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Legal (Un)Certainty, Legal Process, and Patent Law

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LEGAL (UN)CERTAINTY, LEGAL PROCESS, AND PATENT LAW

*Kelly Casey Mullally**

Concern for certainty is ubiquitous in the law. Some degree of determinacy in the content and application of laws is necessary for individuals to identify the scope of their rights and to ensure that their conduct conforms with legal constraints. In patent law, lack of determinacy has the potential to undermine a fundamental goal of the patent system—providing an incentive for creators to invent and to publicly disclose their inventions. A patent (the incentive) is only as valuable as the laws that give force to it. With an exceedingly uncertain reward, the incentive effect may diminish. Recent criticism of patent law and the institutions that apply it, particularly the U.S. Court of Appeals for the Federal Circuit, has asserted that patent law suffers from an unreasonably high level of uncertainty or unpredictability that threatens the patent system's ability to stimulate innovation. Yet many of the demands for certainty in patent law have been vague and fail to present a complete view of the causes for uncertainty in the patent system.

This Article seeks to deepen the determinacy debate by comprehensively examining sources of uncertainty in patent law. All areas of law experience some baseline entropy, and theories explaining uncertainty in other areas of the law and in the legal system generally are useful in understanding, and lending perspective to, the current state of patent law. In addition to exploring some of those theories, this Article discusses two systemic sources of uncertainty in patent law: first, uncertainty that results from patent law's public institutions; and second, uncertainty that results from private actors in the patent system. Specifically, with regard to the first category, the Federal Circuit experiences an upward pressure for bright-line rules from

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patent law's administrative agency and the district courts, countered by a downward pressure for flexible standards from the U.S. Supreme Court, resulting in oscillation in the law. As to the second category, the strategic value of vague claims and broad descriptions of inventions provides an incentive for inventors to inject uncertainty into their patents, making rights to practice competing technologies indeterminate. Although the extent of uncertainty in patent law caused by these public and private sources is neither highly unusual nor a fatal flaw in the system, this Article concludes by offering a general framework and some specific tools for managing and assessing uncertainty. This Article accordingly presents a critique of the demand for certainty in patent law and advocates a more measured debate over indeterminacy in the patent system.

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INTRODUCTION

Concern for certainty is ubiquitous in the law. Some degree of determinacy in the content and application of governing rules is necessary for individuals to identify the scope of their rights and to ensure that their conduct conforms to legal constraints, at least in contexts where *ex ante* decision making is possible. The law forms the basis for many social and economic expectations, and legal thinkers naturally have some interest in certainty.¹ Certainty, in terms of predictability of results, is necessary to view law-making institutions as legitimate sources of authority.² Lawyers should be able to use the law as a guide to what courts will do in future cases; otherwise, a lack of certainty can cause the public to abandon legal institutions.³

In the patent system, indeterminacy can undermine a fundamental goal—providing an incentive for creators to invent and to publicly disclose their inventions.⁴ A patent, the incentive, is only

1. Jeremy Bentham referred to property as “nothing but a basis of expectation.” 1 JEREMY BENTHAM, *THE WORKS OF JEREMY BENTHAM* 307–08 (John Bowring ed., Edinburgh, William Tait 1843). He posited that laws must support the expectations that they engender and argued that for laws to regulate expectation effectively, they must be understood. Otherwise, a divergence will arise between laws and customs, which creates uncertainty and lessens the power that laws have over expectation. *Id.* at 325; see also H.L.A. Hart, *Positivism and the Separation of Law and Morals*, 71 HARV. L. REV. 593, 607–08 (1958) (“If a penumbra of uncertainty must surround all legal rules, then their application . . . cannot be a matter of logical deduction and so deductive reasoning, which for generations has been cherished as the very perfection of human reasoning, cannot serve as a model for what judges, or indeed anyone, should do”); Jason Scott Johnston, *Uncertainty, Chaos, and the Torts Process: An Economic Analysis of Legal Form*, 76 CORNELL L. REV. 341, 341 (1991) (“One of the central concerns of contemporary post-Realist jurisprudence is legal determinacy—the ability to formulate legal rules that yield certain or at least predictable outcomes at least some of the time.”).

2. Professor Peter Schuck has written about the “delegitimation costs” of legal complexity, which is related to legal uncertainty. See Peter H. Schuck, *Legal Complexity: Some Causes, Consequences, and Cures*, 42 DUKE L.J. 1, 22–25 (1992). He emphasizes the loss of confidence the public experiences in law-making institutions as governing rules become more complex. See *id.* at 23 (“When . . . Delphic law also emerges from an institutional black box that is itself dense and difficult to comprehend, its legitimacy—the sense of ‘oughtness’ that the lawmakers hope will attach to it—is diminished.”). Professor Schuck notes a RAND Corporation study of product liability law’s effect on corporate behavior that concluded, “the law emitted such noisy, random, and confusing signals to manufacturers that it had little effect on the product design decisions it was supposed to influence.” *Id.* at 24.

3. See, e.g., *id.* at 42 (noting that one common response to legal complexity and uncertainty is “partial or complete withdrawal from the field”).

4. See *Graver Tank & Mfg. Co. v. Linde Air Prods., Co.*, 339 U.S. 605, 607 (1950) (“[D]isclosure of inventions . . . is one of the primary purposes of the patent system.”); Richard

as valuable as the laws that give force and meaning to it. With an uncertain reward, the incentive effect may diminish and innovation may suffer.⁵ Patentees may be unable to ascertain their rights and obligations without engaging in costly litigation.⁶ They also may be unable to obtain the financing necessary to bring their innovations to market in the form of a commercial product when their patent rights are uncertain.⁷ Knowing these possibilities, inventors may be deterred from entering the patent system and even discouraged in their creative efforts.⁸

The cost of uncertainty to non-patentees is also great. Patent holders' competitors face the prospect of expensive and potentially ruinous litigation to determine whether their activities infringe a patent, or often multiple patents.⁹ The general public also bears the

Lidar Wang, *Biomedical Upstream Patenting and Scientific Research: The Case for Compulsory Licenses Bearing Reach-Through Royalties*, 10 YALE J.L. & TECH. 251, 264 (2008) ("Generating sufficient incentive to invent is the primary justification for the patent system in the United States.").

5. See *In re Bilski*, 545 F.3d 943, 977 (Fed. Cir. 2008), cert. granted sub nom. *Bilski v. Doll*, 129 S. Ct. 2735 (2009) (Newman, J., dissenting) ("Uncertainty is the enemy of innovation. These new uncertainties . . . diminish the incentives available to new enterprise . . ."); Johnston, *supra* note 1, at 344 (noting that uncertainty in the law "has been shown to have potentially serious economic consequences in discouraging certain socially desirable, but risky, activities.").

6. According to a 2005 study conducted by the American Intellectual Property Law Association, the median cost to try a patent case with between \$1 and \$25 million in damages at risk is \$2 million, for legal fees alone. The cost to litigate a case where more than \$25 million is at risk was reported to be over \$5 million. AM. INTELL. PROP. LAW ASS'N, LAW PRACTICE MGMT. COMM., AIPLA REPORT OF THE ECONOMIC SURVEY 2005, at 22, 109 (2005).

7. See Craig Allen Nard, *Certainty, Fence Building, and the Useful Arts*, 74 IND. L.J. 759, 759 (1999) ("The prospect of certainty in the patentee's property interest has several benefits, one of which is to create a sense of security which permits the patentee to secure risk capital from investors, which in turn facilitates the commercialization of the claimed invention.").

8. See *supra* note 3 and accompanying text (noting that one effect of uncertainty is abandonment of the legal system).

9. As one judge has noted about counseling clients on infringement:

Patent counselors should be able to advise their clients, with some confidence, whether to proceed with a product or process of a particular kind. The consequences of advice that turns out to be incorrect can be devastating, and the costs of uncertainty—unjustified caution or the devotion of vast resources to the sterile enterprise of litigation—can be similarly destructive.

Litton Sys., Inc. v. Honeywell, Inc., 87 F.3d 1559, 1580 (Fed. Cir. 1996) (Bryson, J., concurring in part and dissenting in part). In some industries, competitors must clear more than a hundred patents before entering the market. See, e.g., Mark A. Lemley & Carl Shapiro, *Patent Hold Up and Royalty Stacking*, 85 TEX. L. REV. 1991, 1992 (2007) ("In the information technology sector in particular, modern products . . . can easily be covered by dozens or even hundreds of different patents. As a striking example, literally thousands of patents have been identified as essential to the proposed new standards for 3G cellular telephone systems.").

cost of uncertainty in a derivative but less obvious way if inventors neglect to undertake research that could result in a technological advance, or competitors avoid bringing cheaper alternatives to market, because funds have been diverted to legal expenses or because the expected return is too tenuous. Rule makers can also be affected by uncertainty. For example, even reform-minded judges and legislators may be reluctant to modify a body of law that is complex and indeterminate.¹⁰

Much current commentary asserts that uncertainty in patent law is indeed debilitating the system. Patent law has become the target of harsh and increasing criticism based on a perceived lack of determinacy. In particular, commentators have accused the U.S. Court of Appeals for the Federal Circuit, the predominant arbiter of patent law,¹¹ of being unable to render certain and predictable decisions in patent law.¹² For instance, the court has been accused of

10. As Professor Schuck explains:

Even fervent reformers hesitate to alter a landscape that is so hard to read; they know that in a more polycentric legal world, any change will have ripple effects, ramifying widely, swiftly, and unpredictably throughout the system's web. When the risks of error are magnified, rulemakers are more likely to adhere to even an unsatisfactory status quo.

Schuck, *supra* note 2, at 20–21. This sort of risk aversion might explain, at least in part, Congress's prolonged inability to pass patent reform legislation.

11. The U.S. Court of Appeals for the Federal Circuit has near-exclusive appellate jurisdiction over patent disputes, *see* 28 U.S.C. § 1295(a)(4)(A)–(C) (2006); *see also infra* Part I.B (discussing the Federal Circuit's role in patent law), and is effectively the court of last resort in the United States for patent matters. *See* THE U.S. JUDICIAL CONFERENCE COMM. ON THE BICENTENNIAL OF THE CONSTITUTION OF THE U.S., THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT: A HISTORY, 1982–1990, at 226–27 (1991); *see also* Mark D. Janis, *Patent Law in the Age of the Invisible Supreme Court*, 2001 U. ILL. L. REV. 387, 387 (2001) (“The [Federal Circuit] . . . has become the de facto supreme court of patents.”).

12. *See, e.g.*, Gretchen Ann Bender, *Uncertainty and Unpredictability in Patent Litigation: The Time Is Ripe for a Consistent Claim Construction Methodology*, 8 J. INTELL. PROP. L. 175, 176 (2001) (“[T]he [Federal Circuit's] current practice does not provide certainty or predictability to patent litigants.”); James Bessen & Michael J. Meurer, *Lessons for Patent Policy from Empirical Research on Patent Litigation*, 9 LEWIS & CLARK L. REV. 1, 2 (2005) (noting that “[p]atent litigation has been called the sport of kings; it is complex, uncertain, and expensive”); Christian A. Chu, *Empirical Analysis of the Federal Circuit's Claim Construction Trends*, 16 BERKELEY TECH. L.J. 1075, 1100 (2001) (referring to pre-trial predictability in patent litigation as “a tantalizing dream”); Jeffrey A. Lefstin, *The Measure of the Doubt: Dissent, Indeterminacy, and Interpretation at the Federal Circuit*, 58 HASTINGS L.J. 1025, 1026 (2007) (noting that “commentators, practitioners, trial judges, and even some judges of the Federal Circuit themselves seem united in their view that uncertainty and unpredictability are the order of the day”); Glynn S. Lunney, Jr., *Patent Law, the Federal Circuit, and the Supreme Court: A Quiet Revolution*, 11 SUP. CT. ECON. REV. 1, 76 (2003) (arguing that empirical data “suggests that the Federal Circuit and its doctrinal changes have brought less certainty and predictability to patent

failing to follow its own precedent and of panel dependency.¹³ Empirical assessments in traditional legal journals report high reversal rates in patent cases, creating uncertainty about trial court judgments.¹⁴ Lawyers have said that they “look for bright-line rules” from the Federal Circuit but instead find “chaos and uncertainty.”¹⁵ In another indictment, the largest intellectual property owners’ trade association vigorously opposed a legislative proposal to expand the Federal Circuit’s jurisdiction to include immigration appeals on the basis of its effect on patent law—namely that such a change would reportedly “exacerbate the current uncertainty over patent rights.”¹⁶

enforcement”); Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1, 40–41 (2005) (noting “key areas of expanding uncertainty” in Federal Circuit jurisprudence).

13. See, e.g., Thomas G. Field, *The Role of Stare Decisis in the Federal Circuit*, 9 FED. CIR. B.J. 203, 212, 215–22 (1999) (citing examples of inter-panel conflicts); Craig Allen Nard & John F. Duffy, *Rethinking Patent Law’s Uniformity Principle*, 101 NW. U. L. REV. 1619, 1627 (2007) (“[O]ne of the prominent criticisms of the Federal Circuit is that the court exhibits ‘panel dependency.’”); Polk R. Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding?*, 152 U. PA. L. REV. 1105, 1112 (2004) (asserting, based on empirical study, that Federal Circuit decisions on claim construction are panel-dependent); 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) (asserting that the Federal Circuit uses a series of judicial devices to avoid following its own precedent).

14. See, e.g., Bender, *supra* note 12, at 203, 207 (finding that the Federal Circuit reversed approximately 40 percent of claim construction rulings appealed between April 1996 and 2000); Chu, *supra* note 12, at 1104 (citing a 44 percent reversal rate for claim terms appealed between January 1998 and April 2000); Kimberly A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1, 8–11 (2001) [hereinafter Moore, *Judges Equipped*] (citing a 33 percent claim construction reversal rate between April 1996 and 2000); Kimberly A. Moore, Markman *Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231, 239, 247 (2005) (finding that the Federal Circuit overturned district court decisions on claim construction 34.5 percent of the time between April 1996 and 2003 and concluding that “there should be more predictability” in the Federal Circuit’s claim construction decisions); Andrew T. Zidel, *Patent Claim Construction in the Trial Courts: A Study Showing the Need for Clear Guidance from the Federal Circuit*, 33 SETON HALL L. REV. 711, 741–42, 755–60 (2003) (finding that Federal Circuit reversed thirty-nine of ninety-four claim construction decisions in 2001).

15. *Patents/Seminars: Speakers Offer Practical Tips on Crafting and Drafting Winning Patent Applications*, 71 PAT., TRADEMARK & COPYRIGHT J. (BNA) 501 ¶¶ 3, 5 (Mar. 10, 2006) (noting lawyer’s comment about “chaos and uncertainty” at the Federal Circuit and view that “[w]e don’t know what the Federal Circuit is going to do from one decision to the next. It largely depends on which panel of judges you draw from the Federal Circuit. It also depends on which side of the bed each judge gets up on in the morning.”); Victoria Slind-Flor, *Federal Circuit Judged Flawed*, 20 NAT’L L.J. 49, A1 (Aug. 3, 1998) (noting lawyer’s complaint that “[w]e look to the [Federal Circuit] for bright guidelines and bright rules of law we can rely on, and instead we get vagueness and ambiguity.”).

16. *Courts/Federal Circuit: Specter Withdraws Proposal to Send Appeals of Immigration Cases to Federal Circuit*, 71 PAT., TRADEMARK & COPYRIGHT J. (BNA) 585, ¶ 20 (Mar. 31, 2006).

Legislators and district court judges have also criticized the court and patent law, arguing, among other things, that trial court resources are wasted on a reviewing court that often fails to give deference to district court conclusions and that renders unpredictable decisions.¹⁷ Scholars have called for the court's jurisdiction over patent law to be circumscribed based in part on the perceived uncertainty in patent law and have even considered the possibility of abolishing the Federal Circuit.¹⁸

All areas of law experience some baseline uncertainty. Common law courts by their nature struggle with ambiguities in judicial opinions, reconciliation of conflicting precedent, and the application of *stare decisis*—all of which can give rise to uncertainty in any subject matter. Balancing tests and equitable considerations, which commentators typically characterize as indeterminate, abound in all fields of law, even when life and liberty are at stake.¹⁹ Courts often reject precision in, and categorization of, legal concepts in resolving disputes of all kinds.²⁰ More generally, scholars have demonstrated

17. See, e.g., *Medegen MMS, Inc. v. ICU Med., Inc.*, 317 F. App'x 982, 988–89, 990 (Fed. Cir. 2008) (Walker, J., dissenting) (noting, in an opinion authored by a district court judge sitting by designation, the “conundrum often faced by district courts when construing [patent] claims” and arguing that the panel majority failed to give the trial court adequate deference). As one district judge famously said,

Frankly, I don't know why I'm so excited about trying to bring this thing [patent case] to closure. It goes to the Federal Circuit afterwards. You know, it's hard to deal with things that are ultimately resolved by people wearing propeller hats. But we'll just have to see what happens when we give it to them. I could say that with impunity because they've reversed everything I've ever done, so I expect fully they'll reverse this too.

O.I. Corp. v. Tekmar Co., No 95-CV-113 (S.D. Tex. June 17, 1996), *aff'd*, 115 F.3d 1576 (Fed. Cir. 1997); Moore, *Judges Equipped*, *supra* note 14, at 29 (noting that high reversal rates cause district court judges frustration); *Legislation/Patents: House Passes Bill to Enhance District Court Patent Litigation Expertise*, 77 PAT., TRADEMARK & COPYRIGHT J. (BNA) 571, ¶ 10 (Mar. 20, 2009) (reporting comment of Representative Lamar Smith of Texas that “[p]atent litigation is too expensive, too time-consuming, and too unpredictable”).

18. Nard & Duffy, *supra* note 13, at 1620, 1651 (questioning whether the Federal Circuit has brought uniformity and certainty to patent law and suggesting need for patent appeals to be heard by other circuit courts in addition to the Federal Circuit); see also Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1123 (2003) (“Abolition of the Federal Circuit is an idea with considerable appeal.”).

19. See Johnston, *supra* note 1, at 343 (noting that “countless areas of the law that were once characterized by formalistic, bright-line rules are now dominated by balancing tests under general standards such as ‘reasonableness’ or ‘foreseeability’”).

20. See, e.g., *Daly v. Gen. Motors Corp.*, 575 P.2d 1162, 1167 (Cal. 1978) (“The inherent difficulty in the [plaintiff's] argument is its insistence on fixed and precise definitional treatment of legal concepts. In the evolving areas of both products liability and torts defenses, however,

that the processes of legislating and judicial decision making naturally tend toward greater uncertainty.²¹ Some of these same scholars have also identified specific forces at play within the legal system at large that inexorably move the law toward greater uncertainty.²² Further, cases that are litigated, particularly at the appellate level, are typically indeterminate in any area of the law.²³ Although patent law presents serious and important issues, certainty is arguably even more important in areas such as criminal law, where the primary goal is deterrence rather than remediation and the direct stakes are more than monetary.²⁴ Yet despite the prevalence,

there has developed much conceptual overlapping and interweaving in order to attain substantial justice.”).

21. Anthony D’Amato, *Legal Uncertainty*, 71 CAL. L. REV. 1, 1 (1983) (concluding that “the tendency toward increasing uncertainty in the law is inexorable”); see also Caleb E. Mason, *An Aesthetic Defense of the Nonprecedential Opinion: The Easy Cases Debate in the Wake of the 2007 Amendments to the Federal Rules of Appellate Procedure*, 55 UCLA L. REV. 643, 651 (2008) (relating argument that “the law has irreducibly contradictory content (apparently in every conceivable case)” and concluding, “[t]his position is generally known as the indeterminacy critique, and most commentators concede that it has a fair degree of merit”); Schuck, *supra* note 2, at 9 (noting that “[t]he legal system as a whole exhibits a marked tendency to become more complex,” a feature of the law closely related to legal uncertainty).

22. D’Amato, *supra* note 21, at 8 (discussing inherent uncertainties in the law generally). For example, the growth in real-world transactions that give rise to disputes outstrips the availability of applicable reported judicial decisions. *Id.* at 10; see also *infra* notes 31–36 and accompanying text (discussing additional sources of uncertainty in the legal system).

23. Ronald J. Allen, *Burdens of Proof, Uncertainty, and Ambiguity in Modern Legal Discourse*, 17 HARV. J.L. & PUB. POL’Y 627, 633 (1994) (“The defining trait of litigation is decision under uncertainty.”). Rational litigants generally do not pursue cases where the outcome is clear and the incentive to settle is accordingly great. See, e.g., Oona A. Hathaway, *Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System*, 86 IOWA L. REV. 601, 634 (2001) (“[C]ases in which the result is abundantly clear generally are settled long before they arrive in the courtroom [I]f the correct legal result were always clear, there would be little need for courts at all.”).

Similarly, a sort of selection bias may affect the study of legal uncertainty, and claims of widespread indeterminacy based solely on published judicial opinions are inherently flawed. The outcome of cases that result in unpublished opinions and cases disposed of by summary affirmation without an opinion are often predictable, yet they are not subject to the same public attention as published opinions. See, e.g., William L. Reynolds, *Legal Process and Choice of Law*, 56 MD. L. REV. 1371, 1389 n.84 (1997) (“The success of a system depends in part on how it handles the easy, as well as the difficult, cases. By their very nature, however, the former will not be published, and therefore not evaluated by scholars.”).

24. See, e.g., Tom Baker et al., *The Virtues of Uncertainty in Law: An Experimental Approach*, 89 IOWA L. REV. 443, 468 (2004) (noting “fundamental principle that an individual is entitled to know in advance the content of criminal prohibitions as well as the sanctions for violating them”). As Professor Tamara Lawson has explained:

Certainty of results, *i.e.*, the ability for attorneys to accurately predict outcomes, is very acute in criminal law wherein ninety percent of defendants plead guilty. In order to properly assess the fairness of the plea bargains, both the prosecution and the defense

inherency, and relative importance of uncertainty in the legal system as a whole, the patent system seems to be suffering acutely from delegitimation based on concerns about determinacy.²⁵

Some of the focus on certainty in patent law no doubt stems from the Federal Circuit's distinct mission within the U.S. judicial system. The court was designed to increase uniformity and predictability in patent law decisions in order to stimulate technological innovation.²⁶ Congress created the Federal Circuit with its rare subject-driven docket at a time when the regional circuit courts were issuing varied, and sometimes conflicting, decisions on principles of patent law, often relating to the same patent.²⁷ Legislators intended the Federal Circuit to alleviate these problems in patent law.²⁸ That former scientists and engineers (who, at least according to stereotypes, are attracted to the notion of single right answers) dominate the patent bar may only enhance the preoccupation with certainty in patent law.²⁹

need to be able to accurately predict the probable outcome of key evidentiary rulings. Without a firm knowledge of [how certain legal issues will be resolved], defense attorneys cannot properly advise their clients whether to plead guilty or risk the outcome of a jury trial.

Tamara F. Lawson, *Can Fingerprints Lie?: Re-Weighing Fingerprint Evidence in Criminal Jury Trials*, 31 AM. J. CRIM. L. 1, 57 n.201 (2003).

A contrasting example is the often-bewildering doctrine of proximate cause in tort law. Because the parties involved in a tort lawsuit generally do not make decisions in reliance on a purported rule of proximate cause, legal certainty is less important. *See, e.g.*, VICTOR E. SCHWARTZ ET AL., PROSSER, WADE AND SCHWARTZ'S TORTS CASES AND MATERIALS 356 (11th ed. 2005) ("This [resolving issues of proximate cause] is not a situation . . . in which precision and certainty are essential. Neither party to the action engaged in his conduct in reliance upon a 'rule' of proximate cause. For this purpose, a weighing, evaluative process is required, rather than a clear-cut rule of law.").

25. *See supra* note 2 and accompanying text (discussing delegitimation costs of legal uncertainty).

26. MEMBERS OF THE ADVISORY COUNCIL TO THE U.S. COURT OF APPEALS FOR THE FED. CIRCUIT, THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT: A HISTORY, 1990-2002, at 6, 10 (2002).

27. H.R. REP. NO. 97-312, at 17 (1981) (quoting U.S. DEP'T OF JUSTICE, REPORT OF THE DEPARTMENT OF JUSTICE COMMITTEE ON REVISION OF THE FEDERAL JUDICIAL SYSTEM 1 (1977) (expressing concerns about forum shopping in patent law)).

28. *Id.* at 20-22 ("A single court of appeals for patent cases will promote certainty where it is lacking to a significant degree and will reduce, if not eliminate, the forum-shopping that now occurs."); S. REP. NO. 275-97, at 5 (1981) ("The creation of the Court of Appeals for the Federal Circuit will produce desirable uniformity in [patent] law.").

29. *See* DAVID KEIRSEY & MARILYN BATES, PLEASE UNDERSTAND ME: CHARACTER AND TEMPERAMENT TYPES 53-54 (3d ed. 1978) (noting that the "NT" (intuition and thinking) personality type is drawn to science, mathematics, technology, and engineering and needs "the

To be sure, the topic of legal certainty in patent law warrants robust debate. Scholars in fields other than patent law have explored legal certainty, both broadly as well as in the context of specific disciplines, in great depth.³⁰ They have identified numerous factors that affect or create uncertainty in the law generally, including the complexity of rules,³¹ how close a given set of facts is to the facts of previous cases,³² exceptions to rules,³³ equitable tests,³⁴ balancing tests,³⁵ and methodologies for interpreting legal norms,³⁶ to name just

answers given to him to ‘hang together’ and to make sense; he can be insistent in his efforts to gain this data”); ISABEL BRIGGS MYERS WITH PETER B. MYERS, *GIFTS DIFFERING: UNDERSTANDING PERSONALITY TYPE 151–52* (1995) (noting that “NT” personality types “tend to be logical . . . and are most successful in . . . scientific research, electronic computing, mathematics, . . . or pioneering in technical areas”).

30. For just a few examples, see Dan L. Burk, *Muddy Rules for Cyberspace*, 21 *CARDOZO L. REV.* 121, 163–79 (1999); D’Amato, *supra* note 21; Johnston, *supra* note 1; Schuck, *supra* note 2.

31. Paul H. Brietzke, *Globalization, Nationalism, & Human Rights*, 17 *FLA. J. INT’L L.* 633, 677 (2005) (“Another even less escapable source of legal uncertainty is complexity itself. There are few ‘economies of scale’ in a rule specific enough unambiguously to govern a decision; over time the increasingly-difficult question becomes which of these proliferating specific rules resolves a particular dispute with some degree of flexibility.”); Kyle D. Logue, *Optimal Tax Compliance and Penalties When the Law Is Uncertain*, 27 *VA. TAX REV.* 241, 248 (2007) (“[T]he complexity of the tax rules is a primary source of substantive legal uncertainty.”).

32. See, e.g., J. Clifford Wallace, *The Jurisprudence of Judicial Restraint: A Return to the Moorings*, 50 *GEO. WASH. L. REV.* 1, 14 (1981) (“Predictability and uniformity increase when a judge applies a precedent to an analogous set of facts.”).

33. See D’Amato, *supra* note 21, at 4–5 (suggesting that laws become increasingly uncertain when courts interpret statutes and create exceptions, exemptions, and privileges).

34. See, e.g., Richard L. Jaeger & Gregory C. Yadley, *Equitable Uncertainties in SEC Injunctive Actions*, 24 *EMORY L.J.* 639, 667–68 (1975) (attempting to identify the equities that courts consider in deciding whether to grant permanent injunctions for violations of the securities law and concluding that “prediction with any degree of certainty of the result in a particular case is a dangerous journey, fraught with pitfalls”).

35. See Warren F. Schwartz & C. Frederick Beckner III, *Toward a Theory of the “Meritorious Case”: Legal Uncertainty as a Social Choice Problem*, 6 *GEO. MASON L. REV.* 801, 807–08 (1998) (positing that rules requiring judges or juries to balance the costs of avoiding a harm and the costs associated with occurrence of a harm create legal uncertainty because they are largely dependent on discretion, which often provokes disagreement).

36. See, e.g., William N. Eskridge, Jr. & Philip P. Frickey, *Statutory Interpretation as Practical Reasoning*, 42 *STAN. L. REV.* 321, 333 (1990) (noting that intentionalism and purposivism in statutory interpretation have suffered from indeterminacy); Amanda L. Tyler, *Continuity, Coherence, and the Canons*, 99 *NW. U. L. REV.* 1389, 1418 (2005) (criticizing dynamic theory of statutory interpretation as “promot[ing] a regime in which reliance and predictability are wholly subsumed to constant change and, correspondingly, an unstable legal framework.”). Moreover, the absence of a single methodology for interpretation can compound any uncertainty that does exist. See Sydney Foster, *Should Courts Give Stare Decisis Effect to Statutory Interpretation Methodology?*, 96 *GEO. L.J.* 1863, 1866–67 (2008) (“The lack of consistency and predictability in statutory interpretation methodology has raised alarm bells because of its negative effects.”).

a few. In contrast to these detailed studies of indeterminacy, many of the demands for certainty in patent law have been vague, conclusory, and fatalistic. Jurists and scholars have identified some sources of uncertainty in patent law³⁷ and have debated the effect that applying patent law's technology-neutral statutes to a wide array of scientific fields has on certainty,³⁸ but the broad issue of legal certainty bears additional inquiry in patent law.

This Article seeks to add comprehensive and theoretical study to the legal uncertainty conversation in patent law. Analyzing systemic sources of legal uncertainty can impart important lessons for public and private actors in patent law, informing both law reform and private transactions. At the same time, patent law, with its unique characteristics of disputes involving rapidly changing technology and the combination of both general and specialized judicial and administrative bodies, presents an opportunity to explore further the topic of legal determinacy and the ways in which legal institutions and private parties affect it.

Any discussion of legal uncertainty encounters a threshold definitional task. Indeed, the general concept of legal uncertainty or indeterminacy has many aspects and causes. For example, the law may be uncertain when the legislature or a court has not yet articulated a rule. Even if the legislature or a court has set forth a rule, that rule may be uncertain if its content is difficult to discern or

37. See, e.g., Paul M. Janicke, *On the Causes of Unpredictability of Federal Circuit Decisions in Patent Cases*, 3 NW. J. TECH. & INTELL. PROP. 93 (2005) (examining particular doctrinal inconsistencies and the breadth and generality of the patent statutes as sources of unpredictability in patent law); Jeffrey A. Lefstin, *Claim Construction, Appeal, and the Unpredictability of Interpretative Regimes*, 61 MIAMI L. REV. 1033 (2007) (exploring potential causes of unpredictability in claim construction process); Parchomovsky & Wagner, *supra* note 12, at 40–41 (2005) (noting several “key areas of expanding uncertainty” in patent law); S. Jay Plager, *Challenges for Intellectual Property Law in the Twenty-First Century: Indeterminacy and Other Problems*, 2001 U. ILL. L. REV. 69 (2001) (discussing indeterminacy in patent system); see also Nard, *supra* note 7, at 765 (arguing in favor of post-grant opposition proceedings to address uncertainty about patent rights); Lee Petherbridge, *On the Development of Patent Law*, 43 LOY. L.A. L. REV. 893, 907 (2010) (discussing legal determinateness as it relates to nonobviousness).

38. See Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155, 1183, 1205–06 (2002) (illustrating substantial variation in the application of patent law to different technologies and thus advocating technology-specific patent laws); Janicke, *supra* note 37, at 93–94 (identifying the patent statute's general standards as a primary cause of uncertainty in the law). But see R. Polk Wagner, *Of Patents and Path Dependency: A Comment on Burk and Lemley*, 18 BERKELEY TECH. L.J. 1341, 1359–60 (2003) (arguing that technology-specific patent laws would increase uncertainty and lead to instability).

if the way in which the courts will apply or implement it is unclear. Another dimension of uncertainty concerns the likelihood that a court will apply a given rule, where more than one rule exists, to a particular case. Uncertainty may also refer to, or result from, the form of the law (e.g., whether it is a rule or a standard). Stated more generally, rules, processes for making rules, and rule-making institutions can all be indeterminate in a variety of ways.³⁹ The criticism of patent law has been expansive and has directly or indirectly touched on all of these ways in which the law can be uncertain. Ultimately, all of these, and other, forms of uncertainty affect the ability of lawyers to predict outcomes in legal disputes—one of the key functions of lawyers.⁴⁰ This Article therefore uses the term “legal uncertainty” (and forms thereof) broadly to refer to the unpredictability of litigation outcomes, encompassing the numerous dimensions of uncertainty.⁴¹ In addition, the Article will use the term “legal indeterminacy” interchangeably with “legal uncertainty.”

The Article proceeds in three parts. Part I provides an overview of patent law’s administrative and judicial processes. Within that legal landscape, Part II identifies two distinctive, systemic pressures that push toward uncertainty in patent law: Part II.A discusses uncertainty that results from the conflicting preferences exhibited by patent law’s public institutions regarding the form of legal rules, and Part II.B describes uncertainty that derives from private actors in the patent system. Part III concludes the Article by offering some criteria that law reformers can use in determining when and how to address issues of legal uncertainty, as well as some specific tools for enhancing determinacy. The Article advocates for a more measured call for certainty in patent law, suggesting the framework described

39. See, e.g., Schuck, *supra* note 2, at 4 (noting existence of “[i]ndeterminate rules, processes, and institutions”).

40. Oliver Wendell Holmes defined law as “[t]he prophecies of what the courts will do in fact, and nothing more pretentious . . .” Oliver Wendell Holmes, *The Path of Law*, 10 HARV. L. REV. 457, 461 (1897).

41. See John E. Calfee & Richard Craswell, *Some Effects of Uncertainty on Compliance with Legal Standards*, 70 VA. L. REV. 965, 968 (1984) (“In the most general terms, uncertainty occurs whenever people cannot be sure what legal consequences will attach to each of their possible courses of action.”); Johnston, *supra* note 1, at 341 (referring to “legal determinacy” as “the ability to formulate legal rules that yield certain or at least predictable outcomes at least some of the time”); D’Amato, *supra* note 21, at 2–3 (defining legal uncertainty in terms of predictability of outcomes).

in Part III as a starting point for evaluating current and future complaints about uncertainty.

I. PATENT PREPARATION AND LEGAL PROCESS

The patent system is characterized by a unique mix of private drafting, agency review, and judicial resolution of both administrative and private disputes. To obtain a patent, an inventor must first prepare an application describing and claiming the invention. The U.S. Patent and Trademark Office (PTO) then reviews the application to determine patentability of the invention. If an applicant has been denied a patent in a final decision by the PTO and seeks review of that decision, or alternatively, if an applicant has completed the patent procurement process successfully and later asserts her rights against a perceived infringer, the federal courts become involved.

A. Patent Preparation and Prosecution

Patents are privately drafted legal documents. A patent applicant has great latitude regarding the information she includes in her application and how she presents it.⁴² All patents, however, must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”⁴³ In drafting the claims of the patent, an applicant generally describes as many different variations of the invention, with as much breadth as possible.⁴⁴ Thus, an invention that an observer unfamiliar with patent practice would view as a single contribution can generate numerous claims. An applicant can include

42. Other than meeting the statutory disclosure requirements and conforming to a loose structure of application components, inventors (or their representatives) have great freedom in drafting patent applications. *See* 35 U.S.C. § 112 (2006) (setting forth disclosure requirements); 37 C.F.R. § 1.77 (2006) (providing arrangement of application components).

43. 35 U.S.C. § 112.

44. RONALD D. SLUSKY, INVENTION ANALYSIS AND CLAIMING: A PATENT LAWYER'S GUIDE 53 (2007) (“A patent application . . . needs claims of varying scope. This means not only claims that define the invention at what we believe to be its broadest but also other claims . . . that stake out more modest parcels of intellectual property by qualifying the broad invention definition.”); *see also id.* at 55 (discussing need to “preserv[e] coverage for those features of the [invention] embodiment(s) that we think are more likely than others to appear in competitors' marketplace offerings” in drafting claims).

as many claims as desired; the only requirement is payment of a fee for each claim over twenty.⁴⁵

After the inventor files her application, a patent examiner reviews it ensure conformity with patentability requirements.⁴⁶ Patent examiners are “quasi-judicial officials trained in the law . . . ‘whose duty it is to issue only valid patents.’”⁴⁷ Patent examiners specialize in particular technologies and typically have an educational background and some experience in their assigned area of technology.⁴⁸ Although they are not lawyers, examiners are charged with applying, and assessing compliance with, legal requirements of the Patent Act. The patent office received over 450,000 patent applications in 2008.⁴⁹ Based on the volume of applications and number of examiners, commentators estimate that examiners spend, on average, no more than eighteen hours on each application.⁵⁰ Patent examiners thus face the daunting task of determining whether the claims of an application are permissible under the Patent Act within a relatively short amount of time.

After issuance, the claims become the critical components of a patent, delineating the subject matter from which the patentee may exclude all others. Concerns for certainty in patent law are often

45. The basic filing fee of \$330 includes twenty claims. The fee for claims in excess of twenty is either \$52 or \$220, depending on whether the claim refers to another claim (a dependent claim) or stands alone (an independent claim). 37 C.F.R. § 1.16(i) (2007); U.S. Pat. & Trademark Off., PTO Fee Schedule-FY 2009, <http://www.uspto.gov/web/offices/ac/qs/ope/fee2009september15.htm> (last modified Sept. 23, 2010) (setting forth fees). Issued patents contain, on average, thirteen claims; litigated patents contain, on average, nineteen claims. John R. Allison et al., *Valuable Patents*, 92 GEO. L.J. 435, 451 (2004).

46. See 35 U.S.C. §§ 101–103, 112 (2006) for the statutory patentability requirements. Under the Patent Act, an invention must be appropriate subject matter for a patent, the invention must be new, the applicant must be the first inventor, the invention must be sufficiently different from prior work done in the relevant field of technology, and the invention must be adequately disclosed. *Id.*

47. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 986 (Fed. Cir. 1995) (en banc) (quoting *Am. Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1359 (Fed. Cir. 1984)), *aff'd*, 517 U.S. 370 (1996).

48. *Am. Hoist*, 725 F.2d at 1359.

49. U.S. PAT. & TRADEMARK OFFICE, U.S. PATENT STATISTICS, CALENDAR YEARS 1963–2009 (2010), available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf.

50. See Daralyn J. Durie & Mark A. Lemley, *A Realistic Approach to the Obviousness of Inventions*, 50 WM. & MARY L. REV. 989, 1008 (2008) (“The PTO . . . devotes very little time to the evaluation of each application. Patent examiners spend on average only sixteen to eighteen hours per application, spread over as much as seven years. And those eighteen hours are spread among a variety of tasks . . .”).

linked to a failure of the claims to adequately communicate the scope of that proprietary right.⁵¹ Claims are supposed to perform a public notice function—the “mechanism whereby the public learns which innovations are the subjects of the claimed invention, and which are in the public domain.”⁵² If the public cannot be certain of the claims’ scope, the claims cannot fulfill this vital role in the patent system.

B. Judicial Process

The vast majority of patent cases come before the federal courts by one of two routes.⁵³ First, an applicant may appeal the administrative denial of a patent to the federal courts. The applicant has the option to proceed initially at the trial court level, filing a civil action against the PTO’s Director of Patents in the U.S. District Court for the District of Columbia.⁵⁴ Either the applicant or the government may appeal that district court decision to the Federal Circuit.⁵⁵ A party to an interference proceeding in the PTO may also file a civil suit in the district court against an adversary in the interference.⁵⁶ As an alternative to filing suit at the trial court level, an applicant may bypass the district court and appeal a PTO decision directly to the Federal Circuit.⁵⁷ Second, the courts also become involved in patent matters when a party who has successfully obtained a patent seeks to enforce her rights by filing a civil suit against an alleged infringer in federal district court.⁵⁸ Parties may

51. See, e.g., *Freedman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350, 1358 (Fed. Cir. 2005) (stating that, “add[ing] uncertainty to the scope of patent claims . . . detracts from the public-notice function of patent claims and risks deterring non-infringing and potentially innovative endeavors”).

52. *PSC Computer Prods., Inc. v. Foxconn Int’l, Inc.* 355 F.3d 1353, 1361 (Fed. Cir. 2004); see also *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997) (noting the “public-notice function[] of the statutory claiming requirement”).

53. At the trial court level, litigants may also file a small subset of cases—those against the U.S. government or against government contractors—in the U.S. Court of Federal Claims. 28 U.S.C. § 1498(a) (2006).

54. 35 U.S.C. § 145.

55. 28 U.S.C. § 1295.

56. 35 U.S.C. § 146. An interference proceeding is a dispute between two or more parties who claim the same invention. *Id.*

57. *Id.* § 141.

58. 28 U.S.C. § 1338.

appeal from a judgment in such an infringement action exclusively to the Federal Circuit.⁵⁹

Decisions of the Federal Circuit, like decisions of other circuit courts, are subject to certiorari review by the U.S. Supreme Court. In the years following the Federal Circuit's formation, the Supreme Court was deferential to the Federal Circuit in developing patent jurisprudence.⁶⁰ For some time, scholars considered the Supreme Court to be "invisible" in patent law.⁶¹ Recently, however, the Supreme Court has granted certiorari more often in patent cases. Significantly, these recent decisions from the high court have shown less deference to the Federal Circuit and also demonstrate some divergence between the goals of the two institutions.⁶²

II. FORCES OF UNCERTAINTY IN PATENT LAW

Patent law is not unique in suffering from uncertainty. Legal scholars have identified numerous factors that create indeterminacy in the legal system generally.⁶³ All of these types of uncertainty can be found in some form in patent doctrine and are worthy of examination. It is also useful, however, to distinguish between uncertainty that is extant in the legal process in general and uncertainty that results from the structure or nature of the patent system in particular.⁶⁴ This Article accordingly focuses on two sources of uncertainty that are endogenous to the patent system: first, uncertainty that derives from the conflicting preferences regarding the form of legal rules among patent law's public institutions; and

59. *Id.* § 1295.

60. *See, e.g.,* *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388 (1996) (recognizing need for Federal Circuit to fill in jurisprudential gaps in patent claim construction); *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 40 (1997) (deferring to Federal Circuit's "sound judgment in this area of its special expertise"); *see also* Kelly Casey Mullally, 59 FLA. L. REV. 333, 353–54 (2007) (explaining how the Federal Circuit was left with the task of developing a claim construction methodology following the Supreme Court's *Markman* decision).

61. Janis, *supra* note 11, at 387 ("The Supreme Court has rendered itself well nigh invisible in modern substantive patent law.").

62. *See infra* Part II.A (discussing Supreme Court decisions).

63. *See supra* notes 31–36 and accompanying text (discussing causes of uncertainty in the law generally).

64. *See supra* notes 19–23 and accompanying text (discussing baseline uncertainty in the law).

second, uncertainty that derives from private interests at work in patent law.

A. Public Pressures

In the patent system, four public institutions have significant, ongoing effects on patent law: the PTO, the district courts, the Federal Circuit, and the Supreme Court. Because these institutions exhibit conflicting preferences and needs regarding the form of legal rules, however, patent law has experienced a series of shifts between rules and standards of varying degrees. In particular, the Federal Circuit experiences upward pressure from the PTO and the district courts for more bright-line rules (greater formalism) and downward pressure from the Supreme Court for more flexible standards (less formalism).

At the outset of the patent process, the law encounters a push toward formalism. The PTO, the initial institutional hurdle in the patent system for any inventor, must memorialize Federal Circuit law in a form suitable for its examiners to apply to thousands of different technologies. The examiners operate out of a voluminous and detailed reference work, the Manual of Patent Examining Procedure (MPEP), that does not have the force of law but that sets forth the agency's understanding of patent law.⁶⁵ Although patent examiners apply the same legal rules that courts apply, they are not lawyers and they serve only a ministerial function, at least in the sense that examiners do not make the law or policy but merely administer the law created by Congress and the courts.⁶⁶ The MPEP accordingly attempts to distill the law in an algorithmic fashion for making decisions based on substantive or procedural patent law so that

65. *In re Portola Packaging, Inc.*, 110 F.3d 786, 788 (Fed. Cir. 1997). Because the guidelines do not have the force of law, "any perceived failure by Office personnel to follow these instructions are neither appealable nor petitionable," as the PTO frequently notes. *See, e.g.*, Interim Examination Guidelines for Evaluating Subject Matter Eligibility Under 25 U.S.C. § 101, at 1 (Aug. 24, 2009), available at http://www.uspto.gov/web/offices/pac/dapp/opla/2009-08-25_interim_101_instructions.pdf.

66. Orin S. Kerr, *Rethinking Patent Law in the Administrative State*, 42 WM. & MARY L. REV. 127, 138-40 (2000) ("The PTO and its over three thousand patent examiners serve a narrowly circumscribed role in the private law patent system. The PTO has a ministerial task: to apply a legal standard determined by Congress and the courts to the facts presented to it by the patent applicant. . . . Patent examiners and the BPAI [Board of Patent Appeals and Interferences] must evaluate patent applications and reach decisions based on the courts' interpretations of [the law], rather than their own.").

examiners may apply the law to a given patent application using a step-by-step rubric.⁶⁷ The PTO also periodically publishes guidelines for examination on discrete topics, which function similarly to the MPEP and may subsequently be incorporated into the MPEP.⁶⁸ The MPEP also provides language that examiners can simply copy into the written Office Actions that explain their decisions.⁶⁹ Ultimately,

67. For example, the following is an excerpt from the examination guidelines for assessing compliance with patent law's utility requirement under 35 U.S.C. § 101:

(A) Read the claims and the supporting written description.

(1) Determine what the applicant has claimed, noting any specific embodiments of the invention.

(2) Ensure that the claims define statutory subject matter (i.e., a process, machine, manufacture, composition of matter, or improvement thereof).

(3) If at any time during the examination, it becomes readily apparent that the claimed invention has a well-established utility, do not impose a rejection based on lack of utility. An invention has a well-established utility if (i) a person of ordinary skill in the art would immediately appreciate why the invention is useful based on the characteristics of the invention (e.g., properties or applications of a product or process), and (ii) the utility is specific, substantial, and credible.

(B) Review the claims and the supporting written description to determine if the applicant has asserted for the claimed invention any specific and substantial utility that is credible:

(1) If the applicant has asserted that the claimed invention is useful for any particular practical purpose (i.e., it has a "specific and substantial utility") and the assertion would be considered credible by a person of ordinary skill in the art, do not impose a rejection based on lack of utility.

(i) A claimed invention must have a specific and substantial utility. This requirement excludes "throw-away," "insubstantial," or "nonspecific" utilities, such as the use of a complex invention as landfill, as a way of satisfying the utility requirement of 35 U.S.C. 101.

(ii) Credibility is assessed from the perspective of one of ordinary skill in the art in view of the disclosure and any other evidence of record (e.g., test data, affidavits or declarations from experts in the art, patents or printed publications) that is probative of the applicant's assertions. An applicant need only provide one credible assertion of specific and substantial utility for each claimed invention to satisfy the utility requirement.

U.S. PAT. & TRADEMARK OFFICE, U.S. DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2107 (8th ed., rev. 2008); *see also* PTO, Interim Examination Guidelines for Evaluating Subject Matter Eligibility Under 25 U.S.C. § 101, at 9–10 (Aug. 24, 2009), available at http://www.uspto.gov/web/offices/pac/dapp/opla/2009-08-25_interim_101_instructions.pdf (providing series of "yes" or "no" questions and two flowcharts setting forth the analytical procedure for assessment of statutory subject matter requirements).

68. *See, e.g.*, Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in *KSR Int'l v. Teleflex Co.*, 72 Fed. Reg. 57526 (Oct. 10, 2007).

69. Chapter 700, entitled "Examination of Applications," of the MPEP provides a series of form paragraphs for insertion into Office Actions. The following is an example relating to rejections based on anticipation by the prior art under 35 U.S.C. § 102:

even complicated doctrine has to be condensed to a routinized, regimented format for examiners to apply within the limited time they have for each application. The more rule-like the law, the more easily it can be “translated” into this form for nonlawyer patent examiners to apply. Thus, the PTO exerts pressure on the Federal Circuit to create bright-line rules in patent law.

Like the patent office, the district courts also have some need for easily implemented guidance from the Federal Circuit and they too exert upward pressure for greater formalism. While possessing significant legal expertise in general, district judges typically lack both technical background in and experience with patent law.⁷⁰ Because most patent cases settle early in litigation, district court judges have few opportunities and, particularly given the high reversal rates and nondeferential standard of review that attaches in many patent appeals, little incentive to develop an expertise in patent law.⁷¹ In addition, the facts of patent cases rarely repeat, unlike

This form paragraph must be preceded by form paragraph 7.07, and may be preceded by one or more of form paragraphs 7.08 to 7.13.

¶ 7.15 Rejection, 35 U.S.C. 102(a), (b) Patent or Publication, and (g)

Claim [1] rejected under 35 U.S.C. 102 [2] as being [3] by [4].

EXAMINER NOTE:

1. In bracket 2, insert the appropriate paragraph letter or letters of 35 U.S.C. 102 in parentheses. If paragraph (e) of 35 U.S.C. 102 is applicable, use form paragraph 7.15.02 or 7.15.03.
2. In bracket 3, insert either —clearly anticipated— or —anticipated— with an explanation at the end of the paragraph.
3. In bracket 4, insert the prior art relied upon.
4. This rejection must be preceded *either* by form paragraph 7.07 and form paragraphs 7.08, 7.09, and 7.14 as appropriate, *or* by form paragraph 7.103.
5. If 35 U.S.C. 102(e) is also being applied, this form paragraph must be followed by either form paragraph 7.15.02 or 7.15.03.

U.S. PAT. & TRADEMARK OFFICE, *supra* note 67, at § 706.02(i).

70. Robin Feldman, *Plain Language Patents*, 17 TEX. INTELL. PROP. L.J. 289, 290 (2009) (“District court judges charged with patent interpretation are unlikely to have any scientific expertise.”); Moore, *Judges Equipped*, *supra* note 14, at 30 (“[D]istrict court judges . . . generally . . . do not adjudicate enough patent cases to develop expertise with the law and certainly not with the technology which changes from case to case”); Rai, *supra* note 18, at 1040, 1097 (“Generalist trial judges . . . may be overwhelmed by the technology involved in patent cases. . . . [M]any trial court judges may be uncomfortable dealing with the intricacies of patent litigation.”).

71. Moore, *Judges Equipped*, *supra* note 14, at 30 (demonstrating empirically that “the majority of patent cases are resolved via settlement or prior to any significant court involvement” and concluding that “[t]hese figures indicate that district court judges are not seeing very many patent cases each year”); John B. Pegram, *Should There Be a U.S. Trial Court with Specialization*

criminal matters, for instance, where the basic events are often the same in one case as in previous cases and are also more familiar to judges. Scholars and judges have consequently questioned whether district courts have the ability to resolve patent cases with adequate accuracy.⁷² To increase predictability (at least with respect to procedural matters), some district courts have developed local rules to facilitate adjudication of patent cases. For example, a number of judicial districts have developed a set of rules of practice to lay out the procedures for construing the disputed terms of a patent.⁷³ In addition, district court judges have sought clearer, more predictable doctrine from the Federal Circuit.⁷⁴ Rules that do not require extensive understanding of technological facts or of the patent system help to compensate for district courts' lack of technical expertise and scarce exposure to patent cases. This can apply some

in Patent Litigation?, 82 J. PAT. & TRADEMARK OFF. SOC'Y 765, 788 (2000) (estimating that the average district judge presides over "only one patent trial every 6 to 8 years"); *supra* note 14 (noting reversal rates in claim construction cases); *infra* notes 167–68 (discussing de novo standard of review applicable to issues of claim construction).

72. *See, e.g.*, Moore, *Judges Equipped*, *supra* note 14, at 3, 38 (noting "doubt about the abilities of district court judges to adjudicate complex technical patent cases" and concluding that "[district] judges are not, at present, capable of resolving these issues [of claim construction] with sufficient accuracy"); Gregg A. Paradise, *Arbitration of Patent Infringement Disputes: Encouraging the Use of Arbitration Through Evidence Rules Reform*, 64 FORDHAM L. REV. 247, 254 (1995) (discussing limitations of district court judges in patent cases); Rai, *supra* note 18, at 1035 (noting "the fact-finding and policy application deficiencies of the trial courts" in patent law).

73. *See, e.g.*, N.D. CAL. PAT. L. R. (2010), available at [http://www.cand.uscourts.gov/CAND/LocalRul.nsf/fec20e529a5572f0882569b6006607e0/5e313c0b7e4cd680882573e20062dbcf/\\$FILE/Pat4-10.pdf](http://www.cand.uscourts.gov/CAND/LocalRul.nsf/fec20e529a5572f0882569b6006607e0/5e313c0b7e4cd680882573e20062dbcf/$FILE/Pat4-10.pdf).

74. As Judge William Young of the District of Massachusetts has commented:

I have had nine of my cases appealed to the Federal Circuit. I have been affirmed in one. I have been affirmed in part in one. And I have been reversed in seven. . . . My duty is to predict what they are going to say and follow the law. But I haven't had noticeable success in dealing with these matters.

Panel Discussion, *High Technology Law in the Twenty-First Century*, 21 SUFFOLK TRANSNAT'L L. REV. 13, 19 (1997) (statement of J. William G. Young); *see also Conferences/Patents: Supreme Court's Interest in Patent Doctrines Alarms, Invigorates AIPLA Meeting Attendees*, 78 PAT., TRADEMARK & COPYRIGHT J. (BNA) 765 ¶ 18 (Oct. 23, 2009) (noting comment at a conference about patent doctrine, "I'm a district court judge. I don't do ambiguity."); *Medegen MMS, Inc. v. ICU Med., Inc.*, 317 F. App'x 982, 990 (Fed. Cir. 2008) (Walker, J., dissenting) (noting, in an opinion authored by a district court judge sitting by designation, that "guidance from this court [the Federal Circuit] is essential to creating uniformity and predictability in patent litigation"); *Conferences: Panel Agrees That Federal Circuit Not More Unpredictable Than Other Courts*, 68 PAT., TRADEMARK & COPYRIGHT J. 688 ¶ 32 (Oct. 22, 2004) (reporting comments of district judge regarding the need for greater predictability in claim construction).

pressure, in addition to that exerted by the PTO, on the Federal Circuit for formal, bright-line rules.

Although the patent office and the district courts have differing skills and abilities, pressures within each of the two tribunals thus favor rules over standards. The Federal Circuit has in turn instituted a number of bright-line rules, perhaps in response to these pressures.⁷⁵

The Supreme Court, on the other hand, exerts downward, counter-pressure on the Federal Circuit, moving the intermediate appellate court and the law away from formal rule-like doctrine. As it has become more active in patent cases over the past decade, the Court has expressly stated in conjunction with several specific areas of patent law that greater flexibility is required. Moreover, the Supreme Court has replaced a bright-line rule with a more flexible standard or balancing test with respect to numerous issues, some of which are unique to patent disputes but some of which also arise in other areas of the law.

Indeed, recent Supreme Court opinions on issues that do not relate solely to patents demonstrate a marked preference for flexible standards in patent law. For example, in the high-profile *eBay Inc. v. MercExchange LLC*⁷⁶ case, the Court held that the traditional test for a permanent injunction should apply in patent cases just as it does in other areas of the law.⁷⁷ In doing so, the Court replaced the Federal Circuit's "general rule that courts will issue permanent injunctions against patent infringement absent exceptional circumstances," under which courts granted injunctions almost as a matter of course following a finding of infringement, with a four-part equitable test for injunctions that includes a balancing component and that grants the district court great latitude in denying injunctive relief.⁷⁸

75. Rai, *supra* note 18, at 1037 (noting "[t]he [Federal Circuit] court's adoption of bright-line rules that are insensitive both to technological fact and to related issues of innovation policy"); see also Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123, 127 (2005) (noting that the Federal Circuit "has articulated bright-line rules in the interest of certainty in a number of areas"); John R. Thomas, *Formalism at the Federal Circuit*, 52 AM. U. L. REV. 771, 774-75 (2003) (noting a "drift toward simple rules" and "an increasingly formal jurisprudence" in Federal Circuit decisions).

76. 547 U.S. 388 (2006).

77. *Id.* at 391-92.

78. *Id.* at 391 (quoting *eBay Inc. v. MercExchange LLC*, 401 F.3d 1323, 1339 (Fed. Cir. 2005)). A patentee seeking a permanent injunction must show: (1) irreparable injury; (2) that remedies available at law are inadequate; (3) that the balance of the hardships warrants injunctive

Similarly, addressing the intersection of antitrust law and patent law in *Illinois Tool Works Inc. v. Independent Ink, Inc.*,⁷⁹ the Supreme Court eliminated a per se presumption of market power in tying arrangements involving patented products, instead applying a flexible rule-of-reason analysis.⁸⁰ The year following those two decisions, the Court set aside the Federal Circuit's unique rule for standing in declaratory judgment actions involving a patent licensing agreement in *MedImmune, Inc. v. Genentech, Inc.*⁸¹ Under the Federal Circuit's erstwhile rule, a patent licensee was required to breach the license—a well-demarcated boundary—in order to bring a declaratory judgment action challenging the validity of a patent.⁸² The Court reversed that requirement; as in non-patent cases, the Court held that a plaintiff should not be required to risk liability before bringing suit when a private party threatens legal action. Justice Scalia instead applied a totality-of-the-circumstances test based on the particular facts of each case that asks whether the actual or imminent injury is of “sufficient immediacy and reality to warrant the issuance of a declaratory judgment.”⁸³ The Court acknowledged unapologetically that its declaratory judgment cases “do not draw the brightest of lines between those declaratory-judgment actions that satisfy the case-or-controversy requirement and those that do not.”⁸⁴

The Court has also continued this movement away from bright-line rules when addressing issues in patent law that do not have a precise counterpart in other areas of the law. For example, in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*,⁸⁵ concerning patent law's defense of prosecution history estoppel, the Supreme Court reversed the Federal Circuit rule—intended to bring certainty to the law—that amending a claim during prosecution would be a complete bar to a patentee establishing infringement under the

relief; and (4) that the public interest would not be disserved by such an injunction. *Id.* The district court's application of the test is reviewed for an abuse of discretion. *Id.*

79. 547 U.S. 28 (2006).

80. *Id.* at 34, 43–44.

81. 549 U.S. 118 (2007).

82. *Id.* at 123.

83. *Id.* at 127.

84. *Id.*

85. 535 U.S. 722 (2002).

doctrine of equivalents.⁸⁶ The Court instead mandated a flexible bar and a series of subtests that includes the broad, catch-all possibility that a patentee might avoid prosecution history estoppel where “there may be some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question.”⁸⁷ In another case, *KSR International Co. v. Teleflex Inc.*,⁸⁸ the Court addressed the nonobviousness patentability requirement.⁸⁹ The Supreme Court in *KSR* overturned a Federal Circuit decision applying the “teaching, suggestion, or motivation” rule, “under which a patent claim is only proved obvious if ‘some motivation or suggestion to combine the prior art teachings’ can be found in the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art.”⁹⁰ Justice Kennedy wrote that the Federal Circuit had applied the rule too rigidly and narrowly.⁹¹ The Court explained that it preferred “an expansive and flexible approach” rather than a “rigid and mandatory formula[.]”⁹² In a case dealing with the experimental-use exemption in patent law, *Merck KgaA v. Integra Life Sciences I Ltd.*,⁹³ the Court reversed the Federal Circuit’s bright-line rule limiting the exemption to uses of patented compounds for the development of information to be included in a submission to the Food and Drug Administration (FDA).⁹⁴ In contrast, the Court held that the exemption applies to uses of patented compounds “reasonably related” to the process of developing information for submission to the FDA.⁹⁵ A final example, *Quanta Computer Inc. v. LG Electronics, Inc.*,⁹⁶ resulted in the Court’s reversal of the Federal Circuit’s relatively clear-cut

86. *Id.* at 737 (“Based upon its experience the Court of Appeals decided that the flexible-bar rule is unworkable because it leads to excessive uncertainty and burdens legitimate innovation.”); see also *infra* notes 184–91 and accompanying text (discussing doctrine of equivalents).

87. *Festo Corp.*, 535 U.S. at 738–41.

88. 550 U.S. 398 (2007).

89. *Id.*

90. *Id.* at 407.

91. *Id.* at 415, 419–21.

92. *Id.* at 415, 419.

93. 545 U.S. 193 (2005).

94. *Id.* at 206.

95. *Id.* at 206–07.

96. 553 U.S. 617 (2008).

categorical rule that the patent exhaustion doctrine does not apply to method claims, a particular class of patent claims.⁹⁷ The Supreme Court instead held that the exhaustion doctrine applies when a patentee sells any device that “substantially embodie[s]” the patent, regardless of the type of the claim—a much broader and less clear standard without an easily excised class of claims.⁹⁸

These recent Supreme Court opinions push in the direction of greater flexibility in the form of patent law. Indeed, in each of the foregoing decisions, the Court modified or replaced a comparatively bright-line rule in favor of a more flexible standard, in some cases also expressly commenting on the need for the law to be less rigid. Significantly, these decisions do not simply track the pattern of general, high-level guidance followed by deference to the lower courts for percolation that often comes from the Supreme Court in any legal subject matter and had previously been the Court’s practice with respect to the Federal Circuit.⁹⁹ The Court went much further than it had in the past by specifying more precisely the content of the law and its form as a flexible standard. This preference for flexible standards conflicts with the pressures on the patent system from the PTO and the lower courts, and partially from the Federal Circuit as well, perhaps in response to the lower tribunals, for relatively bright-line rules.

The conflict in preferences regarding the form of the law has caused oscillation between rules and standards in patent jurisprudence, resulting in uncertainty in the law. Indeed, scholars have identified such shifts between rules and standards in the legal system generally as an explanation for the subsistence and proliferation of legal uncertainty, and they have sought to understand why these fluctuations occur.¹⁰⁰ For example, taking a historical view, some commentators have noted that the law exhibits shifting

97. *Id.* at 628.

98. *Id.* at 621.

99. *See supra* note 60 and accompanying text (discussing Supreme Court’s deference to Federal Circuit on patent law).

100. *See, e.g.,* Pierre J. Schlag, *Rules and Standards*, 33 UCLA L. REV. 379, 428–29 (1985) (describing patterns by which rules turn into standards and vice versa); *see also* Schuck, *supra* note 2, at 9 n.30 (“[P]articular doctrines may oscillate between simpler and more complex forms.”).

preferences for rules and standards over time.¹⁰¹ Professor Carol Rose has posited that fluctuations between “crystal” rules and “muddy” standards occur in property law because private parties and other ex ante decision makers such as legislators seek to define rights and obligations with crystal rules, but courts, which become involved in disputes ex post, prefer muddy rules in order to save parties from improvident bargains.¹⁰² Professor Jason Scott Johnston, undertaking an economic analysis of the form of legal rules in tort law, has noted that rules and standards (or forms thereof) attract the cases that reveal their respective flaws, so that rules drift toward standards and vice versa.¹⁰³ His theory of endogenous, judicial oscillation suggests “a pattern of ceaseless oscillation, from rules to balancing and back again.”¹⁰⁴ These fluctuations create considerable uncertainty, in part due to the difficulty of predicting changes from rules to standards and vice versa.¹⁰⁵

In patent law, the relationships among, and the differing functions and institutional strengths of, the administrative agency and judicial bodies in the patent system are a predominant cause of the oscillation between rules and standards. This institutional differentiation in preferences with respect to the form of the law has recently resulted in shifts in, and disruption of, the direction of the law. Patent law’s public institutions are highly interdependent yet have needs and goals that are so disparate that cohesiveness in the form of the law may be difficult to achieve. These aspects of the patent system transcend any particular doctrine or rule and cause systemic uncertainty. Interestingly, in contrast to Professor Rose’s observation of private parties as the primary certainty-inducing force in property law, private forces in patent law often exert additional pressure toward uncertainty.¹⁰⁶

101. See, e.g., Carol M. Rose, *Crystals and Mud in Property Law*, 40 STAN. L. REV. 577, 595–97 (1988) (noting accounts of historical shifts between dim- and bright-line rules, particularly in property law).

102. *Id.* at 604.

103. Johnston, *supra* note 1, at 348.

104. *Id.* at 346.

105. *Id.* at 362.

106. See Rose, *supra* note 101, at 585 (describing “a back-and-forth pattern: crisp definition of entitlements, made fuzzy by accretions of judicial decisions, crisped up again by the parties contractual arrangements, and once again made fuzzy by the courts.”).

B. Private Pressures

The uncertainty conversation in patent law has focused almost exclusively on the form and content of legal doctrine and the public institutions that make and apply it.¹⁰⁷ Although the aspiration for certainty from public institutions and the laws that they make is legitimate, uncertainty also derives from pressures placed on the system by private parties. This section of the Article discusses a number of incentives for private participants to make the patent system more uncertain.

1. Uncertain Patents

In patent law, the private actors with the most significant impact on the system are patent holders. The patent itself is the focal point for every dispute; it provides the raw material to which the law—whether certain or uncertain—is applied. Even more particularly, nearly every patent dispute revolves around the patent’s claims, which define the metes and bounds of the inventor’s ownership rights.¹⁰⁸ The scope of the patentee’s rights affects nearly every case resolved on the merits, and the meaning of the claims is often outcome-determinative of all issues.¹⁰⁹

Patent applicants, however, have incentives to introduce uncertainty into their patents, thus introducing uncertainty into the patent system as a whole. Although economic theory suggests an increasing need to draw clearer, more certain lines around patent rights,¹¹⁰ commentators have observed that patents are becoming

107. See *supra* notes 12–18 and accompanying text (discussing uncertainty-based criticism of patent law).

108. See *supra* Part I.A (discussing patent claims).

109. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 989 (1995) (en banc) (Mayer, J., concurring) (“[T]o decide what the claims mean is nearly always to decide the case.”).

110. “Economic thinkers have been telling us for at least two centuries that the more important a given kind of thing becomes for us, the more likely we are to have . . . hard-edged rules to manage it.” Rose, *supra* note 101, at 577; see also Michael J. Meurer & Craig Allen Nard, *Patent Policy Adrift in a Sea of Anecdote: A Reply to Lichtman*, 93 GEO. L.J. 2033, 2035 (2005) (noting that “the standard view in law and economics that fuzzy property rights frustrate investment decisions and impede transactions”). Given that a patent by definition should describe something novel, and in light of our economy’s increasing dependence on intellectual property as a commodity, this theory would predict that patent rights would be characterized by exceedingly clear boundaries. See 35 U.S.C. § 102 (2007) (setting forth novelty requirement for patent protection); Kerr, *supra* note 66, at 194 (noting “increasing importance of intellectual property to the national economy”).

more unclear and their meanings more uncertain.¹¹¹ Professors James Bessen and Michael Maurer explain that “increasingly, patents fail to provide *clear notice* of the scope of patent rights. Thus, innovators find it increasingly difficult to determine whether a technology will infringe upon anyone’s patents”¹¹² The claims, although intended to serve the important public notice function, have become a questionable source of information about the scope of the patentee’s entitlement in many instances.¹¹³

Uncertain patents add indeterminacy to the patent system. The public cannot know the scope of the patent when it is unclear. In addition, the strategic use of uncertainty in claim drafting can also have effects beyond the particular patent at issue: the resultant judicial decisions resolving disputes about uncertain patents can make for uncertain caselaw. Indeed, when patent quality is poor, it affects the entire system. The patent is generally the largest factual input into a patent case, and it naturally has an impact on the contours of the legal doctrine that results from the dispute. When patents are difficult to read and understand, even for experts in patent law, it can affect the clarity of the resultant judicial opinions and doctrine, impacting the resolution of later cases. Judges are often faced with unclear claims but must nevertheless render decisions on the record before them.¹¹⁴ Patent law is not immune from the problem

111. See, e.g., *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1583 (Fed. Cir. 1988) (Nichols, J., dissenting) (noting “a growing inability of speakers and writers, lawyers, technicians, and laymen, to say what they intend to say with accuracy and clarity” in patent claims); JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 46–47, 50 (2008) (observing “a profusion of fuzzy patent rights” and “a large number of uncertain patent rights,” and concluding that “notice problems [in patents] have been getting worse”).

112. BESSEN & MEURER, *supra* note 111, at 46.

113. See *supra* notes 51–52 and accompanying text (discussing public notice function of claims).

114. For example, in a case involving a patent directed to systems used in processing semiconductor wafers into integrated circuits, the court had to construe the claim language, “respective second microcomputer means for receiving and processing digital information communicated with said respective second two-way communication means mounted on the respective work station therewith.” *Asyst Techs., Inc v. Empack, Inc.*, 268 F.3d 1364, 1367 (2001). In resolving the case, the court noted the difficulty of reaching a decision based on the language in the patent, writing, “the . . . patent[-in-suit] is not drafted in a manner that facilitates confident claim construction,” and resigned itself to reaching “the best interpretation of the patent.” *Id.* at 1370.

of “bad facts” leading to “bad law,” and bad law is often uncertain law.¹¹⁵

Some uncertainty in patents no doubt results from good-faith mistakes, which are in some instances unforeseeable even with careful study of caselaw and the best of intentions.¹¹⁶ To be sure, patent drafting is a challenging task. But there are at least two reasons why inventors might strategically and intentionally utilize uncertainty in their patent claims.

First, uncertainties in claim scope increase a patentee’s ability to tailor the reach of the claims to future activities and technological developments. Patent drafters generally write claims as broadly as possible to cover unknown prospective behavior and to capture all potential infringements. As one reference for patent drafters explains,

[a] patent is valuable when its claims read on what somebody *else* will market, or, at least, *would* market but for the existence of the patent

Thus, when we are drafting the problem-solution statement—which will serve as the basis for the patent application’s broadest claims—the appropriate mind-set is not one of defining what our inventor has done. Rather, our mind-set needs to be one of defining what some competitor *may* do¹¹⁷

Inventors, focused on capturing not the concrete but rather the unknown possibilities, value patents that are predictive rather than

115. *Haig v. Agee*, 453 U.S. 280, 319 (1981) (referring to adage that “bad facts make bad law”); *see also* *Schiavo ex rel. Schindler v. Schiavo*, 404 F.3d 1270, 1271 (11th Cir. 2005) (Birch, J., concurring) (“An axiom in the study of law is that ‘hard facts make bad law.’”). In computer science, an extreme version of this occurrence is colloquially referred to as “GIGO,” or “garbage in, garbage out.” The term is used to describe studies that produce poor results due to inadequate or low-quality inputs. *See, e.g.*, *U.S. v. Coriary*, 300 F.3d 244, 255 n.7 (“Often abbreviated as GIGO, [“garbage in, garbage out”] is a famous computer axiom meaning that if invalid data is entered into a system, the resulting output will also be invalid. Although originally applied to computer software, the axiom holds true for all systems, including, for example, decision-making systems.”) (quoting Webopedia, *Garbage In, Garbage Out*, at http://www.webopedia.com/TERM/G/garbage_in_garbage_out.html (last modified Dec. 3, 2001)).

116. Other explanations for drafting uncertain patents include inadvertence, malpractice, or the desire simply to have a patent—without regard to its quality or enforceability—for product-marketing purposes or to spread information, for example. *See, e.g.*, Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 625 (2002) (arguing that patents have value wholly independent of the exclusive rights they convey, such as being a means of disseminating information).

117. SLUSKY, *supra* note 44, at 29–30 (third emphasis added).

predictable.¹¹⁸ To capture these future infringements, patent drafters often seek to avoid tying the claims to a particular meaning because to do so would limit the patentee's options when asserting the patent.¹¹⁹ Patents are drafted in a nonadversarial setting and patent examiners do not serve as a sufficiently effective check against this behavior.¹²⁰

To be sure, a patentee will sometimes opt for a claim having a clear and certain meaning, for example when a patentee learns of competing endeavors while prosecution is still ongoing.¹²¹ A patentee may also choose at times to include a "picture claim," which describes with specificity a particular embodiment of the invention.¹²²

118. See Plager, *supra* note 37, at 71 ("[T]he inventor wants to have the claims stated as broadly as possible to cover not only the actual invention but also all possible future variants. Thus, lawyers who draft patent specifications for their clients tend to write claims in the broadest and most general terms possible, sometimes to the point at which it is virtually impossible to grasp what is actually claimed.").

119. See BESSEN & MEURER, *supra* note 111, at 57 (describing patent drafters' use of ambiguous claims). Patent prosecutors typically seek to preserve options for their clients in the future on other issues as well. See, e.g., R. Polk Wagner, *Exactly Backwards: Exceptionalism and the Federal Circuit*, 54 CASE W. RES. L. REV. 749, 755 (2004) ("Whenever there is a line drawn, rational patent prosecutors want to straddle it; that strategy gives litigators the most flexibility in the future.").

120. As Professors Bessen and Meurer explain:

[P]atent applicants sometimes game the system by drafting ambiguous patent claims that can be read narrowly during prosecution, such that they avoid a [patentability] rejection, and broadly during litigation, which supports a finding of infringement. . . . [P]atent applicants have an incentive to draft vague claim language and examiners have little incentive to object. Applicants value vague claim language that can be read narrowly when necessary to avoid prior art, and broadly when possible to ensnare third-party technology.

BESSEN & MEURER, *supra* note 111, at 57; *id.* at 4 (providing examples); see also Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1753 (2009) ("The applicant has the power to define the patent claims, but many applicants don't specify what they mean by ambiguous technical language, either because they don't think about the issue or because they intend to exploit the ambiguity in obtaining or enforcing the patent.").

121. It is entirely permissible for inventors to draft a claim to cover a competitor's commercial embodiment. *Kingsdown Med. Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 874 (Fed. Cir. 1988) (en banc in part) ("[T]here is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor's product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitor's product the applicant's attorney has learned about during the prosecution of a patent application.").

122. See JEFFREY G. SHELDON, PRACTICING LAW INSTITUTE, HOW TO WRITE A PATENT APPLICATION § 6.5.2 (24th release 2009) ("[A] 'picture claim' . . . describes in detail all the features of a drawing or model of a specific embodiment of the invention . . . [Such claims are] very narrow.").

Most often, however, patentees do not know exactly what competitors are doing nor do they want to limit themselves to specific embodiments of the invention. But patentees do want to retain the possibility of covering competing activities post-issuance. Rational patentees thus prefer to wait until they know the context in which their claims will be applied to commit to a precise meaning.¹²³ Deferring a determination of the meaning of the claims to an ex post context keeps the scope of the claims uncertain.

Significantly, patentees do not have to choose between certain and less-than-certain claims. Patentees may file as many claims as desired.¹²⁴ Thus, even if a patentee drafts a claim or claims with a certain meaning, this does not preclude the inclusion of additional claims having uncertain meaning.¹²⁵ Courts assess liability on a claim-by-claim basis; only one claim is needed to establish infringement and it may be a claim having an uncertain scope that becomes dispositive in litigation.

Although aspiring to preserve options is not necessarily bad behavior on the part of patent drafters, the availability of patent law's high damages awards¹²⁶ provides a powerful incentive for patentees

123. Scholars have noted such behavior in contract drafters. Professor James Bowers has explained "why designers of contract law and contract drafters might employ imprecise 'standards' instead of precise 'rules.'" James W. Bowers, *Murphy's Law and the Elementary Theory of Contract Interpretation: A Response to Schwartz and Scott*, 57 RUTGERS L. REV. 587, 587 (2005). According to Professor Bowers, "[p]arties unable to foresee the future contexts in which their words will operate inevitably face contractual incompleteness They will prefer to employ an ex post problem resolving institution like common law litigation to address such problems." *Id.*

124. See *supra* note 45 and accompanying text (noting fees for additional claims).

125. BESSEN & MEURER, *supra* note 111, at 239 ("Applicants can avoid the risk of an unfavorable interpretation of a vague claim because they can write any number of other claims that create other versions of the property right to the same invention."); Neil E. Graham, *Patents/Seminars: Speaker Offers Practical Tips on Crafting and Drafting Winning Patent Applications*, 71 PAT., TRADEMARK & COPYRIGHT J. 501, ¶ 45 (Mar. 10, 2006) (noting lawyer's comment, "[w]hen your average small lawsuit costs 2–3 million dollars, what's a couple more claims?"). Inventors who believe that their patents will turn out to be valuable are more likely to include more claims. See Allison et al., *supra* note 45, at 452–53 (concluding that data reflected that "litigated patent applicants anticipated the possibility of litigation or licensing and drafted more claims in order to make their patent stronger in litigation—that is, that a larger number of claims suggests the owners knew at the time of prosecution that these patents would turn out to be important").

126. See Paul R. Michel, *The Court of Appeals for the Federal Circuit Must Evolve to Meet the Challenges Ahead*, 48 AM. U. L. REV. 1177, 1192 (1999) (noting "the large stakes typically attending cases in areas such as patents"); Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 395 n.21 (2000)

to claim more in litigation than what the inventor actually envisioned or the examiner realized she was granting. At that point, such behavior does become rent-seeking.¹²⁷ To the extent that it is bad behavior, however, obscuring or delaying the meaning of written documents—to capture rents or for other purposes—is not unique to the patent system.¹²⁸ But regardless of good or bad faith, it does have implications for legal certainty.

A second reason patent drafters may embrace uncertainty is the perceived deterrence value of uncertain claim language. Uncertainty plays a major role in legal actors' willingness to engage in behavior that may violate the law (here, by infringing a patent claim).¹²⁹ Just as indeterminacy in legal doctrines and institutions affects parties' behavior, so does uncertainty in the patent document. Uncertainty as to whether particular conduct will infringe a patent may have a chilling effect on risk-averse would-be competitors, which benefits a patentee.¹³⁰ The potential exposure to patent law's high damages awards may be too great to risk.¹³¹ Patentees can thus use uncertainty in their claim language to their advantage in potentially securing a sphere of protection around their inventions that may be wider than warranted.¹³² The incentive of a deterrent effect may have its greatest

(presenting empirical study of patent cases tried between 1983 and 1999 reporting the mean award as \$6.5 million in cases tried by juries and \$4.4 million in cases tried by the court and the median award as \$1.1 million in jury trials and \$531,000 in bench trials); David W. Opperbeck, *Patent Damages Reform and the Shape of Patent Law*, 89 B.U. L. REV. 127, 146 (2009) (presenting empirical study of patent damages in cases decided between 2002 and 2007 reporting the mean patent award as \$4.3 million).

127. See Burk & Lemley, *supra* note 120, at 1788 (noting "strategic claim drafting that expands the patent to cover things well beyond the contemplation of the inventor").

128. See *supra* note 123 (noting similar tendencies in contract drafting); see also Burk & Lemley, *supra* note 120, at 1752 ("[L]awyers are paid to create, identify, and exploit ambiguities in language.").

129. See, e.g., Baker et al., *supra* note 24, at 445 (discussing the role of uncertainty in deterring violations of legal norms); Warren F. Schwartz, *Toward a Theory of the "Meritorious Case": Legal Uncertainty as a Social Choice Problem*, 6 GEO. MASON L. REV. 801, 811 (1998) ("[L]egal uncertainty may cause an injurer to take more care than she would if there were no legal uncertainty.").

130. The deterrent effect will sometimes chill desirable innovation, an externality that the public must bear. See Calfee & Craswell, *supra* note 41, at 1001–03 (setting forth examples in various areas of law where uncertainty leads to over compliance).

131. See *supra* note 126 (discussing patent damages).

132. Cf. Baker et al., *supra* note 24, at 487 (discussing strategic manipulation of uncertainty by law-making and -enforcing entities to increase deterrence in tort and criminal law).

impact on patentees of technologies that involve difficult-to-detect infringement, where voluntary compliance is particularly desirable.¹³³

The lack of liability insurance for patent infringement strengthens the deterrent effect caused by uncertainty in patent scope. Insurance of various kinds is a common mechanism in the legal system for protecting against uncertainty.¹³⁴ In many other areas of the law involving civil suits, such as torts, insurance protects against the risk of loss, thus limiting liability and making clear an insured's potential exposure, even in the face of unclear legal doctrine.¹³⁵ In patent law, however, neither liability nor litigation-expense insurance is readily available.¹³⁶ Even in the rare circumstances where coverage is offered, prospective patent litigants rarely purchase it due to high premiums, conservative underwriting, and undesirable policy limitations.¹³⁷ Commentators have also cited administrative burdens

133. *See id.* at 473 (discussing importance of deterrent effect of uncertainty in areas such as tax law where the probability of detection is low).

134. *See, e.g., id.* at 474 (noting that liability insurance "substantially reduces" the uncertainty in the expected value of tort sanctions).

135. For example, recovery in tort law for damages is notoriously broad and uncertain, requiring the defendant to compensate the victim for even unforeseeable harm. *See, e.g., id.* (discussing "eggshell skull" rule in the law of tort damages and use of liability insurance to protect against uncertainty).

136. Jean O. Lanjouw & Mark Schankerman, *Protecting Intellectual Property Rights: Are Small Firms Handicapped?*, 47 J.L. & ECON. 45, 68–69 (2004) (noting that patent litigation insurance market "remains severely underdeveloped").

137. As two economists have explained,

[D]emand has been severely limited by high prices The level of prices is very high the annual premium for an insured of average risk is about 6–7 percent of the coverage. This is much higher than the litigation risk Including suits for declaratory judgment, the total number of expected cases that involve a given patent, over its lifetime, is just 1.9 per hundred patents

Id. at 49, 68–69; *see also* Beth M. Goldman et al., *Specialty Insurance Coverage for Intellectual Property*, in MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 33:20 (4th ed. 2009) (noting "cautious underwriting and expensive premiums" in intellectual property insurance generally); Melvin Simensky & Eric C. Osterberg, *The Insurance and Management of Intellectual Property Risks*, 17 CARDOZO ARTS & ENT. L.J. 321, 330 (1999) ("A shortcoming of AIG's patent infringement policy is that reimbursement to the insured may not be due until final disposition of a claim, that is, judgment after appeal or final settlement."); *see also id.* at 329, 339 (noting significant limitations in patent abatement coverage as well as state law that prohibits patent insurance for offensive litigation). In addition, defense expenses such as attorney's fees, damage awards, settlement payments, and pre-judgment interest are "counted against the total amount of the coverage." *Id.* at 329. Thus, the amount of the indemnity remaining to pay damages will be reduced by the cost of an unsuccessful defense." *Id.*

with patent insurance as a bar to its viability.¹³⁸ The high litigation costs and damages typically at issue in patent law likely make this enterprise unattractive to insurers.¹³⁹ The unavailability of insurance can strengthen the potential deterrent effect of uncertainty and its influence on patent drafters because competitors lack a mechanism for protecting against their risk of loss.

Thus, uncertainty may have a number of perceived or actual advantages for patentees. Consequently, uncertainty may be a deliberate legal practice itself, rather than descriptive of a legal practice. This strategic use of uncertainty may help to explain why patent law seems to defy economic theory in engendering uncertainty: the instrumental use of indeterminacy in claim drafting may serve a given patentee's goals more effectively.¹⁴⁰

2. Political Economy

Political economy theory provides further insight into how the private sector can be a source of uncertainty in patent law. Looking at political and economic effects on lawyering, scholars have argued that lawyers in general are motivated to create or find uncertainties in the law.¹⁴¹ For example, it may be easier for a lawyer to convince a judge to rule for her client if she can find or create a nuanced exception that avoids the necessity of a large-scale doctrinal revision, even if it introduces uncertainties into the law.¹⁴² Moreover, scholars posit that lawyers on both sides of any issue prefer uncertainty and complexity for more self-interested reasons as well, because such qualities of the law enhance the value of lawyers' training and skills, netting an economic benefit in fees.¹⁴³ Commentators have argued

138. Mark C. Vallone, *System and Method of Funding SMEs Commencing Patent Infringement Disputes*, 56 SYRACUSE L. REV. 181, 188–89 (2005) (noting disadvantages of patent insurance, in context of abatement policies, including, “filing claims under the policies has proven to be ‘time-consuming,’ ‘expensive,’ and impossible without a lawyer”).

139. Beth M. Goldman et al., *supra* note 137, at § 33:20 (noting that some insurers have exited the intellectual-property loss prevention business “because they were unable to achieve the desired profitability”); *see also* Vallone, *supra* note 138 (discussing cost of patent litigation).

140. *See supra* notes 117–20, 129–33 and accompanying text (discussing reasons why patent drafters might prefer uncertainty in claim meaning).

141. *See, e.g.*, Schuck, *supra* note 2, at 26, 32 (describing scholars' arguments why lawyers and litigants favor more indeterminate rules).

142. *See supra* note 33 (noting how exceptions to rules engender uncertainty).

143. *See, e.g.*, Richard A. Epstein, *The Political Economy of Product Liability Reform*, 78 AM. ECON. REV. pt. 2, at 311, 313–14 (1988) (arguing that trend toward indeterminacy in

that tax lawyers, for instance, may have a vested interest in a complex and uncertain body of law.¹⁴⁴

These political economy arguments have some force in patent law, where the bar has traditionally been insular and specialized due to limitations on admission to practice before the patent office. Candidates for admission to the patent bar must meet the PTO's specified scientific and technical requirements—generally a Bachelor's degree, or equivalent course credits, in an acceptable field, such as biology, chemistry, physics, or engineering—to take the patent examination.¹⁴⁵ The examination itself, requiring in-depth knowledge of patent office procedures and patentability requirements, is arduous and has a low passage rate.¹⁴⁶ Although non-patent lawyers have begun to participate more regularly in litigation

products liability law results in part from the incentive for lawyers to maximize their expected income by promoting more complex rules that require expert interpretation “to navigate the legal waters”); Alan Schwartz & Robert E. Scott, *The Political Economy of Private Legislatures*, 143 U. PA. L. REV. 595, 616 (1995) (“[V]ague rules can create direct economic gains for [lawyers] These rules increase or maintain uncertainty, and thus increase, or do not reduce, the occasions on which lawyers will have to give advice or be involved in litigation.”); see also Schuck, *supra* note 2, at 26 (“[T]he main producers, rationalizers, and administrators of law—legislators and their staff, bureaucrats, litigants, lawyers, judges, and legal scholars—generally benefit from legal complexity while bearing few of its costs.”).

144. See Michelle J. White, *Why Are Taxes So Complex and Who Benefits?*, 47 TAX NOTES 341, 346–48 (1990) (arguing that tax lawyers prefer complexity in the law because it maximizes their potential income); see also Boris I. Bittker, *Tax Reform and Tax Simplification*, 29 U. MIAMI L. REV. 1, 10–11 (1974) (suggesting that practitioners favor complex statutory tax provisions that are difficult to interpret and enforce because it allows them to create ambiguities in favor of their clients).

145. See 37 C.F.R. § 11.7 (2000) (enumerating the requirements to register to practice before the U.S. PTO including “possess[ing] good moral character and reputation; [and] possess[ing] the legal, scientific, and technical requirements necessary . . . to render valuable service”); U.S. PAT. & TRADEMARK OFFICE, GENERAL REQUIREMENTS BULLETIN FOR ADMISSION TO THE EXAMINATION FOR REGISTRATION TO PRACTICE IN PATENT CASES BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE 4–8 (2008), available at <http://www.uspto.gov/web/offices/dcom/olia/oed/grb.pdf> (describing special scientific and technical requirements for admission to patent bar examination). See generally Dale L. Carlson et al., *Re-thinking Patent Bar Admission: Which Bag of Tools Rules?*, 87 J. PAT. & TRADEMARK OFF. SOC'Y 113, 115–20 (2005) (discussing the requirements to sit for the patent bar including possession of legal, scientific, and technical qualifications).

146. John C. Lindgren & Craig J. Yudell, *Protecting American Intellectual Property in Japan*, 10 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1, 20 (1994) (“Admission to the Patent Bar requires passing the rigorous Patent Bar Examination, which often has a pass rate of less than fifty percent.”); Daiske Yoshida, *The Applicability of the Attorney-Client Privilege to Communications with Foreign Legal Professionals*, 66 FORDHAM L. REV. 209, 218 (1997) (“In order to practice before the USPTO, both patent agents and patent attorneys must first take a patent bar examination administered by the USPTO. . . . The entire exam has a pass rate ranging from 28% to 40%.”).

involving issued patents, the exclusive membership requirements for patent prosecution nevertheless ensure the vitality of a patent law cognoscenti. In addition, Congress's creation of the Federal Circuit as a unique forum for patent appeals reinforced the impression that patent law has special, or at least singular, status.¹⁴⁷

In recognition of their special expertise, patent lawyers often earn salaries that are higher than those of their non-patent lawyer counterparts.¹⁴⁸ This economic incentive might—whether overtly or not—encourage patent lawyers to maintain a certain level of inapproachability in the law in order to maintain demand for their services and to justify the higher fees for their skills. Indeed, commentators have suggested in a related vein that patent lawyers may be motivated by economic factors to draft more complicated patents, which may be more indeterminate.¹⁴⁹ Thus, being able to market patent law as uncertain may actually benefit the practitioners of it and thereby create incentives to perpetuate uncertainty, or at least create disincentives to reduce uncertainty. Without question, lawyers are not solely motivated by these incentives, and many lawyers have countervailing interests. Even when deliberately creating legal uncertainty, that uncertainty may be in a client's or the public's best interest, such as when it is a by-product resulting from the pursuit of another value, rather than in the interest of self-preservation.¹⁵⁰ But the political and economic interest in maintaining

147. See Nard & Duffy, *supra* note 13, at 1645 (noting that “the creation of a single specialized court located in one city cannot help but foster an even greater degree of insularity” in the patent bar). Although the Federal Circuit is not a “specialized” court due to the breadth of its jurisdiction outside of patent law, it is commonly misperceived as one. See S. Jay Plager, *The United States Courts of Appeals, The Federal Circuit, and the Non-Regional Subject Matter Concept: Reflections on the Search for a Model*, 39 AM. U. L. REV. 853, 858–63 (1990) (explaining erroneous view of Federal Circuit as a specialized court).

148. For example, one national law firm offers a \$10,000 entry-level salary increase for members of the patent bar. See NALP Directory of Legal Employers, http://www.nalpdirectory.com/dledir_search_advanced.asp (last visited Oct. 7, 2010) (providing salary data for Alston & Bird LLP, Atlanta, Georgia); see also *Patent Attorney Salary Facts & Charts*, PATENT BAR STUDY, available at <http://www.patentbarstudy.com/career/patentattorneysalary.html> (last visited Apr. 15, 2010) (noting average patent lawyer salaries); Press Release, Nat'l Assoc. for Law Placement, Market for Law Graduates Changes with Recession: Class of 2009 Faced New Challenges (July 22, 2010), available at <http://www.nalp.org/09salpressrel> (noting mean and median salaries for recent law school graduates).

149. Allison et al., *supra* note 45, at 452 n.69 (raising possibility that “lawyers are simply increasing their fees by writing more complex patents”).

150. See *infra* Part III.C (discussing competing values).

a high level of prestige and specialization on the part of lawyers is nevertheless an additional and important force that can lead to uncertainty in the patent system.¹⁵¹

3. Patent Proliferation

Lastly, on a very basic level, the sheer increase in the filing of patent applications can create uncertainty. Scholars have pointed to the ever-increasing volume of reported caselaw as a source of indeterminacy in the law.¹⁵² They argue that the need to consult more opinions, which may raise new questions rather than clarify existing ones, leads to less certainty.¹⁵³ While the number of patent cases is indeed increasing, this theory has additional, more subtle applicability to the patent system: because they determine what constitutes infringement and what does not, patents serve as a form of law.

The public must consult an increasing number of patents to inform prospective actions. Both the number of patent applications and the number of issued patents have been increasing.¹⁵⁴ Between 1998 and 2008, the number of utility patent applications filed increased by nearly 90 percent.¹⁵⁵ In 2006, the PTO granted 173,772 utility patents compared to 109,645 in 1996—a 58 percent

151. In the interest of full disclosure, I should note that law professors may also have incentives to increase legal uncertainty. Cf. Schuck, *supra* note 2, at 34–38 (“There are reasons to think that this distinctive scholarly commitment to complexity, always great, is growing apace in the law schools. . . . [L]egal scholars tend to prefer complexity . . .”).

152. See, e.g., D’Amato, *supra* note 21, at 9 (noting difficulties that arise from increasing volume of caselaw and statutes and concluding that “increasingly dense ‘legal information’ can as easily confuse an issue as clarify it, and may also support conflicting resolutions”). But see Arthur D. Hellman, *Precedent, Predictability, and Federal Appellate Structure*, 60 U. PITT. L. REV. 1029, 1101 (1999) (“[T]he existence of multiple precedents addressing the same issue does not, without more, create the kind of uncertainty that makes the work of lawyers and trial judges more difficult.”); Arthur D. Hellman, *Breaking the Banc: The Common Law Process in the Large Appellate Court*, 23 ARIZ. ST. L.J. 915, 968–70 (1991).

153. D’Amato, *supra* note 21, at 9–10.

154. The number of patent applications filed between 1996 and 2006 increased 118 percent. U.S. PAT. & TRADEMARK OFFICE, *supra* note 49; see also James R. Farrand, *Territoriality and Incentives Under the Patent Laws: Overreaching Harms U.S. Economic and Technological Interests*, 21 BERKELEY TECH. L.J. 1215, 1269–70 (2006) (“At the same time as U.S. patents have gained strength legally, they have proliferated greatly in numbers, thereby further increasing the patent-based risks and uncertainties facing technology companies.”). While the number of issued patents has decreased three times between 1996 and 2008, the predominant trend has been growth in the number of issued patents. U.S. PAT. & TRADEMARK OFFICE, *supra* note 49.

155. U.S. PAT. & TRADEMARK OFFICE, *supra* note 49.

increase.¹⁵⁶ Competitors must often consult numerous patents in order to determine whether their actions will subject them to liability for infringement, and patent thickets are now common in many industries.¹⁵⁷ The growth in patent filings and issued patents can thus create indeterminacy in the system, possibly at an even earlier stage than caselaw, just as the need to consult a growing number of judicial opinions can create indeterminacy in the law. This is not to say that inventors should not utilize the patent system, but merely to recognize that patent proliferation will inherently inject some additional uncertainty into the system.

III. ADDRESSING UNCERTAINTY

The explanations for uncertainty offered above do not portend a cavalier or defeatist attitude toward uncertainty. To the contrary, acknowledging the entropy in the law and identifying the sources of this entropy should make legal actors more conscious of indeterminacy and better equipped to address it. Such vigilance is useful in counteracting the inherent uncertainty in the law as transactional lawyers draft patent applications and related documents, as litigators frame arguments to courts, as professional associations seek to influence legal change, as judges decide cases and determine the path of patent law, and as legislators endeavor to revise the Patent Act.¹⁵⁸

Each of those contexts presents opportunities to reform the law and to enhance certainty. In doing so, however, uncertainty-based criticism of patent law should be cast in an analytical light so that it is not simply a routine invective when courts issue unfavorable decisions or complicated doctrine. This part of the Article thus describes some simple guideposts for addressing uncertainty: identifying with as much precision as possible the primary institution or actor responsible for the uncertainty; assessing different types of uncertainty; and lastly, taking into account the importance of other,

156. *Id.*

157. See Lemley & Shapiro, *supra* note 9, at 1992 (discussing need to clear over a hundred patents in some industries); *id.* at 2010 (“Royalty stacking, patent thickets, and the related ‘anticommons’ problem have been a source of concern in the semiconductor and biotechnology industries for some time.”).

158. *Cf.* Schuck *supra* note 2, at 25 (noting that “the rulemaking process systematically obscures” the disadvantages of legal complexity).

countervailing values. Within that framework, Part III also notes some tools that have the potential to reduce uncertainty in patent law.

A. Identifying the Source of Uncertainty

In assessing any proposals designed to address uncertainty, reformers should consider comprehensively which actors in the legal system bear responsibility for the perceived uncertainty. For example, a recognition of the pressure that the Supreme Court places on patent doctrine is important when considering suggestions to abolish the Federal Circuit or to decrease its influence in patent law. Although critics of patent law tend to focus primarily on the Federal Circuit, the Supreme Court's recent decisions mandate more flexible standards—which scholars typically consider to result in less determinate outcomes compared to bright-line rules—in pursuit of values other than certainty.¹⁵⁹

In addition, although public law-making institutions are obvious sources of uncertainty in the law and logical targets for reform, the role of patentees in producing uncertainty should also be considered. Adjusting the claim definiteness requirement, for instance, could counteract uncertainty-inducing incentives for patentees.¹⁶⁰ For example, courts could shift the burden to patentees to prove that claims are definite or construe claims against patentees, as the drafters of the texts at issue. In implementing reforms to increase certainty, it is appropriate to place some of the burden on patentees, who potentially gain from uncertainty and who are the least-cost avoiders of uncertainty, at least with respect to the meaning of the

159. Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685, 1710–11 (1976) (listing certainty among qualities that describe rules and uncertainty among qualities that describe standards); Schlag, *supra* note 100, at 400 (“Rules, for instance, are said to be appropriate when certainty, uniformity, stability, and security are highly valued, whereas standards are seen as more appropriate when flexibility, individualization, open-endedness, and dynamism are important.”).

160. *See, e.g.*, BESSEN & MEURER, *supra* note 111, at 239 (suggesting that the claim definiteness requirement be modified such that “claims that can be given more than one plausible interpretation are invalid for claim indefiniteness”). To allow for determinations of infringement and patentability and thereby protect those who might be adversely affected by the patent from uncertainty, the claim definiteness requirement is intended to provide clear notice of what the claimed invention is. 35 U.S.C. § 112 (2006); *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996) (“[T]he primary purpose of the requirement is ‘to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their [respective] rights.’” (quoting *Gen. Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938))).

claims and other portions of the patent.¹⁶¹ Professor Peter Schuck refers to this idea as “the user fee principle,” pursuant to which “lawmakers should seek to tax the special beneficiaries of legal complexity for the special costs associated with those benefits” where feasible.¹⁶² The user-fee approach could be applied to indeterminacy. In some cases, patentees can gain from uncertainty about claim scope; if empirical research shows patentees to be the primary, systematic beneficiaries of that uncertainty, increasing the threat of invalidity based on claim indefiniteness or applying other pressures to make the scope of the claims more certain may be a suitable tax for that benefit. Similarly, for other issues, it may be appropriate to place the burden of indeterminacy on another class of litigants, such as accused infringers, if research shows that they are systematically and predominately benefiting from uncertainty.

B. Identifying the Type of Uncertainty

Uncertainty exists in many different forms and can affect multiple aspects of a given legal issue; these aspects may be opposed to one another with regard to their respective impacts on determinacy.¹⁶³ Indeed, enhancing one type of certainty along one axis of a legal rule will often sacrifice another type of certainty along another axis. Controlling for certainty may be impossible as an absolute matter, but isolating and prioritizing the particular type of certainty that is most highly valued will at least decrease the potential for unexpected side effects. In addition, parsing out the type of certainty that is desired and identifying conflicting types of certainty can also guide the choice among available tools for reducing indeterminacy.

The Federal Circuit’s standard of review for claim interpretation presents an example of the choice between differing types of certainty. In a key case on claim construction, *Markman v. Westview*

161. This practicality is one of the reasons for the rule of lenity in criminal law. *United States v. Santos*, 128 S. Ct. 2020, 2025 (2008) (plurality opinion) (citations omitted) (“The rule of lenity . . . places the weight of inertia upon the party that can best induce Congress to speak more clearly . . .”).

162. Schuck, *supra* note 2, at 47.

163. See *supra* note 39 and accompanying text (discussing different ways in which the law can be uncertain).

Instruments, Inc.,¹⁶⁴ the Supreme Court held that claim interpretation is an issue of law, reserved for judges rather than juries.¹⁶⁵ The *Markman* decision was driven in part by the desire to increase predictability in patent law.¹⁶⁶ The Court did not, however, address what standard the appellate court should apply in reviewing issues of claim construction. The Federal Circuit subsequently resolved that issue en banc in *Cybor Corp. v. FAS Technologies, Inc.*, holding that claim interpretation is a purely legal question subject to de novo review.¹⁶⁷ The scope of the de novo review applied by the Federal Circuit is broad, extending to “any allegedly fact-based questions relating to claim construction.”¹⁶⁸ Critics of the *Cybor* rule widely hail it as a major and systemic source of the purportedly rampant uncertainty in patent law.¹⁶⁹

In fact, de novo review for claim construction increases one type of certainty while decreasing another. The rule increases certainty by ensuring that each patent will be subject to a uniform claim construction, applicable to all litigants. Because issue preclusion will not apply against new and independent defendants, district courts might construe the claim language in a given patent differently if it is litigated multiple times.¹⁷⁰ With a more deferential standard of review such as the clearly erroneous standard, the Federal Circuit might have to uphold both constructions on appeal, even if they conflict with each other. For example, under the clearly erroneous standard of

164. 517 U.S. 370 (1996).

165. *Id.*

166. *Id.* at 390–91; see also *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1473 (Fed. Cir. 1998) (en banc) (Rader, J., dissenting in part) (“By removing lay juries from complex technological decisions, these [*Markman*] decisions promised to improve the predictability and uniformity of patent law.”).

167. *Cybor*, 138 F.3d at 1456.

168. *Id.*

169. See, e.g., James F. Holderman, *The Patent Litigation Predicament in the United States*, 2007 U. ILL. J.L. TECH. & POL’Y 1, 11 (2007) (citing de novo standard of review in claim construction as among the factors contributing to the uncertainty of patent litigation); Craig Allen Nard, *Process Considerations in the Age of Markman and Mantras*, 2001 U. ILL. L. REV. 355, 382 (2001) (“[D]e novo review delays certainty . . .”).

170. “[I]ssue preclusion could not be asserted against new and independent infringement defendants even within a given jurisdiction,” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996), because those defendants, as non-parties, would not have had adequate opportunities to obtain full and fair adjudication or “obtain [] review of the judgment in the initial action.” RESTATEMENT (SECOND) OF JUDGMENTS § 28 (1982).

review typically applied to factual findings by the district courts, if two different district courts, faced with different expert testimony or other evidence presented by the litigants, reached opposite conclusions about the meaning of the same claim, the Federal Circuit might have to affirm both of the lower court decisions. Alternatives to de novo review would therefore result in more variance at the trial court level, with a patent's meaning dependent on the litigants' evidence and on the jurisdiction where the plaintiff filed suit. Thus, compared to other standards of review, the *Cybor* rule increases uncertainty regarding the meaning of claims.

At the same time, the rule of de novo review decreases certainty of another kind. The de novo standard of review makes district court judgments less certain because it increases the probability that the lower court's decision will be reversed in any given case. Because the Federal Circuit can look at the issue of claim construction anew on appeal, unfettered by the district court's conclusions, most patent litigants attribute little significance to trial courts' claim construction rulings, knowing that the Federal Circuit will have the last word and be relatively unencumbered by the district court ruling.¹⁷¹ Judge Rader, opposed to de novo review for claim construction, has written that it "will undermine, if not destroy, the values of certainty and predictability."¹⁷²

This issue, then, presents a choice between two kinds of certainty. A more deferential standard of review would result in an increase in certainty of one type—the likelihood that the Federal Circuit will affirm the lower courts' judgments—at the cost of a decrease in certainty of another type—predictability as to how courts will construe the claims. Any certainty achieved would be at the expense of another kind of certainty. De novo review in claim construction is thus neither "anti-certainty" nor "pro-certainty" and cannot unqualifiedly be labeled as such.

The doctrine of prosecution history estoppel presents another example of the choice between different kinds of certainty.¹⁷³ In

171. See, e.g., *Cybor*, 138 F.3d at 1476 (Rader, J., dissenting in part) (noting that de novo review provides a disincentive to settlement due to the high likelihood that the district court's claim construction will be reversed on appeal and that the standard "means that the trial court's early claim interpretation provides no certainty at all, but only opens the bidding.").

172. *Id.* at 1474.

173. See *supra* notes 85–87 and accompanying text (discussing prosecution history estoppel).

rejecting the Federal Circuit's bright-line, absolute bar, the Supreme Court noted that "[f]undamental alterations in these rules risk destroying the legitimate expectations of inventors in their property."¹⁷⁴ The Court recognized that litigants have sought "bright-line rule[s] that would have provided more certainty in determining when estoppel applies but at the cost of disrupting the expectations of countless existing patent holders."¹⁷⁵ The Court has consistently rejected that approach in the context of prosecution history estoppel in order to avoid disrupting inventors' settled expectations.¹⁷⁶ In patent law, where documents are often drafted decades before they are litigated, such changes in the rules could be particularly pernicious. Certainty in the sense of preserving parties' existing expectations may be more compelling than crafting a rule that leads to more certainty in the future.

Which types of uncertainties we wish to manage will inform the appropriate approaches to resolving them. For example, if law reformers wish simply to enhance the certainty of district court or PTO decisions, standards of review would be an appropriate tool. As with claim construction, a more deferential standard of review on any issue of law would increase the likelihood that the district court judgment would be affirmed and thereby increase early certainty.

Relatedly, adjustment of burdens of proof, burdens of persuasion, and presumptions would be effective tools if reformers simply want to increase certainty as to which party will prevail on a given issue. Such process-oriented tools allow for systematically tipping the scales against the class of litigants deemed most appropriate to bear the costs of uncertainty.¹⁷⁷ These tools are designed by the legal system to compensate for imperfect information, which causes uncertainty. This is a simplistic, blunt approach, but if compelling reasons exist to favor one party over

174. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 739 (2002).

175. *Id.*

176. *Id.* (noting previous rejection of proposal to adopt a bright-line rule).

177. *Cf. Allen*, *supra* note 23, at 634 (discussing use of burdens of proof and persuasion to deal with situations "[w]hen there is reason to prefer errors to be skewed against a class of litigants").

another, it could be effective in attaining greater certainty.¹⁷⁸ Although clarification of the substantive legal test is often an option in resolving uncertainty, procedural mechanisms such as these may be useful in areas where legal doctrine is particularly difficult to articulate and reform of the substantive test is consequently unlikely to be effective in bringing about certainty.¹⁷⁹

C. *The Trade-Off: Other Values in Patent Law*

Certainty is almost always considered beneficial, particularly in patent law, and the advantages of certainty are often regarded as self-evident.¹⁸⁰ Indeed, given the choice between two rules, equally effective in advancing the policy interests at issue and achieving the desired outcome, the rule that provides more certainty would be preferable in patent law. Certainty can be harmful, however, if it comes at the expense of other important qualities of the law. Awareness of uncertainty therefore does not in every instance counsel in favor of decreasing uncertainty nor does it suggest that the presence of uncertainty should be dispositive. Courts must often give more weight to values other than certainty, and a simpler, more certain rule is not always best.¹⁸¹

It is unlikely that courts set out to create uncertainty in the law. Instead, uncertainty is often the indirect result of numerous other considerations that are involved in judicial decision making. In resolving a given case or type of case, courts generally must take into account various—and often conflicting—policies and their constraints.¹⁸² This might require a highly nuanced approach that

178. For example, in cases of information asymmetry, such as issues relating to the meaning of statements in the prosecution history of a patent, it may be appropriate to place the burden on the patentee, who has greater access to the relevant information.

179. We should not expect courts to be capable of achieving the impossible. See Jerome Frank, *COURTS ON TRIAL: MYTHS AND REALITY IN AMERICAN JUSTICE 2* (1949) (“The illusion that [the judicial process] either is, or can be, super-human constitutes one of the chief hindrances to its substantial reform.”). Just as drafting a patent application entails great difficulty, the precision with which the substance of legal doctrine can be specified is limited.

180. See Nard, *supra* note 169, at 385 (“Most would agree that the presence of early certainty and uniformity is desirable in any patent law regime.”).

181. Cf. Schuck, *supra* note 2, at 25 (“A simpler regime . . . might be even worse”).

182. See, e.g., Werner Z. Hirsch, *Reducing Law's Uncertainty and Complexity*, 21 *UCLA L. REV.* 1233, 1249 (1974) (“[L]awmakers and courts . . . must face a variety of conflicting objectives in addition to uncertainty-reduction, e.g., justice and implementation of moral values,

necessarily results in some uncertainty. Legal rules and policies are, for the most part, not monolithic. Tailoring a decision to satisfy many different aims, which may often be at cross-purposes with one another, may demand a more complex, less predictable legal rule.¹⁸³

The long-standing doctrine of equivalents—perhaps one of the most indeterminate aspects of patent law—presents a useful example of the policies that can weigh against the optimization of certainty.¹⁸⁴ The doctrine of equivalents is an equitable, judicially created doctrine that extends the scope of a patent beyond its literal, textual boundaries to encompass products or processes that are “substantially the same” as the claimed invention.¹⁸⁵ The standard attempts to take into account numerous considerations relating to both the patented technology and the alleged infringer’s activities.¹⁸⁶ As one Federal Circuit judge has written, “[f]ew problems have vexed this court more than articulating discernible standards for non-

including a more equitable income distribution, as well as clashes between private and public objectives.”).

183. Schuck, *supra* note 2, at 37 (noting that crafting legal rules that take into account “the goals and constraints relevant to a given policy . . . may necessitate a system of multi-factored rules, multiple defense, complex party structures, sequential burden-shifting, and so on”).

Similarly, proponents of certainty cannot reasonably cling to it singularly. Indeed, critics have not expressed an unqualified, normative commitment to certainty at all costs. For instance, a rule that the patentee will always prevail on questions of validity could not be seriously defended, although it is absolutely certain. And patentees have been stalwart in their defense of some uncertain, pro-patent laws, such as the doctrine of equivalents. Thus, there are often countervailing policies at play.

184. Paul R. Michel, *The Challenge Ahead: Increasing Predictability in Federal Circuit Jurisprudence for the New Century*, 43 AM. U. L. REV. 1231, 1236–38 (1994) (discussing the doctrine of equivalents as a highly unpredictable area of Federal Circuit caselaw); *see also* Charles W. Adams, *The Doctrine of Equivalents: Becoming a Derelict on the Waters of Patent Law*, 84 NEB. L. REV. 1113, 1116 (2006) (discussing lack of certainty in the doctrine of equivalents).

185. “[A] patentee may invoke this doctrine to proceed against the producer of a device ‘if it performs substantially the same function in substantially the same way to obtain the same result.’” *Graver Tank & Mfg. v. Linde Air Prods.*, 339 U.S. 605, 608 (1950) (quoting *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30, 42 (1929)); *see also* *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320, 1325 (Fed. Cir. 1991) (“In order to prove infringement under the doctrine of equivalents, a patentee must show that the accused device performs substantially the same function in substantially the same way to achieve substantially the same result as the claimed device.”).

186. *See Graver Tank*, 339 U.S. at 608–09 (“What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case. Equivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum.”); *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 40 (1997) (explaining that “the particular linguistic framework used” for the doctrine of equivalents is not critical and that different tests may be applicable to different sets of facts).

textual infringement.”¹⁸⁷ Under the doctrine, a claim describing the “frustum of a cone” (a circle) can include an octagon,¹⁸⁸ and a claim requiring a pH of 6.0 can include a pH of 5.0.¹⁸⁹ Not only is it uncertain whether the doctrine of equivalents will apply in any given case due to the presence of various limitations on its applicability, but the scope of the doctrine (i.e., which equivalents will be considered “substantially the same,” even assuming the doctrine’s applicability) is also difficult to predict.¹⁹⁰ Indeed, the doctrine of equivalents is a variable that makes it nearly impossible for even well-meaning competitors to determine *ex ante* whether they are infringing a patent.¹⁹¹

Despite these shortcomings, the doctrine of equivalents does have its virtues. As Learned Hand explained in discussing the policies behind this body of law, courts “resort to the ‘doctrine of equivalents’ to temper unsparing logic and prevent an infringer from stealing the benefit of the invention. No doubt, this is, strictly speaking, an anomaly; but it is one which courts have frankly faced and accepted almost from the beginning.”¹⁹² The Supreme Court later elaborated:

[T]o permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for—indeed encourage—the unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim and hence outside the reach

187. *Johnson & Johnston Assocs. Inc. v. R.E. Serv. Co.*, 285 F.3d 1046, 1056 (Fed. Cir. 2002) (Rader, J., concurring); *see also* *Corning Glass Works v. Sumitomo Elec. U.S.A. Inc.*, 868 F.2d 1251, 1260 (Fed. Cir. 1989) (“This court has not set out in its precedent a definitive formula for determining equivalency . . . Nor do we propose to adopt one here.”).

188. *Winans v. Denmead*, 56 U.S. 330 (1853).

189. *Warner-Jenkinson Co.*, 520 U.S. 17.

190. Michel, *supra* note 184, at 1236–37 (discussing limitations on the doctrine of equivalents and arguing that application of the doctrine is too uncertain).

191. *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991) (noting concern with doctrine of equivalents that “[c]ompetitors will never know whether their actions infringe a granted patent”); Michel, *supra* note 184, at 1235–38 (explaining that the doctrine of equivalents renders the scope of patent protection highly unpredictable).

192. *Royal Typewriter Co. v. Remington Rand, Inc.*, 168 F.2d 691, 692 (2d Cir. 1948).

of law. . . . To prohibit no other [than an exact copy] would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention and would foster concealment rather than the disclosure of inventions, which is one of the primary purposes of the patent system. . . . The essence of the doctrine is that one may not practice a fraud on a patent.¹⁹³

The Court readily recognized several rationales for the doctrine of equivalents. For instance, the doctrine serves a number of important goals—ensuring that a patent provides a meaningful right to inventors, avoiding piracy, preventing fraud, compensating for the practical limitations of language, and preserving the incentive to disclose inventions that the patent system provides—all of which come at the expense of certainty, at least in the case of the doctrine of equivalents.

Other values are often at odds with certainty in patent law as well. For example, accuracy and certainty may conflict. Then Professor, now Federal Circuit Judge, Kimberly Moore has noted the tension between accuracy and certainty in the context of claim construction in patent law:

The unintended consequence of having district court judges construe patent claim terms as a question of law is that, rather than promoting settlement, it increases uncertainty and prolongs litigation because parties hold out for Federal Circuit review. Treating claim construction as a question of law, however, permits *de novo* review by the Federal Circuit, which increases the accuracy of the claim scope analysis.¹⁹⁴

The choice between certainty and correctness may depend on the degree of error. Thus, for some issues, like claim construction, where the degree of error is by some accounts unusually high,¹⁹⁵ choosing

193. *Graver Tank & Mfg. v. Linde Air Prods.*, 339 U.S. 605, 607 (1950).

194. Moore, *supra* note 14, at 28.

195. See *supra* note 14 (citing reversal rates for claim construction cases in patent law). But see Richard S. Gruner, *How High Is Too High?: Reflections on the Sources and Meaning of Claim Construction Reversal Rates at the Federal Circuit*, 43 LOY. L.A. L. REV. 981, 1070 (arguing that “[e]xcessive concern about Federal Circuit claim construction reversal rates is misplaced”).

accuracy over certainty (or at least, early certainty)¹⁹⁶ may be more compelling.

Similarly, fairness must also be balanced against certainty.¹⁹⁷ A patentee should be permitted a fair reward for her invention, but the public should also be able to determine the scope of the patent right. Professor Donald Chisum has referred to this problem as “the fair protection-certainty conundrum.”¹⁹⁸ More generally, a rule focused on advancing fairness—whether to patentees or to competitors—may be less certain because it allows the court to adapt the rule to varied circumstances and policy considerations. Indeed, ad hoc, multifactor rules that allow for greater ex post assessments of liability or entitlement necessarily sacrifice certainty to some extent.¹⁹⁹ Nevertheless, a rule that permits the court to allocate responsibility with greater precision, even if it requires a comparatively elaborate ex post analysis, may lead to more just results. The rule governing injunctive relief in patent law presents an example of this choice.²⁰⁰

Other values or characteristics of rules that courts might pursue at the risk of creating uncertainty include individualization and flexibility. More individualized and flexible rules can allow courts to adjust to changing circumstances and technologies. They also preserve the ability to make nuanced policy decisions in future cases.²⁰¹ Patent law, characterized by rapidly changing technology, demands doctrine that is highly adaptable to new scenarios and thus may result in more open-textured jurisprudence. It is particularly

196. See *supra* Part III.B (discussing different types of certainty).

197. *Int'l Visual Corp. v. Crown Metal Mfg. Co.*, 991 F.2d 768, 775 (1993) (“Ultimately, a court needs to balance the public’s need for certainty with the need for fairness to the patentee.”); see also *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, (Fed. Cir. 2000) (en banc) (Linn, J., dissenting in part and concurring in part) (noting need to “balance[] fairness to inventors with certainty for competitors”), *vacated*, 535 U.S. 722 (2002).

198. Donald S. Chisum, *The Scope of Protection for Patents After the Supreme Court’s Warner-Jenkinson Decision: The Fair Protection-Certainty Conundrum*, 14 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1, 7 (1998).

199. See, e.g., Warren F. Schwartz & C. Frederick Beckner III, *Toward a Theory of the “Meritorious Case”: Legal Uncertainty as a Social Choice Problem*, 6 GEO. MASON L. REV. 801, 807–08 (1998) (arguing that balancing tests create legal uncertainty).

200. See *supra* notes 77–78 and accompanying text (discussing two approaches to injunctive relief in patent law).

201. See, e.g., Schuck *supra* note 2, at 30 (“Indeterminate rules also serve important bureaucratic interests. . . . [T]hey preserve agencies’ future freedom of action in policy environments dominated by uncertainty and the need for flexibility.”).

difficult to see the implications of new technologies as they are arising. Courts' treatment of biotechnology inventions and business methods, for example, has caused considerable uncertainty in the law, both historically and currently, as society beyond the legal community continues to debate the impact of these disciplines. For example, the patentability of biotechnology inventions was long unclear, as commentators and government officials explored the policy implications of allowing patents on living organisms.²⁰² The still-emerging field of nanotechnology presents similar policy challenges.

A final, pragmatic consideration that can weigh against certainty is cost. Reducing uncertainty can entail significant expense. The law must necessarily be somewhat general in order to guide the resolution of future cases. Courts and legislatures may go to great expense in attempting to develop more certain rules and to account for various possible contingencies that may never come to fruition, yet still fail to anticipate scenarios that do occur. Attempts to determine and convey the outcomes in all possible future cases would not only violate the constitutional prohibition on advisory opinions but would also give rise to significant costs in an attempt to achieve the impossible.²⁰³ As a result, less certain rules may save on decision costs.²⁰⁴ Likewise, a system of particularized, bright-line rules, while superficially more certain, might increase transaction costs for parties, such as those involved in negotiating licensing agreements relating to patent rights.²⁰⁵ Thus, the costs of attaining certainty must also be weighed against the costs of uncertainty; the latter may not always be greater.

202. *Diamond v. Chakrabarty*, 447 U.S. 303, 316 (1980) (holding that human-made living organisms are not excluded from patentable subject matter and discussing policy arguments raised by amicus).

203. See, e.g., Cass R. Sunstein, *Leaving Things Undecided*, 110 HARV. L. REV. 4, 16 (1996) (noting that judicial minimalism may be desirable due to the high costs of decision, at least in an immediate sense).

204. *Id.* at 16–17 (“If a judge in a case involving the ‘right to die’ attempted to generate a rule that would cover all imaginable situations in which that right might exist, it is likely that the case would take a very long time to decide. Perhaps these costs would be prohibitive.”).

205. See, e.g., David Charny, *The New Formalism in Contract*, 66 U. CHI. L. REV. 842, 850 (1999) (“[A] set of simple formal rules . . . may . . . drastically increas[e] the costs of transacting, by requiring the anticipation of numerous improbable contingencies or forcing parties to avoid altogether transactions that might culminate in punitive forfeitures as a result of mere small misunderstandings.”).

Competing values such as those described above call into question the singular importance of certainty. Just as law makers must often make choices among different types of certainty,²⁰⁶ they must also make choices among values other than certainty. Rather than being a fatal flaw in the patent system, uncertainty often indirectly results from, or directly ensures, the advancement of other equally or more important goals. Resolving cases and crafting legal doctrine involves balancing competing policies, and certainty should not be accorded talismanic status in patent law. Indeed, caution is warranted, as scholars have demonstrated that efforts to render the law more precise and certain have, in fact, precisely the opposite effect over time.²⁰⁷ Instead, certainty should be treated as one instrument among many for achieving other goals in the patent system.²⁰⁸

CONCLUSION

Even in patent law, so often factually dominated by sophisticated technology, predicting legal outcomes is not an exact science. The law in general is characterized by an inherent baseline uncertainty. And, as this Article identifies, systemic public and private pressures within the patent system also create uncertainty. These sources of uncertainty are not necessarily worse than those in any other area of the law. Indeed, the patent system has continued to grow, rather than be abandoned for lack of certainty.

Nevertheless, the desire for increased certainty in patent law is unlikely to subside. This can be a positive countereffect to the natural tendency of the law toward uncertainty, as long as expectations are realistic and the efforts to effect certainty are constructive and comprehensive, focusing on the private sector in addition to focusing on the judiciary. Recognizing the entropy in the law in general and in

206. See *supra* Part III.B (discussing choices between different types of uncertainty).

207. D'Amato, *supra* note 21, at 8–11 (describing how even rules that are carefully constructed to lend certainty to prospective behavior nevertheless result in more uncertainty); see also Johnston, *supra* note 1, at 366 (“[I]ncreased regulatory precision has if anything only added to the complexity and uncertainty faced by potential tort defendants . . .”). Tax law, for example, is one area where uncertainty persists despite constant and surgical-like efforts to eliminate it legislatively. See D'Amato, *supra* note 21, at 11 (“[T]ax loopholes . . . comprise a well-known area in which uncertainty flourishes despite massive efforts to extinguish it.”).

208. As economist Werner Hirsch wrote, “certainty per se is but a means to an end, and not an end in itself.” Hirsch, *supra* note 182, at 1249 n.33.

patent law in particular does not mean accepting legal uncertainty as preordained. To the contrary, this Article offers a pragmatic framework for addressing uncertainty if desired. Systematic analysis of the sources of legal uncertainty and their specific impact, along with targeted solutions, have the potential to impart important lessons for private and public actors in patent law.

Using a general framework that considers the source of uncertainty, the type of uncertainty, and the trade-offs for certainty as a starting point, this Article advocates a more measured call for legal certainty. While it is important, certainty cannot be a singular goal—and often it is not even the most important goal—in resolving cases and articulating legal doctrine. A comprehensive analysis of the indeterminacy in patent law can lead to more realistic expectations about legal certainty and to more focused efforts to bring about determinacy throughout the system.

