and Trademark Office, *The 21st Century Strategic Plan* (Feb. 3, 2003), at 3 [hereinafter *Strategic Plan*] (reporting that “[t]oday, the United States Patent and Trademark Office (USPTO) is under siege.”), available at [http://www.uspto.gov/web/offices/com/strat21/stratplan\\_03feb2003.pdf](http://www.uspto.gov/web/offices/com/strat21/stratplan_03feb2003.pdf).

192. U.S. Patent and Trademark Office, *U.S. Patent Statistics, Calendar Year 1963—2001* (2002), at 1, available at [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us\\_stat.pdf](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf). (last modified Feb. 3, 2003).

193. *Id.*

194. See *Strategic Plan*, *supra* note 191, at 1 (noting the estimated seven million pending patent applications and a yearly workload increase of twenty to thirty percent).

195. See Allison & Lemley, *supra* note 153, at 80 (observing that although an increasing number of complex inventions originate from “high-tech” industries, such as software, semiconductors, computers, and biotechnology, there has also been an increased flow of complex inventions from more traditional industries, such as medical devices and automotive technologies).

196. See *id.* at 81 (noting that patents “issued in the 1990s contained approximately 50% more claims than patents issued in the 1970s”).

197. See John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305, 317 (2001) [hereinafter Thomas, *Collusion and Collective Action*] (noting that the income from the patent fee surcharge, intended by Congress to make the Patent Office entirely user-funded, was diverted to a Treasury account and, in less than a decade, over \$234 million was diverted from the Patent Office to other government programs).

198. See, e.g., Jay P. Kesan, *Carrots and Sticks to Create a Better Patent System*, 17 BERKELEY TECH. L.J. 763 (2002).

current crisis in patent administration. Simple rules should streamline patent acquisition procedures by being easily applied and resistant to discretion. Yet a closer look at recent legal developments reveals a more complex picture. Rather than lift Patent Office burdens, recent doctrinal developments may actually be increasing them, both in terms of enlarging the number of applications filed and the costs of the administrative process itself.

1. *Increasing the filing rate*

The Federal Circuit's permissive jurisprudence of patent eligibility is exemplary of how the promulgation of a simple rule by a well-meaning judiciary can lead to unintended consequences. In *State Street Bank*,<sup>199</sup> the Federal Circuit was arguably motivated by its past difficulties in identifying the subject matter appropriate for patenting. A simple "tangible result" rule would seemingly decrease Patent Office workload by allowing examiners to avoid the metaphysical inquires that sometimes accompanied the *Freeman-Walter-Abele*<sup>200</sup> standard and other predecessor tests. But the effect has instead been to increase filings, as firms in industries that were once strangers to the patent system have begun the systematic formalization of their intellectual properties.<sup>201</sup> A rule likely promulgated out of sympathy for Patent Office workload has, in fact, intensified demands upon our patent administrators.<sup>202</sup>

The dwindling doctrine of equivalents also places growing strains upon the Patent Office. By decreasing the ability of patentees to assert the doctrine, the Federal Circuit hopes to increase notice and certainty within innovative industries. Yet experience teaches that this notice will come at a price. Put in rudimentary terms, applicants may respond by procuring numerous small patents instead of a single big one. Inventors must now construct detailed claim sets, perhaps over multiple patents, rather than employ more limited claims along with an expectation of judicial application of the doctrine of

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199. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 47 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1998).

200. See *supra* notes 100-02 and accompanying text.

201. See Jennifer A. Albert & Emerson V. Briggs, III, *Strategies of Tech Business Include Utility Patents*, NAT'L L.J., Jan. 29, 2001, at B23 (reporting that "[t]he PTO has been inundated with patent applications during the past two years and can barely keep up. It is generally understood that this increase in filings results from an influx of computer, software, and Internet-based applications in the wake of the Federal Circuit's holding in *State Street*").

202. See *id.* (observing that encouragement of computer-dependent businesses to seek the broader but more difficult to obtain protection of utility patents did less to stem the influx of patent applications than it did to promote greater complexity in patent applications).

equivalents. Patent administrators will bear the brunt of a policy shift that increases the transaction costs of patent acquisition and removes flexibility from enforcement litigation.

More than other Federal Circuit opinions pertaining to the doctrine of equivalents, *Johnson & Johnston*<sup>203</sup> addresses the impact of its holding upon the Patent Office. The results were not especially encouraging. The court expressly encouraged applicants to file continuation and reissue applications to ensure that no disclosed subject matter goes unclaimed.<sup>204</sup> The opinion also implicitly encourages applicants to file more claims so that no portion of the disclosure is considered to be disclaimed.<sup>205</sup> The Federal Circuit decided *Johnson & Johnston* recently, and its impact has yet to be felt. There should be little doubt that the best the Patent Office can hope for is equipoise in its workload, and quite possibly could expect significantly greater demands from patent applicants.

## 2. *Heightening the burdens of examination*

Even as recent doctrinal developments increase the number of patent applications, they may also raise the administrative costs of processing these applications. The patenting of business methods and other post-industrial inventions has proven especially burdensome to the Patent Office because it lacks institutional experience in these fields. Other advanced technologies, such as biotechnology, semiconductors, or polymer chemistry, descended naturally from their predecessors. No such antecedent basis informs Patent Office practices and expertise concerning post-industrial inventions.<sup>206</sup>

The Patent Office has endeavored to meet this challenge. It has sponsored a roundtable discussion, pronounced an initiative, and altered its ordinary examination practices in order to come up to speed as quickly as its difficult circumstances allow.<sup>207</sup> Whether the examination of post-industrial inventions will ever be on par with advancements in traditionally patented fields still remains an open question. While the norms of the scientific method encourage

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203. 285 F.3d 1046, 62 U.S.P.Q.2d (BNA) 1225 (Fed. Cir. 2001).

204. *Id.* at 1055, 62 U.S.P.Q.2d (BNA) at 1234 (holding that “[w]ithin two years from the grant of the original patent, a patentee may file a reissue application and attempt to enlarge the scope of the original claims to include the disclosed but previously unclaimed subject matter.”).

205. *See id.* (providing that “a patentee can file a separate application claiming the disclosed subject matter under 35 U.S.C. § 120 (2000) . . .”).

206. *See* Thomas, *Collusion and Collective Action*, *supra* note 197, at 318-19.

207. *See* Brenda Sandburg, *Business Method Patents Come Under Increased Scrutiny*, LEGAL INTELLIGENCER, Mar. 31, 2000, at 4.

publication and disclosure of advancements in biology, chemistry, and physics, no such principle guides the world of commerce. Advances there are maintained in the practices of commercial enterprises and the heads of business persons, and it is not entirely sure that the patent system will alter this traditional norm.<sup>208</sup> As a result, Patent Office difficulties in located prior art will likely prove longstanding.

The diminishing nonobviousness requirement increases pressures upon patent administrators to discover prior art references of great specificity. This consequence can be best appreciated when viewed in light of the Patent Office's sweeping statutory obligations. When enacting the patent code, Congress charged the Patent Office with knowledge of the entire state of the art across all the disciplines that comprise patentable subject matter. The Patent Act commands examiners to locate all prior patents and publications published anywhere in the world, in any language; all domestic sales and uses, even where they have not been documented; and even information that has been maintained in secrecy.<sup>209</sup> The requirement that examiners sift through this vast universe of knowledge to find a single, anticipatory reference is one that often cannot be practically achieved.

The nonobviousness standard has traditionally ameliorated the harshness of this task. Examiners need not rely solely upon the novelty requirement and a scorched earth prior art search for a single, ideal reference. Instead, they may employ teachings from several references that are more readily obtainable, brought together from the perspective of skilled persons within the field. This flexibility substitutes for a single, identical reference that may exist somewhere in the world, but simply cannot be readily retrieved within the time and budget restraints of the Patent Office. Nonobviousness allows the Patent Office to maintain its role as a guardian of the public domain despite its challenging workload and difficult financial circumstances.

The Federal Circuit's recently imposed evidentiary requirements, exemplified by such opinions as *Lee*,<sup>210</sup> threaten to remove this flexibility. Examiners must now find not only each element of the claimed invention within the prior art, but demonstrate that a skilled

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208. See Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?*, 16 SANTA CLARA COMPUTER & HIGH TECH. L.J. 263, 269 (2000).

209. 35 U.S.C. § 102 (2000).

210. *In re Lee*, 277 F.3d 1338, 61 U.S.P.Q.2d (BNA) 1430 (Fed. Cir. 2002).

artisan would have been motivated to combine them.<sup>211</sup> To the extent that *Lee* requires a showing from the prior art of a motivation to combine, examiners must effectively possess fully anticipatory reference in order to make an obviousness rejection.<sup>212</sup> By converting an administrative ideal into an everyday practice, the Federal Circuit has made it far more difficult for the Patent Office to reject applications.

*Lee*'s demand that the Patent Office Board provide "full and reasoned explanations"<sup>213</sup> of each decision also places great pressures upon the Patent Office. In recent years, the Board has experienced backlogs in its challenging workload. If the Board's Administrative Patent Judges must present a fulsome articulation of its decision in every case, it seems likely that the Board will fall still farther behind. Notably, the Federal Circuit issues many of its opinions in brief, conclusory, nonprecedential form.<sup>214</sup> It is at least questionable whether the Federal Circuit is holding the Board to a standard it does not meet itself.

Shifts in the Federal Circuit's thinking on the doctrine of equivalents have also impacted patent prosecution. At its best, patent prosecution encourages a dialogue between applicant and examiner about the appropriate scope of the claims in light of the prior art.<sup>215</sup> In view of *Festo*<sup>216</sup> and other decisions that emphasize a patent's prosecution history, contemporary patent acquisition proceedings have become more confrontational. Concern for the adverse consequences of prosecution history estoppel have made applicants' responses more formulaic and decreased their willingness to amend claims. *Festo*'s primary impact may indeed lie not so much in infringement litigation, but in prosecution, as applicants engage in

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211. See *id.* at 1345, 61 U.S.P.Q.2d (BNA) at 1435 (holding that "[t]he board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.").

212. *Id.*, 61 U.S.P.Q.2d (BNA) at 1435.

213. See *id.* at 1342, 61 U.S.P.Q.2d (BNA) at 1432 (holding that "[f]or judicial review to be meaningfully achieved within these strictures, the agency tribunal must present a full and reasoned explanation of its decision.").

214. See Elizabeth M. Horton, *Selective Publication and the Authority of Precedent in the United States Courts of Appeals*, 42 UCLA L. REV. 1691, 1693 (1995) (noting that the relaxed standard allows judges to allocate more time to drafting opinions with precedent-creating opportunities).

215. See generally John R. Thomas, *On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation*, 47 UCLAL. REV. 183, 188-89 (1999) [hereinafter Thomas, *Prosecution Histories*] (describing the applicant/patent examiner exchange when an inventor seeks patent protection).

216. 535 U.S. 722, 62 U.S.P.Q.2d (BNA) 1705 (2002).

more adversarial prosecution practices and have enhanced incentives to appeal examiner decisions.<sup>217</sup>

### C. Formalism and Certainty

Finally, it is also appropriate to question whether adjudicative rule formalism will achieve its goals of certainty, predictability, and doctrinal stability.<sup>218</sup> Undoubtedly some legal issues, such as whether a particular invention is eligible for patenting or whether a competitor's product infringes under the doctrine of equivalents, are more easily answered today than a decade ago. Yet historical experience suggests that we view Federal Circuit rulemaking with a healthy skepticism. Over its twenty-year history, the court has not always followed its own mandates with the rigor we might expect.

Product-by-process claims illustrate one of the more notable examples of disobedience. Rather than recite the structure of the claimed product, this claim format instead describes the product by the method through which it was made.<sup>219</sup> Some ambiguity has surrounded the scope of such claims. One Federal Circuit three-judge panel held that product-by-process claims covered the product, no matter whether the claimed method of making that product was employed or not.<sup>220</sup> Less than one year later, a second Federal Circuit panel decided differently.<sup>221</sup> According to the panel in the later *Atlantic Thermoplastics* decision, the original panel had not properly understood controlling Supreme Court precedent. The memorable lines of Judge Rich, dissenting from the denial of rehearing *en banc*, captured the mood of the moment: "[I]t is mutiny. It is heresy. It is illegal."<sup>222</sup>

Other authors have catalogued additional instances of this sort.<sup>223</sup> In addition to pointing to higher authority, Federal Circuit panels

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217. See generally *supra* note 206 and accompanying text; Thomas, *Prosecution Histories*, *supra* note 215, at 203 (asserting that patent examiners only rarely hold legal qualifications; further, admission to represent others before the patent bar is not restricted to attorneys).

218. See generally Weil & Rooklidge, *supra* note 150, at 791.

219. See ADELMAN ET AL., *supra* note 185, at 544.

220. See *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1583, 18 U.S.P.Q.2d (BNA) 1001, 1016 (Fed. Cir. 1991) (holding that "[s]ince claims must be construed the same way for validity and for infringement, the correct reading of product-by-process claims is that they are not limited to product prepared by the process set forth in the claims.>").

221. *Atl. Thermoplastics Co. v. Faytex Corp.*, 970 F.2d 834, 23 U.S.P.Q.2d (BNA) 1481 (Fed. Cir. 1992).

222. *Atl. Thermoplastics Co. v. Faytex Corp.*, 974 F.2d 1279, 1281, 23 U.S.P.Q.2d (BNA) 1801, 1802 (Fed. Cir. 1992). (Rich, J., dissenting from denial of rehearing *en banc*).

223. See Weil & Rooklidge, *supra* note 150, at 791.

have sometimes distinguished an earlier rule based upon the facts of the decision that formed it;<sup>224</sup> declared a different policy at play under the facts at hand;<sup>225</sup> or simply engrafted an exception on the rule.<sup>226</sup> That the Federal Circuit has not always observed its own rules calls more for the refinement than the rejection of its current rule-making drive. Still, the Federal Circuit may need to foster a newfound discipline in order to maintain the many rules it has recently established. The coming years will reveal the success of this endeavor.

#### CONCLUSION

In a legal climate where diverse strands of Federal Circuit jurisprudence appear to be moving in different directions, the theme of adjudicative rules formalism presents a unifying explanation. To the extent this theory is accurate and possesses predictive power, some cautious forecasts about the near future of patent law are in order. First, the court will likely continue its trend of declaring issues frequently before it to arise in law rather than fact.<sup>227</sup> Given the prevailing trend in the Federal Circuit, the doctrine of equivalents appears a likely candidate for such treatment.<sup>228</sup> Second, the Federal Circuit will augment the collection of issues it chooses to decide under its own law, rather than the law of a regional circuit court of appeals.<sup>229</sup> Finally, as applicants continue to find patentability criteria more readily satisfied, so too will patentees find the doctrine of equivalents less availing. The U.S. patent system will continue to move towards a regime where many patents issue, but few are

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224. See *Rhone Poulenc Agro, S.A. v. DeKalb Genetics Corp.*, 284 F.3d 1323, 1334, 62 U.S.P.Q.2d (BNA) 1188, 1196 (Fed. Cir. 2002) (declining to apply the good faith purchaser for value rule to a non-exclusive license).

225. See *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1314, 51 U.S.P.Q.2d (BNA) 1161, 1177 (Fed. Cir. 1999) (distinguishing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 39 U.S.P.Q.2d (BNA) 1578 (Fed. Cir. 1996), based upon perceived benefits of expert testimony in patent claim interpretation).

226. Compare *In re Sang Su Lee*, 277 F.3d 1338, 61 U.S.P.Q.2d (BNA) 1430 (Fed. Cir. 2002) (stating general rule that in order to combine teachings of the prior art for purpose of obviousness under 35 U.S.C. § 103, there must be objective evidence of record based on a thorough factual inquiry), with *In re Peterson*, 315 F.3d 1325, 65 U.S.P.Q.2d (BNA) 1379 (Fed. Cir. 2003) (concluding it was appropriate to assume that artisans possess the motivation to determine the optimal combination where the prior art teaches materials made out of a combination of ingredients).

227. See Robert D. Fram & Sarah E. Mitchell, *Federal Circuit Sees Fit to Streamline Litigation But Converting More Issues to Matters of Law May Not Result in Hoped-For Predictability*, NAT'L L.J., Oct. 20, 1997, at C25 (reporting that "the court has shown an inclination to convert a wider range of issues into matters of law.").

228. See *MERGES & DUFFY*, *supra* note 119, at 955.

229. See *Manildra Milling Corp. v. Ogilvie Mills, Inc.*, 76 F.3d 1178, 1182, 37 U.S.P.Q.2d (BNA) 1707, 1710 (Fed. Cir. 1996).

awarded a scope of protection beyond their literal wording. That this system might resemble an earlier era of the Japanese patent system, with its patent thickets and frustrating judgment of noninfringement, may give American readers appropriate pause.

More sure is that in a time of sweeping change, U.S. patent law is in many ways becoming more certain. The Federal Circuit's ongoing pursuit of doctrinal stability has led to maximalist decision making that has specified considerable legal rules in advance of their application. As we assess the court's movement into adjudicative rules formalism, we would do well to remember that the goals of certainty and predictability rank high among the list of legal aspirations. But there are other values for the patent system as well. The central concern of a sound innovation policy and due regard for administrative ramifications, along with a healthy skepticism over whether certainty can be practically achieved, suggests the desirability of more nuanced alternatives. In days soon to come, the dynamic field of innovation will surely test the wisdom of the court's newly forged rules, as well as the resolve of its jurists to abide by them.