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IP AND ANTITRUST: REFORMATION AND HARM

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Abstract: Antitrust and intellectual property (“IP”) law both seek to improve economic welfare by facilitating competition, and investment in innovation. At various times both antitrust and IP law have wandered off this course and have become more driven by special interests. Today, antitrust and IP are on very different roads to reform. Antitrust reform began in the late 1970s and is largely complete. Today, patent law has begun its own reform journey, but it is in a much earlier stage. The U.S. Supreme Court’s recent decision in *Bilski v. Kappos* did not reform patent law significantly, however, some of its language may lead to closer examination of some method patent applications. Unfortunately, the outlook for copyright reform is bleaker. An important component of antitrust reform has been the development of a concept of harm that effectuates the underlying policy of making markets more competitive. In its 1977 decision in *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, the Supreme Court largely ignored the language of an expansive antitrust damages provision that apparently gives private plaintiffs a remedy for every injury caused by an antitrust violation. Rather, the Court said, harm is cognizable only when it threatens to make markets less competitive. We propose a concept of “IP injury” that limits IP remedies to situations in which the IP holder has suffered or is likely to suffer harm sufficiently linked to the purpose of IP law, which is to incentivize innovation. As in antitrust, reformation in IP is more likely to come from the judiciary and not from Congress.

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INTRODUCTION

No legal policies are more important for innovation, competition and economic development than the antitrust and intellectual property (“IP”) laws. Both antitrust and IP law have wandered off course, however, subordinating public-regarding concerns for competition and innovation to interest group demands. Today they are on very different paths to reform. Antitrust’s decades-long period of isolation, redefinition, and retrenchment is largely completed. The reforms that are not yet finished belong to the IP laws, particularly patent and copyright, the two bodies of IP law expressly authorized by the Intellectual Property Clause of the Constitution.¹ During the middle of the twentieth century, antitrust policy lost much of its concern with economic competition and started protecting less efficient small businesses from the lower costs of larger firms.² Then, beginning in the late 1970s, the Supreme Court moved antitrust law in a new direction, toward the protection of consumers.³ By the same token, patent and copyright law have lost their focus on facilitating the type and amount of innovation needed to benefit consumers and turned toward the protection of rights holders, often at the expense of economic progress.⁴

The linkage of IP and competition policy is hardly novel.⁵ But our concern here is not to apply established antitrust doctrine in IP-intensive areas. Rather, we try to develop the basis for a common legal theory for fostering innovation and growth. Identifying the appropriate scope of IP protection is as much a question of competition policy as of patent or copyright policy. Overly broad IP rights or infringement doctrines that are too lax about proof of harm serve to create unjustified regions of behavior that are protected from competition, thereby threatening innovation. In very much the same way, excessive enforcement of the antitrust laws without concern about competitive injury protects firms from competition and undermines the incentive to innovate. In both cases, consumers are the victims.

In both antitrust and IP, meaningful reform requires two things. First, substantive doctrine must be revised to bring the law into align-

¹ See U.S. CONST. art. I, § 8, cl. 8.

² See HERBERT HOVENKAMP, *THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION* 1 (2005).

³ See *id.* at 2.

⁴ See Christina Bohannon, *Copyright Harm, Foreseeability, and Fair Use*, 85 WASH. U. L. REV. 969, 969 (2007).

⁵ See generally HERBERT HOVENKAMP ET AL., *IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW* (2d ed. 2010).

ment with the underlying policy. Better substantive law, however, is not a complete answer. By their nature, both antitrust and IP law continually confront phenomena in areas that are poorly understood, and where legal remedies are likely to do more harm than good.

Second, antitrust and IP law need a new focus on the degree and kind of harm required for a violation. As the Supreme Court has discovered through many years of interpreting the antitrust laws in private plaintiff actions, antitrust is complex and true reform is lurching, piecemeal and often elusive.⁶ One way to avoid the pitfalls created by ambiguous and complex substantive law is to ensure that the harm that is claimed is consistent with the underlying purpose of those laws.⁷ For example, predicting the economic consequences of a merger is extraordinarily difficult, and the chance of error is correspondingly high.⁸ But if a plaintiff is complaining that a merger caused *more* rather than less competition in a market, why bother with the difficult substantive analysis? The very nature of the plaintiff's claim tells us that we do not want to condemn this particular merger, at least not for the reason that the plaintiff claims. As we argue in Part V, we can often address problems of IP overreaching and complex and ambiguous doctrine by simply avoiding intractable questions of substance. Rather, courts need to ask more frequently whether the type of harm of which the plaintiff complains is sufficiently related to the underlying goals of IP laws, which can be defended only on the grounds that they encourage innovation.

We begin in Part I by giving an account of antitrust's journey to redemption and of how reform was accomplished largely by the judiciary—in apparent conflict with a statute that seemed both clear and inflexible.⁹ Part II then examines the state of reform in IP laws generally¹⁰ before turning to specific issues involving patents in Part III,¹¹ and copyright in Part IV.¹² Finally, in Part V we urge courts to develop the concept of “IP injury,” similar to the concept of “antitrust injury” in the

⁶ See *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 907 (2007) (overruling century of precedent and applying rule of reason to resale price maintenance); *State Oil Co. v. Khan*, 522 U.S. 3, 22 (1997) (adopting similar, maximum resale price maintenance).

⁷ Cf. Bohannon, *supra* note 4, at 1031.

⁸ On the need for simplifying assumptions and prophylactic rules in merger analysis, see 4 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 905, at 30 (3d ed. 2009).

⁹ See *infra* notes 14–51 and accompanying text.

¹⁰ See *infra* notes 52–147 and accompanying text.

¹¹ See *infra* notes 148–440 and accompanying text.

¹² See *infra* notes 441–496 and accompanying text.

antitrust laws, which links the type of harm that a plaintiff must show to the underlying purpose of those laws.¹³ True IP reform requires both a reconsideration of its substance and the formulation of a theory of harm that is linked to the underlying goals of those laws.

Our evaluation of antitrust, patent, and copyright law leads us to conclude that courts are far more likely than Congress to be the engines of true reform. The revolution in antitrust was undertaken almost exclusively by the courts, in the face of a clear and aggressive statute that would seem to make a strenuous harm requirement impossible. The transformation that is currently occurring in patent law is also very largely the work of the Supreme Court. Although the cleansing of the Copyright Act remains mainly in the future, nothing gives us hope that the needed reforms will come from Congress; therefore, the courts must act to reform this area of the law as well.

I. THE REFORMATION OF ANTITRUST POLICY

The story of antitrust reform is well known.¹⁴ The half-century period that ended in the late 1970s had seen many antitrust infidelities, mainly from expansion that today seems unprincipled, given that injury to competition was so often absent. Among these was the doctrine that mergers in highly competitive markets should be condemned if they permitted the post-merger firm to undersell smaller rivals;¹⁵ the *Utah Pie* doctrine that recent entrants into a market could not use aggressive pricing against a dominant firm there if they were charging higher prices somewhere else;¹⁶ the doctrine that vertical non-price restraints should be unlawful per se;¹⁷ the doctrine that tying arrangements should be unlawful even if the seller lacked serious market power and the tie excluded no one;¹⁸ and the doctrine that purely vertical agree-

¹³ See *infra* notes 497–558 and accompanying text.

¹⁴ See HOVENKAMP, *supra* note 2, at 1–2.

¹⁵ See generally *FTC v. Procter & Gamble Co.*, 386 U.S. 568 (1967) (condemning a merger because it would create economies in advertising); *United States v. Von's Grocery Co.*, 384 U.S. 270 (1966) (stating a similar proposition); *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962) (condemning a merger because the post-merger firm would be able to undersell smaller stores).

¹⁶ See generally *Utah Pie Co. v. Cont'l Baking Co.*, 386 U.S. 685 (1967) (finding it unlawful for firms operating in many markets to undersell a dominant firm in its local market).

¹⁷ See *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365, 382 (1967) (explaining that vertical non-price restraints are unlawful per se), *overruled by* *Cont'l T. V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 57 (1977) (explaining that vertical non-price restraints should be subjected to rule of reason).

¹⁸ See *Int'l Salt Co. v. United States*, 332 U.S. 392, 396 (1947) (tying of patented product presumptively unlawful), *overruled by* *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S.

ments maintaining either maximum or minimum resale prices were unlawful per se.¹⁹ In this period, antitrust law was substantially overdeterring. That is, it condemned a good deal of conduct that was pro-competitive and in the process forced consumers to pay higher prices.

What went wrong with antitrust following World War II was not all that different from what is wrong with the IP laws today. In both areas the legal policy became disconnected from its articulated goals and began pursuing other ends. Antitrust shielded small businesses from competition that would have benefitted consumers. Similarly, IP law expanded entitlements for the benefit of patent and copyright holders, often at the expense of innovation, which always relies on the work of predecessors as well as a robust public domain. The ultimate victims, once again, were consumers.

In the case of antitrust, people initially placed the blame for this disconnection on the Supreme Court—something that Robert Bork and Ward Bowman did forcefully in their disturbing 1965 article, *The Crisis in Antitrust*, and that Bork expanded thirteen years later in *The Antitrust Paradox*.²⁰ More recently, the tendency has been to blame private plaintiffs and the private treble damages enforcement system.²¹ In reality, however, Congress and the government antitrust enforcement agencies were behind most of it. For example, the 1967 U.S. Supreme Court decision in *United States v. Arnold, Schwinn & Co.* was an aggressive decision that condemned manufacturer-imposed territorial restrictions because they were restraints on alienation, not because they had any impact on competition.²² In 1962, the U.S. Supreme Court, in *Brown Shoe Co. v. United States*, condemned a merger because it injured smaller rivals, al-

28, 46 (2006) (asserting that there is no presumption of market power from patented tying product).

¹⁹ See *Albrecht v. Herald Co.*, 390 U.S. 145, 154 (1968) (holding that maximum resale price maintenance is unlawful per se), *overruled by Khan*, 522 U.S. at 22 (holding that maximum resale price maintenance is to be addressed under rule of reason); *Dr. Miles Med. Co. v. John D. Park & Sons Co.*, 220 U.S. 373, 409 (1911) (holding that minimum resale price maintenance is unlawful per se), *overruled by Leegin*, 551 U.S. at 907 (holding that minimum resale price maintenance is addressed under rule of reason).

²⁰ See ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 4 (1978); Robert H. Bork & Ward Bowman, Jr., *The Crisis in Antitrust*, 65 COLUM. L. REV. 363, 375 (1965).

²¹ See, e.g., William J. Baumol & Janusz A. Ordover, *Use of Antitrust to Subvert Competition*, 28 J.L. & ECON. 247, 263 (1985) (explaining that antitrust protects inefficiency for the benefit of small business); Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263, 314–15 (1981) (stating a similar proposition); Edward A. Snyder & Thomas E. Kauper, *Misuse of the Antitrust Laws: The Competitor Plaintiff*, 90 MICH. L. REV. 551, 598 (1991) (making a similar argument).

²² See 388 U.S. at 381–82.

beit by reducing prices to consumers.²³ The plaintiffs in these cases, however, were not “Pop’s Bike and Trike” or “Sally’s Little Shoe Shop.” In both cases, as well as other big Supreme Court decisions of this vintage, the plaintiff was the U.S. government.²⁴ The Supreme Court rarely did more than give the government what it asked for.²⁵ Yes, the Supreme Court did condemn many mergers precisely because they created efficiencies that might injure competitors, but it did so, at least in large part, because that is what the Department of Justice’s Antitrust Division and the Federal Trade Commission wanted.²⁶

For example, speaking through Archibald Cox as Solicitor General, the government identified low consumer prices as the primary evil brought about by the merger of Brown Shoe and Kinney:

[T]he integration of manufacturer-retailer Brown with the large Kinney retail organization will seriously aggravate the difficulties that independent retailers are already having in competing with the substantial and ever-expanding retail chains. The manufacturer-owned or controlled retail outlet can sell its own product at a significantly lower price than the nonintegrated independent retailer can obtain for a comparable product. . . . The conclusion was inevitable that the advantages the merged company would have over its smaller retailing competitors would be so great as to threaten to become decisive.²⁷

Even as early as 1947, in *International Salt Co. v. United States*, the U.S. Supreme Court granted the government’s request to condemn a tying arrangement without any showing of either market power in the tying product or significant harm in the market for the tied-up salt.²⁸ That is, the government showed no injury to competition whatsoever but believed it was wrong for a patentee to insist that users of its patented machine also use its own salt, a common commodity not capable of being monopolized.²⁹

²³ See 370 U.S. at 346 (addressing a government suit to break up a merger).

²⁴ See *Schwinn*, 388 U.S. at 367; *Brown Shoe*, 370 U.S. at 296.

²⁵ See *Schwinn*, 388 U.S. at 381–82; *Brown Shoe*, 370 U.S. at 346.

²⁶ See *Brown Shoe*, 388 U.S. at 296; see also *Procter & Gamble*, 386 U.S. at 580–81 (condemning a product-extension merger, a type of conglomerate acquisition, because it would lead to economies in marketing that would enable P&G to undersell rivals). See generally 4 AREEDA & HOVENKAMP, *supra* note 8, ¶ 905, at 30.

²⁷ Brief for the United States at 48, *Brown Shoe*, 370 U.S. 294 (No. 4).

²⁸ See 332 U.S. at 401 (accepting government’s argument that power and anticompetitive effects be presumed from existence of a patent).

²⁹ See *id.*

As for private plaintiffs, they assuredly have a tendency to push the envelope, but in most subsequent private actions they asked the federal courts to do no more than give them what had already been given to the government.³⁰ For example, the plaintiffs in the 1977 case *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.* had simply requested that the lower court follow *Brown Shoe* by protecting their small bowling alley from a rival that threatened to become more robust and efficient as a result of a merger.³¹ The U.S. Court of Appeals for the Third Circuit obliged, with a detailed analysis of the *Brown Shoe* decision.³² The court found that the main difference in the present case was that the bowling alley market in Pueblo, Colorado, was far more concentrated than the shoe market in *Brown Shoe*.³³ In reversing, the Supreme Court created the “antitrust injury” doctrine, discussed below, which stood the rationale of *Brown Shoe* on its head.³⁴

Dating the beginning of antitrust reform is difficult. It may have been 1957, when Ward Bowman exploded the traditional leverage theory of tying arrangements, which had suggested that the tying of a monopoly product to a competitive product could turn one monopoly into two.³⁵ Perhaps it was 1958, when John McGee debunked the theory that Standard Oil had engaged in predatory pricing,³⁶ or 1969,

³⁰ See, e.g., *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 480 (1977).

³¹ See *id.*

³² See *NBO Indus. Treadway Cos. v. Brunswick Corp.*, 523 F.2d 262, 269–70 (3d Cir. 1975).

³³ See *id.* at 270.

³⁴ See *Brunswick*, 429 U.S. at 480; *infra* notes 531–543 and accompanying text.

³⁵ See generally Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 *YALE L.J.* 19 (1957) (debunking notion that tying a monopoly product to a competitive product enables a firm to turn one monopoly into two). On the use of the leveraging theory in patent misuse cases, see Christina Bohannon, *IP Misuse as Foreclosure*, 96 *IOWA L. REV.* (forthcoming 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1474407. For a recent attempt to revitalize the leverage theory, see Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 *HARV. L. REV.* 397, 400 (2009). For a critique showing that the great majority of ties both increase welfare and benefit consumers, see Erik N. Hovenkamp & Herbert Hovenkamp, *Tying Arrangements and Antitrust Harm*, 52 *ARIZ. L. REV.* (forthcoming 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1443284.

³⁶ See John McGee, *Predatory Price Cutting: The Standard Oil (N.J.) Case*, 1 *J.L. & ECON.* 137, 168 (1958) (arguing that Standard Oil did not engage in predatory pricing, but was simply more efficient than its rivals). McGee’s work was recently called into question by James A. Dalton and Louis Esposito. See James A. Dalton & Louis Esposito, *Predatory Price Cutting and Standard Oil: A Re-examination of the Trial Record*, 22 *RES. L. & ECON.* 155, 189 (2007) (re-examining the trial record and finding numerous instances of predation, in conflict with McGee’s conclusions); see also RON CHERNOW, *TITAN: THE LIFE OF JOHN D. ROCKEFELLER, SR.* 113–17, 144–47, 202–25, 251–58 (1998) (documenting various rebate agreements between Standard Oil and the railroad).

when the Neal Report on the antitrust laws was released, provoking a sharp reaction that rejected its interventionist recommendations.³⁷ The first major signpost of reform may have been in 1975, when Phillip E. Areeda and Donald F. Turner published their law review article advocating strict, cost-based standards for predatory pricing,³⁸ or 1978, when they published the first three volumes of the *Antitrust Law* treatise.³⁹ Or maybe it began in 1976, when then-professor Richard A. Posner published the first edition of his monograph, *Antitrust Law*,⁴⁰ or 1978, when Robert Bork popularized Chicago School ideas in his influential book, *The Antitrust Paradox*.⁴¹ Perhaps a better candidate is 1981, when President Ronald Reagan appointed William F. Baxter as head of the Antitrust Division.⁴² In any event, antitrust reform began largely in academic literature and then moved into government enforcement and the courts.

Today, the antitrust landscape differs so much from the view of *Brown Shoe* that one could barely recognize it from that vantage point. The reformation of antitrust involved not only the development of a coherent theory of harm related to the underlying goals of the antitrust laws, but also a major revision in substance.⁴³ Five years after *Brunswick*, the Supreme Court imposed significant restrictions on antitrust standing that limit private enforcement to people who suffer demonstrable injury as a result of decreased competition.⁴⁴ In two important decisions twenty years apart, the Court greatly strengthened pleading and proof requirements, imposing harsh standards for summary judgment

³⁷ See WHITE HOUSE TASK FORCE REPORT ON ANTITRUST POLICY, reprinted in ANTI-TRUST L. & ECON. REV., Winter 1968–1969, at 11; see also Herbert Hovenkamp, *The Neal Report and the Crisis in Antitrust*, COMPETITION POL'Y INT'L, Spring 2009, at 217 (chronicling harsh reaction to Report that advocated aggressive use of antitrust laws).

³⁸ See Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697, 733 (1975) (advocating restrictive cost-based tests for predatory pricing).

³⁹ See generally PHILLIP E. AREEDA & DONALD F. TURNER, ANTITRUST LAW (1978) (calling for more restrictive rules for antitrust enforcement, particularly by private plaintiffs).

⁴⁰ See RICHARD A. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 3–7 (1976) (making a similar argument).

⁴¹ See generally BORK, *supra* note 20.

⁴² See Thomas J. DiLorenzo, *The Origins of Antitrust: An Interest-Group Perspective*, 5 INT'L REV. L. & ECON. 73, 74 (1985).

⁴³ See 2A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 335d, at 66–70 (3d ed. 2007).

⁴⁴ See *Assoc. Gen. Contractors of Cal., Inc. v. Cal. State Council of Carpenters*, 459 U.S. 519, 542–44 (1983) (applying a restrictive test for antitrust standing to sue).

in its 1986 *Matsushita Electric Industrial Co. v. Zenith Radio Corp.* decision⁴⁵ and strict pleading standards in its 2007 *Bell Atlantic Corp. v. Twombly* decision.⁴⁶ In addition, the Supreme Court made exclusionary practices much more difficult to prove, with holdings on predatory pricing in *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.* in 1993⁴⁷ and strict cost-based pricing tests in *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.* in 2007.⁴⁸ These rules largely followed the Areeda and Turner recommendations of 1975 and 1978. Similarly, in 2004, the Supreme Court considerably narrowed the law of unilateral refusals to deal by dominant firms.⁴⁹ It has completely rewritten the law of vertical restraints, removing such common law concerns as restraints on alienation, which have nothing to do with competition policy.⁵⁰ More generally, the courts have greatly reduced the use of per se rules, with their automatic inference of competitive harm, except in cases of naked collusion. Rather, they have required plaintiffs to prove market power and anticompetitive effects.⁵¹

II. IP: REFORMATION THAT HAS BARELY BEGUN

IP law today is in a place closely resembling antitrust policy in the 1960s. As with antitrust, the argument that IP law has become too detached from its central concern with protecting innovation has been

⁴⁵ See 475 U.S. 574, 596–97 (1986) (adopting strict standard for summary judgment in antitrust case); see also 2 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 308, at 133–39 (3d ed. 2007).

⁴⁶ See 550 U.S. 544, 570 (2007) (adopting strict standard for pleadings alleging unlawful antitrust conspiracy); see also 2 AREEDA & HOVENKAMP, *supra* note 45, ¶ 307, at 83–84.

⁴⁷ See 509 U.S. 209, 222, 223, 224, 232, 243 (1993) (adopting strict rules for predatory pricing cases and citing PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 711, 714, 720c (Supp. 1992)).

⁴⁸ See 549 U.S. 312, 325–26 (2007) (adopting strict cost based rules for predator purchasing); see also 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 747, at 454–55 (3d ed. 2008).

⁴⁹ See *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 415–16 (2004) (narrowing scope of antitrust law on unilateral refusals to deal); see also 3B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 774, at 219 (3d ed. 2008).

⁵⁰ See *Leegin*, 551 U.S. at 907 (applying rule of reason to resale price maintenance); *Ill. Tool Works*, 547 U.S. at 46 (overruling presumption that patented tying product confers sufficient market power to make a tie unlawful); *Khan*, 522 U.S. at 22 (applying rule of reason to maximum price fixing); *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 31–32 (1984) (tightening up standards for tying arrangements); *GTE Sylvania*, 433 U.S. at 57 (applying rule of reason to vertical non-price restraints).

⁵¹ See, e.g., *Cal. Dental Ass'n v. FTC*, 526 U.S. 756, 781 (1999) (adopting lenient rules for evaluating price-affecting joint conduct).

made in the academic literature and is fully underway.⁵² Although the courts are beginning to respond to these arguments in the area of patent law, they have yet to do so in the area of copyright law.

The *articulated* goal of IP law is economic, just as it is for antitrust.⁵³ As the Supreme Court has recognized, the “economic philosophy” of the Constitution’s Intellectual Property Clause⁵⁴ is to “advance public welfare” through the patent and copyright systems.⁵⁵ This is similar to saying that the goal of the antitrust law is to advance the public welfare by promoting competition.⁵⁶ Competition and innovation are two blades of the same scissors. Traditional competition improves economic welfare in the shorter run by keeping markets competitive, which means that prices are reasonably close to cost and there are no unnecessary restraints on output or entry.⁵⁷ Innovation policy pursues the same welfare goal, but focuses on more “dynamic” concerns, by giving people proper incentives to develop new ideas and technologies that society will value.⁵⁸ In both cases consumers are the protected class, because they are the ones who benefit from lower prices and improved products and services.⁵⁹

A. *The Articulation of Economic Goals*

Although antitrust rules are more explicitly grounded in economics than IP rules are, the latter play at least as important a role in economic growth. It has been clear since the work of Joseph Schumpeter, later elaborated in Robert W. Solow’s work on the neoclassical growth model, that the economic gains from innovation dwarf those from capital accumulation and increased price competition.⁶⁰ An important but often

⁵² See Bohannon, *supra* note 4, at 969.

⁵³ See U.S. CONST. art. I, § 8, cl. 8.

⁵⁴ *Id.* (“The Congress shall have Power To . . . promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . .”).

⁵⁵ See *Mazer v. Stein*, 347 U.S. 201, 219 (1954) (“The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in ‘Science and useful Arts.’”).

⁵⁶ See Herbert Hovenkamp, *Restraints on Innovation*, 29 CARDOZO L. REV. 247, 254 (2007).

⁵⁷ See *id.*

⁵⁸ See *id.* at 260 (advocating more aggressive use of antitrust laws against innovation-reducing restraints).

⁵⁹ See *id.* at 254; see also U.S. CONST. art. I, § 8, cl. 8.

⁶⁰ See JOSEPH SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 83–87 (1942); Robert M. Solow, *A Contribution to the Theory of Economic Growth*, 70 Q.J. ECON. 65, 65

overlooked corollary is that restraints on innovation can do far more harm to the economy than restraints on traditional output or pricing.⁶¹

Nevertheless, the concern with economic welfare is much more direct and appears much more frequently in antitrust case law than in IP case law. In antitrust cases, courts often state that promoting economic welfare through competition is the singular goal.⁶² One rarely sees an appellate antitrust opinion that reaches the merits and does not say something about whether the practice under examination undermines competition by raising prices above cost, reducing output, injuring consumers, excluding rivals, and the like.⁶³ In fact, the antitrust injury doctrine requires courts to make these determinations in private actions.⁶⁴ Most IP decisions are less explicit. Rather than looking to first principles to determine the best way to promote public welfare through innovation, courts in IP cases generally focus on interpreting particular statutory provisions.⁶⁵ Although in patent cases the Supreme Court and the U.S. Court of Appeals for the Federal Circuit certainly address fundamental concerns about innovation incentives more frequently than other courts do, they do so mainly in decisions that interpret the relationship between IP laws and the Constitution.⁶⁶ In its recent statutory decision in *Bilski v. Kappos*, discussed below, the Supreme Court missed an important opportunity for reformation in patent law.⁶⁷

One consequence of the antitrust revolution has been the gradual suppression of noneconomic goals. Throughout the history of antitrust laws, a number of goals have been articulated for their existence, including a guarantee of “fairness” or justice in business practices, the protec-

(1956); Robert M. Solow, *Technical Change and the Aggregate Production Function*, 3 REV. ECON. & STAT. 312, 320 (1957); see also Herbert Hovenkamp, *Schumpeterian Competition and Antitrust*, COMPETITION POL'Y INT'L, Autumn 2008, at 273.

⁶¹ See Hovenkamp, *supra* note 60, at 273.

⁶² See, e.g., *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488 (1977); *Brown Shoe Co. v. United States*, 370 U.S. 294, 320 (1962).

⁶³ See, e.g., *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1360 (Fed. Cir. 1999).

⁶⁴ See *Brunswick*, 429 U.S. at 489.

⁶⁵ See, e.g., *Litecubes, LLC v. N. Light Prods., Inc.*, 523 F.3d 1353, 1371 (Fed. Cir. 2008).

⁶⁶ See, e.g., *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 427 (2007) (discussing relevance of Constitution's IP Clause in the context of nonobviousness requirement in patent law); *Eldred v. Ashcroft*, 537 U.S. 186, 221–22 (2003) (examining constitutionality of statutory amendment extending copyright term retroactively and considering the intersection of the First Amendment and the IP Clause); *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 426, 428–29 (1984) (discussing First Amendment and IP Clause); *Graham v. John Deere Co.*, 383 U.S. 1, 5–6, 37 (1966) (addressing nonobviousness and IP Clause).

⁶⁷ 130 S. Ct. 3218, 3228 (2010) (downplaying fundamental concerns about furthering innovation and relying mainly on a parsing of the statute and the precedents); see *infra* notes 353–400 and accompanying text.

tion of small business, or some form of populism.⁶⁸ Today, however, all sides of the antitrust debate seem to agree that the antitrust laws are designed to further some version of economic competition.⁶⁹ To be sure, important differences remain. Some prefer an articulation of economic competition that maximizes total economic welfare, which is the sum of producer and consumer wealth.⁷⁰ This is the view most consistent with that of neoclassical economists generally, whose concern is to maximize the size of the pie without regard to how resources are distributed.⁷¹ A softer variation is “consumer welfare,” which seeks to maximize the size of consumers’ surplus.⁷² Advocates of this view are willing to condemn a practice that harms consumers, even though it benefits producers by a larger amount.⁷³ The classic example is the merger that results in higher consumer prices, but produces an even larger efficiency gain to the merging parties. Assuming no one else is affected, such a merger is “efficient” in the neoclassical sense because total value is increased, and we do not care about which party is richer.⁷⁴ Under the consumer welfare argument, however, antitrust law’s protected class is consumers, and we are willing to pay the price of some inefficiency in order to protect low consumer prices.⁷⁵ This vision of antitrust is written into the U.S. Department of Justice Merger Guidelines that are in force today, which refuse to recognize an “efficiency defense” in merger cases unless the efficiency gains are large enough to guarantee that the merger will not result in higher consumer prices at all.⁷⁶ Beyond the consumer welfare

⁶⁸ See, e.g., Robert H. Lande, *Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged*, 34 HASTINGS L.J. 65, 69–70 (1982) (describing consumer welfare as the most prominent concern of antitrust laws); Louis B. Schwartz, *“Justice” and Other Non-Economic Goals of Antitrust*, 127 U. PA. L. REV. 1076, 1080–81 (1979) (explaining that antitrust is concerned with leveling the playing field between large and small business). For evaluations, see also BORK, *supra* note 20, at 5–8; HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE* 48–77 (3d ed. 2005).

⁶⁹ See HOVENKAMP, *supra* note 68, at 77.

⁷⁰ See Joseph Farrell & Michael L. Katz, *The Economics of Welfare Standards in Antitrust*, COMPETITION POL’Y INT’L, Autumn 2006, at 1.

⁷¹ See SCHUMPETER, *supra* note 60, at 63.

⁷² But see Lande, *supra* note 68, at 84.

⁷³ See Farrell & Katz, *supra* note 70, at 3; John B. Kirkwood & Robert H. Lande, *The Chicago School’s Foundation is Flawed: Antitrust Protects Consumers, Not Efficiency*, in *HOW THE CHICAGO SCHOOL OVERSHOT THE MARK: THE EFFECT OF CONSERVATIVE ECONOMIC ANALYSIS ON U.S. ANTITRUST* 89, 97 (Robert Pitofsky ed., 2008).

⁷⁴ Cf. SCHUMPETER, *supra* note 60, at 63.

⁷⁵ But see Lande, *supra* note 68, at 84.

⁷⁶ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 4.0, at 31–32 (rev. ed. 1997), available at <http://www.usdoj.gov/atr/public/guidelines/hmg.pdf> (noting that in making a determination of whether to challenge a merger, “the

argument, which rarely shows up in litigated cases, the goals of antitrust laws are purely economic.

One problem with admitting alternative goals is that the resulting theory becomes less robust and more susceptible to interest group “capture.” Congress is more likely to pass good legislation when goals are clearly defined and the path to getting there is relatively clear. When goals are divergent, ambiguous, or poorly articulated, Congress may have much more difficulty formulating its own vision for how things should be. At that point, it could become far more willing to listen to special interests.⁷⁷

Another problem with noneconomic approaches generally is that making them operational is virtually impossible. For example, giving serious recognition in antitrust policy to the protection of small business might end up condemning every efficient practice that enables larger firms to undersell smaller ones. If pursued consistently, such a policy could drive us back to the Stone Age, and the theory itself offers very little guidance about where to draw the line.⁷⁸

An important difference between antitrust law on the one hand and the patent and copyright laws on the other is that antitrust laws are passed under the commerce power, whereas the IP provisions are authorized by the Constitution’s Intellectual Property Clause.⁷⁹ That fact would appear to place a giant thumb on the efficiency side of the scale for the IP laws. The Commerce Clause says nothing about encouraging competition or efficiency as an exclusive or even an articulated goal.⁸⁰ It merely gives Congress the power to regulate interstate and foreign commerce.⁸¹ At the time the antitrust laws were passed, protection of economic efficiency was clearly not foremost on Congress’s mind.⁸² More likely, it was the protection of small business.⁸³ Indeed, the Commerce Clause has provided the congressional authorization for many “fairness” provisions, such as the federal civil rights statutes, as well as

Agency considers whether cognizable efficiencies likely would be sufficient to reverse the merger’s potential to harm consumers in the relevant market, e.g., by preventing price increases in that market”).

⁷⁷ See generally Christina Bohannon, *Reclaiming Copyright*, 23 CARDOZO ARTS & ENT. L.J. 567 (2006) (explaining special interest “capture”).

⁷⁸ See 1 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 111, at 100–19 (3d ed. 2006) (discussing alternative goals for antitrust laws and advocating a dominant economic approach).

⁷⁹ See U.S. CONST. art. I, § 8, cls. 3, 8.

⁸⁰ See *id.* art. I, § 8, cl. 3.

⁸¹ See *id.*

⁸² See 1 AREEDA & HOVENKAMP, *supra* note 78, ¶ 111, at 102–03.

⁸³ See *id.*

statutes that cannot be understood as anything other than favored regulatory treatment for specific special interests.⁸⁴ In sharp contrast, the Constitution's IP Clause expressly articulates a goal of incentivizing innovation.⁸⁵ Indeed, the IP Clause states more strongly than any other constitutional provision a goal of furthering economic growth. The purpose of patent and copyright legislation is to "promote the progress of science and useful arts."⁸⁶ To this end, the property rights that these provisions create must be valid for only "limited times."⁸⁷ That is, their purpose is to create incentives to innovate by giving creative people a limited period to capture enough of the benefit to incentivize their work. When that time has expired, the innovation must be given over to the public domain.

The Constitution's purely economic authorization for IP law notwithstanding, IP writers have produced plenty of noneconomic theories that depend on such concepts as natural law, common law property rights theory, Hegelian personality theory, and Lockean labor theory, among others.⁸⁸ In general, noneconomic theories seem to be more attractive in copyright law⁸⁹ than in patent law.⁹⁰ Where copyright law is

⁸⁴ Cf., e.g., 42 U.S.C. § 2000e (2006) (addressing workplace discrimination by employers).

⁸⁵ See U.S. CONST. art. I, § 8, cl. 8.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ See, e.g., JEREMY WALDRON, *THE RIGHT TO PRIVATE PROPERTY* 137–252 (1988) (discussing Lockean rights based on labor and individual contribution); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 330 (1988) (advocating Hegelian theory based on primacy of personal autonomy).

⁸⁹ See, e.g., Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281, 291 (1970) (enumerating and rejecting noneconomic goals for copyright); Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1606 (1993) (advocating a modified natural law approach); Glynn S. Lunney, Jr., *Reexamining Copyright's Incentives-Access Paradigm*, 49 VAND. L. REV. 483, 489 (1996) (defending an allocative efficiency justification); Stewart E. Sterk, *Rhetoric and Reality in Copyright Law*, 94 MICH. L. REV. 1197, 1197–98 (1996) (critiquing incentives justifications); see also LIOR ZEMER, *THE IDEA OF AUTHORSHIP IN COPYRIGHT* 227–28 (2007); John Tehranian, *Et Tu, Fair Use? The Triumph of Natural-Law Copyright*, 38 U.C. DAVIS L. REV. 465, 507–08 (2005); Lior Zemer, *The Making of a New Copyright Lockean*, 29 HARV. J.L. & PUB. POL'Y 891, 946–47 (2006) (defending a Lockean contribution-of-labor theory); Benjamin G. Damstedt, Note, *Limiting Locke: A Natural Law Justification for the Fair Use Doctrine*, 112 YALE L.J. 1179, 1180–81 (2003).

⁹⁰ Cf., e.g., Adam D. Moore, *Toward a Lockean Theory of Intellectual Property*, in *INTELLECTUAL PROPERTY* 81, 82 (Adam D. Moore ed., 1997) (advocating Lockean, labor-driven justification); Edwin C. Hettinger, *Justifying Intellectual Property*, 18 PHIL. & PUB. AFF. 31, 51–52 (1989) (supporting a similar Lockean justification); Tom G. Palmer, *Are Patents and Copyrights Morally Justified? The Philosophy of Property Rights and Ideal Objects*, 13 HARV. J.L. & PUB. POL'Y. 817, 820 (1990) (describing personality theory); D. B. Resnik, *A Pluralistic*

concerned, noneconomic theory seems to have the upper hand in Congress.⁹¹ For instance, Congress continuously and retroactively extends the term of the Copyright Act, with the result that copyright today is of effectively indefinite duration, in two different senses.⁹² First, it appears likely that Congress will keep extending and re-extending the duration of the copyright, ensuring that copyrights currently in existence will never expire. Second, even without further extension, today's copyright term—life of the author plus seventy years—is nearly the economic equivalent of indefinite protection.⁹³ The result seems quite inconsistent with the mandate of the IP Clause and is more akin to a natural rights or property-labor theory that creates permanent private property rights to those who have enriched society with their labor.

B. *The Statutory Structure of Antitrust and IP Laws*

The differing attitudes that antitrust and IP have toward foundational issues are due in part to striking differences between their respective statutes. The antitrust laws generally condemn restraints on competition without providing specific instructions about how to achieve underlying goals.⁹⁴ For example, the Sherman Act, passed in 1890, gives little guidance for identifying anticompetitive practices.⁹⁵ It condemns agreements that “restrain trade” and unilateral conduct that “monopolizes,” but neither of these terms is defined in the statute and the word “competition” never appears at all.⁹⁶ This famously led Justice Holmes to chastise his colleagues for arguing “as if maintaining competition were the expressed object of the Act.”⁹⁷ In fact, the Sherman Act “says nothing about competition.”⁹⁸

Account of Intellectual Property, 46 J. Bus. ETHICS 319, 332 (2003) (advocating a multi-faceted approach).

⁹¹ See *Eldred*, 537 U.S. at 243, 255–56 (Breyer, J., dissenting).

⁹² See *id.*

⁹³ See *id.* (observing that under the Act, the present value of the legislatively created term was 99.8% of the value of infinitely long protection making the effective term “virtually perpetual”); see also Bohannon, *supra* note 77, at 633–34 (recognizing extent of special interest capture in copyright and proposing statutory construction mechanisms for addressing it).

⁹⁴ See, e.g., 15 U.S.C. §§ 1–7, 12–27 (2006); 29 U.S.C. §§ 52–53 (2006).

⁹⁵ See Sherman Antitrust Act, ch. 647, 26 Stat. 209 (1890) (codified as amended at 15 U.S.C. §§ 1–7 (2006)).

⁹⁶ See 15 U.S.C. §§ 1–2.

⁹⁷ See *N. Sec. Co. v. United States*, 193 U.S. 197, 403 (1904) (Holmes, J., dissenting) (rejecting majority's condemnation of a railroad merger).

⁹⁸ *Id.*

Similarly, in the Clayton Act twenty-four years later, Congress said a little more, condemning in very general terms anticompetitive tying, exclusive dealing, price discrimination, and mergers.⁹⁹ But the Clayton Act still provides very little detail, stating only that these practices are unlawful when they “may . . . substantially lessen competition or tend to create a monopoly”¹⁰⁰ Nothing in the antitrust statutes defines competition, says how it may be reduced, or indicates how much reduction is needed to trigger a violation.¹⁰¹ Nor is there any reference to marginal cost pricing or output-maximizing conduct, which have become the predominant baselines for measuring competition.¹⁰² Congress apparently did not want to get involved in articulating a specific definition of competition or in determining which practices might promote or undermine it.¹⁰³ Rather, it enacted a few general principles derived from the common law, and then left it largely to the courts to determine what practices violate them.¹⁰⁴

By contrast, both the Patent Act and the Copyright Act are lengthy codes, describing in detail the kinds of rights they create and the remedies that are available to enforce them.¹⁰⁵ Patents in particular are the subject of heavy regulation, mainly through the U.S. Patent and Trademark Office (the “PTO”).¹⁰⁶

Why did Congress provide so little detail in the antitrust laws, simply handing that job over to the courts, but so much in the IP laws? One explanation is that the members of Congress were not economists or market experts. They did not want to tread in areas where they were poorly equipped and could do much more harm than good.¹⁰⁷ They instead left the federal courts to develop a common law of anticompeti-

⁹⁹ See Clayton Act, Pub. L. No. 63-212, 38 Stat. 730 (1914) (codified as amended at 15 U.S.C. §§ 12–27; 29 U.S.C. §§ 52–53); see also 15 U.S.C. § 13 (addressing price discrimination); *id.* § 14 (addressing tying and exclusive dealing); *id.* § 18 (addressing mergers).

¹⁰⁰ 15 U.S.C. § 14; see also *id.* §§ 13, 18.

¹⁰¹ See *id.* §§ 1–7, 12–27.

¹⁰² See *id.*

¹⁰³ See I AREEDA & HOVENKAMP, *supra* note 78, ¶ 101, at 8–9.

¹⁰⁴ See *id.* (explaining that the Sherman Act is derived from common law of restraints on trade).

¹⁰⁵ See Copyright Act of 1976, Pub. L. No. 94-553, 90 Stat. 2541 (codified as amended at 17 U.S.C. §§ 101–810 (2006)); Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792 (1952) (codified as amended at 35 U.S.C. §§ 1–376 (2006)).

¹⁰⁶ See 35 U.S.C. §§ 1–42.

¹⁰⁷ See HOVENKAMP, *supra* note 2, at 43–44.

tive practices on a case-by-case basis.¹⁰⁸ That has largely been the course of antitrust policy ever since.¹⁰⁹

If that is the story for antitrust, however, it should apply even more forcefully to IP laws. At every point in our intellectual history we have understood and been able to express the technical requirements for traditional price and output competition far more satisfactorily than the optimum requirements for furthering innovation.

Rather, differing levels of detail in the antitrust and IP provisions are most likely the result of the relative power of special interests involved in their drafting. The development of patent and copyright legislation has reflected the wishes of patent and copyright holders much more than the interests of consumers. For instance, in copyright law, Congress has yielded increasingly to interest groups representing mainly copyright holders, particularly since passage of the 1976 Copyright Act, sometimes even permitting these interest groups to take over the process of statutory drafting.¹¹⁰ Likewise, patent law has proved nearly as susceptible to special interest influence.¹¹¹

To be sure, special interests have been present in antitrust as well. With a few exceptions in the regulated industries, however, they have

¹⁰⁸ See *id.* at 1–2.

¹⁰⁹ See I AREEDA & HOVENKAMP, *supra* note 78, ¶ 103, at 62–63.

¹¹⁰ See Bohannon, *supra* note 77, at 633 (explaining the extent of special interest capture in the 1976 Copyright Act); Jessica D. Litman, *Copyright, Compromise, and Legislative History*, 72 CORNELL L. REV. 857, 862–79 (1987) (describing the magnitude of legislative capture in the 1976 Copyright Act); Neil Weinstock Netanel, *Locating Copyright Within the First Amendment Skein*, 54 STAN. L. REV. 1, 67–69 (2001) (lamenting continuous expansion of protection since 1909 resulting from Congress's reliance on interested parties to do statutory drafting); Sterk, *supra* note 89, at 1245 (“In the period leading to the 1976 Copyright Act, Congress made it clear that industry representatives would have to hammer out a bill acceptable to all interest groups.”).

¹¹¹ See Robert P. Merges, *One Hundred Years of Solicitude: Intellectual Property Law, 1900–2000*, 88 CAL. L. REV. 2187, 2215–33 (2000) (addressing Congress's susceptibility to lobbyists in the passage of IP statutes); Carl Shapiro, *Patent System Reform: Economic Analysis and Critique*, 19 BERKELEY TECH. L.J. 1017, 1021–23 (2004) (suggesting that lawyers and inventors are interest groups); see also Jay P. Kesan & Andres A. Gallo, *The Political Economy of the Patent System*, 87 N.C. L. REV. 1341, 1346 (2009) (explaining the influence of special interests on current patent reform efforts). On earlier patent law, see Andrew P. Morriss & Craig Allen Nard, *Institutional Choice & Interest Groups in the Development of American Patent Law: 1790–1870*, at 4 (Ill. Law & Econ. Research Paper Series, Paper No. LE07-007, 2008), available at <http://ssrn.com/abstract=1262970> (addressing the role of interest groups since the early constitutional period) and Craig Allen Nard, *Legal Forms and the Common Law of Patents* 5 (Case Research Paper Series in Legal Studies, Paper No. 09-18, 2009), available at <http://ssrn.com/abstract=1396679> (advocating the common law approach to control for capture). See also DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 95–100 (2009) (tracing the history of failed congressional efforts to reform patent law and capitulation to special interests).

appeared much less in the statutory language, which has generally limited itself to open-ended statements about competition and monopoly.¹¹² But blaming special interest capture for the differences in the antitrust and IP laws is too superficial, for it begs the question of why the IP laws have been so much more susceptible to capture than the antitrust laws.

1. Default Positions

Two explanations seem convincing. The first has to do with default rules. In the United States, the underlying economics of competition policy has always been either classicism or neoclassicism. Under both of these schools of economic thought, the default rule was free and open market competition.¹¹³ Antitrust starts out from the position that markets generally work well and correct themselves, and that government intervention is justified only occasionally.¹¹⁴ When the antitrust laws do intervene, they are mainly corrective, in the sense that they are designed to restore a generally unregulated balance that was previously upset.¹¹⁵ Even antitrust decrees that are intended to stay in place for a long time typically articulate the restoration of competitive conditions and their own expiration as a goal.¹¹⁶

In sharp contrast, both the Patent Act and the Copyright Act begin with the premise—fully justified by the Constitution's IP Clause—that the market operating alone will not produce the optimum amount of innovation.¹¹⁷ Indeed, market failure is the starting point for IP laws, and it is market failure that gives rise to the need for legal entitlements.¹¹⁸ Without such entitlements, other persons could free ride by copying an innovator's invention or copyrighted work.¹¹⁹ The result would be fewer people willing to invest in innovation and creative arts

¹¹² On the role of special interests in the development of antitrust legislation, see I AREEDA & HOVENKAMP, *supra* note 78, ¶ 101, at 10–11; *see also* HOVENKAMP, *supra* note 2, at 20–22; DiLorenzo, *supra* note 42, at 75–77; Herbert Hovenkamp, *Distributive Justice and the Antitrust Laws*, 51 GEO. WASH. L. REV. 1, 31 (1982); George J. Stigler, *The Origin of the Sherman Act*, 14 J. LEGAL STUD. 1, 1–3 (1985).

¹¹³ *See* HOVENKAMP, *supra* note 2, at 32, 35, 38.

¹¹⁴ *See id.*

¹¹⁵ *Cf. id.* at 13–14.

¹¹⁶ *See, e.g.*, *United States v. Microsoft Corp.*, 253 F.3d 34, 103 (D.C. Cir. 2001) (en banc) (per curiam) (explaining that an antitrust remedy decree “must seek to ‘unfetter a market from anticompetitive conduct,’ to ‘terminate the illegal monopoly, deny to the defendant the fruits of its statutory violation, and ensure that there remain no practices likely to result in monopolization in the future’”) (internal citations omitted).

¹¹⁷ *See* U.S. CONST. art. I, § 8, cl. 8.

¹¹⁸ *See* Bohannon, *supra* note 77, at 580.

¹¹⁹ *See id.*

and, therefore, fewer socially beneficial innovations.¹²⁰ Thus, government action rather than inaction is the default rule; the only question is what kind and how much is desirable. That is to say, the IP laws are affirmative regulatory provisions, and regulation naturally invites special interest participation in questions about the nature and scope of government intervention.¹²¹

2. Lack of Theoretical Robustness

A second reason that special interests have had more traction in IP than in antitrust has to do with the relative robustness of the doctrines' competition and innovation models. The history of competition and innovation policy shows more consensus about the nature of traditional competition than about the nature of innovation.¹²² The point can be pushed too far, and there is always plenty of dissent along the margins, but the principle is a strong one nonetheless. Competition requires rivalry among firms in the same market and free entry into the market.¹²³ We can debate endlessly about how many firms it takes to make a market perform competitively, or about adjustments for product differentiation, or high fixed costs or informational imbalances, but the basic outline of the requirements for competition have been well known for more than a century and claim a broad professional and policy consensus.¹²⁴

When we ask instead what government policy will encourage the optimum amount of innovation, the answers become far less determinate and go much more to the extremes. To this day, the economics of innovation has no equivalent to formulations such as the robust, broadly applied neoclassical rule that under perfect competition price equals marginal cost.¹²⁵ To be sure, there are always complicated tradeoffs. For example, in antitrust, we continually compare the dominant firm's need to expand aggressively against the resulting harm to rivals, speculating about the long-run impact on consumers.¹²⁶ But the tradeoffs in IP law

¹²⁰ See *id.*

¹²¹ See *id.* at 633.

¹²² See, e.g., George J. Stigler, *Perfect Competition, Historically Contemplated*, 65 J. POL. ECON. 1, 1 (1957).

¹²³ See *id.* at 2.

¹²⁴ See generally *id.* (tracing development of robust neoclassical model of perfect competition).

¹²⁵ See, e.g., Lunney, *supra* note 89, at 517 n.140 (noting that where markets for innovation are not perfectly competitive, producers are able to charge more than the marginal costs).

¹²⁶ See HOVENKAMP, *supra* note 2, at 13–14.

are much more extreme and difficult to measure. No one knows what the optimal duration of patent or copyright protection should be, or whether there should be different periods of protection in different areas of enterprise. Some even doubt whether we need any protection at all.¹²⁷ Although the patent term (twenty years from filing of the patent application) is much shorter than the copyright term, it may still be far too long in areas such as computer technology, where inventions become obsolete in the marketplace long before their patents expire and long terms contribute to innovation-stifling thickets.¹²⁸ On the other hand, the patent term might be too short in areas such as pharmaceuticals, where shelf lives are very long, copying is relatively easy, and innovation costs are very high in relation to annualized payoffs.¹²⁹ Nor are there robust models for explaining the proper scope of patent claims, the optimal amount of fair use in copyright, and the like.¹³⁰

About the best we can say is that the primary goal of IP policy should be to maximize net gains from innovation after all transaction costs have been paid. As such, it must balance the incentive value of exclusion against that of access to the developed technology and ideas of others.¹³¹ This may or may not require different decisions about pat-

¹²⁷ See, e.g., MICHELE BOLDRIN & DAVID K. LEVINE, AGAINST INTELLECTUAL MONOPOLY 137, 243 (2008) (arguing for abolition of IP laws and claiming that first mover advantages are sufficient to facilitate most worthwhile innovation); Breyer, *supra* note 89, at 291 (finding very weak case for copyright).

¹²⁸ See SUZANNE SCOTCHMER, INNOVATION AND INCENTIVES 117 (2006) (explaining that single term in all markets rewards some industries too much while rewarding others too little).

¹²⁹ See *id.*; Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155, 1205–06 (2002) (making a similar argument).

¹³⁰ See Andrew F. Christie & Fiona Rotstein, *Duration of Patent Protection: Does One Size Fit All?*, 3 J. INTELL. PROP. L. & PRAC. 402, 404–05 (2008); Richard Gilbert & Carl Shapiro, *Optimal Patent Length and Breadth*, 21 RAND J. ECON. 106, 111–12 (1990). See generally WILLIAM D. NORDHAUS, INVENTION, GROWTH, AND WELFARE: A THEORETICAL TREATMENT OF TECHNOLOGICAL CHANGE (1969) (examining diverse factors in various industries that affect value of patent protection and producing formulas for optimal patent duration); F. M. Scherer, *Nordhaus' Theory of Optimal Patent Life: A Geometric Reinterpretation*, 62 AM. ECON. REV. 422 (1972) (interpreting Nordhaus). On copyright, see Yuehong Yuan & Stephen F. Roehrig, *On the Duration of Copyright Protection for Digital Information*, in THE INTERNET AND TELECOMMUNICATIONS POLICY 247, 267–69 (Gerald W. Brock & Gregory L. Rosston eds., 1996) (examining the possibility of differential duration for digital and more traditional works).

¹³¹ See WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 11 (2003).

ent term and scope in different industries.¹³² Today the consensus is fairly broad that our laws provide too much protection.¹³³

In general, the influence of special interests depends on the relative robustness of the model under which democratic policymakers work.¹³⁴ When a model is robust and obtains broad consensus, the influence of special interests tends to be minimized.¹³⁵ For example, the pricing of both groceries and retail electricity are left to the states, which means that numerous jurisdictions could intervene in either or both markets. Yet grocery prices are set by the market virtually everywhere, whereas retail electricity prices are regulated by government agencies virtually everywhere.¹³⁶ Surely this is not because the electric industry has better lobbyists than the grocery trade or its special interests are better organized in every state. The explanation is a much more obvious one. Most markets have many grocery stores. For the most part, they sell commodities, and entry is easy.¹³⁷ Accordingly, grocery retailing fits the economic model for competition rather robustly. At the other end of the spectrum, retail electricity fits the economic model for a natural monopoly. We know that electricity is most efficiently delivered to houses by a single firm, which requires price regulation.¹³⁸ Thus, although the grocery and electricity markets are very different, there is broad agreement on the appropriate economic model and policy for each market. That consensus, more than special interest capture, explains why there is regulation in one market and not in the other.

¹³² See BURK & LEMLEY, *supra* note 111, at 95; Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1615 (2003).

¹³³ See MICHAEL HELLER, *THE GRIDLOCK ECONOMY: HOW TOO MUCH OWNERSHIP WRECKS MARKETS, STOPS INNOVATION, AND COSTS LIVES 2* (2008); LAWRENCE LESSIG, *FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CENTRAL CREATIVITY 292* (2004). Even relative conservatives such as Landes and Posner agree that our laws provide too much protection. See LANDES & POSNER, *supra* note 131, at 36.

¹³⁴ See Bohannon, *supra* note 77, at 572.

¹³⁵ *Cf. id.*

¹³⁶ Compare *FTC v. Whole Foods Mkt., Inc.*, 548 F.3d 1028, 1032, 1039 (D.C. Cir. 2008) (examining the “premium, natural, or organic supermarkets” industry and distinguishing such supermarkets from ordinary grocery stores), with *Otter Tail Power Co. v. United States*, 410 U.S. 366, 369 (1973) (describing franchises granted to a power company by municipalities).

¹³⁷ See, e.g., *Whole Foods*, 548 F.3d at 1032, 1033 (reversing a district court finding that a premium organic supermarket competed within the broader market of grocery stores).

¹³⁸ See, e.g., *Otter Tail*, 410 U.S. at 369 (“Each town in [electric company’s] service area generally can accommodate only one distribution system, making each town a natural monopoly market . . .”).

By contrast, when an area of enterprise is not well understood, lawmakers are more vulnerable to special interests.¹³⁹ That is clearly the case in patent and copyright law.¹⁴⁰ Either there is no factually “right answer” to problematic questions about the duration and scope of IP rights or, more likely, the answers are very complex and may vary considerably from one market to the next. Indeed, there is probably more variation in the right approach than could ever be accounted for by a single model. Lacking any consensus resembling the neoclassical vision of price competition, Congress simply listens to those who speak with the most persuasive voices.¹⁴¹ The classic public choice paradigm clearly favors IP rights holders: they are fewer in number, have individually greater stakes, and typically have interests that are much more homogenous.¹⁴² On the other side, the users of IP rights tend to be more numerous and heterogeneous.¹⁴³ Because of this disparity, IP rights holders are better organized than IP users and, therefore, are able to communicate their wishes to Congress more effectively.¹⁴⁴

As a result of special interest capture, the IP laws as enacted have become much more disconnected from their purpose, which is optimum promotion of innovation.¹⁴⁵ At the same time, some recent judicial decisions and pending patent reform legislation show that patent reform has seriously begun.¹⁴⁶ The outlook for copyright law is bleaker. Despite voluminous scholarly commentary and powerful arguments for reform, there is little evidence today that copyright law is ready to take that journey.¹⁴⁷

III. THE BEGINNINGS OF PATENT REFORM

As several commentators have ably observed, the patent system is currently so beset with problems that it arguably does more harm to

¹³⁹ See Bohannon, *supra* note 77, at 572 (explaining generally how lawmakers are influenced).

¹⁴⁰ See *id.* at 568.

¹⁴¹ See *id.* at 568, 572.

¹⁴² See *id.* at 581–82 (showing how copyright law bears the hallmark characteristics of special interest legislation).

¹⁴³ See *id.*

¹⁴⁴ See DANIEL A. FARBER & PHILIP P. FRICKEY, *LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION* 20 (1991); DENNIS C. MUELLER, *PUBLIC CHOICE III* 473 (2003); Herbert Hovenkamp, *Legislation, Well-Being, and Public Choice*, 57 U. CHI. L. REV. 63, 88 (1990).

¹⁴⁵ See Bohannon, *supra* note 77, at 582.

¹⁴⁶ See *infra* notes 148–440 and accompanying text.

¹⁴⁷ See *infra* notes 441–496 and accompanying text.

innovation than good.¹⁴⁸ Dan Burk and Mark Lemley suggest that the consensus for stronger patent protection, which led to the creation of the Federal Circuit in 1982, with its broad appellate jurisdiction over cases arising under the Patent Act, has now “broken down.”¹⁴⁹ Today we have gone to the opposite extreme. First, we have created a system that issues too many patents, many of which are only trivial improvements over prior art. Innovation would be better served if these “inventions” were left in the public domain. Second, patents have unclear boundaries, and the patent notice system does not enable innovators to know with confidence when they are treading on another’s property rights.¹⁵⁰ Third, the patent system lacks clear rules about priority of rights.¹⁵¹ As a result, developers often discover that they are infringers only after they have made significant, irreversible investments.¹⁵² Paying to get out of such a predicament often costs far more than avoiding it in the first place. In many areas of enterprise, then, the private costs of the patent system outweigh any private gains, and market participants would be better off if the system did not exist.¹⁵³ Fourth, the patent system, like the copyright system, has lacked a serious harm requirement as an element of infringement.¹⁵⁴ As a result, the rights it creates are often not related in any coherent way to the underlying goal of the system, which is to encourage the optimal amount of innovation.¹⁵⁵ An infringement that does not cause foreseeable harm to the patentee cannot be said to reduce the incentive to invent.¹⁵⁶

¹⁴⁸ See JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 46–47 (2008); BURK & LEMLEY, *supra* note 111, at 3.

¹⁴⁹ BURK & LEMLEY, *supra* note 111, at 3. On the creation of the Federal Circuit and the controversy surrounding it, see Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 3–5 (1989) and Paul M. Janicke, *To Be or Not to Be: The Long Gestation of the U.S. Court of Appeals for the Federal Circuit (1887–1992)*, 69 ANTITRUST L.J. 645, 645–47 (2002). On the court’s impact in strengthening patent protection, see Matthew D. Henry & John L. Turner, *The Court of Appeals for the Federal Circuit’s Impact on Patent Litigation*, 35 J. LEGAL STUD. 85, 114–15 (2006).

¹⁵⁰ See BESSEN & MEURER, *supra* note 148, at 47.

¹⁵¹ *Cf. id.* at 200.

¹⁵² *See id.*

¹⁵³ *See id.* at 46–47; see also Bronwyn H. Hall & Dietmar Harhoff, *Post-Grant Reviews in the U.S. Patent System: Design Choices and Expected Impact*, 19 BERKELEY TECH. L.J. 989, 992–94 (2004) (examining the economic cost of excessive, weak patents).

¹⁵⁴ See Bohannon, *supra* note 4, at 1031.

¹⁵⁵ *See id.*

¹⁵⁶ *See id.*

A. *The Patent-Antitrust Conflict*

These problems in the patent system can have severely detrimental effects on innovation and competition. Consider how patent law's own internal problems interfere with antitrust law's purpose of promoting economic growth through innovation and competition.¹⁵⁷ Antitrust law today enjoys the comparative advantage of well-behaved statutory language and doctrine.¹⁵⁸ Although significant conflicts exist between antitrust and patent policy, most of these result from defects in the patent law system rather than in antitrust. We consider three examples: improperly brought IP infringement suits;¹⁵⁹ extreme judicial deference to patent settlements;¹⁶⁰ and patent continuations and holdup problems.¹⁶¹

1. Post-Issuance Conduct: Improper Infringement Actions

The antitrust law of unreasonably exclusionary infringement actions is relatively clear. If an IP holder either has or threatens to have substantial market power and brings an objectively "baseless" infringement suit, then the lawsuit is deemed anticompetitive and can violate section 2 of the Sherman Act.¹⁶² Although the cases can arise under both patent and copyright, most are patent infringement suits.¹⁶³ The cases typically arise when an infringement defendant counterclaims that the patentee brought suit on an invalid or unenforceable patent, or under circumstances where no reasonable person would have anticipated success if the true facts were known.¹⁶⁴ For example, the patent might be unenforceable because it was obtained by fraud or inequitable conduct before the PTO, or perhaps the patentee should have known that the defendant's technology did not infringe.¹⁶⁵

¹⁵⁷ See BESSEN & MEURER, *supra* note 148, at 200.

¹⁵⁸ See HOVENKAMP, *supra* note 2, at 1.

¹⁵⁹ See *infra* notes 162–201.

¹⁶⁰ See *infra* notes 202–206.

¹⁶¹ See *infra* notes 207–260.

¹⁶² See 3 AREEDA & HOVENKAMP, *supra* note 48, ¶ 706, at 161.

¹⁶³ See generally *Prof'l Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc.*, 508 U.S. 49 (1993) (leading copyright case); *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172 (1965) (leading patent case); 3 AREEDA & HOVENKAMP, *supra* note 48, ¶ 705, at 156–57.

¹⁶⁴ See, e.g., *Walker Process*, 382 U.S. at 174.

¹⁶⁵ See, e.g., *Monsanto Co. v. Bayer Bioscience N.V.*, 514 F.3d 1229, 1243 (Fed. Cir. 2008). At this writing the Federal Circuit may be on the verge of rewriting the rules for inequitable conduct in procurement. See *Therasense, Inc. v. Becton, Dickinson and Co.* (*Therasense I*), 593 F.3d 1289, 1311 (Fed. Cir. 2010) (finding inequitable conduct for failure to disclose statements made to a European Patent Office about prior art), *vacated and rehearing en banc granted*, (*Therasense II*), Nos. 2008-1511, 2008-1512, 2008-1513, 2008-1514,

Although the case for competitive harm from improper infringement actions is strong, uncertainty and confusion in patent law often undermine these antitrust claims. All too often no one knows what are the boundaries of a patent. As a result, it is often impossible to say that no reasonable person would have brought a particular infringement suit to enforce a patent.¹⁶⁶

Further, the problem is exacerbated by the fact that the Federal Circuit itself is willing to overlook fairly outrageous patent assertions. In its 2007 decision, *Dippin' Dots, Inc. v. Mosey*, for example, the court refused to impose antitrust liability on a patentee who obtained a patent by deceiving the PTO.¹⁶⁷ The court acknowledged that the patent applicant knowingly lied in a sworn statement that there had been no sales more than one year prior to the application.¹⁶⁸ In fact, some 800 such sales had occurred.¹⁶⁹ That such sales would have rendered the product unpatentable was indisputable because of the statutory on-sale bar.¹⁷⁰ The Federal Circuit held that although the omission rendered the patent unenforceable, it was insufficient to create antitrust liability.¹⁷¹

There are two ways in which the court's decision makes it easier for patent holders to restrain innovation and competition. First, the court required at least two independent pieces of information showing intent

2008-1595, 2010 WL 1655391 (Fed. Cir. Apr. 26, 2010). In granting the rehearing en banc, the court asked the parties to brief the question of whether existing standards balancing materiality and intent should be modified or replaced. *Therasense II*, 2010 WL 1655391, at *1.

¹⁶⁶ On the unacceptably high rate of reversals and Federal Circuit dissents in claim construction decisions, see Joseph Scott Miller, *Enhancing Patent Disclosure for Faithful Claim Construction*, 9 LEWIS & CLARK L. REV. 177, 182 (2005) and John R. Thomas, *Claim Re-construction: The Doctrine of Equivalents in the Post-Markman Era*, 9 LEWIS & CLARK L. REV. 153, 163 (2005).

¹⁶⁷ 476 F.3d 1337, 1347 (Fed. Cir. 2007).

¹⁶⁸ *See id.* at 1345-46, 1349.

¹⁶⁹ *See id.* at 1347.

¹⁷⁰ *See* 35 U.S.C. § 102(b) (2006) (barring patentability of product placed on the market more than one year prior to filing of the patent application).

¹⁷¹ *See Dippin' Dots*, 476 F.3d at 1346 (citing *Paragon Podiatry Lab, Inc. v. KLM Lab, Inc.*, 984 F.2d 1182, 1189 (Fed. Cir. 2003)). The court explained that:

Absent explanation, the evidence of a knowing failure to disclose sales that bear all the earmarks of commercialization reasonably supports an inference that the inventor's attorney intended to mislead the PTO. The concealment of sales information can be particularly egregious because, unlike the applicant's failure to disclose, for example, a material patent reference, the examiner has no way of securing the information on his own.

Id.

to deceive the PTO.¹⁷² It found only one, the omitted sales themselves.¹⁷³ The offending sales occurred in 1987, but the subsequent infringement suit was filed in 2000, some thirteen years later.¹⁷⁴ Because proving fraud would require investigation into facts that occurred thirteen years before the suit was filed, such a requirement hinders parties seeking to prove anticompetitive uses in patent infringement suits.¹⁷⁵

Second, the court's decision failed to consider the patent holder's anticompetitive conduct in filing the infringement suit itself.¹⁷⁶ The court reasoned that because antitrust penalties are far more severe than invalidating the patent, a single knowing misstatement was not sufficiently bad conduct to support an antitrust counterclaim.¹⁷⁷ But the Federal Circuit overlooked the fact that there *was* in fact much more. Not only had the patentee lied to the PTO, but more than a decade later, after the PTO had closed its book on this patent and prior sales had become very difficult to trace, the patentee filed a patent infringement claim.¹⁷⁸ Thus, the Federal Circuit had the two independent pieces of evidence of fraudulent conduct that it required; it simply neglected to look at the post-issuance period when the infringement action was filed.¹⁷⁹ That conduct is especially important because the PTO no longer effectively regulates patentee conduct once a patent is issued. As such, the conduct is not subject to regulatory supervision and must be considered fair game under the antitrust laws.¹⁸⁰

When thinking about Patent Act and antitrust remedies for improper infringement activities, one must distinguish pre-issuance and post-issuance conduct.¹⁸¹ The patent application process is heavily regulated, but after a patent is issued, PTO regulation is minimal.¹⁸² Fun-

¹⁷² See *id.* at 1345–46.

¹⁷³ See *id.* at 1347.

¹⁷⁴ See *In re Dippin' Dots Patent Litig.*, 249 F. Supp. 2d 1346, 1353–54 (N.D. Ga. 2003) (explaining that offending sales occurred in 1987); *cf.* *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 1062, 1072 (Fed. Cir. 1998) (determining that antitrust liability may be predicated on evidence that prior art was fraudulently kept from the PTO, where inventors included in a patent application a reference to a book published earlier that was subsequently found to be prior art precluding patentability, but the agent making the patent application deleted the reference to the book).

¹⁷⁵ See *Dippin' Dots*, 476 F.3d at 1348.

¹⁷⁶ See *id.* at 1349.

¹⁷⁷ See *id.* at 1348–49.

¹⁷⁸ See *id.* at 1340, 1341.

¹⁷⁹ See *id.* at 1344–45.

¹⁸⁰ See Herbert Hovenkamp, *Patents, Property, and Competition Policy*, 34 J. CORP. L. 1243, 1243 (2009) (addressing the patent system as a regulatory regime).

¹⁸¹ See *id.* at 1243–44.

¹⁸² *Id.*

damentally, the *Walker Process* doctrine—from the Supreme Court’s 1965 decision in *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*—is about *post*-issuance conduct.¹⁸³ *Walker Process* held that a firm might violate the antitrust laws by filing an infringement suit based on an invalid patent if the patent had been obtained through false representations on the patent application. Thus, the antitrust violation concerns post-issuance conduct, such as the filing of an infringement action, the threat to file such an action, or threats to customers or other business relations.¹⁸⁴ All of these can occur many years after a patent has been issued. Antitrust law should stand aside when a government agency is an active regulator, but not when economic decision making is left entirely in private hands. As a result, antitrust rightfully has a place when the anticompetitive conduct occurs subsequent to patent issuance.¹⁸⁵

The remedy of unenforceability, which the patent system itself administers against falsified applications, is designed to protect the integrity of the patent issuance process. Patents have a certain exclusionary force even if they are never enforced.¹⁸⁶ For example, a firm contemplating product development in ice cream might do a patent search, discover the Dippin’ Dots patent, and then abandon its development efforts.¹⁸⁷ There may be no correspondence whatsoever with the patentee. The result is reduced competition in a market that would have been more competitive had the invalidity of the patent been known.¹⁸⁸ The antitrust laws are most likely to be invoked when another person has independently developed the technology or rightfully believed it to be in the public domain. Now the patentee can brandish the patent as a market exclusion device.¹⁸⁹ This is likely to happen during the post-issuance period, when there is no oversight from the PTO.¹⁹⁰

The *Dippin’ Dots* case also gives us a perspective on the kinds of improper infringement actions that are most problematic.¹⁹¹ A patent applicant’s sales of the patented product prior to the application are

¹⁸³ See 382 U.S. at 173–74.

¹⁸⁴ See *id.*

¹⁸⁵ Cf. Hovenkamp, *supra* note 180, at 1243–44.

¹⁸⁶ See BESSEN & MEURER, *supra* note 148, at 33.

¹⁸⁷ A wide variety of exclusionary conduct falls short of actual infringement suits or threats to sue. See generally Christopher R. Leslie, *Patents of Damocles*, 83 IND. L.J. 133 (2008).

¹⁸⁸ See *id.* at 135–36.

¹⁸⁹ See *id.*

¹⁹⁰ See Hovenkamp, *supra* note 180, at 1243–44.

¹⁹¹ See 476 F.3d at 1340–41.

frequently undocumented and difficult to uncover.¹⁹² It is one thing to file a patent infringement suit on a patent that is reasonably subject to dispute on the basis of public information—for example, where there is a legal dispute about patentable subject matter or claim construction.¹⁹³ Both the patentee and the infringer have the same access to relevant information, so this amounts to a “title dispute” over the meaning of the public record.

Consider the U.S. Supreme Court’s 1993 decision in *Professional Real Estate Investors, Inc. v. Columbia Pictures Industries, Inc.*, which involved a disputed question of law.¹⁹⁴ Columbia Pictures owned the copyrights on certain recorded movies that Professional Real Estate (“PRE”), a hotel operator, permitted guests to play in their rooms for a fee.¹⁹⁵ The lower courts were divided on the question of whether paid viewing of a movie in a hotel room constituted a “public” performance, which was a right retained by Columbia Pictures.¹⁹⁶ Thus, under the broader version of the law, Columbia Pictures had a right to enjoin or collect royalties for paid viewing of its recorded films.¹⁹⁷ The Supreme Court held that an infringement action was not improper simply because the lower courts disagreed with each other about the copyright holder’s rights and the plaintiff chose one interpretation over the other.¹⁹⁸

Fraudulent failure to disclose prior sales does not ordinarily appear in the record, however, and sales made by the patentee itself thirteen years earlier are unlikely to show up at all.¹⁹⁹ The reason enforcement actions such as the one in *Dippin’ Dots* are so dangerous is that prior sales are likely to be known only by the patent applicant and discovered by the infringement defendant only as a matter of luck. Continuing the analogy to real property, lying about prior sales is more like

¹⁹² *See id.*

¹⁹³ *See Kinetic Concepts, Inc. v. Blue Sky Med. Group, Inc.*, 554 F.3d 1010, 1015–16 (Fed. Cir. 2009) (examining a disputed claim construction over the word “wound” and other terms in a method patent for wound treatment); *In re Bilski*, 545 F.3d 943, 977–78 (Fed. Cir. 2008) (en banc), *aff’d sub nom*, *Bilski v. Kappos*, 130 S. Ct. 3218 (2010) (addressing the scope of patentable subject matter).

¹⁹⁴ 508 U.S. at 52–53.

¹⁹⁵ *See id.* at 52.

¹⁹⁶ *See id.* at 64.

¹⁹⁷ *See id.*

¹⁹⁸ *See id.* at 65–66.

¹⁹⁹ *See In re Dippin’ Dots*, 249 F. Supp. 2d at 1353.

forgery of a signature on a deed. Such a deed fails to pass any title, but the forgery itself cannot be detected by a title search.²⁰⁰

Antitrust challenges to patent infringement suits, to the threat of such suits, or to related exclusionary conduct should be analyzed as of the time the suit is brought or the threat is made. At that point, the question is whether a reasonable patent owner aware of the entire record should have known that the patent was unenforceable under the circumstances. If the answer to that question is yes, then the “conduct” element of a monopolization offense has been established. Sometimes making this assessment will involve some analysis of how serious any misconduct before the PTO was and whether the misconduct was “material,”²⁰¹ in the sense that the patent would not have issued (or would have been narrower) but for the misconduct. In all cases, however, the question is what a reasonable patent owner would have believed.

2. Judicial Deference to IP Settlements

Another area in which patent law enables patentees to restrain competition and innovation involves judicial deference to patent and other IP settlements. Courts have been extremely deferential to settling parties, even to the point of tolerating naked antitrust restraints.²⁰² For example, in the so-called “exit payment” cases in the pharmaceutical market, courts have upheld a drug patent holder’s payments to another pharmaceutical company for that company’s agreement not to make and market a generic version of the drug.²⁰³

²⁰⁰ See, e.g., *Erier v. Creative Fin. & Inv., LLC*, 203 P.3d 744, 750 (Mont. 2009) (“A forged deed is absolutely void and wholly ineffectual to pass title, even to a subsequent innocent purchaser.”).

²⁰¹ See *Dippin’ Dots*, 476 F.3d at 1345.

²⁰² See *BESSEN & MEURER*, *supra* note 148, at 126.

²⁰³ The U.S. Court of Appeals for the Federal Circuit recently weighed in with its view of the legality of reverse payment settlements in Hatch–Waxman Act patent litigation. See *In re Ciprofloxacin Hydrochloride Antitrust Litig.*, 544 F.3d 1323, 1334–35 (Fed. Cir. 2008) (rejecting Solicitor General’s view that the court should examine the validity and enforceability of the patent under the circumstances), *cert. denied*, 129 S. Ct. 2828 (2009). The U.S. Court of Appeals for the Sixth Circuit had previously found such payments to be per se illegal as analogous to market allocation agreements among competitors. See *In re Cardizem Antitrust Litig.*, 332 F.3d 896, 915 (6th Cir. 2003). By contrast, the U.S. Court of Appeals for the Eleventh Circuit rejected per se treatment if such settlements did not restrict competition beyond the exclusionary scope of the patent themselves. See *Valley Drug Co. v. Geneva Pharms.*, 344 F.3d 1294, 1304 (11th Cir. 2003); see also *In re Tamoxifen Citrate Antitrust Litig.*, 466 F.3d 187, 190 (2d Cir. 2006) (finding no violation); *Schering-Plough Corp. v. FTC*, 402 F.3d 1056, 1076 (11th Cir. 2005) (finding no violation); MICHAEL A. CARRIER, *INNOVATION FOR THE 21ST CENTURY: HARNESSING THE POWER OF INTELLECTUAL PROPERTY AND ANTITRUST LAW* 293 (2009) (advocating presumptive illegality); C. Scott Hemp-

This deferential attitude toward anticompetitive patent settlements may reflect judges' eagerness to encourage parties to resolve their disputes privately.²⁰⁴ But clearly that is not a complete answer. The real source of the problem is the complete indeterminacy that the patent system creates with respect to ownership and priority of patent rights. To illustrate, consider how antitrust law would apply to "exit payments" involving real property, where ownership rights are much clearer. Suppose Alpha owns an urban parcel of land with a working gasoline station. When Beta begins constructing a competing gasoline station across the street, Alpha files a trespass action against Beta even though Alpha has no title or possessory claim to the land on which Beta is building. The parties then "settle" the dispute by agreeing that Alpha will make "exit payments" to Beta, giving it \$1000 per month in exchange for abandonment of its construction plans.

No court would think twice about investigating the land title records, determining that there was no property dispute here, and concluding that the whole charade was a cover for unlawful collusion. The difference in the pharmaceutical situation has nothing to do with any kind of deference to settlements generally. Rather, the reason is that the state of the "title records" in patent law is so abysmal that courts are inclined to defer to the parties' judgments about them. If patent boundaries were clearer, we would almost certainly have many fewer anticompetitive settlement agreements.

As James Bessen and Michael Meurer observe, patent law is fraught with problems of fuzzy boundaries, overly broad claims, retroactive assertions of interest, and serious questions about validity that make the patent system a completely unreliable guide to the proper state of patent rights.²⁰⁵ These problems and uncertainties, rather than any judicial preference for settlements, drive the extreme deference toward anticompetitive patent settlements.²⁰⁶

hill, *An Aggregate Approach to Antitrust: Using New Data and Rulemaking to Preserve Drug Competition*, 109 COLUM. L. REV. 629, 688 (2009); Herbert Hovenkamp et al., *Anticompetitive Settlements of Intellectual Property Disputes*, 87 MINN. L. REV. 1719, 1720 (2003) (advocating presumptive illegality for large payment in excess of reasonably anticipated litigation costs). At this writing, a bill pending before Congress would abolish all such payments. See Protecting Consumer Access to Generic Drugs Act of 2009, H.R. 1706, 111th Cong.

²⁰⁴ See 12 HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 2046, at 262 (2d ed. 1999).

²⁰⁵ See BESSEN & MEURER, *supra* note 148, at 46–47.

²⁰⁶ See *id.* at 126.

3. Priority, Holdup, and Disclosure Obligations

Finally, there are the problems of late patent claims and holdups, some of which the PTO has attempted to address, although thus far without much success.²⁰⁷ Much of the problem of priority and holdup in the patent system results from “late claiming,” or patent claims that are submitted to the PTO and approved subsequent to the filing of the original application.²⁰⁸ By statute, patent protection begins as of the date the application is filed, so late claiming can create property rights that are “retroactive,” in the sense that the public record first provides evidence of the right much later than the right is acknowledged for infringement purposes.²⁰⁹ Late claiming can lead to assertions of patent rights over third parties whose technological development actually preceded approval and publication of the claim that they have allegedly infringed. These parties become infringers even though they could not have had notice of the patent claims at the time of their own investment. As many as seventy percent of issued patents now claim priority to at least one previously filed patent application by virtue of backdated enforceability to the time of filing.²¹⁰ The impact of this practice can be catastrophic. Prospectively, a licensee will be willing to pay the incremental value of an invention in light of competitive alternatives, and that is the invention’s efficient value.²¹¹ Retrospectively, however, if the potential licensee has already built a factory or made another substantial commitment to the patentee’s technology without knowledge of the prior claim, the patentee can appropriate the additional value up to the cost of switching to a different technology.²¹² This gives late claims a strategic value at the expense of innovation.²¹³

The “claims” in a patent are individual statements that set out the boundaries for determining what constitutes infringement.²¹⁴ Using the real property deed as an analogy, the written description in a patent is

²⁰⁷ See Tun-Jen Chiang, *Fixing Patent Boundaries*, 108 MICH. L. REV. 523, 530 (2010).

²⁰⁸ See *id.*; see also Herbert Hovenkamp, *Notice and Patent Remedies*, 88 TEX. L. REV. (forthcoming 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1596789 (arguing for a stronger relationship between the amount and kind of notice a patentee gives and his entitlement to remedies).

²⁰⁹ See 35 U.S.C. § 154 (2006).

²¹⁰ See *Priority Claims in Issued Patents*, PATENTLYO (July 26, 2009, 18:26 EST), <http://www.patentlyo.com/patent/2009/07/priority-claims-in-issued-patents.html>.

²¹¹ Cf. Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1995–96 (2007).

²¹² See *id.*

²¹³ See *id.*

²¹⁴ See 35 U.S.C. § 112 (2006).

like the general description given in the granting clause of the deed, such as “Blackacre,” or “the farm at Route 2, Box 192, Celery Center Road.” The written description was historically designed to demonstrate that the patentee was in “possession” of the invention, in the sense that he had all technical knowledge necessary to produce it and make it operational.²¹⁵ Just like the real property deed, however, the patent must also include a precise statement that will enable a skilled professional to know with some accuracy where the boundaries are located. In a deed this could be a “metes and bounds” description by reference to compass courses and distances, or it could be a reference to a survey map and to surveyors’ pins that are driven into the ground along the property lines.²¹⁶

The written description in a patent typically describes the history of the art prior to this patent, the problems that the patent addresses, and the overall nature of the invention in sufficient detail that a person skilled in the art could replicate it without too much experimentation.²¹⁷ The Federal Circuit recently reiterated that a separate written description is an essential part of a patent application.²¹⁸ In describing the entire invention, the written description will very likely refer to things that are already in the prior art, and thus not covered by this particular patent, as well as the new inventive steps that the invention includes, often without distinguishing the two. The “enablement” requirement virtually guarantees this mixture. For example, if a device contains ten components, a sufficiently enabled written description would ordinarily have to describe all ten of them, with instructions as to how they work together. It may be the case, however, that only three of the components are novel, and the inventor is claiming only these as the

²¹⁵ See Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 175 (2006) (discussing diverse meanings of requirement that patent applicant be in “possession” of the invention).

²¹⁶ See *id.*

²¹⁷ See 35 U.S.C. § 112. For a patent to be valid, the law requires the following:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same

Id.

²¹⁸ *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1366 (Fed. Cir. 2010) (concluding that the written description requirement is not satisfied by showing enablement); see Michael Risch, *A Brief Defense of the Written Description Requirement*, 119 YALE L.J. ONLINE 127 (2010), <http://yalelawjournal.org/2010/03/09/risch.html> (showing independent relevance of written description requirement beyond enablement).

invention.²¹⁹ The claims would then identify these three components as the things that this particular patentee is claiming as novel, and for which an exclusive right is sought.²²⁰ As the Supreme Court has observed, the purpose of claims is to “inform the public . . . of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not.”²²¹

To illustrate from a well-known patent validity decision, a patent on a mechanical device for permitting a sectional sofa to have parallel, independent reclining seats contained a written description of “a sectional sofa arrangement that includes a double reclining seat sofa section,” and a console between the seats that “includes a table top.”²²² The inventor was not claiming to have invented a “sectional sofa,” however, nor a sofa with “double reclining seats,” nor the idea of a console that can be used as a table top.²²³ All of these things had been invented before by others. Rather, the invention was limited to the mechanical apparatus that enabled the individual seats on the sofa to be reclined by the use of push buttons mounted on the console.²²⁴ But someone reading the written description alone would not be able to tell which parts of the described invention were new, and thus patentable, and which parts were already a part of the prior art. This particular patent then went on to enumerate twenty-one separate claims, or what were intended to be statements of those elements of the described sofa that the patentee was claiming as his invention.²²⁵

²¹⁹ Cf. *Evans v. Eaton*, 20 U.S. (7 Wheat.) 356, 434 (1822) (explaining that the patent’s written description “mix[ed] up the new and old” such that one could not tell which part of the described machine was new and which was not, and asking, “How can that be a sufficient specification of an improvement in a machine, which does not distinguish what the improvement is, nor state in what it consists, nor how far the invention extends?”). On the importance of this decision in creating the necessity of independent claims, see Chiang, *supra* note 207, at 540–41, and also Christopher A. Cotropia, *Patent Claim Interpretation Methodologies and Their Claim Scope Paradigms*, 47 WM. & MARY L. REV. 49, 65 (2005) (explaining the importance of patents in determining what an invention actually is).

²²⁰ On the centrality of claims to the determination of patent scope, see John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 WASH. U. J.L. & POL’Y 109, 109 (2000) and Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101, 101 (2005).

²²¹ *Permutit Co. v. Graver Corp.*, 284 U.S. 52, 60 (1931); see also *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373–75 (1996) (describing centrality of patent claims).

²²² U.S. Patent No. 5,064,244 (filed Jan. 3, 1991) (issued Nov. 12, 1991).

²²³ See *id.*

²²⁴ See *id.*

²²⁵ See *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1475, 1479–80 (Fed. Cir. 1998) (concluding that many of the claims were not supported by the written description portion of the specification); see also *White v. Dunbar*, 119 U.S. 47, 52 (1886) (stating that

The fact that the written description in a patent does not itself provide adequate notice of patent boundaries is further evidenced by the treatment of “omnibus” claims. Having written a sufficient description, the applicant might be tempted to write a claim such as: “I claim whatever is enabled and described by the specification [including the written description], and that is not made obvious by the prior art.”²²⁶ But such claims are largely useless because they simply put to the searcher the duty to conduct her own search through the prior art to determine what is obvious and what is not.²²⁷ They also create the problem of too much information because properly enabled written descriptions are often very detailed, providing a flood of technical detail, only a small portion of which constitutes the invention.²²⁸

Deeds and patents differ from one another in several respects. Deeds and their descriptions are ordinarily drafted by lawyers, perhaps with the aid of a surveyor’s description. Their language is not approved by any regulatory agency, and the clerk in the recorder’s office rarely does more than ascertain that the deed is not missing obvious elements, such as the grantor’s signature.²²⁹ She certainly does not review the document to make sure that the description is accurate or, in most cases, even sensible.²³⁰ Further, she does not do a title search to determine that the description is consistent with the grantor’s record title, which is the recording system’s equivalent of “prior art.” Deed descriptions can be litigated, however, and generally a deed description that does not describe the conveyed land with sufficient accuracy such that a reasonably knowledgeable person can identify its boundaries fails to pass any title whatsoever.²³¹ This approach creates a very powerful de-

claims force patentee to “define precisely what his invention is”); BURK & LEMLEY, *supra* note 111, at 11–13 (describing claiming process).

²²⁶ See Chiang, *supra* note 207, at 538.

²²⁷ See *Ex parte* Fressola, No. 93-0828, 27 U.S.P.Q.2d 1608, 1613, 1614 (B.P.A.I. 1993) (rejecting omnibus claim because it placed upon searcher the obligation to distinguish what was in the prior art from what was novel); John M. Golden, *Construing Patent Claims According to Their “Interpretive Community”: A Call for an Attorney-Plus-Artisan Perspective*, 21 HARV. J.L. & TECH. 321, 350 (2008) (describing an omnibus claim as a “frank but unhelpful generality”).

²²⁸ See Golden, *supra* note 227, at 350.

²²⁹ See, e.g., *Erier*, 203 P.3d at 747.

²³⁰ Cf. *id.*

²³¹ See, e.g., *In re* Poteat, 176 B.R. 734, 740 (Bankr. D. Del. 1995) (explaining that an inadequate description rendered mortgage deed invalid, and it did not matter that trustee could have determined proper description by examining land title records for prior conveyances of same parcel); *Mitchell v. Thomas*, 467 So. 2d 326, 328 (Fla. Dist. Ct. App. 1985) (stating that the description failed to locate two property lines). A narrow exception exists for clear mistakes, such as where the drafter of the deed described a different parcel

fault rule: the drafter of the deed must get it right the first time. The price of not getting it right is an invalid deed. This default rule also makes the deed a remarkably accurate device for describing property ownership, and in the vast majority of cases a trained professional can look at a deed and have little difficulty in determining the property's boundaries.

The patent process works much differently. Patent claims are usually, but not always, drafted by lawyers. The patent applicant offers a written description with sufficient enablement that someone skilled in the art can replicate the invention, and a set of claims that are intended to be as broad as can reasonably be asserted, with ambiguities generally resolved in favor of enforceability.²³² The patent examiner then begins a review process that tests the individual claims against both the written description and the prior art.²³³ A particular claim might fail because this particular item was already established in the prior art, or it might fail because the claim went beyond that which the written description included—that is, because it covered something that was not shown to be a part of the proposed invention.²³⁴

Many priority problems arise because the current system gives the patentee virtually unlimited bites at the apple. If one or more claims in the original patent are rejected, the patentee may file a “continuation” application that asserts new or additional claims.²³⁵ Further, because the effective validity date of a patent is the date that the original application was filed, such “after claiming,” or “late claiming,” can result in a patent that is effective from, for example, July, 2005, even though the precise claim that ends up being infringed was drafted much later and approved even later still.²³⁶

The patent system does not provide adequate incentives to applicants to propose clear claims in a timely fashion.²³⁷ As Tun-Jen Chiang

than the one the parties agree upon. In such cases the court will admit parol evidence and reform the deed if necessary. *See, e.g.*, *Drake v. Hance*, 673 S.E.2d 411, 413 (N.C. Ct. App. 2009).

²³² *See* 35 U.S.C. § 112 (2006).

²³³ *See generally* U.S. PATENT AND TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE (rev. ed. 2010) (establishing patent review procedures).

²³⁴ *See* 35 U.S.C. §§ 112, 131 (2006).

²³⁵ *See* Paul M. Janicke, *When Patents Are Broadened Midstream: A Compromise Solution to Protect Competitors and Existing Users*, 66 U. CIN. L. REV. 7, 26–27 (1997).

²³⁶ *See id.*

²³⁷ The lack of proper incentives to draft clear claims is suggested by the high reversal rate: the Federal Circuit reverses district court claim constructions in more than a third of appealed cases. *See* Kimberly A. Moore, Markman *Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231, 233, 239 (2005).

has observed, claims that are included in the original patent application are likely to be more “honest” than late-filed claims, which give the patentee the opportunity to add things not foreseen when the original application was filed or, worse yet, to hijack the inventions of third parties whose work the applicant did not anticipate.²³⁸ Patent law should strive for the position that never finds liability for infringement against technology that was deployed prior to the time that the infringement-producing claim was approved and of which the public was adequately notified.

Cases such as *Rambus, Inc. v. FTC*, decided in 2008 by the U.S. Court of Appeals for the D.C. Circuit, arise because it is too easy for patentees surreptitiously to file retroactively enforceable continuation applications on the technology of rivals.²³⁹ Rambus had a patent application in process that had been filed in 1990.²⁴⁰ It subsequently participated in standard-setting talks while surreptitiously filing patent continuation applications that added new claims covering the very standards that the standard-setting organization was promulgating.²⁴¹ These claims then related back to the original 1990 application for priority purposes.²⁴² Then, three years later, after firms had committed to and implemented the standardized technology, Rambus asserted its patent and demanded royalties.²⁴³ Rambus was then able to increase prices as well as to foreclose the standard-setting organization’s consideration of alternate technologies.²⁴⁴

Writing patent continuation claims on the technology of others is currently lawful under patent law. The Federal Circuit has observed:

[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

²³⁸ See Chiang, *supra* note 207, at 543.

²³⁹ See 522 F.3d 456, 459 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009); see also *In re Dell Computer Corp.*, 121 F.T.C. 616, 624 (1996) (stating that computer manufacturer participated in standard-setting organization and certifying that it did not have IP rights on developing standards when in fact it did).

²⁴⁰ *Rambus*, 522 F.3d at 459.

²⁴¹ *Id.*

²⁴² *Id.*

²⁴³ *Id.* at 460.

²⁴⁴ See Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. CORP. L. 1151, 1192 (2009); see also *Qualcomm, Inc. v. Broadcom Corp.*, 548 F.3d 1004, 1024, 1027 (Fed. Cir. 2008) (applying equitable estoppel so as to enjoin some enforcement of patent where patentee misrepresented to standard-setting organization that it was in process of maintaining continuation applications on covered technology), *cert. denied*, 129 S. Ct. 2182 (2009).

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. Any such amendment or insertion must comply with all statutes and regulations, of course, but, if it does, its genesis in the marketplace is simply irrelevant and cannot of itself evidence deceitful intent.²⁴⁵

Of course, the harm here does not occur from deceitful intent, but from inadequate notice of another's property rights. Until the patent system provides adequate, timely notice of the scope of patent rights, the costs of the system are likely to outweigh its benefits.

Given that patents are public records providing notice of property rights, an important patent reform would place greater responsibility on the patent applicant to communicate effective and timely notice of what he has invented.²⁴⁶ Two competing principles are at play here. One is the patentee's wish to claim everything he invented, even if it was unforeseen at the time the patent application was filed.²⁴⁷ The other is the potential infringer's wish to have timely notice of everything that constitutes infringement.²⁴⁸ The current system decidedly favors the former principle, even if it means that developers find out only after the fact that their technology infringes someone else's patent.²⁴⁹ To use the perhaps overdrawn deed analogy, the current patent system can be equated to a system in which deeds leave some property lines ambiguous, permitting an owner to wait until a neighbor has built

²⁴⁵ *Kingsdown Med. Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 874 (Fed. Cir. 1988); *accord* *Tex. Instruments, Inc. v. ITC*, 871 F.2d 1054, 1065 (Fed. Cir. 1989); *see also* Bhaven N. Sampat & Mark A. Lemley, *Examining Patent Examination* 20–21 (Stanford Pub. Law Working Paper No. 1485011, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1485011 (stating that a significant number of patentees use continuations to delay the process in order to “modify their application to track developments in the marketplace”).

²⁴⁶ *See* *Boyden v. Burke*, 55 U.S. (14 How.) 575, 582 (1852) (“Patents are public records. All persons are bound to take notice of their contents, and consequently should have a right to obtain copies of them.”).

²⁴⁷ Defending this principle are Stephen T. Schreiner & Patrick A. Doody, *Patent Continuation Applications: How the PTO's Proposed New Rules Undermine an Important Part of the U.S. Patent System with Hundreds of Years of History*, 88 J. PAT. & TRADEMARK OFF. SOC'Y 556, 565 (2006) (arguing for patentee's right to capture uses or rewards to inventions that were not foreseen at the time of the application).

²⁴⁸ *See* BESSEN & MEURER, *supra* note 148, at 46–47.

²⁴⁹ *See* Michael Risch, *The Failure of Public Notice in Patent Prosecution*, 21 HARV. J.L. & TECH. 179, 181 (2007).

a house or swimming pool before asserting that the structure crossed the boundary and filing a trespass action.

The Constitution's IP Clause clearly mandates that the purpose of the patent system is to incentivize invention,²⁵⁰ and the only things that create incentives are those that are anticipated at the time invention takes place. As a result, permitting a patentee to produce a claim years after an application is filed and then assert it retroactively creates disincentives for the innocent infringer by increasing the risks of development, while doing little to incentivize the patentee.²⁵¹

As a general rule patent continuations, or late claims, are used for one of three purposes. First, the claim may not have been foreseen by the applicant at the time the patent application was filed.²⁵² Second, the claim may have been foreseen by the applicant, but the applicant chose to "lie in wait" until others developed new technology so that she could write a late claim on that technology.²⁵³ Third, the failure to get a claim right the first time may have been a mistake; for example, the claims may have been drafted more narrowly than intended, or they may have initially been drafted too broadly, rejected by the PTO, and then narrowed in a later submission.²⁵⁴

Our first-cut answers to these three problems are as follows. First, claims that were not included in the original application because the applicant did not foresee them were not part of the incentive to create the invention in the first place. As a result, giving them recognition creates entitlements that were not necessary to innovation and are thus inconsistent with the constitutional mandate that the goal of the patent system is to incentivize invention.²⁵⁵ At the very least, if such claims are

²⁵⁰ U.S. CONST. art. I, § 8, cl. 8.

²⁵¹ See Michael J. Meurer & Craig Allen Nard, *Invention, Refinement and Patent Claim Scope: A New Perspective on the Doctrine of Equivalents*, 93 GEO. L.J. 1947, 1993 (2005) (noting that late claiming in response to a competitor's invention necessarily involves claims that the inventor did not foresee at the time of filing the original application).

²⁵² See Chiang, *supra* note 207, at 526.

²⁵³ Under 35 U.S.C. § 122, pending patent applications are held in secret for eighteen months subsequent to their filing date; a continuation is treated in the same way as an original application, so there is typically no notice on the record of any claim that is filed within the eighteen months prior to a patent search. See 35 U.S.C. § 122 (2006). This is a plausible explanation of the decision in *Rambus*. See 522 F.3d at 469 (denying antitrust liability).

²⁵⁴ Cf. Chiang, *supra* note 207, at 526.

²⁵⁵ Cf. *Kintner v. Atl. Commc'n Co.*, 240 F. 716, 717 (2d Cir. 1917). The court in *Kintner* stated:

[T]he patentee is conclusively presumed to have known what he invented or discovered, better than did any one else, at the time he applied for a patent.

to be acknowledged, they should not be applied retroactively against those who made a technological choice before the claim was on record; this could be done either by making late claims effective only as of the date that they are approved and placed on record, or else by giving prior user rights to third parties who made infringing investments prior to the publication of the claim that they infringed.²⁵⁶ The general goal of the system, as of any property rights system, is notice first, and infringement only later. Changing the system in this way would entirely change the patent applicant's incentive structure; it would force her to write clear and reasonable claims and get them on the public record as soon as possible.

Second, strategically withheld claims operate as an affirmative disincentive to invent and are clearly contrary to constitutionally mandated patent policy; they should never be applied retroactively to technological investments made prior to the approval of the claim.²⁵⁷

Third, the existence of innocent mistakes must be acknowledged, but the question of who should bear the loss remains. As a general rule, the common law did not penalize trespassers or other occupants by fixing mistaken property descriptions retroactively unless there was actual notice, and with good reason.²⁵⁸ A rule placing the burden of mistakes on the person who makes them creates an incentive not to make them in the first place.²⁵⁹ Further, it is much less costly for someone to draft

This is true, even though subsequent students may perceive . . . that he disclosed methods, means, or processes having capabilities surpassing the inventor's dreams at the time [the] attempt was made to put achievements into words.

Id.; cf. Meurer & Nard, *supra* note 251, at 1998 (“[A]n inventor’s incentive is not harmed much when, ex post, she is denied patent scope over technology that she did not foresee ex ante.”); see also Bohannon, *supra* note 77, at 633–34 (making similar argument for copyright).

²⁵⁶ See FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 16 (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>; Carl Shapiro, *Prior User Rights*, 96 AM. ECON. REV. 92, 92 (2006).

²⁵⁷ See Robert P. Merges, *Software and Patent Scope: A Report from the Middle Innings*, 85 TEX. L. REV. 1627, 1653–54 (2007) (referring to strategic delay in filing claims and then writing them on the technology of third parties as “misappropriation by amendment”).

²⁵⁸ Cf. BESSEN & MEURER, *supra* note 148, at 30–31.

²⁵⁹ Another reason that late claiming should not be used to fix mistakes is that the doctrine of equivalents can help the patentee out by adding breadth to claims that were initially written too narrowly. See Douglas Lichtman, *Substitutes for the Doctrine of Equivalents: A Response to Meurer and Nard*, 93 GEO. L.J. 2013, 2013–14 (2005) (noting extent to which doctrines of equivalents and patent continuations act as substitutes for one another—the former tends to read a broader range of coverage into existing claims by judicial decision while the latter tend to permit patentees to write broader claims for themselves after the fact); Meurer & Nard, *supra* note 251, at 1950; Joshua D. Sarnoff, *The Doctrine of Equivalents*

claims clearly early on—particularly if they are properly limited to that which is anticipated—than to put third-party investors at risk of infringement for something that they could not reasonably discover.²⁶⁰

B. *The Judicial Road to Patent Reform*

Despite these severe problems, patent law is clearly seeing the beginning of reform. Although the late claiming problem still awaits a satisfactory solution, several judicial decisions have modified patent doctrine in other areas in an attempt to limit patentability to truly “nonobvious” inventions, provide clearer boundaries and notice of patented inventions, and limit the scope of injunctive relief.²⁶¹ Although the Supreme Court’s 2010 decision in *Bilski v. Kappos*,²⁶² discussed below,²⁶³ missed an opportunity to effect necessary reforms to the scope of patentable subject matter, it did not derail judicial reforms that are already in place.

I. Nonobviousness

The United States Patent Act requires a sufficient difference between a claimed invention and the existing prior art that a person with ordinary skill in that art would not regard the claimed innovation as obvious.²⁶⁴ This doctrine of “nonobviousness,” or “inventive step,” was developed judicially by the Supreme Court in the nineteenth century,²⁶⁵ and be-

and *Claiming the Future After Festo*, 14 FED. CIR. B.J. 403, 404 (2005); Joshua D. Sarnoff, *The Historic and Modern Doctrine of Equivalents and Claiming the Future, Part I (1790–1870)*, 87 J. PAT. & TRADEMARK OFF. SOC’Y 371, 373 (2005); Joshua D. Sarnoff, *The Historic and Modern Doctrines of Equivalents and Claiming the Future: Part II (1870–1952)*, 87 J. PAT. & TRADEMARK OFF. SOC’Y 441, 443 (2005).

²⁶⁰ F. Scott Kieff, *The Case for Registering Patents and the Law and Economics of Present Patent-Obtaining Rules*, 45 B.C. L. REV. 55, 99 (2003) (explaining that the patentee is in the least-cost position to avoid ambiguities in the notice and search process).

²⁶¹ See *infra* notes 264–432 and accompanying text.

²⁶² 130 S. Ct. at 3228.

²⁶³ See *infra* notes 353–400 and accompanying text.

²⁶⁴ See 35 U.S.C. § 103(a) (2006). The statute states:

A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Id. The requirement was not always an explicit part of U.S. patent policy, although some version of it was certainly implied. See John F. Duffy, *Inventing Invention: A Case Study of Legal Innovation*, 86 TEX. L. REV. 1, 17 (2007).

²⁶⁵ See *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248, 267 (1850).

came an explicit part of the Patent Act in 1952.²⁶⁶ Already in 1882, the Supreme Court had written the following:

It was never the object of those laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the arts. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexatious accountings for profits made in good faith.²⁶⁷

The statutory nonobviousness requirement does a number of things. First, it refers to “prior art” but does not specify its content.²⁶⁸ The case law indicates that “prior art” includes, but is not limited to, previously issued patents and many patent applications, as well as other available knowledge that pertains to the subject matter of the patent.²⁶⁹ Second, the statute refers to an imaginary person with “ordinary skill” in this prior art, which means someone who is a trained professional in the subject area of the patent, but presumably not a genius.²⁷⁰ Third, the statute relates this knowledge to the process by which a patent may be “obtained,” thus indicating that it is the responsibility of the patent examiner as well as the applicant to examine the prior art to determine whether the claimed innovation takes a sufficient “inventive step.”²⁷¹ The latter term is also used in the patent statutes of some foreign juris-

²⁶⁶ On the doctrinal development, see generally Duffy, *supra* note 264.

²⁶⁷ *Atl. Works v. Brady*, 107 U.S. 192, 200 (1882).

²⁶⁸ See 35 U.S.C. § 103(a).

²⁶⁹ See, e.g., *Altana Pharma AG v. Teva Pharms. USA, Inc.*, 566 F.3d 999, 1004 (Fed. Cir. 2009) (describing scholarly articles as prior art); *Kinetic Concepts*, 554 F.3d at 1016 (explaining that articles, books, and expert testimony on historical uses can constitute prior art).

²⁷⁰ See 35 U.S.C. § 103(a).

²⁷¹ *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966) (“[T]he primary responsibility for sifting out unpatentable material lies in the Patent Office.”).

dictions.²⁷² The basic idea is intuitively clear: we want to know whether an average person working in this particular discipline could readily have anticipated the subject matter of the claimed patent. If so, it is not patentable.²⁷³

The nonobviousness provision raises issues that go directly to the question of whether we grant too many patents. Should we patent only works of great creative genius, such as steamboats, telegraphs, light bulbs, or Prozac? Or is it enough if the patentee simply comes up with a clever little gadget or process that does something a little differently than it had been done before? Closely related is the question of “hind-sight bias,” which has troubled the courts.²⁷⁴ Ex post, we might look at some new thing, such as a garbage bag with a pumpkin’s face printed on it, and say “that’s obvious,” or “I could have thought of that.”²⁷⁵ But the fact is that both trash bags and artistically drawn Jack-O-Lantern faces had been around for decades prior to a Federal Circuit decision holding that the combination constituted a nonobvious invention, and apparently no one had thought about putting them together on a commercial product.²⁷⁶

More generally, what is the appropriate domain of “prior art”? Does it refer only to previously issued patents and patent processes and technical journals? Or does it also include things that fall into the category of common sense or perhaps even historical practice? This question is of enormous practical importance because patent examiners are overworked officials who can realistically dedicate only so many hours to a given patent application and can readily look in only a limited number of places.²⁷⁷ The PTO maintains an enormous database of prior art, focusing mainly on patents and patent applications as well as

²⁷² See European Patent Convention art. 52, Oct. 5, 1973, 1065 U.N.T.S. 199 (as amended Dec. 13, 2007), available at <http://www.epo.org/patents/law/legal-texts/epc.html>.

²⁷³ See, e.g., *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007).

²⁷⁴ See Gregory N. Mandel, *Patently Non-Obvious: Empirical Demonstration that the Hind-sight Bias Renders Patent Decisions Irrational*, 67 OHIO ST. L.J. 1391, 1429 (2006).

²⁷⁵ See, e.g., *In re Dembiczak*, 175 F.3d 994, 1003 (Fed. Cir. 1999), abrogated by *In re Gartside*, 203 F.3d 1305 (Fed. Cir. 2000) (determining patent on garbage bags bearing pumpkin face to be sufficiently nonobvious).

²⁷⁶ See *id.* (determining, prior to the *KSR* decision, the patent on garbage bags bearing pumpkin face to be sufficiently nonobvious). For a critique, see Mandel, *supra* note 274, at 1430.

²⁷⁷ See Andrew Chin, *Artful Prior Art and the Quality of DNA Patents*, 57 ALA. L. REV. 975, 977 (2006) (describing the tendency of overworked examiners to concentrate on previously issued patents and patent applications).

some technical materials.²⁷⁸ Private databases are available as well.²⁷⁹ The examiner will consult the database, but patent applicants are also required to disclose known prior art.²⁸⁰ A failure to disclose could result in patent unenforceability.²⁸¹

The usefulness of searches for prior art is greatly driven by the nature of the market. Often when new technologies emerge, participants “transport” ideas from old settings into the new ones. Amazon.com’s famous patent on “one-click shopping” is a good example.²⁸² The main ingredients in one-click shopping are a customer willing to store log-in information with a merchant, a valid credit card number, and a shipping address.²⁸³ Then, presumably with a single mouse click, the customer can select an item, and Amazon.com automatically charges the item to the stored credit card and ships it to the stored shipping address. For purposes of argument, we may assume that Amazon.com was the first to come up with this innovation in Internet shopping. But what about more traditional markets? Since time immemorial, stores have been permitting regular customers to open accounts. The stores maintained names, delivery addresses, and perhaps some credit information on index cards. When your pre-World War II grandfather called the store and asked for a sack of flour to be delivered, the shopkeeper would load it into the pickup, charge the account, and deliver the flour to the address on the account slip. At the end of the month, your grandfather would get the bill. Should Amazon.com be entitled to collect a royalty from the thousands of Internet vendors who simply adapted to the Internet an age-old way of making shopping easier? The courts properly doubted it.²⁸⁴ The reason that patents for business methods such as one-click shopping are granted in the first place is that

²⁷⁸ See *Patent Full-Text and Full-Page Image Databases*, U.S. PATENT & TRADEMARK OFFICE, <http://patft.uspto.gov> (last visited Aug. 31, 2010).

²⁷⁹ See *Searching Overview*, IP.COM, <http://priorartdatabase.com/prior-art-searching.html> (last visited Sept. 2, 2010).

²⁸⁰ See 35 U.S.C. § 112 (2006).

²⁸¹ See, e.g., *Nobelpharma*, 141 F.3d at 1062 (explaining the failure to include reference to a previously published book that was known to the drafter of the patent application).

²⁸² See, e.g., *Method and Sys. for Placing a Purchase Order Via a Commc’ns Network*, U.S. Patent No. 5,960,411 (filed Sept. 12, 1997) (issued Sept 28, 1999).

²⁸³ See *id.*

²⁸⁴ See *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1363, 1366 (Fed. Cir. 2001) (denying preliminary injunction after finding likely obviousness, given the prior art). The patent, U.S. Patent No. 5,960,411, with its claims somewhat narrowed, was confirmed upon re-examination in March, 2010. See *Amazon One-Click Patent Slides Through Reexamination*, PATENTLY-O (Mar. 10, 2010), <http://www.patentlyo.com/patent/2010/03/amazon-one-click-patent-slides-through-reexamination.html>.

relevant prior art is construed too narrowly.²⁸⁵ Justice Stevens noted the problem in his *Bilski* concurrence and argued that for this reason, as well as many others, the scope of patentable subject matter should exclude business method patents.²⁸⁶

If something is “obvious,” many people are likely to discover it on their own. As a result, patents that fail to meet a serious requirement of nonobviousness are likely to be infringed by innocent copiers more often than patents that require serious creativity. This is a vexing, recurring problem with business method patents. If we grant patents on very slight departures from historical practices, such as one-click shopping, many other business persons are likely to discover the process on their own. Because independent discovery is not a defense to a patent infringement claim, however, this would place businesses “in constant fear of litigation” unless they undertook the costs of conducting a patent search for every minor innovation in business.²⁸⁷ For example, a photographer who developed the perfectly ordinary idea of posting her photos on the web for inspection and sale might discover that she would be infringing a patent claiming control over that process.²⁸⁸

In its 2007 decision *KSR International Co. v. Teleflex Inc.*, the U.S. Supreme Court tightened the standard for demonstrating nonobviousness of patent claims.²⁸⁹ There, the Court rejected the Federal Circuit’s rigid application of the teaching-suggestion-motivation (“TSM”) test, although not necessarily the test itself.²⁹⁰ Under the Federal Circuit’s version of the test, a patent claim was obvious only if there was a specific “teaching” or “suggestion” in the prior art regarding the combination of previously known elements into the new element that constitutes the subject of the patent claim at issue.²⁹¹ Thus, the Federal Circuit’s appli-

²⁸⁵ See Susan Walmsley Graf, Comment, *Improving Patent Quality Through Identification of Relevant Prior Art: Approaches to Increase Information Flow to the Patent Office*, 11 LEWIS & CLARK L. REV. 495, 502–03 (2007) (noting the problem, particularly with reference to software patents, where examiners tend to focus prior art searches on earlier patents even though the history of software patents is short); see also Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 589 (1999) (noting problem in new technologies when prior art searches focus too much on previously issued patents and patent applications).

²⁸⁶ 130 S. Ct. at 3256 n.55 (Stevens, J., concurring); see *supra* notes 353–400 and accompanying text.

²⁸⁷ *Bilski*, 130 S. Ct. at 3256 n.55 (Stevens, J., concurring).

²⁸⁸ See Process for Providing Event Photographs for Inspection, Selection & Distribution via a Computer Network, U.S. Patent No. 7,047,214 B2 (filed May 16, 2006).

²⁸⁹ 550 U.S. at 427–28.

²⁹⁰ See *id.*

²⁹¹ See *id.* at 421.

cation of the TSM test rendered a claim obvious only if someone had *already* anticipated it, or at least the need for it.²⁹² By contrast, the Supreme Court unanimously held that a patent claim is obvious if “a person having ordinary skill in the art” (“PHOSITA”) *could have* anticipated the innovation offered by the patent.²⁹³

The Supreme Court’s *KSR* rule seems eminently sensible. When a PHOSITA can foresee the benefit in doing what the patent claims, the claimed improvement seems obvious to try. The principal value of the TSM test is for *rejecting* claims, because the fact that the TSM is already in the prior art indicates obviousness. But the TSM test cannot be dispositive for accepting claims because some things that are not taught or suggested in the prior art might still be foreseeable to the PHOSITA. A forward-looking test is particularly important in young and fast-developing markets, such as high technology and the Internet.²⁹⁴ In those markets, the amount of conventional prior art is much less voluminous than in older well-established markets, and the pace of innovation is fast enough that many developments will be anticipated before they are documented in the prior art.²⁹⁵

2. Tactile Subject Matter and Overly Abstract Patent Claims

Section 101 of the U.S. Patent Act defines the scope of patentable subject matter as “any new and useful process, machine, manufacture, or composition of matter” or “new and useful improvement,” that also meets other patentability requirements in the statute.²⁹⁶ It is often said that section 101 permits patentability of “anything under the sun,” a phrase that the Supreme Court in 1980 in *Diamond v. Chakrabarty* quoted from earlier congressional reports. The Court stated that “Congress intended statutory subject matter to “include anything under the sun that is made by man.”²⁹⁷ In fact, however, as Justice Stevens pointed out in his *Bilski* concurrence, the full statement in the House Report that *Chakrabarty* quoted says something quite different:

²⁹² See *id.* at 427–28.

²⁹³ See *id.*

²⁹⁴ See Merges, *supra* note 285, at 589.

²⁹⁵ See *id.*; see also Tun-Jen Chiang, *A Cost-Benefit Approach to Patent Obviousness*, 82 ST. JOHN’S L. REV. 39, 104–05 (2008) (discussing the problem more generally).

²⁹⁶ 35 U.S.C. § 101 (2006).

²⁹⁷ 447 U.S. 303, 309 (1980). Justice Stevens was part of the majority that made the assertion. See Tonja Jacobi & Matthew Sag, *Taking the Measure of Ideology: Empirically Measuring Supreme Court Cases*, 98 GEO. L.J. 1, 45–46 (2009) (discussing the Court’s use of the phrase in *Chakrabarty*).

A person may have “invented” a machine or a manufacture, which may include anything under the sun that is made by man, but it is not necessarily patentable under section 101 unless the conditions of [this] title are fulfilled.²⁹⁸

Contrary to its representation in *Chakrabarty*, the sentence in fact contrasts the scope of things that might be “invented,” placing that word in quotation marks, with the scope of things that are patentable. Further, Justice Stevens noted, the reference is only to a “machine or manufacture,” not to the full range of conceivable inventions. If an invention is not a machine or manufacture, the “everything under the sun” predicate simply does not apply.

A useful and administrable doctrine of patent subject matter is essential to making the patent system manageable. In his *Bilski* opinion for the Supreme Court, Justice Kennedy played down the independent importance of the patentable subject matter requirement, observing that in any event a patent application must meet the requirements that the invention be novel, nonobvious, and fully and particularly described.²⁹⁹ But this overlooks one critical element of the requirement of patentable subject matter, which is that it can nearly always be determined by an examination of the four corners of a patent application. By contrast, determining whether the requirements of novelty and nonobvious subject matter have been met requires a search and interpretation of a very large and often uncertain record of prior art.³⁰⁰

A well-designed rule of patentable subject matter should do two things at the same time. First, it should enable examiners and subsequent courts or other tribunals to determine patentability on the basis of the application itself so that a costly evaluation of prior art is not always required. Second, to the extent possible, it should tie patent law

²⁹⁸ *Bilski*, 130 S. Ct. at 3249 (Stevens, J., concurring) (quoting S. REP. NO. 1979, at 5 (1952); H.R. REP. NO. 1923, at 6 (1952)).

²⁹⁹ 130 S. Ct. at 3225 (citing 35 U.S.C. §§ 101–103, 112(2006)).

³⁰⁰ The difference is analogous to that between motions to dismiss and motions for summary judgment in federal civil litigation. In antitrust cases, the Supreme Court has been extremely concerned about plaintiffs whose complaints lack factual specificity. In *Bell Atlantic Corp. v. Twombly*, the Court imposed strict pleading requirements after observing that such restrictions are essential if the parties are to avoid enormously expensive and often inconsequential discovery. See 550 U.S. 544, 558–59 (2007). Pleading requirements and the motion to dismiss serve to reduce excessive demand on the federal courts and litigants by requiring plaintiffs to plead enough “factual matter” to make their claim plausible. *Id.* (stating that a claim of antitrust conspiracy “requires a complaint with enough factual matter (taken as true) to suggest that an agreement was made”).

more closely to its Constitutional purpose, which is to incentivize inventions whose benefits to the public exceed their social costs.

The enormous case law and literature on patentable subject matter covers the patentability of things such as living organisms, genetic mutations, abstract ideas, the laws of nature, or business methods.³⁰¹ One problem particularly important to competition policy and innovation is excessive abstraction, which allows patent claims to spill over into unanticipated areas, permitting patentees to monopolize things that they really did not invent and perhaps did not even foresee.³⁰² When the claims in issued patents are too abstract, later innovators cannot determine whether their work is covered by another's patent. Nothing suppresses irreversible investment in innovation more than a substantial fear that once the innovation is developed, a court will find that it in fact belongs to someone else. The vaguely defined category of "business method" patents is particularly vulnerable to excessive abstraction.³⁰³ As a result, these patents have produced so much litigation that the net welfare effects are very likely negative.³⁰⁴ This places such patents on a collision course with the Constitution's IP Clause, which does not authorize patents that retard rather than promote innovation.³⁰⁵

An example is the infamous eData patent, which at its core covered the sale of electronic files such as music downloaded at the point of sale in shopping mall kiosks.³⁰⁶ The patent claims, however, included coverage of all sales of information that was loaded into a physical object at the point of sale if the data were transported from a remote

³⁰¹ See, e.g., *Chakrabarty*, 447 U.S. at 318 (discussing patentability of synthesized bacteria not found in nature); *AT&T Corp. v. Excel Commc'ns, Inc.*, 172 F.3d 1352, 1353–54 (Fed. Cir. 1999) (addressing patentability of a process used to establish the value of a number used in customer billing); *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1370 (Fed. Cir. 1998), *overruled by In re Bilski*, 545 F.3d at 943 (discussing patentability of a business method).

³⁰² Many of the same issues arose in the early development of process patents. See I DONALD S. CHISUM, CHISUM ON PATENTS § 1.03, at 1-109 to -110 (2009).

³⁰³ See BESSEN & MEURER, *supra* note 148, at 187–88.

³⁰⁴ See *id.*

³⁰⁵ See *Graham*, 383 U.S. at 5 (“[The Constitution’s IP] clause is both a grant of power and a limitation.”); see also BESSEN & MEURER, *supra* note 148, at 187–88; Robert Patrick Merges & Glenn Harlan Reynolds, *The Proper Scope of the Copyright and Patent Power*, 37 HARV. J. ON LEGIS. 45, 52–53 (2000) (arguing against extensions of patent scope); Malla Pollack, *The Multiple Unconstitutionality of Business Method Patents: Common Sense, Congressional Consideration, and Constitutional History*, 28 RUTGERS COMPUTER & TECH. L.J. 61, 90 (2002) (explaining that the framers objected to business method patents because they believed that monopolies on trade itself were odious).

³⁰⁶ See *Sys. for Reproducing Info. in Material Objects at a Point of Sale Location*, U.S. Patent No. 4,528,643 (filed Jan. 10, 1983).

source.³⁰⁷ The patentee later filed successful infringement suits against many sellers who engaged in services such as selling software, music, eBooks, and other digital technologies over the Internet.³⁰⁸ Bear in mind that the eData inventor did not invent any part of the *technology* for transmitting a computer file over a communication line and then recording it onto a tape or other storage device.³⁰⁹ That technology was already in place and included such things as hard drives, software and file formats, telecommunications and modems, and cassette recorders, to name a few.³¹⁰ Rather, the patent claimed the *idea* of telecommunicating electronic files and charging money for them at the receiving end.³¹¹ The patent's description and drawings are simple, empty boxes bearing titles such as "information file unit" and "reproduction unit."³¹² These referred generically to the full range of devices including hard drives or CD burners that a file-transfer system might contain.³¹³ Under this patent, if a store (1) electronically downloaded digital songs from a remote supply source such as iTunes, (2) copied them onto CDs, and (3) sold them to customers on site, it would be committing infringement, even though all three of these activities were accomplished with technologies that either existed prior to the time of the patent application or were later invented by someone else.³¹⁴

One can approach the abstraction problem that *eData* raises in different ways. One solution is to resort to a system of "central claiming" as was once common in the judicial interpretation of patent claims.³¹⁵ Under that system, the courts tried to assess patent scope by taking a less technical, more common sense look at the core of an invention, focusing more on the written description rather than considering the outermost reaches of its claims.³¹⁶ Another solution, indicated by the

³⁰⁷ *See id.*

³⁰⁸ *See Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331–33 (Fed. Cir. 2001) (construing claims broadly). On the eData saga, see BESSEN & MEURER, *supra* note 148, at 2, 194–95.

³⁰⁹ *See* '643 Patent.

³¹⁰ *See Interactive Gift Express*, 256 F.3d at 1327–28.

³¹¹ *See* '643 Patent.

³¹² *Id.*

³¹³ *See id.*

³¹⁴ *See Interactive Gift Express*, 256 F.3d at 1342, 1349 (upholding eData patent against technologies that were not yet developed when patent was written, and applying it to firms that downloaded remote files, including books, to retail store and burned them onto consumer-supplied media).

³¹⁵ *See* Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts: Rethinking Patent Claim Construction 4* (Stanford Pub. Law Working Paper No. 1358460, 2009), available at <http://ssrn.com/abstract=1358460>.

³¹⁶ *See id.*

Federal Circuit's *In re Bilski* decision in 2008, is to tie patent eligibility under section 101 of the Patent Act more securely to tactile subject matter.³¹⁷ *In re Bilski*'s "machine/transformation" test queried whether a particular method or process for which a patent is sought (1) is tied to a particular machine or apparatus, or (2) transforms an article into a different state or thing.³¹⁸

The Federal Circuit's *Bilski* approach to eligible subject matter was hardly new. Prior to the Civil War, the Supreme Court observed how overreaching can occur when claims become too abstract.³¹⁹ In 1853, the Court considered the validity of a reissued patent for the Morse telegraph.³²⁰ Samuel F. B. Morse's patent contained eight claims.³²¹ Five of them covered the functional aspects of the mechanical transmitter and receiver that Morse claimed were unique, and that distinguished his invention from those of numerous rivals.³²² Another claim was on the set of dots and dashes that came to be known as Morse code, and another was on the use of the Morse code in combination with the hardware described in the earlier claims.³²³ In addition, however, Morse included this eighth claim:

"I do not propose to limit myself to the specific machinery, or parts of machinery, described in the foregoing specifications and claims; the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed, for making or printing intelligible characters, letters, or signs, at any distances,

³¹⁷ 35 U.S.C. § 101 (2006) (permitting a patent to one who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof").

³¹⁸ *In re Bilski*, 545 F.3d at 954. *But see* *Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, 581 F.3d 1336, 1350 (Fed. Cir. 2009) (upholding patentability of a method that includes a mental step to determine the proper dosage of a drug to be administered, whereby one administers the drug to a patient, then determines the level of drug in the patient's blood, and then uses a table to determine whether an additional dose is needed), *vacated*, 130 S. Ct. 3543 (2010).

³¹⁹ *See* *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 113 (1853).

³²⁰ *See id.* at 63.

³²¹ *See id.* at 85–86.

³²² On the rivalry in Europe and America to develop the first commercially feasible telegraph, see GEORGE B. PRESCOTT, *HISTORY, THEORY, AND PRACTICE OF THE ELECTRIC TELEGRAPH* 50–80, 125–35 (1860) and KENNETH SILVERMAN, *LIGHTNING MAN: THE ACCURSED LIFE OF SAMUEL F. B. MORSE* 147–50 (2004).

³²³ *See O'Reilly*, 56 U.S. at 85–86.

being a new application of that power, of which I claim to be the first inventor or discoverer."³²⁴

The Supreme Court approved Morse's claims on the device described in the patent specification and the code.³²⁵ Chief Justice Taney's opinion for the Court, however, rejected the eighth claim.³²⁶ Taney observed that during the period leading up to Morse's patent application, many scientists had been studying a variety of ways to use electricity plus magnets to send long-distance communications.³²⁷ Morse devised a particular system that permitted the signals to be sent long distances, rather than quickly fading in a few hundred feet, although some European scientists had similar successes at about the same time.³²⁸ Morse's eighth claim covered not only what he had actually invented, but the entire principle of using electromagnetic impulses to communicate over long distances.³²⁹ Just like the patent approved by the Federal Circuit in the *eData* case a century and a half later, Morse was trying to commandeer all future technologies for accomplishing something.³³⁰ Chief Justice Taney complained that:

For aught that we now know some future inventor, in the onward march of science, may discover a mode of writing or printing at a distance by means of the electric or galvanic current, without using any part of the process or combination set forth in the plaintiff's specification. His invention may be less complicated—less liable to get out of order—less expensive in construction, and in its operation. But yet if it is covered by this patent the inventor could not use it, nor the public have the benefit of it without the permission of this patentee.³³¹

Taney's observations were prescient because Morse's telegraph system was in fact quite primitive.³³² Tremendous progress in telegraph technology was on the horizon, including faster keys, receivers that

³²⁴ *Id.* at 86 (quoting patent claim eight).

³²⁵ *Id.* at 112.

³²⁶ *Id.* at 113.

³²⁷ *Id.* at 106–07.

³²⁸ *See id.* at 109.

³²⁹ *See O'Reilly*, 56 U.S. at 113.

³³⁰ *See supra* notes 306–314 and accompanying text.

³³¹ *O'Reilly*, 56 U.S. at 113.

³³² *See* ROBERT LUTHER THOMPSON, *WIRING A CONTINENT: THE HISTORY OF THE TELEGRAPH INDUSTRY IN THE UNITED STATES, 1832–1866*, at 9 (1947).

produced sounds rather than dots and dashes on strips of paper, and eventually the development of teletype devices that printed letters of the alphabet at the receiving end.³³³ If accepted, Morse's eighth claim would likely have delayed many of these inventions.³³⁴ Taney's observation also indicates that excessive abstraction is a *competition* problem. Overly broad claims eliminate rivalry because the patent covers not only the technology that the patentee actually invented, but other potentially competing technologies that might have entered the market had the patent not squelched them.

Early on, courts invalidated patents for their lack of tactile engagement. As the Supreme Court observed in 1868, "[I]f the subject-matter be neither a machine nor a manufacture, nor a composition of matter, then . . . it *must* be an art, for there can be no valid patent except it be for *a thing made*, or for the art or *process of making* a thing."³³⁵ Early twentieth-century courts began upholding what might be characterized as business method patents, *provided* that the subject matter of the patent was a tangible good or a process for changing a good in some useful way.³³⁶ In 1911, a federal appeals court sustained a patent on a scrip book containing coupons that could be exchanged for railway tickets on a dollar rather than mile basis, thus permitting them to be interchanged among different railroads that had differing fare structures.³³⁷ The court concluded as follows:

Nor do we think that this patented concept is nothing more than a business method. Its use is a part of a business method. The ticket patented is not a method at all, but a physical tangible facility, without which the method would have been impracticable, and with which it is practicable.³³⁸

Another federal appeals court approved a patent on a perforated railroad ticket that could be torn in specific places to show which part of a route a passenger had already traveled and which parts of the

³³³ See *id.* at 248, 250.

³³⁴ See ANTON A. HUURDEMAN, *THE WORLDWIDE HISTORY OF TELECOMMUNICATIONS* 300–20 (2003) (detailing technological improvements in the telegraph subsequent to Morse's invention); THOMPSON, *supra* note 332, at 9 (focusing on improvements in the telegraph in the United States subsequent to Morse's invention).

³³⁵ *Jacobs v. Baker*, 74 U.S. (7 Wall.) 295, 297 (1868) (quoting GEORGE TICKNOR CURTIS, *A TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS* 91 (3d ed. 1866)).

³³⁶ See, e.g., *Cincinnati Traction Co. v. Pope*, 210 F. 443, 449 (6th Cir. 1913); *Rand, McNally & Co. v. Exchange Scrip-Book Co.*, 187 F. 984, 986 (7th Cir. 1911).

³³⁷ See *Rand, McNally*, 187 F. at 986.

³³⁸ *Id.*

ticket were still useable.³³⁹ The court emphasized that the patent “describe[d] a distinctive physical structure.”³⁴⁰ By contrast, if the method consisted only of a new use of an established device, the courts were hostile. A 1903 decision refused to permit a patent on the use of an ordinary business ledger to create entries that would track railroad cargo to ensure that it was not sent to the wrong destination.³⁴¹ Other courts denied patentability to bookkeeping systems that simply employed pre-existing ledger books to monitor restaurant waiters’ receipts or to track bad debts.³⁴² The physical objects affected by these patents were all well-established prior art. At most, the patentee was contributing a different way of using them.

In sum, the courts have emphasized since the nineteenth century that patents must relate in some formative way to a physical object that is described in the written description of a patent application. As the Morse telegraph decision recognized, when the subject matter of patents becomes more abstract, patent claims have a tendency to reach out into unanticipated places.³⁴³ Morse had been fairly honest about this—his patent claim reached to all technologies “however developed,” indicating that he was asserting control over devices that he himself could not foresee.³⁴⁴ The chill on innovation could hardly be more severe—those knowing of the patent would know that any device they made for improving electromagnetic long distance communications would fall under Morse’s claim and constitute infringement, no matter how novel and important it was in fact.³⁴⁵

³³⁹ See *Cincinnati Traction*, 210 F. at 449.

³⁴⁰ *Id.* at 446.

³⁴¹ See *Hocke v. N.Y. Cent. & H. R. R. Co.*, 122 F. 467, 469 (2d Cir. 1903).

³⁴² See *Hotel Sec. Checking Co. v. Lorraine Co.*, 160 F. 467, 472 (2d Cir. 1908) (describing a method of monitoring waiters’ order slips in order to prevent fraud as unpatentable); *U.S. Credit Sys. Co. v. Am. Credit Indem. Co.*, 53 F. 818, 819 (C.C.S.D.N.Y. 1893) (finding a bookkeeping system designed to track bad debts not patentable); see also Alan L. Durham, “Useful Arts” in the Information Age, 1999 BYU L. REV. 1419, 1491 (tracing how early “business method” patents were in fact approved if they involved the production or transformation of a physical object). See generally P. J. Federico, *Origin and Early History of Patents*, 11 J. PAT. OFF. SOC’Y 292 (1929) (explaining the early history of patents).

³⁴³ See *O’Reilly*, 56 U.S. at 113.

³⁴⁴ See *supra* note 324 and accompanying text.

³⁴⁵ Cf. F. Russell Denton, *Plumb Lines Instead of a Wrecking Ball: A Model for Recalibrating Patent Scope*, 16 J. INTEL. PROP. L. 1, 7, 8 (2008) (acknowledging problems caused by excessive abstraction, but also observing that writing concrete claims is extremely tedious work).

Patents that do not create or transform specific physical objects rarely have clear boundaries.³⁴⁶ Recognizing this, the courts have imposed a number of limitations. For example, the Supreme Court has said that one cannot patent an abstract idea, and the Court has compared purely mental patents to laws of nature, which cannot be patented.³⁴⁷ The rise of the computer and later the Internet has led to an explosion of process patents in data processing, financial services and banking, transaction facilitation, risk determination, tax planning, educational materials provided on the Internet, and even dating strategies.³⁴⁸ What many of these patents have in common is that their principal useful content consists of formulas or algorithms that can potentially have a wide variety of uses.³⁴⁹ Patenting a formula itself, in contrast to a specific and concrete application of a formula, can come dangerously close to patenting either a law of nature or an abstract idea, which patent policy forbids. The Supreme Court made that distinction seventy years ago in acknowledging a patent for a radio antenna whose length and attitude were based on a well-known mathematical formula (the “Abraham’s formula”) relating wave length to optimal antenna length and position.³⁵⁰ The Court concluded that “[w]hile a scientific truth, or the mathematical expression of it, is not patentable invention, *a novel and useful structure created with the aid of knowledge of scientific truth* may be.”³⁵¹ The Court then limited the scope of the patent to specific structures that applied the mathematical formula.³⁵²

The *Bilski* patent application comprised a set of mental steps leading to a formula for computing the optimal balance of investment for minimizing risk.³⁵³ It involved a series of hypothetical transactions between buyers and sellers of a particular commodity who had different

³⁴⁶ See BESSEN & MEURER, *supra* note 148, at 187–88 (focusing mainly on software patents).

³⁴⁷ See *Diamond v. Diehr*, 450 U.S. 175, 185 (1981) (excluding from patentable subject matter “laws of nature, natural phenomena, and abstract ideas”); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”).

³⁴⁸ See, e.g., Internet-Based Educ. Support Sys. & Methods, U.S. Patent No. 6,988,138 (filed June 30, 2000); Method of Designating Dating Status, U.S. Patent No. 7,255,277 (filed Apr. 6, 2006).

³⁴⁹ See ’138 Patent; ’277 Patent.

³⁵⁰ See *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939).

³⁵¹ *Id.* (emphasis added).

³⁵² *Id.* at 98–99.

³⁵³ See *In re Bilski*, 545 F.3d at 949.

risk profiles.³⁵⁴ Some tended to profit when the value of the commodity increased while others profited when it decreased.³⁵⁵ For instance, suppose that a coal-burning electric utility must purchase large quantities of coal and sell its power at regulated rates. The utility suffers if the price of coal goes up, but coal mining companies benefit. As a result, an optimal investment strategy for a utility might be to purchase some stock in coal mining companies, which means that operating losses from high coal prices would be offset by gains in the stock's value.

In essence, *Bilski* was attempting to patent a very general form of risk "hedging."³⁵⁶ Hedging is nothing more than a way of managing risks, and the financial literature has been filled with such strategies for decades.³⁵⁷ The literature on hedging is highly mathematical, and different hedging strategies produce different formulas that can be applied in a variety of settings, including commodity pricing, energy management, foreign currency exchange rates, construction risks, and insurance, to name a few.³⁵⁸ Even the process described in the *Bilski* patent application of initiating hypothetical transactions in markets with differing risk profiles is well established in the literature.³⁵⁹

In rejecting the claim, the examiner concluded that "the invention is not implemented on a specific apparatus and merely manipulates [an] abstract idea and solves a purely mathematical problem without any limitation to a practical application."³⁶⁰ The important factors about the *Bilski* patent were that: (1) it was not a patent on a specific apparatus or machine; and (2) it was not for a process that would make (or improve) a specific apparatus or machine.³⁶¹

With regard to the problem of abstract claims, it is important to note that the specification in the *Bilski* patent application described a risk-management process for energy markets where prices fluctuated

³⁵⁴ See *id.*

³⁵⁵ See *id.*

³⁵⁶ See *id.*

³⁵⁷ See, e.g., CAROL ALEXANDER, MARKET RISK ANALYSIS: QUANTITATIVE METHODS IN FINANCE 181–82 (2008); NIALL FERGUSON, THE ASCENT OF MONEY: A FINANCIAL HISTORY OF THE WORLD 324 (2008).

³⁵⁸ See PATRICK CUSATIS & MARTIN THOMAS, HEDGING INSTRUMENTS AND RISK MANAGEMENT 1–2 (2005); ROBERT W. KOLB, UNDERSTANDING FUTURES MARKETS 170–71, 176–81 (3d ed. 1991).

³⁵⁹ See R. H. Snape & B. S. Yamey, *Test of the Effectiveness of Hedging*, 73 J. POL. ECON. 540, 540 (1965) (proposing the use of series of hypothetical transactions to test outcomes from hedging strategies).

³⁶⁰ See *Ex parte Bilski*, No. 02-2257, 2006 WL 5738364, at *1 (B.P.A.I. Sept. 26, 2006) (quoting patent examiner) (internal quotation marks omitted) (alteration in original).

³⁶¹ See *In re Bilski*, 545 F.3d at 949.

mainly due to weather.³⁶² The first claim, however, referred generally to “commodities,” indicating that the patent later could have been asserted in any market subject to risk differentials.³⁶³ As a result, the *Bilski* patent, like the *eData* patent, would have been a little like a deed to Camelot—its location and boundaries impossible to identify. These patents spill over from things that are arguably novel to processes that have been well known for centuries. An insurance company trying to diversify its risks or a farmer selling grain futures to hedge against a low market price for her crop might discover that she owes *Bilski* a royalty, even though both insurers and farmers have been doing these things for decades.

The Federal Circuit responded with its double-branched machine/transformation test:

[A]n applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article. Certain considerations are applicable to analysis under either branch. First, . . . the use of a specific machine or transformation of an article must impose meaningful limits on the claim’s scope to impart patent-eligibility. . . . Second, the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity.³⁶⁴

The *Bilski* problem would be much less substantial if the patent laws contained a right of independent discovery, as the copyright and trade secret laws do.³⁶⁵ One cannot be liable for copyright or trade secret infringement unless she actually had access to the owner’s writing, product, or process and copied from it in some way.³⁶⁶ Any property system that makes infringers strictly liable for trespasses must include a mechanism for giving investors adequate and timely notice of their property interests. As the Supreme Court observed as early as the 1960s, until a “process claim has been reduced to production of a product shown to be useful, the metes and bounds of that monopoly

³⁶² See *id.* at 949–50.

³⁶³ See *id.* at 949.

³⁶⁴ *Id.* at 961–62 (citations omitted).

³⁶⁵ See *Samson Vermont, Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475, 479 (2006); see also Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law* 6–7 (Stanford Pub. Law Working Paper No. 1270160, 2009), available at <http://ssrn.com/abstract=1270160> (suggesting that most alleged patent infringers are not copyists).

³⁶⁶ See Cotropia & Lemley, *supra* note 365, at 2.

are not capable of precise delineation. It may engross a vast, unknown, and perhaps unknowable area."³⁶⁷

This problem is exacerbated by the lingering effects of the doctrine of equivalents, which gives patentees infringement claims for uses that do not literally infringe the claims of the patent.³⁶⁸ Patent infringement claims under the doctrine of equivalents are permitted even when the innovator developed its innovation independently.³⁶⁹ The doctrine makes intuitive sense when applied to someone who intentionally invents around a known patent by making tiny changes that fall just outside the scope of a patent claim.³⁷⁰ In other cases, however, finding infringement against an innocent innovator under the doctrine of equivalents simply rewards a patentee for writing fuzzy claims and relying on a default rule that requires the innovator to invest at its peril.³⁷¹

The Supreme Court affirmed the Federal Circuit's conclusion that the *Bilski* patent was invalid, but rejected its holding that the machine/transformation criterion is the sole test for patentability.³⁷² Rather, the Court returned to the formulation stated in earlier decisions such as *Gottschalk v. Benson*³⁷³ to the effect that the machine/transformation test was the "clue" to patentability.³⁷⁴ As the Supreme Court pointed out, the machine/transformation test seems narrower and more rigid than the statutory language, which defines "process" broadly and without any qualification resembling the machine/transformation test.³⁷⁵ For that reason, although the Supreme Court had often relied on machine/transformation language as a key to assessing patentability, it had never found the test to be exclusive.³⁷⁶

³⁶⁷ *Brenner v. Manson*, 383 U.S. 519, 534 (1966).

³⁶⁸ See *Cotropia & Lemley*, *supra* note 365, at 5–6.

³⁶⁹ See *id.*

³⁷⁰ See *Meurer & Nard*, *supra* note 251, at 1949.

³⁷¹ See John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 960 (2007).

³⁷² 130 S. Ct. at 3231.

³⁷³ See 409 U.S. at 70.

³⁷⁴ See *id.* ("Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines.")

³⁷⁵ See 35 U.S.C. § 101 (2006) ("Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."); see also *id.* § 100(b) ("The term 'process' means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.")

³⁷⁶ *Bilski*, 130 S. Ct. at 3226 (stating that the test was "not intended to be an exhaustive or exclusive test").

At the same time, no part of the patent statute may be construed so as to make it inconsistent with either its constitutional authorization or its drafter's intended purpose. If the subject of an application falls outside of that authorization, it is no answer to say that the PTO examiner can subsequently fix things by applying a different technical doctrine, such as the requirement of nonobviousness.³⁷⁷ For example, nothing in section 101 of the Patent Act, which defines patentable subject matter, indicates that "abstract ideas" cannot be patented.³⁷⁸ The statute covers "any new and useful process," making no exclusion for thought processes.³⁷⁹ Nevertheless, the Supreme Court has consistently stated that abstract ideas cannot be patented, and the *Bilski* majority based its conclusion of nonpatentability on those holdings.³⁸⁰ With respect to laws of nature, also not mentioned in section 101, the Supreme Court has distinguished between the *discovery* of the laws themselves (unpatentable) and a particular application of those laws (pat-

³⁷⁷ See 35 U.S.C. § 101.

³⁷⁸ See *id.*

³⁷⁹ See *id.*; Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc., 548 U.S. 124, 126–27 (2006) (Breyer, J., dissenting) (dismissing grant of certiorari in *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354 (Fed. Cir. 2004) as improvidently granted). In his dissent, Justice Breyer explained as follows:

The justification for the principle [that laws of nature are not patentable subject matter] does not lie in any claim that "laws of nature" are obvious, or that their discovery is easy, or that they are not useful. To the contrary, research into such matters may be costly and time consuming; monetary incentives may matter; and the fruits of those incentives and that research may prove of great benefit to the human race. Rather, the reason for the exclusion is that sometimes *too much* patent protection can impede rather than "promote the Progress of Science and useful Arts," the constitutional objective of patent and copyright protection.

Id. (Breyer, J., dissenting); see *In re Comiskey*, 499 F.3d 1365, 1375 (Fed. Cir. 2007) ("The Constitution explicitly limited patentability to 'the national purpose of advancing the useful arts—the process today called technological innovation.'"); *cf.* *Parker v. Flook*, 437 U.S. 584, 596 (1978) ("[W]e must proceed cautiously when we are asked to extend patent rights into areas wholly unforeseen by Congress.")

³⁸⁰130 S. Ct. at 3231 ("The concept of hedging, described in claim 1 and reduced to a mathematical formula in claim 4, is an unpatentable abstract idea . . ."); see also *Diehr*, 450 U.S. at 185 ("Excluded from such patent protection are laws of nature, natural phenomena, and abstract ideas."); *id.* at 195 (Stevens, J., dissenting) (explaining that "processes involving mental operations" are not patentable subject matter); *Parker*, 437 U.S. at 598 (Stewart, J., dissenting) ("It is a commonplace that laws of nature, physical phenomena, and abstract ideas are not patentable subject matter."); *cf.* *Benson*, 409 U.S. at 67 (using the term "abstract intellectual concepts"); *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507 (1874) ("An idea of itself is not patentable"); *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175 (1852) ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented . . .").

entable).³⁸¹ This is so notwithstanding the fact that section 101 includes within its protection one who “discovers any new and useful process . . . or composition of matter.”³⁸² Congress drafted section 101 broadly in order to extend patentable subject matter to the full range of its power under the IP Clause of the Constitution,³⁸³ but that still gives the courts the job of determining what that power is.³⁸⁴

Justice Stevens’ opinion for four concurring Justices came much closer than the majority did to aligning the requirement of patentable subject matter with the innovation-incentivizing goals of patent law.³⁸⁵ He agreed with the majority that the machine/transformation test should not be the exclusive criterion of patentability, but from that point departed in a different direction that he believed would “restore patent law to its historical and constitutional moorings.”³⁸⁶ He showed that historically the framers of the Patent Act never intended to include patents on business methods. After temporarily approving them, the Federal Circuit had come around in *Bilski* to a test that excluded “general methods of doing business” as well as some other subjects that fell

³⁸¹ See *Diehr*, 450 U.S. at 188; *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 132 (1948).

³⁸² 35 U.S.C. § 101 (emphasis added). On the meaning of “discover” or “discovery” in the Constitution’s IP Clause and the Patent Act, and its relation to promotion of science and the useful arts, see Stephen McKenna, *Patentable Discovery?*, 33 SAN DIEGO L. REV. 1241, 1243 (1996). McKenna notes that one important distinction between discoveries and inventions is that the discoveries already existed before they were discovered, even if they were not generally known. See *id.* The author concludes that the distinction between “discoveries” (unpatentable) and “inventions” (patentable) is entirely judicial. See *id.* In any event, both the framers of the Constitution and the drafters of section 101 probably regarded the terms “invention” and “discovery” as largely synonymous.

³⁸³ See *Chakrabarty*, 447 U.S. at 315 (“The subject-matter provisions of the patent law have been cast in broad terms to fulfill the constitutional and statutory goal of promoting ‘the Progress of Science and the Useful Arts’ with all that means for the social and economic benefits envisioned by Jefferson.”); *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124, 131 (2001).

³⁸⁴ See *J.E.M. Ag Supply*, 534 U.S. at 151 (Breyer, J., dissenting); *In re Bilski*, 545 F.3d at 998 (Mayer, J., dissenting); see also *Comiskey*, 499 F.3d at 1375 (“The Constitution explicitly limited patentability to ‘the national purpose of advancing the useful arts—the process today called technological innovation.’”). Antitrust does very much the same thing that the Patent Act does. For example, the Sherman Act reaches to the full extent of congressional power under the Commerce Clause. See *United States v. Se. Underwriters Ass’n*, 322 U.S. 533, 558 (1944). Nevertheless, the courts continue to decide whether jurisdiction under the Commerce Clause obtains in particular situations. Compare, e.g., *Summit Health, Ltd. v. Pinhas*, 500 U.S. 322, 333 (1991) (finding jurisdiction), with *United States v. Yellow Cab Co.*, 332 U.S. 218, 233–34 (1947) (finding no jurisdiction).

³⁸⁵ *Bilski*, 130 S. Ct. at 3231 (Stevens, J., concurring). Justice Stevens was joined by Justices Ginsburg, Breyer and Sotomayor; Justice Breyer also wrote a separate concurrence, which Justice Scalia joined in part. See *id.* at 3257 (Breyer, J., concurring).

³⁸⁶ *Id.* at 3232 (Stevens, J., concurring).

within the classification of process patents.³⁸⁷ He would have preferred a holding that *Bilski*'s "method is not a 'process' because it describes only a general method of engaging in business transactions, and business methods are not patentable."³⁸⁸

Justice Stevens' analysis of section 101's term "process" showed how it certainly could not refer to everything that a lay person would regard as a process. That would lead to the absurd conclusion that even something like a series of dance steps would be patentable if it were sufficiently novel.³⁸⁹ He traced the general hostility toward business method patents in both English and American patent law,³⁹⁰ showing that the term "useful arts" in the IP clause almost certainly did not encompass business methods.³⁹¹ Justice Stevens noted, for example, that Noah Webster's First American dictionary defined the term "art" as the "disposition or modification of things by human skill, to answer the purpose intended." Webster's definition distinguished "useful or mechanic" arts from "liberal or polite" arts.³⁹² "[F]ields such as business and finance were not generally considered part of the 'useful arts' in the Founding Era."³⁹³ When Congress amended the Patent Act in 1952, it substituted the more modern term "process" for the term "art," but did not intend to change the scope of meaning from its original understanding.³⁹⁴ The often-misquoted "anything under the sun" statement in the 1952 Act's legislative history was meant in fact to contrast the scope of all things that someone might conceivably "invent" with the scope of patentable inventions. Further, the phrase itself referred only to a "machine or manufacture," which excluded art or process.³⁹⁵

Like most of the scholarship he cited, Justice Stevens could not find a positive link between patentability and the incentive to innovate

³⁸⁷ *Id.*

³⁸⁸ *Id.*

³⁸⁹ *Id.* at 3238.

³⁹⁰ *Id.* at 3239–48.

³⁹¹ *Bilski*, 130 S. Ct. at 3249 (Stevens, J., concurring).

³⁹² *Id.* at 3243 (citing 1 AN AMERICAN DICTIONARY OF THE ENGLISH LANGUAGE (1828) (facsimile ed.); John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139, 1164 (1999) ("[The Framers] undoubtedly contemplated the industrial, mechanical and manual arts of the late eighteenth century, in contrast to the seven 'liberal arts' and the four 'fine arts' of classical learning.")). Justice Stevens also noted that other dictionaries, such as Samuel Johnson's, defined the term more broadly. *Bilski*, 130 S. Ct. at 3243 n.27 (Stevens, J., concurring) (citing Samuel Johnson, 1 DICTIONARY OF THE ENGLISH LANGUAGE (1773) (reprint 1978)).

³⁹³ *Bilski*, 130 S. Ct. at 3244 (Stevens, J., concurring) (citations omitted).

³⁹⁴ *Id.* at 3249 (citing *Diehr*, 450 U.S. at 184).

³⁹⁵ *Id.* at 3248–49.

in business.³⁹⁶ Further, given the sequential nature of innovations in business methods, particularly in a competitive environment, patenting them often serves to restrain rather than facilitate further innovation.³⁹⁷ Justice Stevens noted:

If business methods could be patented, then many business decisions, no matter how small, could be *potential* patent violations. Businesses would either live in constant fear of litigation or would need to undertake the costs of searching through patents that describe methods of doing business, attempting to decide whether their innovation is one that remains in the public domain.³⁹⁸

These problems are exacerbated by the “potential vagueness” of business method patents,³⁹⁹ which often are “not confined to any one industry” and for which “there is not a well-confined body of prior art to consult”⁴⁰⁰ Justice Stevens’ historical argument against business method patents is devastating. Although he was not able to provide a new, comprehensive definition of patentable subject matter, he did tie the meaning of section 101’s patentable subject matter requirement to the rationales for patenting in the first place, namely, to further innovation. This may require invalidation of certain classes of patents categorically, something that the Supreme Court has done in the past for abstract principles and laws of nature.

C. eBay: *The Relation Between Remedies and Notice*

In 2006, in *eBay Inc. v. MercExchange, L.L.C.*, the U.S. Supreme Court rejected a Federal Circuit rule that gave patentees virtually blanket authority to obtain injunctions against infringement.⁴⁰¹ Rather, the

³⁹⁶ *Id.* at 3254 (citing Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1618 (2003); Michael Carrier, *Unraveling the Patent-Antitrust Paradox*, 150 U. PA. L. REV. 761, 826 (2002); Rochelle Dreyfuss, *Are Business Methods Patents Bad for Business?* 16 SANTA CLARA COMPUTER & HIGH TECH. L.J. 263, 274–77 (2000); Richard A. Posner, *The Law and Economics of Intellectual Property*, DAEDALUS, Spring 2002, at 5.

³⁹⁷ *Bilski*, 130 S. Ct. at 3255 (Stevens, J., concurring) (citing James Bessen & Eric Maskin, *Sequential Innovation, Patents, and Imitation*, 40 RAND J. ECON. 611, 613 (2009)).

³⁹⁸ *Id.* at 3256 (citing Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 487–88 (2004)).

³⁹⁹ *Id.* (citing *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 397 (2006) (Kennedy, J., concurring)).

⁴⁰⁰ *Id.* at 3256 n.55 (citing, inter alia, Rebecca Eisenberg, *Analyze This: A Law and Economics Agenda for the Patent System*, 53 VAND. L. REV. 2081, 2090 (2000)).

⁴⁰¹ *See* 547 U.S. at 394.

patentee must show the traditional set of equity requirements for an injunction—namely, irreparable injury, inadequacy of damages as a remedy, and that the balance of hardships and the public interest favor an injunction.⁴⁰²

One might view *eBay* as creating compulsory licensing by another name—which might occur if courts simply permitted ongoing patent infringement with damages as the sole remedy. But *eBay* has its limitations as an alternative to compulsory licensing. First, it does not apply to ex ante requests for dealing but only to remedies once an infringement is found.⁴⁰³ This means that someone who knows about another's patent right in advance cannot insist on having it.⁴⁰⁴ Rather, the developer must go ahead and develop, risking that if infringement is found, a subsequent court will refuse to issue an injunction and award only damages. Further, knowing about a patent in advance may be a good reason for issuing the injunction—*eBay* has most of its bite in situations where developers did not know they were infringing and were caught by surprise.⁴⁰⁵

Even if we thought that dominant firms had a duty to share newly developed technologies, *eBay* would not be a reliable way of implementing it.⁴⁰⁶ As a result, it is not a good substitute for an antitrust rule that compels dealing. *eBay* is better at dealing with various ex post problems that arise because patent boundaries are so poorly defined.⁴⁰⁷ Although it is hardly a complete fix, *eBay* can operate to reduce the risk of innovating where patents held by others cannot be searched effectively and affordably.⁴⁰⁸ One good example is patents held by nonproducing enti-

⁴⁰² See *id.* at 391. The problem of *eBay* and patent trolls is discussed in Lee Anne Fennell, *Adjusting Alienability*, 122 HARV. L. REV. 1403, 1414–15 (2009).

⁴⁰³ See *eBay*, 547 U.S. at 394.

⁴⁰⁴ For explanations of how risk aversion under uncertainty effectively cedes to IP rights holders larger rights than they actually own, see Christina Bohannon, *Taming the Derivative Works Right: A Modest Proposal for Reducing Overbreadth and Vagueness in Copyright*, 12 VAND. J. ENT. & TECH. L. 669, 688–89 n.113 (2010) and James Gibson, *Risk Aversion and Rights Accretion in Intellectual Property*, 116 YALE L.J. 882, 884, 951 (2007).

⁴⁰⁵ See 547 U.S. at 394.

⁴⁰⁶ See generally Daniel A. Crane, *Intellectual Liability*, 88 TEX. L. REV. 253 (2009) (arguing that the whole problem of compulsory licensing needs to be examined, and that mandatory licensing might serve as a policy offset for permitting other practices, such as bundling of IP rights, that would be less anticompetitive if there were a compulsory licensing duty).

⁴⁰⁷ See John M. Golden, *Principles for Patent Remedies*, 88 TEX. L. REV. 505, 554 (2010).

⁴⁰⁸ See Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 22 (explaining that the cost of patent searches is so high, and results so unreliable, that firms often simply innovate now and worry about infringement litigation later). Nevertheless, the Federal Circuit has indicated that failure to search may result in a finding of willful infringement,

ties (“NPEs”), or patent “trolls,” who develop or acquire patents for complex technologies but do not practice them.⁴⁰⁹ Given the high costs and poor results of patent searches, a firm might discover only after the fact that it has made a costly, irreversible investment in technology covered by someone else’s patent.⁴¹⁰ One consequence of *eBay* is that courts have tended to limit NPEs to damages.⁴¹¹

Dealing with patent trolls is not so much a problem of the right type of relief as the nature and timeliness of notice. Limiting the infringer’s liability to damages in cases where notice is poor serves to give innovators at least some confidence that they can move into a new area without subsequently facing prohibitive, gargantuan penalties that the right to an injunction can produce. A rule that placed a larger premium on notice would also give patentees an incentive to see to it that their patents are effectively communicated to potential infringers. For example, in both the D.C. Circuit’s *Rambus* decision and in the 2008 decision of the U.S. Court of Appeals for the Federal Circuit, *Qualcomm, Inc. v. Broadcom Corp.*, the patentee, who was participating in standard-setting deliberations, knew well in advance who the likely infringers would be and what would be the nature of their infringement.⁴¹² The socially preferable strategy is for them to communicate this to developers at a time when the developer can still make a choice. The plaintiffs chose to hold back, however, or even misrepresent their holdings, in order to extract a larger award later.⁴¹³ In such a case, the pat-

with enhanced penalties up to treble damages. See *Clontech Labs., Inc. v. Invitrogen Corp.*, 406 F.3d 1347, 1357 n.6 (Fed. Cir. 2005).

⁴⁰⁹ See Chiang, *supra* note 295, at 85.

⁴¹⁰ See Cotter, *supra* note 244, at 1159, 1160 (suggesting that denial of injunctive relief may be specially justified in situations involving nonpracticing patentees); Lemley & Shapiro, *supra* note 211, at 2036 (stating a similar proposition); Mark A. Lemley & Philip J. Weiser, *Should Property or Liability Rules Govern Information?*, 85 TEX. L. REV. 783, 798–99 (2007) (opposing injunctions in some situations). But the issue has been controversial. See Einer Elhauge, *Do Patent Holdup and Royalty Stacking Lead to Systematically Excessive Royalties?*, 4 J. COMPETITION L. & ECON. 535, 537 (2008) (arguing in favor of preserving most injunctive relief); Damien Geradin et al., *The Complements Problem Within Standard Setting: Assessing the Evidence on Royalty Stacking*, 14 B.U. J. SCI. & TECH. L. 144, 174–75 (2008) (stating a similar idea); John M. Golden, *“Patent Trolls” and Patent Remedies*, 85 TEX. L. REV. 2111, 2148–49 (2007) (suggesting a rebuttable presumption of injunctive relief).

⁴¹¹ See Michael W. Carroll, *Patent Injunctions and the Problem of Uniformity Cost*, 13 MICH. TELECOMM. & TECH. L. REV. 421, 424 (2007); Bernard H. Chao, *After eBay Inc. v. MercExchange: The Changing Landscape for Patent Remedies*, 9 MINN. J. L. SCI. & TECH. 543, 544 (2008); Vincenzo Denicolò et al., *Revisiting Injunctive Relief: Interpreting eBay in High-Tech Industries with Non-Practicing Patent Holders*, 4 J. COMP. L. & ECON. 571, 572–73 (2008).

⁴¹² See *Qualcomm*, 548 F.3d at 1008; *Rambus*, 522 F.3d at 459.

⁴¹³ See *Qualcomm*, 548 F.3d at 1008; *Rambus*, 522 F.3d at 459.

entee should not be permitted to obtain more relief than damages measured by the value of substitute technologies *ex ante*—that is, prior to the time that a dedicated commitment was made.⁴¹⁴

On the other side of the notice issue is the question of whether the infringer knew of the infringement at the time it developed its technology. If he did not know, then the case for an injunction is weak, particularly if the patentee was not producing the patented invention or if patent enforcement was based on a continuation application that was pending when the infringer's technology was developed and backdated to the date of original patent filing.⁴¹⁵ By contrast, the developer who knows in advance about another's patent but chooses to infringe it anyway is in a much different position. In that case, the award of an injunction is more appropriate because the developer could have negotiated a license in advance, when the full range of alternatives was still available. Further, whether or not the patentee is practicing the patent does not matter all that much.

In sum, the remedy system should be designed so as to reward patentees who give adequate and timely notice of their claims and to penalize those who do not. It should avoid penalizing innocent infringers and instead penalize those who proceeded to develop patented technology even though they knew or suspected they would infringe on the patents.⁴¹⁶

None of this discussion is intended as a brief for either side of the question whether property or liability rules should protect IP owners.⁴¹⁷ Those who want to preserve broad property rights generally emphasize the systematic undercompensation they believe results from judicial determinations of damages, and the resulting harm to the incentive to innovate.⁴¹⁸ Otherwise, they are concerned about the market integrity of prices determined by judges rather than buyers and sellers.⁴¹⁹ Those

⁴¹⁴ See Hovenkamp, *supra* note 208.

⁴¹⁵ On the problem of patent continuations, see *supra* notes 235–260 and accompanying text.

⁴¹⁶ Hovenkamp, *supra* note 208.

⁴¹⁷ See Crane, *supra* note 406, at 253–54.

⁴¹⁸ See, e.g., Richard A. Epstein, *The Property Rights Movement and Intellectual Property*, REGULATION, Winter 2008, at 62 (“[S]ystematic under-compensation during the limited life of a patent is likely to reduce the level of innovation while increasing the administrative costs of running the entire system.”); see also Elhauge, *supra* note 410, at 537.

⁴¹⁹ See Henry E. Smith, *Property and Property Rules*, 79 N.Y.U. L. REV. 1719, 1776–77 (2004).

who favor relaxing injunction entitlements are concerned mainly with holdup and excessive royalties.⁴²⁰

The concern about chronic undercompensation has merit, but mainly in a system with well-defined property rights and adequate and timely notice to outsiders. And holdup is surely of concern when infringers are taken by surprise in circumstances where an objectively reasonable person would not have known about the right. But the availability of remedies can be metered in a way that minimizes both concerns. On the one hand, when IP rights holders have taken all reasonable steps to communicate their rights to others, including specific and timely communications to those it knows are likely to infringe, then the case for equity relief is much stronger than when they keep silent while knowing of likely infringement, or take other steps to withhold information about their rights.⁴²¹ On the other hand, an infringer who had good reason to know she was infringing at the time she made her investment should not be heard later to complain that she is being held up by a rapacious troll seeking to appropriate her investment. But an infringer who acted reasonably and had no reason to suspect infringement until it is too late makes a good case for a damages remedy. As the infringement itself moves further away from anything that was foreseeable to the innovator at the time of its innovation, perhaps because the claims were overly abstract or were the unpublished contents of a continuation application, the case for an injunction grows much weaker.

To be sure, not every bargaining problem goes away when people have timely knowledge of property rights. For example, bilateral monopoly problems exist even when property rights are well-defined.⁴²² Such problems are likely to arise when a standard-setting organization dominates its market and the patentee has a clearly superior technol-

⁴²⁰ See Peter Lee, *The Evolution of Intellectual Infrastructure*, 83 WASH. L. REV. 39, 46 (2008); see also Golden, *supra* note 407, at 513; Lemley & Shapiro, *supra* note 211, at 1993; Mark A. Lemley & Carl Shapiro, *Reply: Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 2163, 2172–73 (2007).

⁴²¹ The penalty of judicially determined royalties rather than an injunction for the patentee who fails to provide effective, timely notice of its rights strikes some as severe. See, e.g., Elhauge, *supra* note 410, at 537. But one should keep in mind that the penalty to the real property owner who fails to provide adequate notice is often complete loss of title. Cf. Holbrook, *supra* note 215, at 146. And where search costs are higher, the property owner should have an even stronger obligation to provide notice. See Hovenkamp, *supra* note 208.

⁴²² See Roger D. Blair et al., *A Pedagogical Treatment of Bilateral Monopoly*, 55 S. ECON. J. 831, 831–32 (1989). On the particular problem in standard setting, see J. Gregory Sidak, *Patent Holdup and Oligopsonistic Collusion in Standard-Setting Organizations*, 5 J. COMP. L. & ECON. 123, 188 (2009).

ogy to offer.⁴²³ The two sides are then thrust into a situation where they can deal only with each other, or at least where offers from everyone else are clearly inferior.⁴²⁴

Ultimately, neither antitrust policy nor IP policy may be able to solve bilateral monopoly problems. But bilateral monopoly is ubiquitous and hardly limited to the context of IP rights.⁴²⁵ Of course, buyers' cartels are unlawful when they are found, and antitrust's rule of reason is designed for such situations.⁴²⁶ A standard-setting organization that is nothing more than a front for a cartel ought to be condemned under the antitrust laws. One that is engaged in true "joint purchasing" of technology that will be used to facilitate a valuable common standard, however, will be approved even if it has power in the buying market.⁴²⁷ Buyer power problems are likely to arise when a group of firms that dominate a market set a mandatory standard, as is likely to be the case of technologies such as network compatible communications devices.⁴²⁸ In such cases, we may have to countenance a legitimate buying organization that is able to suppress the price of the technology that it purchases. But that is hardly an argument for the patentee's concealment of his rights until the buyers have made their investments.

"Judicial" patent reform is underway, and the problems of overbreadth, notice and priority are significantly less imposing today than they were a decade ago. At the same time, *KSR* and *eBay* are relatively recent decisions.⁴²⁹ At this writing it is difficult to predict what their full impact will be. Even *Bilski*, whose holding did not move reform significantly, indicates a concern that too many patents are being issued—a concern that all nine justices shared. The five-justice majority noted that "while § 273 [of the Patent Act] appears to leave open the possibility of some business method patents, it does not suggest broad patentability of such claimed inventions."⁴³⁰ Four concurring justices

⁴²³ See Sidak, *supra* note 422, at 188.

⁴²⁴ See *id.*

⁴²⁵ See Fennell, *supra* note 402, at 1423–24 (discussing problems of bilateral monopoly and proposing revision of alienability rules to address them); Herbert Hovenkamp, *The Coase Theorem and Arthur Cecil Pigou*, 51 ARIZ. L. REV. 633, 640–49 (2009) (explaining bilateral monopoly in Coasian markets).

⁴²⁶ See HOVENKAMP, *supra* note 2, at 21.

⁴²⁷ See Herbert Hovenkamp, *Standards Ownership and Competition Policy*, 48 B.C. L. REV. 87, 91–92, 95 (2007).

⁴²⁸ *Golden Bridge Tech., Inc. v. Motorola, Inc.*, 547 F.3d 266, 271, 273 (5th Cir. 2008) (explaining that a standard-setting organization for cellular phones acted reasonably in setting a standard that excluded the plaintiff's technology), *cert. denied*, 129 S. Ct. 2055 (2009).

⁴²⁹ See generally *KSR*, 550 U.S. 398 (2007); *eBay*, 547 U.S. 388 (2006).

⁴³⁰ See *Bilski*, 130 S. Ct. at 3222; see *supra* notes 353–400 and accompanying text.

would have abolished business method patents altogether. Further, by joining in a portion of Justice Breyer's concurrence, Justice Scalia clearly agreed that under Federal Circuit law too many trivial method patents are being granted.⁴³¹ All of the "absurd" patents that Justice Breyer mentioned in that portion of his opinion, including patents for "training janitors to dust and vacuum using video displays," a "system for toilet reservations," and a "method of using color-coded bracelets to designate dating status in order to limit 'the embarrassment of rejection,'" had in fact been granted under Federal Circuit standards as developed in its *State Street* decision.⁴³² In sum, one cannot read the three opinions in *Bilski* without getting the clear message that the Supreme Court wants the Federal Circuit to continue cutting back on the number of minor patents as it indicated in its own *Bilski* decision. Unfortunately, the Supreme Court did not give much direction as to how this should be accomplished.

D. Legislative and Regulatory Sources of Patent Reform

The impetus for patent reform is also coming from other sources. Recently, the PTO itself initiated several reforms.⁴³³ One of the most important reforms, which a panel of the Federal Circuit subsequently rejected, was to impose severe limitations on patent continuations.⁴³⁴ Under the proposed regulations, a patent applicant would have been entitled to two continuation applications subsequent to the original application.⁴³⁵ If a third application were filed, the applicant would have to show that her claims could not have been stated in the previous applications.⁴³⁶ Otherwise, the third application would be treated as a new application and given its own filing date for priority purposes.⁴³⁷ The Federal Circuit struck down this rule as a violation of the patent statute's requirement that the validity date of a patent relate back to its initial filing date.⁴³⁸

⁴³¹ See *Bilski*, 130 S. Ct. at 3257 (Breyer, J., concurring).

⁴³² See *id.* at 3259; *State St.*, 149 F.3d at 1370. The list came from Judge Mayer's dissenting opinion in the Federal Circuit's *In re Bilski* decision. See 545 F.3d at 1004 (Mayer, J., dissenting).

⁴³³ See *BESSEN & MEURER*, *supra* note 148, at 220, 236.

⁴³⁴ See *id.* at 236.

⁴³⁵ See *Tafas v. Doll*, 559 F.3d 1345, 1350 (Fed. Cir. 2009), *reh'g en banc granted*, 328 F. App'x 658 (Fed. Cir. 2009).

⁴³⁶ See *id.*

⁴³⁷ See *id.*

⁴³⁸ See *id.* at 1364. The Federal Circuit has granted a rehearing en banc. See *Tafas v. Doll*, 328 F. App'x 658 (Fed. Cir. 2009).

The 2009 Patent Reform Act, currently pending before Congress, where it faces an uncertain future, moves the United States from a “first to invent” to a “first to file” system for determining priority, places limits on patent damages to the “specific contribution over prior art” that the patented invention makes to the infringer’s technology, and provides for expanded reexamination processes with increased opposition allowed by third parties.⁴³⁹ The bill, however, does not address most of the problems described in this Part. Further, Congress has been beset by lobbying over patent legislation, and previous patent reform bills have failed.⁴⁴⁰ As a result, the most significant patent reforms are likely to come not from statutory amendments or even from PTO rulemaking, but rather from the courts.

IV. REFORMATION IN COPYRIGHT

The situation for copyright is bleaker than for patents. Although core copyright protection is arguably necessary to allow authors and other copyright holders to prevent harmful piracy of their works, the 1976 Copyright Act confers excessively broad copyrights that prohibit most copying of copyrighted material, even when the copying does no harm to the copyright holder’s incentives to create or distribute their works.⁴⁴¹ Indeed, the Act shows the signs of special interest capture even more than the Patent Act does: it benefits well-organized interest groups while imposing costs on the general public; it contains numerous special provisions favoring various interest groups; the legislative history shows extensive interest group involvement; and the scope of statutory rights is indefensible on public interest grounds.⁴⁴² Yet, unlike in patent law, there is no reform on the horizon for copyright law.⁴⁴³

As Jessica Litman has written, “Unlike the porous 1909 [Copyright] Act, the 1976 Act is a detailed comprehensive code, chock-full of

⁴³⁹ Patent Reform Act of 2009, H.R. 1260, 111th Cong.

⁴⁴⁰ See Patent Reform Act of 2008, S. 3600, 110th Cong.; Patent Reform Act of 2007, S. 1145, 110th Cong.; Patent Reform Act of 2007, H.R. 1908, 110th Cong.; Patent Reform Act of 2006, S. 3818, 109th Cong.; Patent Reform Act of 2005, H.R. 2795, 109th Cong.

⁴⁴¹ See Bohannon, *supra* note 4, at 1031.

⁴⁴² See Bohannon, *supra* note 77, at 568 (showing that the Copyright Act bears all the indicia of special-interest legislation).

⁴⁴³ See Christina Bohannon, *Copyright Harm and Reform*, 96 IOWA L. REV. BULL. (forthcoming 2010); Jessica Litman, *Real Copyright Reform*, 96 IOWA L. REV. (forthcoming 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1474929 (noting need for copyright reform, including making personal uses non-infringing and giving greater rights to authors and lesser rights to intermediaries such as producers and publishers).

specific heavily negotiated compromises.”⁴⁴⁴ The current statute is generally characterized by broad rights for copyright holders and narrow, specific exemptions for users.⁴⁴⁵ For instance, the copyright holder’s right of public performance generally excludes others from “performing” a work in public.⁴⁴⁶ As the right is defined, it is broad enough to cover singing a song to oneself while walking through a public shopping mall, although one of the specifically drawn exemptions to this right might ultimately defeat a finding of infringement.⁴⁴⁷ Moreover, the statute grants to copyright holders the exclusive rights not only to copy but also to modify, transform, or adapt the copyrighted work in any way.⁴⁴⁸ Put together, these broad rights prohibit most copying of copyrighted material unless some exception applies.⁴⁴⁹ In addition, these rights endure for several generations: for the life of the author plus seventy years in the case of a work by a natural author, or for ninety-five years in the case of a work for hire.⁴⁵⁰

The scope and duration of these rights far exceed what is necessary to encourage the creation and dissemination of copyrighted works. Although the goal of the IP Clause of the Constitution is to “promote the Progress of Science” by allowing Congress to grant copyrights only “for limited Times,”⁴⁵¹ the current copyright term is the economic

⁴⁴⁴ Litman, *supra* note 110, at 859.

⁴⁴⁵ See generally 17 U.S.C. §§ 101–112 (2006).

⁴⁴⁶ See *id.* § 106(4).

⁴⁴⁷ See *id.* § 110(4) (exempting the noncommercial performance of a nondramatic literary or musical work). The other statutory exemptions to the public performance right are narrowly drawn to exempt activities such as “face-to-face” teaching in a non-profit educational institution or for performing a non-dramatic literary or musical work of a religious nature in the course of worship. See *id.* § 110(1).

⁴⁴⁸ See *id.* § 106(2).

⁴⁴⁹ See LANDES & POSNER, *supra* note 131, at 110. Landes and Posner argue:

[S]ince it is uncertain whether *any* copyright protection, let alone the amount conferred by current law, is necessary to enable authors and publishers to recover the fixed costs that must be incurred to generate the socially optimal output of expressive works, it would be speculative to conclude that without control over derivative works authors and publishers would be unable to cover those costs.

Id.

⁴⁵⁰ See 17 U.S.C. § 302(a), (c) (2006).

⁴⁵¹ U.S. CONST. art. I, § 8, cl. 8; see also *Eldred v. Ashcroft*, 537 U.S. 186, 260 (2003) (Breyer, J., dissenting) (observing that the Patent and Copyright Clause “assumes that it is the *disappearance* of the monopoly grant, not its *perpetuation*, that will, on balance, promote the dissemination of works already in existence”).

equivalent of indefinite ownership.⁴⁵² The scope of copyright protection is similarly problematic.⁴⁵³ A copyright holder can enjoin or demand royalties for virtually all copying, regardless of whether that copying was of a kind likely to harm the copyright holder's incentives to innovate.⁴⁵⁴

To be sure, the fair use doctrine considers harm to the "market for . . . the copyrighted work" as one factor in determining whether a use is fair.⁴⁵⁵ There are, however, numerous problems with its approach. First, harm is not a strict requirement but is merely one factor to be considered in the analysis.⁴⁵⁶ Second, because fair use is treated as an affirmative defense, the burden of proof is on the defendant to show the *absence* of harm.⁴⁵⁷ Third, harm is so poorly defined in the case law that the concept has become circular.⁴⁵⁸ Because the statute grants copyright holders virtually complete control over copying of their copyrighted works, a copyright holder can always argue that the defendant's copying caused her harm because the defendant could have paid her a license fee for the very copying that the defendant claims is fair.⁴⁵⁹ The effects of this circularity are far-reaching. It causes risk-averse users to obtain licenses even when they are unnecessary, and then the existence

⁴⁵² See *Eldred*, 537 U.S. at 255–56 (Breyer, J., dissenting). Justice Breyer explained the perpetual nature of such copyright term extensions, noting that:

The present extension will produce a copyright period of protection that, even under conservative assumptions, is worth more than 99.8% of protection *in perpetuity* (more than 99.99% for a songwriter like Irving Berlin and a song like Alexander's Ragtime Band). . . . The lack of a practically meaningful distinction from an author's *ex ante* perspective between (a) the statute's extended terms and (b) an infinite term makes this latest extension difficult to square with the Constitution's insistence on "limited Times."

Id. (internal citation omitted).

⁴⁵³ See 17 U.S.C. § 106.

⁴⁵⁴ See *id.* §§ 502–505.

⁴⁵⁵ See *id.* § 107.

⁴⁵⁶ See *id.* (listing four factors courts must consider in fair use analysis); *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577–78 (1994) (discussing fair use factors and stating that no single factor is dispositive).

⁴⁵⁷ See *Campbell*, 510 U.S. at 590 (explaining that the defendant bears the burden of proof on fair use).

⁴⁵⁸ See, e.g., *id.* at 590–91.

⁴⁵⁹ See *Princeton Univ. Press v. Mich. Document Servs.*, 99 F.3d 1381, 1387 (6th Cir. 1996) (discussing circularity problem); *Am. Geophysical Union v. Texaco, Inc.*, 60 F.3d 913, 929 (2d Cir. 1994) (describing the same issue); see also Bohannon, *supra* note 4, at 978–79; Mark A. Lemley, *Should a Licensing Market Require Licensing?*, 70 LAW & CONTEMP. PROBS. 185, 190–91 (2007); Matthew Africa, Comment, *The Misuse of Licensing Evidence in Fair Use Analysis: New Technologies, New Markets, and the Courts*, 88 CAL. L. REV. 1145, 1174–75 (2000).

of those licenses tends to reify the notion that the right to control such uses exists.⁴⁶⁰ Moreover, courts hold that the copyright holder is entitled to licensing fees even for uses that *increase* demand for the original copyrighted work—that is, for uses that are effectively complements to rather than substitutes for the copyrighted work.⁴⁶¹

The fundamental problem here is that the harm element in fair use is not tied to copyright's purpose of encouraging innovation. Although a court might consider whether the defendant should compensate a particular copyright holder for a particular use, the court does not inquire into whether the copyright holder would have relied on compensation for that use in deciding whether to create or distribute the copyrighted work.

Courts have found infringement or likely infringement in numerous cases where harm to the copyright holder's incentives was nonexistent, speculative, or trivial.⁴⁶² For instance, in the 2001 case *Suntrust Bank v. Houghton Mifflin Co.*, the U.S. District Court for the Northern District of Georgia preliminarily enjoined publication of a book entitled *The Wind Done Gone* by Alice Randall, concluding that success on the fair use defense was unlikely.⁴⁶³ Randall's book borrowed characters and plot lines, among other things, from the novel *Gone With the Wind* in order to produce a new story that critiqued the classic story by retelling portions of it from the point of view of a young slave girl.⁴⁶⁴ Despite acknowledging the critical and parodic character of *The Wind Done Gone*, and with little or no supporting evidence involving likely market effects, the district court held that the new work was likely to substitute for authorized sequels of *Gone With the Wind*.⁴⁶⁵

⁴⁶⁰ See Gibson, *supra* note 404, at 884 (“[T]he practice of licensing within gray areas eventually makes those areas less gray, as the licensing itself becomes the proof that the entitlement covers the use.”).

⁴⁶¹ See Bohannon, *supra* note 77, at 596–97 (discussing examples of derivative works that increase sales of the original works on which they are based); see also *Ty, Inc. v. Publ'ns Int'l Ltd.*, 292 F.3d 512, 517–19 (7th Cir. 2002) (distinguishing between uses of copyrighted material that are economic substitutes for the original work and uses that are economic complements).

⁴⁶² See Bohannon, *supra* note 4, at 1001–02.

⁴⁶³ See *Suntrust Bank v. Houghton Mifflin Co.* (*Suntrust I*), 136 F. Supp. 2d 1357, 1386 (N.D. Ga. 2001), *vacated*, 252 F.3d 1165 (11th Cir. 2001), *rev'd*, (*Suntrust II*), 268 F.3d 1257, (11th Cir. 2001).

⁴⁶⁴ See *Suntrust II*, 268 F.3d at 1270 (noting that *The Wind Done Gone* “is principally and purposefully a critical statement that seeks to rebut and destroy the perspective, judgments, and mythology of [*Gone With the Wind*],” and explaining that “[w]here Randall refers directly to Mitchell's plot and characters, she does so in service of her general attack” on the book).

⁴⁶⁵ See *Suntrust I*, 136 F. Supp. 2d at 1383.

The U.S. Court of Appeals for Eleventh Circuit reversed the injunction.⁴⁶⁶ Its review of the record disclosed that the copyright holder, Suntrust, “focuses on the value of [*Gone With the Wind*] and its derivatives, but fails to address and offers little evidence or argument to demonstrate that [*The Wind Done Gone*] would supplant demand for Suntrust’s licensed derivatives.”⁴⁶⁷ Indeed, since the preliminary injunction was reversed and the new book went on sale, anecdotal market evidence suggests that the book actually *enhanced* sales of the original and its derivatives. Amazon.com reports that customers who have purchased the new book also have purchased the original *Gone With the Wind* novel, its authorized sequel *Scarlett*, and the authorized motion picture.⁴⁶⁸

More recently, the U.S. District Court for the Southern District of New York entered a permanent injunction against the sale and distribution of *Lexicon*, an encyclopedic reference guide to the *Harry Potter* series.⁴⁶⁹ The court first held that plaintiffs J.K. Rowling, author of the *Harry Potter* series, and Warner Brothers did not have the right to control the market for reference guides to their works, and therefore that *Lexicon* did not cause any cognizable harm to that market.⁴⁷⁰ The court also concluded that the reference guide was not likely to supplant sales of the original seven *Harry Potter* novels.⁴⁷¹ The court opined, however, that *Lexicon* might potentially harm sales of Rowling’s two companion books, *Quidditch Through the Ages* and *Fantastic Beasts & Where to Find*

⁴⁶⁶ See *Suntrust II*, 268 F.3d at 1277.

⁴⁶⁷ *Id.* at 1275 (“[T]he evidence proffered in support of the fair use defense specifically and correctly focused on market substitution and demonstrates why Randall’s book is unlikely to displace sales of [*Gone With the Wind*].”).

⁴⁶⁸ See *The Wind Done Gone: A Novel*, AMAZON.COM, http://www.amazon.com/Wind-Done-Gone-Novel/dp/0618219064/ref=sr_1_1?ie=UTF8&s=books&qid=1250356777&sr=1-1 (last visited Sept. 2, 2010).

⁴⁶⁹ See *Warner Bros. Entm’t, Inc. v. RDR Books*, 575 F. Supp. 2d 513, 554 (S.D.N.Y. 2008).

⁴⁷⁰ See *id.* at 550 (“Notwithstanding Rowling’s public statements of her intention to publish her own encyclopedia, the market for reference guides to the *Harry Potter* works is not exclusively hers to exploit or license, no matter the commercial success attributable to the popularity of the original works.”).

⁴⁷¹ See *id.* The court went on to state:

Children may be an elusive market for book publishers, but it is hard to believe that a child, having read the *Lexicon*, would lose interest in reading (and thus his or her parents’ interest in purchasing) the *Harry Potter* series. . . . The *Lexicon* is thus unlikely to serve as a market substitute for the *Harry Potter* series and cause market harm.

Id.

Them.⁴⁷² There was no evidence of such harm, however, and it seems inappropriate to presume that an encyclopedic reference guide would supplant demand for Rowling's own fictional books, which look and read very differently.⁴⁷³ For instance, *Fantastic Beasts* purports to be the main character's—Harry Potter's—own course book for his Magical Creatures class at Hogwarts and contains Harry's own amusing handwritten notes throughout.⁴⁷⁴ What is more, the court speculated that “[a]lthough there is no supporting testimony,” the *Lexicon* reference guide could possibly have an effect on future works, such as musical productions or “print publications of [the] songs and poems” that appear in the *Harry Potter* books.⁴⁷⁵ But the plaintiffs submitted no evidence indicating that they planned to enter those markets, or that, if they did, the *Lexicon* would have any negative effect on those markets whatsoever.⁴⁷⁶ Indeed, it seems just as likely that the *Lexicon* reference guide would enhance sales of Rowling's works in current and future markets.

In these cases and others like them, courts prohibit or discourage many uses of copyrighted works absent proof that the defendant's use is likely to harm the plaintiff's incentives to produce copyrighted works.⁴⁷⁷ This is a particular problem in cases involving transformative

⁴⁷² See *id.* at 549–50. The court reasoned that “[u]nless they sought to enjoy the companion books for their entertainment value alone, consumers who purchased the *Lexicon* would have scant incentive to purchase either of Rowling's companion books, as the information contained in these short works has been incorporated into the *Lexicon* almost wholesale.” *Id.* Of course, the same could be said of *Lexicon*'s encyclopedic summaries of the seven original *Harry Potter* novels, but the court concluded that there was no likely harm to the market for those original novels. See *id.* Clearly, people do read Rowling's books for the entertainment value, not merely to obtain the information therein. In any event, the point here is simply that courts should not presume harm in such cases but should require evidence showing that the defendant's copying will actually reduce the copyright holder's incentives.

⁴⁷³ See *id.* at 549–51.

⁴⁷⁴ See *id.* at 519.

⁴⁷⁵ See *RDR Books*, 575 F. Supp. 2d at 551.

⁴⁷⁶ See *id.*

⁴⁷⁷ See, e.g., *Princeton Univ. Press*, 99 F.3d at 1386–87 (explaining that copyshop's copying of college coursepacks was not fair use although professors testified that they would not have purchased copyrighted works in the absence of fair use and no other evidence indicated that copyright holders were worse off as a result of the copying); *Ty, Inc. v. W. Highland Publ'g Inc.*, No. 98-C-4091, 1998 WL 698922, at *16 (N.D. Ill. Oct. 5, 1998) (granting preliminary injunction against defendant's publication of reference guide to Ty's Beanie Babies stuffed animals based on speculation that the guide might have a negative effect on their “marketing image” at some point in the future).

works, where others innovate by improving on existing works.⁴⁷⁸ At one time, such transformative works were themselves considered valuable “works of authorship” and, as such, were held to be noninfringing.⁴⁷⁹ As Landes and Posner have observed, these transformative uses often require substantial investment on the part of the improver, and therefore do not create the same free-riding problems that simple verbatim copying does.⁴⁸⁰ Moreover, many uses of copyrighted material are not only innovative, but also constitute protected speech.⁴⁸¹ Thus, when copyright law prohibits the use of copyrighted expression absent proof of harm to copyright incentives, it creates a glaring exception to the First Amendment rule that government may not prohibit speech absent a showing that the speech causes harm to a significant governmental interest.⁴⁸²

Evidence of copyright reform is very hard to find. To the contrary, in recent years, copyright law has been operating as a one-way ratchet favoring holders over consumers.⁴⁸³ On the legislative front, in 1998 Congress enacted the Copyright Term Extension Act (the “CTEA”), which extended the term of future and existing copyrights by twenty years.⁴⁸⁴ The Supreme Court later upheld retroactive application of this term extension to existing copyrighted works, despite the fact that retroactive term extensions to existing works did little or nothing to promote innovation, while they significantly burdened future use and innovation by others.⁴⁸⁵ Recent copyright legislation has expanded copy-

⁴⁷⁸ See, e.g., *Anderson v. Stallone*, 11 U.S.P.Q.2d 1161, 1167, 1169 (C.D. Cal. 1989) (finding plaintiff’s script for the character *Rocky* to be an unauthorized derivative work, and therefore not entitled to copyright protection).

⁴⁷⁹ See BENJAMIN KAPLAN, *AN UNHURRIED VIEW OF COPYRIGHT 10* (1966) (observing that as of the early 19th century, the rule seemed to be that “if the accused book was a work of authorship, it could not at the same time infringe”).

⁴⁸⁰ See LANDES & POSNER, *supra* note 131, at 109–115; see also *Mills Music, Inc. v. Snyder*, 469 U.S. 153, 174 (1985) (noting that many firms make large investments in derivative works).

⁴⁸¹ See Christina Bohannon, *Copyright Infringement and Harmless Speech*, 61 HASTINGS L.J. 1083, 1083 (2010) (arguing that because copying often constitutes speech, the First Amendment requires that applications of copyright law be justified by a showing that the copying harms the copyright holder’s incentives to create or distribute copyrighted works); Rebecca Tushnet, *Copy This Essay: How Fair Use Doctrine Harms Free Speech and How Copying Serves It*, 114 YALE L.J. 535, 562–86 (2004) (arguing that both transformative and non-transformative copying has speech value).

⁴⁸² See Bohannon, *supra* note 481, at 4.

⁴⁸³ See, e.g., Bohannon, *supra* note 4, at 971.

⁴⁸⁴ See Sonny Bono Copyright Term Extension Act, Pub. L. No. 105-298, 112 Stat. 2827 (1998) (codified as amended in scattered sections of Title 17 of the U.S. Code).

⁴⁸⁵ See *Eldred*, 537 U.S. at 249–51.

rights even further. For instance, in the past few years, Congress has resurrected copyrights for many works that previously had fallen into the public domain.⁴⁸⁶

Unfortunately, unlike in patent and antitrust law, there is very little evidence of copyright reform in the courts. The Supreme Court has not been consistent in making copyright protection commensurate with copyright's purpose. The Court's 1984 decision in *Sony Corp. of America v. Universal City Studios, Inc.* recognized the centrality of harm and the need to prove it.⁴⁸⁷ Writing for the majority, Justice Stevens explained:

The purpose of copyright is to create incentives for creative effort. . . . [A] use that has no demonstrable effect upon the potential market for, or the value of, the copyrighted work need not be prohibited in order to protect the author's incentive to create. . . . Actual present harm need not be shown; such a requirement would leave the copyright holder with no defense against predictable damage. . . . What is necessary is a showing by a preponderance of the evidence that some meaningful likelihood of future harm exists.⁴⁸⁸

The Court in *Sony* went on to hold that home copying of copyrighted television programs for purposes of "time-shifting," or watching the programs at a later time, constituted fair use because the evidence showed that "[h]arm from time-shifting is speculative and, at best, minimal."⁴⁸⁹

Yet, the Court's 1994 decision in *Campbell v. Acuff-Rose Music* seems to retreat from *Sony*.⁴⁹⁰ In *Campbell*, the Court held that the defendant 2

⁴⁸⁶ See Uruguay Round Agreement Acts ("URAA"), Pub. L. No. 103-465, 108 Stat. 4809, § 514 (1994) (codified as amended at 17 U.S.C. §§ 104A, 109 (2006)) (restoring U.S. copyright protection to certain foreign works that were previously in the public domain in the U.S.). This legislation has produced mixed results in the courts. Compare *Golan v. Gonzales*, 501 F.3d 1179, 1197 (10th Cir. 2007) (holding provision unconstitutional), with *Luck's Music Library, Inc. v. Gonzales*, 407 F.3d 1262, 1262-63 (D.C. Cir. 2005) (holding provision constitutional). See generally David S. Olson, *First Amendment Interests and Copyright Accommodations*, 50 B.C. L. REV. 1393 (2009) (arguing that recent changes, such as the elimination of registration requirements and other formalities, have significantly altered the traditional contours of copyright by greatly decreasing the public domain and calling for greater First Amendment scrutiny in the area of copyright).

⁴⁸⁷ 464 U.S. 417, 456 (1984).

⁴⁸⁸ *Id.* at 450-51 (internal citations omitted).

⁴⁸⁹ *Id.* at 454 (quoting the district court's decision in *Universal City Studios, Inc. v. Sony Corp. of Am.*, 480 F. Supp. 429, 467 (C.D. Cal. 1979)); see Bohannon, *supra* note 4, at 991-96 (showing the *Sony* Court's harm-based approach to fair use).

⁴⁹⁰ See *Campbell*, 510 U.S. at 594.

Live Crew's rap version of Roy Orbison's song *Oh, Pretty Woman* reasonably could be perceived as a parody of the original song.⁴⁹¹ The Court sensibly concluded that copyright holders do not control the market for parodies and other criticism of their works, and therefore the unauthorized parody did not cause cognizable harm to that market under the Copyright Act.⁴⁹² Although the Court did inquire into harm, it seemed less emphatic about the need to limit the scope of copyrights to protect only against the kind of harmful copying that is likely to reduce incentives to create and distribute copyrighted works.⁴⁹³ First, the Court stated that copyright holders do get to control satirical uses of their works, despite the difficulty of distinguishing between parody and satire and the seemingly low probability that copyright holders would rely on the market for satirical uses of their works in deciding whether to create or distribute their works.⁴⁹⁴ Second, the Court suggested that the defendant might lose on its fair use defense if its parody caused any harm to the remote market for non-parody rap versions of the original song, and it remanded for further findings on this issue.⁴⁹⁵ Third, although there was no reason to presume on the facts that any harm had occurred or was likely to occur, the Court held that the defendant bore the burden to show the *absence* of harm as part of its fair use defense.⁴⁹⁶ The Supreme Court's ambivalence in these cases suggests that it has not felt the same urgency as it has in patent law to bring copyright law into harmony with its constitutional justification.

V. TOWARD A CONCEPT OF "IP INJURY"

Recent reforms, particularly in patent law, are promising steps toward encouraging innovation and competition.⁴⁹⁷ Much, however, remains to be done. Landes and Posner have argued that the common law can provide useful baselines for measuring the proper scope of IP entitlements because the common law is more insulated from special interests.⁴⁹⁸ As a result, judges are more likely to keep their eyes on the

⁴⁹¹ See *id.* at 583–84.

⁴⁹² See *id.* at 592–93.

⁴⁹³ See *id.* at 590–91.

⁴⁹⁴ See *id.* at 581.

⁴⁹⁵ See *id.* at 593–94.

⁴⁹⁶ See *Campbell*, 510 U.S. at 590–91.

⁴⁹⁷ See *supra* notes 261–432 and accompanying text.

⁴⁹⁸ See LANDES & POSNER, *supra* note 131, at 205–06.

ball.⁴⁹⁹ We agree, and we believe that IP can profitably borrow from the “common law” of antitrust as well.

In addition to substantive reforms, we propose a requirement of IP harm in infringement actions that would borrow from the “antitrust injury” doctrine and antitrust’s strict, common law-driven requirements that the right kind of harm and damages be proven.⁵⁰⁰ In IP law, provable harm should relate to the incentive to innovate, just as in antitrust provable harm relates to the incentive to compete. By querying first how the plaintiff was injured, a court might avoid much more difficult decisions concerning the appropriate scope of patent or copyright protection. To be sure, imposing a harm requirement will not solve every problem of IP overreaching. The “antitrust injury” doctrine went a long way toward aligning antitrust policy with the incentives to compete, but no small part of the antitrust revolution resulted from substantive changes in the law.⁵⁰¹ Nevertheless, a serious harm requirement can help bridge the gap between the incentive to innovate and an imperfect doctrine. Even if the law dictates that an infringement has occurred, plaintiffs who do not have the right kind of injury should be denied recovery.

One of us has already advocated for such a harm requirement in copyright cases, and here we extend the argument to patent infringement actions as well.⁵⁰² The kind of harm necessary to support an infringement action is different for patents, however, than for copyright.⁵⁰³ Someone obtains a copyright by producing a work and in most cases by registering it.⁵⁰⁴ The copyrighted work is what it is, and its “claims,” or boundaries, are defined by the work itself plus legal rules

⁴⁹⁹ See *id.* at 10, 87, 205–06.

⁵⁰⁰ See, e.g., *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 489 (1977); 2A AREEDA & HOVENKAMP, *supra* note 43, ¶ 337, at 82.

⁵⁰¹ See 2A AREEDA & HOVENKAMP, *supra* note 43, ¶ 337, at 82–88.

⁵⁰² The argument for this view of harm in copyright was initially proposed in Bohannon, *supra* note 4, at 969 and subsequently developed by numerous others. See Shyamkrishna Balganes, *Foreseeability and Copyright Incentives*, 122 HARV. L. REV. 1569, 1633 (2009); Thomas F. Cotter, *Transformative Use and Cognizable Harm*, 12 VAND. J. ENT. & TECH. L. 701, 704–05 (2010); Christopher Sprigman, *Copyright and the Rule of Reason*, 7 J. TELECOMM. & HIGH TECH. L. 317, 342 (2009); Sara K. Stadler, *Copyright as Trade Regulation*, 155 U. PA. L. REV. 899, 959 (2008). See generally Bohannon, *supra* note 481 (applying the harm principle to First Amendment analysis of copyright infringement).

⁵⁰³ Compare 17 U.S.C. § 501 (2006) (defining infringement of copyright), with 35 U.S.C. § 271 (2006) (defining infringement of patents).

⁵⁰⁴ See 17 U.S.C. § 102 (2006). Registration is not a prerequisite for protection, but is a precondition for filing a copyright infringement claim. The limitation does not limit the Court’s subject-matter jurisdiction, however. *Reed Elsevier, Inc. v. Muchnick*, 130 S. Ct. 1237, 1243 (2010).

about copying and fair use.⁵⁰⁵ By contrast, a patent consists of a detailed written description that refers to an invention that is something other than the patent document itself, and then states a set of unique “claims” asserting the specific parts of this invention that the patentee has invented.⁵⁰⁶ Thus, the patent provides us with a great deal more information about what the patentee actually “foresaw” as the invention, although the law is also present to determine what the applicant is entitled to claim. Overly broad patent claiming may create foreseeable entitlements, but these will do nothing to incentivize innovation and may even undermine it. Someone who holds a patent that never should have issued in the first place is certainly harmed by an infringement, but that is not the kind of harm that the patent system contemplates. To be sure, a patentee is entitled to rely on the Patent Act and the decisions interpreting it, even if the system is poorly designed. At the same time, statutes must be interpreted, and courts often have room to construe them broadly or narrowly.

In patent law foreseeability as of the time the work is created has a much more subjective dimension than copyright. The patentee’s own patent application and its prosecution history give us information about what the patent applicant actually foresaw and was entitled to foresee.⁵⁰⁷ Claims themselves can be invalid for claiming more than the inventor actually invented.⁵⁰⁸ Further, not all patent claims that are ultimately approved were included at the time the patent application was drafted.⁵⁰⁹ Some claims are drafted much later, sometimes even after the patent applicant has had a chance to inspect the technology of rivals.⁵¹⁰ The case for finding foreseeable harm diminishes significantly as the pedigree of a particular patent claim indicates that it was not a part of the original application. Closely related is the problem of priority. Because late-filed claims relate back to the date of the original patent application, they can give the patentee legal priority over technology that actually preceded the drafting of the claim that it infringed.⁵¹¹ In interpreting the scope and enforceability of late claims, the underlying principle should be that the patentee is harmed only by those in-

⁵⁰⁵ See Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 720 (2009) (explaining copyright “claiming”).

⁵⁰⁶ See 35 U.S.C. §§ 101, 102, 103, 112 (2006).

⁵⁰⁷ See, e.g., *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 741 (2001) (holding that prosecution history of patent is relevant to construing the claims in it).

⁵⁰⁸ See, e.g., *O’Reilly v. Morse*, 56 U.S. (15 How.) 62, 113 (1853).

⁵⁰⁹ See *BESSEN & MEURER*, *supra* note 148, at 62–63.

⁵¹⁰ See *supra* notes 207–213, 237–251, and accompanying text.

⁵¹¹ See *supra* notes 207–213, 237–251, and accompanying text.

fringements that affected the ex ante incentive to innovate in the first place.

Much of the revolution that has gone on in antitrust has pertained to private actions and the types of harm needed to support them. Today the great majority of actions are brought by private parties,⁵¹² and antitrust reform was driven by the idea that private litigants use the antitrust laws for anticompetitive ends, mainly to protect themselves from intense competition.⁵¹³ With rare exceptions, the IP laws are enforced almost exclusively by private parties and the same critique applies to them.

The doctrine that has become the poster child for the reform of private antitrust litigation is the “antitrust injury” rule developed by the Supreme Court in its 1977 *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.* decision.⁵¹⁴ The *Brunswick* case is illustrative, both for how it relates its harm requirement to the goals of the antitrust laws, and how it imposes a limiting interpretation on a private enforcement provision that seems clear and expansive on its face.⁵¹⁵ Finally, it illustrates how the injury doctrine can provide a correction for substantive doctrines that are ambiguous or not in synch with the underlying goals of the statute in question.⁵¹⁶

The *Brunswick* plaintiff, Pueblo Bowl-O-Mat, was a struggling, independent bowling alley in Pueblo, Colorado.⁵¹⁷ It faced one competitor, which was financially even worse off than itself.⁵¹⁸ The competitor was also deeply in debt to its principal hardware supplier, Brunswick, a very large firm that produced an array of sporting goods, including equipment for bowling alleys.⁵¹⁹ The rival bowling alley settled its debts under an arrangement in which Brunswick acquired the alley, gave it an infusion of cash, and began operating it as a subsidiary.⁵²⁰ The plaintiff then filed suit, claiming that Brunswick’s acquisition of the strug-

⁵¹² In most years, around ninety percent of antitrust complaints are filed by private parties. See BUREAU OF JUSTICE STATISTICS, U.S. DEP’T OF JUSTICE, SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS ONLINE (2008), available at <http://www.albany.edu/sourcebook/pdf/t5412008.pdf>.

⁵¹³ See *supra* note 21 and accompanying text; see also William H. Page, *Optimal Antitrust Penalties and Competitors’ Injury*, 88 MICH. L. REV. 2151, 2166 (1990).

⁵¹⁴ 429 U.S. at 489.

⁵¹⁵ See *id.*

⁵¹⁶ See *id.*

⁵¹⁷ *Id.* at 479.

⁵¹⁸ See *id.* at 480.

⁵¹⁹ See *id.*

⁵²⁰ See *Brunswick*, 429 U.S. at 480.

gling alley was an unlawful merger.⁵²¹ As a result, the plaintiff claimed, instead of being in a market where it faced a listless competitor on the verge of bankruptcy, it had to face a newly energized rival with substantial resources from above.⁵²²

The facts immediately invite a double take. Merger law at the time probably made the merger unlawful.⁵²³ Further, the plaintiff was clearly “injured” by the merger.⁵²⁴ Being forced to compete with a rejuvenated, Brunswick-owned facility would be much tougher than competing with a debt-ridden independent.⁵²⁵ Thus, under a plain reading of the expansive private-action provision of the antitrust laws, which requires only injury and causation, all of the statutory language appeared to favor the plaintiff’s position, provided that it could show that the merger was unlawful.⁵²⁶

But the Supreme Court did not focus on whether the merger was technically unlawful.⁵²⁷ Indeed, it did not even reach the issue.⁵²⁸ The only thing that mattered was that the plaintiff was complaining about *more* competition rather than less in the Pueblo bowling market.⁵²⁹ The nature of the plaintiff’s complaint was that Pueblo Bowl-O-Mat would have been a dominant firm with a failing competitor, and that the merger forced him to face a much more aggressive rival.⁵³⁰ Clearly, recognizing such a complaint would be inimical to the goals of the antitrust laws.

The Supreme Court responded with a rule that requires a private antitrust plaintiff to show not just any injury, but *antitrust* injury—that is, injury that results from decreased competition.⁵³¹ The rule was fashioned by one of the Court’s great, pro-antitrust liberals and a survivor of the Warren Era, Justice Thurgood Marshall.⁵³² Further, the antitrust injury rule that he formulated seems quite inconsistent with the statutory language, which provides that: “[A]ny person who shall be injured in his business or property by reason of anything forbidden in the anti-

⁵²¹ *See id.*

⁵²² *See id.* at 481.

⁵²³ On the substantive requirements of merger law, see 4 AREEDA & HOVENKAMP, *supra* note 8, ¶ 905, at 30–32.

⁵²⁴ *See Brunswick*, 429 U.S. at 481.

⁵²⁵ *See id.*

⁵²⁶ *See* 15 U.S.C. § 15 (2006).

⁵²⁷ *See Brunswick*, 429 U.S. at 489.

⁵²⁸ *See id.*

⁵²⁹ *See id.*

⁵³⁰ *See id.* at 481.

⁵³¹ *See id.* at 489.

⁵³² *Id.* at 478.

trust laws may sue therefor . . . and shall recover threefold the damages by him sustained”⁵³³ That language seems to be both mandatory and comprehensive: all it requires is an injury to business or property that is caused by an antitrust violation.⁵³⁴ Nevertheless, Justice Marshall wrote for a unanimous Court:

Every merger of two existing entities into one, whether lawful or unlawful, has the potential for producing economic readjustments that adversely affect some persons. But Congress has not condemned mergers on that account; it has condemned them *only when they may produce anticompetitive effects. Yet under the Court of Appeals’ holding, once a merger is found to violate § 7, all dislocations caused by the merger are actionable, regardless of whether those dislocations have anything to do with the reason the merger was condemned. . . .*

....

. . . At base, respondents complain that by acquiring the failing centers petitioner preserved competition. . . . The damages respondents obtained are designed to provide them with the profits they would have realized had competition been reduced. . . .

....

. . . [T]o recover treble damages on account of § 7 violations, [plaintiffs] must prove more than injury causally linked to an illegal presence in the market. Plaintiffs must prove *antitrust* injury, which is to say injury of the type the antitrust laws were intended to prevent and that flows from that which makes defendants’ acts unlawful. *The injury should reflect the anticompetitive effect either of the violation or of anticompetitive acts made possible by the violation.* It should, in short, be “the type of loss that the claimed violations . . . would be likely to cause.”⁵³⁵

The Court’s decision in *Brunswick* revolutionized private antitrust enforcement, and lack of “antitrust injury” has led to the dismissal of hundreds of private antitrust cases.⁵³⁶ Indeed, antitrust injury is now treated as a doctrine of standing for private plaintiff actions; in assess-

⁵³³ 15 U.S.C. § 15.

⁵³⁴ *See id.*

⁵³⁵ *Brunswick*, 429 U.S. at 487–89 (quoting in part *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 125 (1969)) (emphases added).

⁵³⁶ *See* 2A AREEDA & HOVENKAMP, *supra* note 43, ¶ 337, at 82–96 (discussing scope of antitrust injury doctrine and cases).

ing the plaintiff's standing under this doctrine, courts assume for the sake of argument that there is an antitrust violation.⁵³⁷

Brunswick's most notable features are its virtual disregard of both the question of a substantive violation as well as the language of antitrust's statutory private action provision, which is in fact quite categorical.⁵³⁸ It speaks of "any person" who is injured in business or property "by reason of" an antitrust violation.⁵³⁹ The statute itself says nothing about relating the nature of the injury to the competition-furthering goals of antitrust.⁵⁴⁰ Yet, today it is clear that the antitrust injury rule applies to equity actions just as much as to damages actions.⁵⁴¹ Although antitrust's injunction provision requires only threatened harm of any type,⁵⁴² the Supreme Court has held that "[i]t would be anomalous . . . to read the Clayton Act to authorize a private plaintiff to secure an injunction against a threatened injury for which he would not be entitled to compensation if the injury actually occurred."⁵⁴³

In IP today, as in antitrust thirty years ago, the courts too often equate the issue of actionable injury with the issue of infringement. As a first step in their own efforts toward reform, courts need to incorporate into IP laws a conception of "IP injury," which would require not merely injury-in-fact or speculative injury, but rather demonstrable injury that is tied to the purpose for which the IP laws were passed in the first place. IP law should recognize harm only for uses that are likely to interfere with IP holders' ex ante decisions to create or distribute their works—that is, only for harms that are consistent with patent and copyright's constitutionally mandated purpose of furthering innovation.

Of course, injury-in-fact typically accompanies infringement: the IP holder can say that the defendant could have paid a license fee for the use, even if the defendant's use does not supplant sales of the copyrighted work or patented invention. After all, the defendant is free-riding on the IP holder's work, and the IP holder should at least be allowed to share in the benefits that the defendant gained from its use.

This argument reflects a view that free-riding is a wrong in and of itself, and that property rights in IP should internalize all of the benefits

⁵³⁷ See *id.* ¶ 335f, at 73 ("To test standing, assume a violation.").

⁵³⁸ See 429 U.S. at 489.

⁵³⁹ 15 U.S.C. § 15.

⁵⁴⁰ See *id.*

⁵⁴¹ See, e.g., *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 111, 112 (1986).

⁵⁴² 15 U.S.C. § 26 (2006) (giving a private injunction right to any person facing "threatened loss or damage by a violation of the antitrust laws").

⁵⁴³ See *Cargill*, 479 U.S. at 112.

that the IP produces for others. The argument both overstates and mischaracterizes the nature of free-riding and the harm that it causes. Further, it fails to relate free-riding to the incentive to create. As Brett Frischmann and Mark Lemley have observed, “Spillovers—uncompensated benefits that one person’s activity provides to another—are everywhere.”⁵⁴⁴ It is both impossible and undesirable to compensate for all of them.⁵⁴⁵ Spillovers are one of the true benefits of investment in all kinds of property rights, intellectual or otherwise.⁵⁴⁶ Sellers of butter benefit from the production of better bread, yet bread producers are not entitled to a percentage of butter sales. Nor is the author of a popular, copyrighted opera entitled to a cut of a firm’s sales of opera glasses. Innovation has always benefited people other than the innovator, and the law has not attempted to capture all of those external benefits and return them.⁵⁴⁷ Quite the contrary, the IP Clause of the Constitution seeks to encourage innovation not for the benefit of the individual inventor, but rather for the benefit of society at large.⁵⁴⁸ Significant innovations tend to produce many valuable spillovers—that is why we encourage them.⁵⁴⁹

Indeed, innovators are themselves the beneficiaries of spillovers.⁵⁵⁰ For example, the development of patented or copyrighted software

⁵⁴⁴ Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 258 (2007) (providing examples).

⁵⁴⁵ See Julie E. Cohen, *Creativity and Culture in Copyright Theory*, 40 U.C. DAVIS L. REV. 1151, 1155 (2007); Brett M. Frischmann, *Spillovers Theory and Its Conceptual Boundaries*, 51 WM. & MARY L. REV. 801, 802–03 (2009); Frischmann & Lemley, *supra* note 544, at 284 (“[T]here is good economic evidence that greater innovation spillovers are associated with more, not less, innovation . . .”); see also Wendy J. Gordon, *Harmless Use: Gleaning from Fields of Copyrighted Works*, 77 FORDHAM L. REV. 2411, 2419 (2009) (arguing that, taken to its logical conclusion, the prohibition against reaping where one has not sown “would be insane” because “in a civilized nation full of physical, technological, and cultural infrastructure, we reap from birth what others have sown”).

⁵⁴⁶ See Harold Demsetz, *The Private Production of Public Goods*, 13 J.L. & ECON. 293, 305–06 (1970); Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1032 (2005).

⁵⁴⁷ See Frischmann & Lemley, *supra* note 544, at 259.

⁵⁴⁸ See, e.g., *Kendall v. Winsor*, 62 U.S. (21 How.) 322, 327–28 (1859) (“[T]he limited and temporary monopoly granted to inventors was never designed for their exclusive profit or advantage; the benefit to the public or community at large was another and doubtless the primary object in granting and securing that monopoly.”).

⁵⁴⁹ See Frischmann & Lemley, *supra* note 544, at 284 (“[T]here is good economic evidence that greater innovation spillovers are associated with more, not less, innovation, which suggests that if anything we have too much IP protection and too few spillovers today.”); Richard A. Posner, *Do We Have Too Many Intellectual Property Rights?*, 9 MARQ. INTELL. PROP. L. REV. 173, 174 (2005) (stating that the IP system recognizes too many rights, producing too little in uncompensated social benefit).

⁵⁵⁰ See Frischmann & Lemley, *supra* note 544, at 257–58.

benefits greatly from a market that contains computers. The developer of a patented toaster benefits greatly from the fact that homes are equipped with electricity and that bakers make bread. But we do not require these inventors to compensate computer manufacturers, electric utilities or wholesale bakers. Or to view the issue from another perspective, the developers of computers or builders of electric utilities will not be compensated for every benefit that their work confers on the makers of collateral and complementary products. Uncompensated spillovers go in both directions, and indeed, some IP rights become very valuable precisely because they sit atop the technology developed by others.⁵⁵¹ For example, Microsoft Windows' value depends entirely on the existence of a computer hardware infrastructure that Microsoft itself did not develop.

IP law has become too obsessed with the notion that spilling over is itself a wrong for which compensation is due, or that the IP holder is entitled to compensation for every external benefit that its right produces, whether or not there is a reduction in the incentive to innovate. Spillovers are the "surplus" that innovation produces, just as the consumers' surplus, or the difference between value and price, is the surplus that well-functioning markets produce. Requiring IP holders to be compensated for spillovers would be tantamount to requiring monopolists to be compensated up to the full value that customers place on the goods they sell. Antitrust is built on the bedrock principle that consumers are antitrust's protected class; consumers, not manufacturers, are thus entitled to any surplus that increased competition produces.⁵⁵²

IP law needs a similar approach that requires compensation only where the defendant's use harms the IP holder's ex ante incentives to innovate. Often the defendant's use actually increases the IP holder's incentives to innovate by increasing sales of the original work.⁵⁵³ Consider the British *Da Vinci Code* case. Dan Brown wrote the blockbuster novel *The Da Vinci Code*, a religious historical thriller involving a romantic relationship that allegedly existed between Jesus Christ and Mary Magdalene.⁵⁵⁴ Brown's book borrowed heavily from a nonfiction book by Michael Baigent, Richard Leigh, and Henry Lincoln entitled *Holy Blood, Holy Grail*, which explored the Jesus/Mary Magdalene story.⁵⁵⁵

⁵⁵¹ See *id.*

⁵⁵² See Herbert Hovenkamp, *Antitrust's Protected Classes*, 88 MICH. L. REV. 1, 11 (1989).

⁵⁵³ See, e.g., *supra* notes 466–468 and accompanying text.

⁵⁵⁴ See James M. Klatell, *Dramatic Day at "Da Vinci" Trial*, CBS NEWS (Mar. 7, 2006), <http://www.cbsnews.com/stories/2006/03/07/entertainment/main1379394.shtml>.

⁵⁵⁵ See *id.*

When *Da Vinci Code* was published, *Holy Blood's* sales increased dramatically, restoring it briefly to the British best-seller list.⁵⁵⁶ But that did not prevent its publisher from filing a copyright infringement suit in a British court.⁵⁵⁷ The court eventually found no infringement because, although Brown apparently borrowed uncopyrightable facts and ideas, he borrowed only a trivial amount of copyrighted expression.⁵⁵⁸

Clearly, *The Da Vinci Code* is not a substitute for, but rather a complement to, *Holy Blood*, *Holy Grail*. When goods are complements, sales of one *increase* sales of the other—for example, cheaper butter increases bread sales and better software increases computer sales. Product complementarity increases, rather than decreases, the incentive to innovate. As a result, permitting infringement actions against complements is inconsistent with the goals of copyright law unless the complementary work is one that the copyright owner was very likely to develop itself. Although the authors of *Holy Blood*, *Holy Grail* might conceivably have contemplated a novel based on their nonfiction work, it certainly would not have been the novel that Dan Brown wrote. Ex ante, the prediction that someone will base a best-selling novel on the author's nonfiction historical book would almost certainly have increased rather than reduced that author's incentive to write it.

Spillovers become a problem only when they seriously threaten the incentive to invest in the first place. Spillovers that cause no foreseeable harm or that actually benefit the IP holder do not fall into this category. Under current IP infringement standards, about the only thing that we can say *ab initio* about an infringing work is that it is a spillover. Without analysis, we cannot conclude whether it harms, benefits, or has no impact on the value of an IP holder's rights. We certainly cannot say whether condemning it is worth the costs of doing so, including the loss of innovation on the part of others.

CONCLUSION

IP owners have been enriched for many years by expansive private enforcement provisions that presume harm and base damages on factors such as the infringer's profits or largely hypothetical lost licensing fees. Moreover, IP owners have not had to provide any proof that the IP

⁵⁵⁶ See *id.* (noting that sales of the plaintiff's book had increased some 3500 percent).

⁵⁵⁷ See James M. Klatell, *Mining Da Vinci*, CBS News (Mar. 13, 2006), http://www.cbsnews.com/stories/2006/03/10/listening_post/main1390534.shtml; see also Bohannon, *supra* note 481, at 18 n.92; Bohannon, *supra* note 4, at 1028–29.

⁵⁵⁸ See *Baigent v. Random House Group Ltd.*, [2006] EWHC (Ch) 719 (Eng.) ¶ 182 (finding mainly copying of ideas rather than expression), *aff'd*, [2007] EWCA (Civ) 247 (Eng.).

owner has been harmed in a way that is likely to diminish her incentive to innovate in the first place. As our experience in antitrust law has shown, one problem with per se rules of this sort is that they fail to make records about actual effects. For example, one of the reasons that we know so little about the economic consequences of resale price maintenance, or supplier fixing of the prices at which their goods can be resold, is that resale price maintenance was unlawful per se from 1911 until 2007.⁵⁵⁹ During that time, a plaintiff proved illegality by simply showing the agreement to maintain prices, and no one cared about anticompetitive effects.⁵⁶⁰ As a result, the litigation process rarely determined what were these effects. The same is true in IP cases. For instance, in the *Wind Done Gone* case discussed earlier, the lower court's preliminary injunction, based in part on a presumption that the defendant's copying would cause irreparable harm, precluded the development of facts regarding the effects of the defendant's parody on the market for the plaintiff's work.

By contrast, requiring serious proof of harm in IP infringement cases would enable courts to develop records that could provide information about the kinds of infringements that actually diminish IP holders' investment expectations. In order to limit IP protection to that which is necessary to encourage innovation, IP injury must measure incentives ex ante rather than ex post. Infringement harms innovation when it diminishes anticipated returns, and the only effects that can be anticipated are those that are reasonably foreseeable.⁵⁶¹ Indeed, if an act of IP infringement does no harm to the rights owner but benefits either the infringer or its customers and does not affect anyone else, then that act is a pure Pareto improvement—an economic ideal that is true of very few involuntary transactions. Condemning such an act would be inefficient legal policy even without regard to the lost incentives to innovate that it creates and the transaction costs of employing the legal system. The trick, of course, is defining the circumstances under which the IP owner is injured. An infringement in a market that the IP holder would never have entered anyway “injures” him only in

⁵⁵⁹ See *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 881, 882 (2007); Bork & Bowman, *supra* note 20, at 364–65.

⁵⁶⁰ At least, not until the Supreme Court imposed the “antitrust injury” doctrine on maximum resale price maintenance. See *Atl. Richfield v. USA Petroleum Co.*, 495 U.S. 328, 345–46 (1990) (explaining that antitrust injury doctrine bars recovery from rivals claiming that prices imposed by competitor on its dealers were too low and stating that it did not matter that at the time maximum resale price maintenance was unlawful per se).

⁵⁶¹ See Bohannon, *supra* note 4, at 988–89.

the sense that he could have obtained a royalty but did not—that is, it fails to make him better off.

In both patent and copyright infringement, a serious harm requirement would entail remedies for “naked” infringement, or instances where acts of infringement clearly deprive the IP right holder of sales. It would also require remedies for infringements in obvious markets where the infringer is not a competitor but it is clear that an innovator would rely on those royalties in deciding whether to create the work. This would include, for example, movie versions of copyrighted novels and short stories, translations, or lengthy published excerpts. On the other hand, it would suggest little or no protection for situations where any harm caused by the alleged infringement is merely speculative. If a particular use is unlikely to affect the IP holder’s decision to produce a work, then it should not be deemed infringing. Thus, there should ordinarily be no finding of infringement where the defendant produces a complementary good that increases sales of the protected good or where the defendant uses the work for personal, non-commercial purposes for which ordinary people are likely unwilling to pay.

The injury requirement would also preclude finding infringement where the infringer’s use occupies a market that is remote from the IP holder’s original market. Here, a page of antitrust law is helpful, particularly the law of nascent or unestablished businesses as plaintiffs. Antitrust permits firms that are about to enter new markets to recover for antitrust violations, but only under strictly defined circumstances. The plaintiff who claims “I would have entered this market but for the defendant’s anticompetitive conduct” must typically show “intent and preparedness,” which generally requires an investment, a set of business plans, or other commitments to show that the defendant actually deprived the plaintiff of an opportunity that it had foreseen and to which it had made a substantial commitment.⁵⁶²

The unestablished business requirements in antitrust are rules about standing or entitlement to sue. Like the antitrust-injury doctrine,

⁵⁶² See 2A AREEDA & HOVENKAMP, *supra* note 43, ¶ 349, at 225–28; see also, e.g., *Aviation Upgrade Techs., Inc. v. Boeing Co.*, 78 F. App’x 623, 624, 625 (9th Cir. 2003) (denying standing to nascent firm that had no experience in the market, no plant, no employees other than its principal, no financing, and did not have required FAA certification); *Bourns, Inc. v. Raychem Corp.*, 331 F.3d 704, 712 (9th Cir. 2003) (finding that plaintiff did not have an antitrust case); *Ashley Creek Phosphate Co. v. Chevron USA, Inc.*, 315 F.3d 1245, 1249–53, 1268 (10th Cir. 2003) (explaining that a firm that owned some mineral leases but had not yet determined whether entry into phosphate production would be profitable, had not obtained financing, and had no experience in production, lacked antitrust standing).

these rules were made in the face of a statute that proclaims that *anyone* who is injured in her business or property has an entitlement to damages. Further, because they are rules of standing, they assume that there was in fact an antitrust violation, just as the antitrust-injury doctrine does.⁵⁶³ These rules of standing are driven by the great ambiguity that attends any determination that exclusionary conduct actually violates the antitrust laws, about appraising the degree of harm in the absence of evidence of a clearly injured plaintiff, and our desire to create the right set of incentives for businesses to compete aggressively without worrying too much about harming rivals, particularly when harms to investment incentives are difficult to estimate.

Similar considerations should apply in IP infringement cases. Although it is much easier to decide to license a particular use of IP than to build a factory, IP holders must have to prove more than speculative harm. We want innovators to have sufficient incentives to innovate, but not to ride roughshod over the public domain or the innovative ideas of others. Efficient incentives do not require capture of the value of every spillover.

It is no answer to say that IP owners “expect” that they will be compensated for every infringement, whether foreseeable or not. That rationale confuses *ex ante* and *ex post* expectations. *Ex post*, the farmer gets to keep the gold that was buried on his property. But *ex ante*, the possible presence of gold affects his willingness to purchase the land and the price he will pay only to the extent that he anticipates that the gold is there and he can place a probability and value on its presence. Innovators are presumably not willing to spend infinite dollars on a research project simply because the sum of all conceivable foreseeable and unforeseeable results might be infinitely large. Their willingness to invest, just as that of any other reasonable actor, is a function of what they can anticipate. To the extent the publisher of a novel can foresee a good market for a translation or movie rights, she will be willing to pay more. If the publication is a law book, for example, she may foresee translation rights but probably not movie rights. Antitrust law has developed rules for determining the types of plaintiffs that have a sufficient, objectively determined commitment to a certain market that they have not yet entered.⁵⁶⁴ On the accused infringer’s side, reliable predictions about what does and does not constitute an infringement will also greatly facilitate the incentive to make efficient invest-

⁵⁶³ See 2A AREEDA & HOVENKAMP, *supra* note 43, ¶ 335f, at 73.

⁵⁶⁴ *Id.* ¶ 349, at 225–28.

ments. When a new venture was objectively foreseeable to the IP holder at the time the work was developed, it will also be foreseeable to an innovator who wishes to borrow from the IP holder's work. In that case, the innovator will know she must obtain a license.

An IP injury requirement would help to limit the scope of IP rights to the purpose for which they are granted. In addition, the IP injury requirement can help to provide adequate notice of IP claims. The best way to facilitate this set of values in an uncertain world is to give IP right holders the right to exclude in markets where they are actually operating. This right should also apply in markets in which IP right holders have made an actual initial investment or in which one can reasonably foresee investment as likely, looking from the time that a decision to commit resources to innovation is made.

Antitrust reform came about almost entirely through judicial rather than legislative initiatives. From the late 1970s and continuing through today, the Supreme Court has acted to dismantle most of the expansionism that had occurred in the 1960s and earlier. The Supreme Court has been taking the lead in patent reform as well. What will happen in copyright is difficult to say. When the courts get the urge for reform, there is little to stop them—this was the case in antitrust law, where courts were inspired to produce rulings that were sensible but quite inconsistent with statutory language.⁵⁶⁵ Whether reform impulses will drive the judiciary to such lengths in IP law is less certain. On the one hand, the IP statutes are more elaborate, more recent, and subject to more frequent congressional intervention. On the other hand, however, there is also considerable evidence that Congress is “stuck”—that it cannot muster the collective will to engage in serious reform, and that it resorts to interest groups to become its statutory drafters. For this reason, we think that the judicial system has a comparative advantage, and the scales tip in favor of the judiciary even more strongly in IP than in antitrust because the extent of legislative capture is greater in IP.

It is therefore useful for courts to keep in mind that the patent and copyright laws have explicit authorization in the Constitution—much more explicit than the very general language of the Commerce Clause that enables the antitrust laws—and that this authorization expressly ties the IP rights created to the incentive to create. Thus, IP has a powerful guiding principle. It need only be used.

⁵⁶⁵ See *Brunswick Corp. v. Pueblo Bowl-O-Mat*, 429 U.S. 477, 489 (1977); *supra* notes 531–543 and accompanying text; see also *Ill. Brick Co. v. Illinois*, 431 U.S. 720, 746–47 (1977) (explaining that only direct purchasers may maintain action for overcharge damages); 2A AREEDA & HOVENKAMP, *supra* note 43, ¶ 337, at 86.