PURGING PATENT LAW OF 'PRIVATE LAW' REMEDIES

Ted Sichelman*

ABSTRACT

This paper rejects the fundamental premise of patent law remedies that courts should always attempt to make the patentee "whole" in the event of infringement. The overarching aim of patent law is to promote innovation. As such, the patent system and its associated remedies should be viewed as part of a public regulatory regime designed to further societal goals, rather than a system that protects individual interests by providing private law remedies designed to compensate victims for the infliction of harm. In this vein, a number of scholars have rightly impugned the unnecessary—indeed, detrimental—importation of private property law concepts into patent law. However, it appears nobody has questioned the use of tort law concepts in patent law, particularly in the area of remedies. For instance, as with tort law remedies, there seems to be universal agreement that the optimal remedy for patent infringement should place the patentee in the position it would have been in but for the infringement, i.e., the *status quo ante*. On this basis, the prevailing judicial and scholarly wisdom is that non-practicing entities—who merely license, instead of practice, their patents—should generally be subject to a liability rule (i.e., no injunction), while practicing entities should generally be entitled a property rule (i.e., an injunction).

Using similar economic arguments made in favor of liability rules for non-practicing entities, I argue that precluding injunctions is often optimal for practicing entities, even when the infringer is a direct competitor that sells a substitute, infringing product. Specifically, I propose that when (1) the infringing device or process is a relatively minor component of a complex product or method, and (2) the infringer's switching costs are abnormally high relative to the value of the infringing device or method, injunctions should generally not regardless of the business model of the patentee. Additionally, I contend that an injunction may thwart optimal innovation incentives when it generates large consumer deadweight losses, results in substantial duplicated costs during the pre-invention R & D process, or creates transaction costs far in excess of the value of the invention. In other situations, a patentee should be made more than whole. For example, when infringement is difficult to detect, damages multipliers may be appropriate.

More broadly, I argue that the notion that patentees should be returned to the *status quo ante* is a private law concept that should play no fundamental role in determining optimal remedies in patent law. On this ground, the statutory remedies provisions of the Patent Act themselves rest on a flawed foundation. In general, instead of providing remedies for private wrongs inflicted on private parties, patent law should be tailored simply to promote the types and levels of innovation that most benefit society. Such an approach is essentially regulatory in nature—ultimately, patents should not be viewed as private rights protecting private interests, but merely as means to provide proper compensation to innovators.

---

* Assistant Professor, University of San Diego School of Law. I thank Chris Cotropia for encouraging me to undertake this project and Michael Risch for his helpful comments.

INTRODUCTION

Private law—such as tort, property, and contract law—generally provides remedies for the infliction of wrongs on private individuals and entities.[1] For example, if a rambunctious bar patron punches you on the nose while you quietly sip a martini, you can sue the patron in tort for battery, collecting damages for at least the harm inflicted—and, in many, cases—an injunction going forward to prevent future harm.[2] The reason tort law would provide you these sorts of remedies is because we as a society believe the optimal state of the world is for you to go on quietly sipping your drink, free from the interference and physical damage caused by the rowdy patron. In other words, tort law generally assumes that a world free from unjustified interference into an individual's or private entity's sphere of autonomy is the ideal state of the world.[3] As such, it seeks to return the private actor that has been harmed to the *status quo ante*, through damages, an injunction, or both.[4]

Patent law, on the other hand, is not designed to remedy private wrongs. Rather, its major aim is to promote innovation.[5] Yet, oddly, patent remedies mirror tort law remedies by attempting to restore the patentee to the *status quo ante*—namely, the state of the world in which

---

[1] *See generally* ERNEST JOSEPH WEINRIB, THE IDEA OF PRIVATE LAW 143 (1995); Ezra Ripley Thayer, *Public Wrong and Private Action*, 27 HARV. L. REV. 317 (1914).

[2] *See* DAN B. DOBBS, LAW OF REMEDIES (1993); *see also* 4 WILLIAM BLACKSTONE, COMMENTARIES 7 (1769) (arguing that private law remedies redress violations of private right "by either restoring to [the victim] his right" or providing remuneration sufficient to compensate for the violation).

[3] *See* Donald P. Judges, *Of Rocks and Hard Places: The Value of Risk Choice*, 42 EMORY L.J. 1, 63 (1993) ("Tort law generally seeks to protect the autonomy of plaintiffs by compensating for and deterring the forced intrusions of defendants' tortious conduct.").

[4] *See* Aaron Xavier Fellmeth, *Civil and Criminal Sanctions in the Constitution and Courts,* 94 GEO. L.J. 1, 61 (2005) ("In tort law, injunctions are granted . . . when the remedy of compensatory damages will not suffice to restore the status quo ante."). *See generally* RESTATEMENT (SECOND) OF TORTS § 936 (1979) (setting forth factors for when an injunctions are appropriate).

[5] *See* U.S. Const., art. I, § 8, cl. 8 ("To *promote the progress* of science and useful arts . . . .") (emphasis added); Sears, Roebuck & Co. v. Stiffel Co., 376 U.S. 225, 229-31 (1964) ("Patents are not given as favors, as was the case of monopolies given by the Tudor monarchs, . . . but are meant to encourage invention by rewarding the inventor with the right . . . ."); Peter S. Menell, *Intellectual Property: General Theories*, *in* 2 ENCYCLOPEDIA OF LAW AND ECONOMICS: CIVIL LAW AND ECONOMICS 129, 130-48, 155-56 (Boudewijn Bouckaert & Gerrit De Geest eds., 2000) ("The United States Constitution expressly conditions the grant of power to Congress to create patent and copyright laws upon a utilitarian foundation.").

there is no infringement of the patent.[6] This absence of infringement occurs in two situations: (1) when third parties, including competitors, do not practice the patent; or (2) when third parties pay license fees to permissibly perform otherwise infringing acts. Historically, patent law typically provided for damages for past infringement and injunctions on a going-forward basis to restore the *status quo ante*.[7] Backward-looking damages compensate the patent holder either for lost profits caused by the third party's infringing activity or for forgone royalties in the event the patent holder did not practice its patent (or, in some situations, where royalties would result in greater damages than lost profits).[8] Forward-looking injunctions restore the patent holder to the equitable *status quo ante* at the time of patent issuance, providing the holder an absolute right—backed by contempt sanctions—to prevent third parties from infringing the patent.

In *eBay v. MercExchange*,[9] the Supreme Court shifted the calculus by holding that injunctions are not mandatory and should, instead, be awarded on the basis of a set of equitable factors. Importantly, in a concurrence, Justice Kennedy argued that entities that do not practice their patents (so-called "non-practicing entities" or "NPEs")—typically, by forgoing manufacturing and product sales in favor of licensing—arguably should not be awarded an injunction, because it would give them undue leverage over third parties, particularly when the

[6] Mark A. Lemley, *Distinguishing Lost Profits From Reasonable Royalties*, 51 WM. & MARY L. REV. 655, 674 (2009) ("Patent damages are supposed to compensate patent owners for their losses, putting them back in the world they would have inhabited but for infringement.").

[7] *See, e.g.*, Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1247 (Fed. Cir. 1989) (reaffirming the long-standing rule of issuing injunctions to successful patentees).

[8] *See* Lemley, *supra* note 6, at 655 ("Patent damages are designed to compensate patentees for their losses, not punish accused infringers or require them to disgorge their profits."); *id.* at 657 ("Giving patentees the profits they would have made absent the infringement effectively puts them in the same position as if they had had an injunction in place all along."); 35 U.S.C. § 284 (providing for "no . . . less than a reasonable royalty for the use made of the invention by the infringer"). *See generally* ROGER D. BLAIR & THOMAS F. COTTER, INTELLECTUAL PROPERTY: ECONOMIC AND LEGAL DIMENSIONS OF RIGHTS AND REMEDIES (2005).

[9] 547 U.S. 388 (2006).

patent covers a mere component of a complex product.[10] Implicit in Justice Kennedy's reasoning is the tort law-*status quo ante* rationale: because an NPE would by definition license its patents, a liability rule providing damages on a forward-looking basis—assuming it adequately reflected the market royalty rate—would return the NPE exactly to that state of the world that would have existed but for the infringement.[11] Conversely, Justice Kennedy assumed that a practicing entity would not—at least in many situations—generally license its patents, instead choosing to leverage its patents by earning supernormal profits by selling products and services in the marketplace.[12] Importantly, both the historical and slightly modified approach of *eBay* assume that the *status quo ante* endgame—to the extent it can be costlessly and accurately implemented by a court—is in fact the ideal remedy. In other words, the courts—and essentially the entire body of academic literature—has assumed that treating the patentee like a private right-holder entitled to private law remedies optimally promotes innovation.[13] This assumption is premised on the belief that "the value of a patent is . . . commensurate with the value of the market or market niche it controls."[14]

I argue in this paper, however, that the traditional view is wrong in at least three contexts. First, along the lines of Justice Kennedy's suggestion, when a patent covers an innovative component of a complex product that a third party has already implemented—and there are large switching costs in implementing a substitute for the patented component—then providing any

[10] *See id.* at 396-97 ("When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.").
[11] *See id.* at 397 ("For [NPEs], an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent.").
[12] *See id.* at 396 ("An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees.").
[13] *See, e.g.*, Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2036 (2006); Amy L. Landers, *Liquid Patents*, 84 DENV. U. L. REV. 199, 253 (2006) (contending that patent remedies should differ as between practicing and non-practicing entities, because each incurs different kinds of harm).
[14] Lemley, *supra* note 6, at 657.

patentee, practicing or not, with an injunction on a going-forward basis may yield market rewards (or settlement payments) far in excess in the value of the innovative component to society. This windfall to the patentee results in the patent system providing too great an incentive for component and incremental innovations relative to discrete, whole product innovations. Indeed, Mark Lemley and Carl Shapiro have convincingly argued as much in the context of non-practicing entities.[15] Yet, because they and Justice Kennedy fall prey to the assumption that patent remedies should mirror private law remedies, they all mistakenly conclude that injunctions should still be generally available to practicing entities.[16] Rather, as I show below, the arguments against injunctions issuing to NPEs are often just as applicable to practicing entities.[17]

Second, in many contexts, the patent system provides excessive incentives to generate needed R & D and commercialization activity. For example, the costs of invention and commercialization in the software industry are far below those in the pharmaceutical industries. Yet, the duration of software and pharmaceutical patents are exactly the same (indeed, in practice, software patents last longer), and—at least in rough conceptual terms—the scope of software patents often exceeds the scope of pharmaceutical patents. If the broad scope and long duration afforded software patents is not necessary to incentivize innovation in that industry, then the rewards provided by the patent system are excessive. This creates windfalls for innovators—and, more importantly—needless consumer deadweight losses that result when (1) the patent holder enjoys the ability to price its patented goods over the competitive price; or (2) when multiple parties needlessly duplicate R & D in "racing" for an excessive patent prize. In

[15] *See* Lemley & Shapiro, *supra* note 13. As an important point of clarification, Lemley would effectively treat an NPE that exclusively licenses a patent as a practicing entity, since the NPE essentially stands in the shoes of the sole practicing entity from a market perspective. *See* Lemley, *supra* note 6, at 673.
[16] *See infra* Part II.
[17] *See id.*

these situations, Ian Ayres and Paul Klemperer[18]—as well as one of my papers[19]—have shown that allowing for probabilistic enforcement of the patent may result in superior welfare outcomes to ironclad enforcement. As such, for many software patents, the more optimal remedy may often be a liability rule that provides damages to the patentee sufficient to induce R & D and commercialization, rather than a property rule, which results in perfect enforcement of the patent via an injunction.[20]

Third, when reasonable minds differ over whether a given patent is infringed, valid, or enforceable, it may be economically efficient for third parties to forgo large transaction costs in negotiating a license, instead infringing. Like the theory of efficient breach in contract law,[21] I argue below that efficient infringement occurs when the transaction costs of negotiation dwarf the value of the innovation-at-issue, which can occur when there is large uncertainty in the underlying patent rights or simply when the economic value of the innovation is fairly minimal.[22] In these situations, it may be more optimal to preclude injunctions.

On the other hand, I also assert that while full compensatory damages may be excessive in the three situations described above, there are at least two other situations in which the patentee may need *more than* compensatory damages to generate optimal innovation incentives. First, if detection of infringement is difficult, damages should be enhanced to compensate for undetected infringement—activity for which the accused infringer reaps profit but pays no

---

[18] Ian Ayres & Paul Klemperer, *Limiting Patentees' Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-Injunctive Remedies*, 97 MICH. L. REV. 985, 993 (1999).
[19] Ted Sichelman, *Quantum Game Theory and Coordination in Intellectual Property* (working paper), *available at* http://ssrn.com/abstract=1656625.
[20] As noted earlier, removing the presumption of returning patentees to the *status quo ante* will often imply that the optimal level of damages is less than full compensation for any "losses" caused by the infringement. *See id.*; Ayres & Klemperer, *supra* note 18, at 1029-30 (suggesting a "partial" damages regime to reduce consumer deadweight losses).
[21] *See* Ian R. Macneil, *Efficient Breach of Contract: Circles in the Sky*, 68 VA. L. REV. 947, 950-53 (1982) (positing that "efficient breach" is efficient when the transaction costs of renegotiating the contract outweigh the transaction costs from breach).
[22] *See infra* Part II.

reward to the patentee.[23] This condition should apply regardless of whether the infringer was "willful," unless the willfulness somehow increases the odds of non-detection. Second, if the private value of an innovation to a single patentee is insufficient to generate optimal social incentives to invest in R & D and commercialization, then the patentee will need more reward than mere compensatory damages.[24]

In sum, this paper contends that the implicit assumption of courts and scholars that private law remedies are optimal for patent law is incorrect in many situations. I argue as much as follows. In Part I, I describe the aims of patent law, showing that there is nearly universal agreement that the patent system's primary goal is to promote innovation, rather than to vindicate individual, private rights. In so doing, I draw upon scholarly work criticizing patent doctrine for over-incorporating contract and private property law concepts, but argue that this line of scholarship is incomplete for failing to critique the incorporation of tort law principles into patent law.[25] In Part II, I explain in more detail why existing models of patent law remedies are deficient. In particular, contrary to the prevailing wisdom, I show that injunctions and full compensatory may not be optimal for non-practicing and practicing entities alike for (1) patents covering components of complex products; (2) industries in which the costs and risks of innovation are relatively low; and (3) when transaction costs in bargaining are far greater than the value of the innovation at issue. Additionally, I argue that awarding more than compensatory

---

[23] *See* Michael Abramowicz, *A Unified Economic Theory of Noninfringement Opinions*, 14 FED. CIRCUIT B.J. 241, 254-55 (2004) ("If infringers pay full damages, their conduct will be optimized, so if patentees will enforce their rights only some of the time, enhanced damages are appropriate, with the enhanced damages multiplier equal to the inverse of the probability of detection."); Roger D. Blair & Thomas F. Cotter, *An Economic Analysis of Damages Rules in Intellectual Property Law*, 39 WM. & MARY L. REV. 1585, 1591 (1998) (remarking that damage multipliers may be necessary to compensate for low detection levels).

[24] *Cf.* Steven Shavell & Tanguy van Ypersele, *Rewards Versus Intellectual Property Rights*, 44 J.L. & ECON. 525, 529 (2001) ("[I]ncentives to invest in research are inadequate because monopoly profits are less than the social surplus created by an innovation.").

[25] *See, e.g.*, Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031 (2005) (arguing that intellectual property should not be viewed through the lens of real property law, but overlooking similar problems in classifying intellectual property infringement as a species of tort).

damages, even in the absence of willful infringement, may be optimal when infringement is difficult to detect or when the private returns from innovation fall far below the level needed to generate optimal social returns. In so doing, I address the issue of whether courts are sufficiently competent to impose forward-looking damages in place of injunctions.

Part III begins by contending that the previous analysis implies that structure of remedies in the current Patent Act is fundamentally flawed. More generally, I conclude by arguing that the notion that patentees should be returned to the *status quo ante* is a private law concept that should play no fundamental role in determining optimal remedies in patent law. Instead of providing remedies for private wrongs inflicted on private parties, patent law should be tailored simply to promote the types and levels of innovation that most benefit society. In this regard, drawing on the work of Shubha Ghosh, I briefly propose a conceptual model that properly views patent law as a public regulatory mechanism, rather than a system of private law rights, duties, and remedies.

I. THE AIM OF PATENT LAW IS INNOVATION, NOT PROTECTING PRIVATE HARMS

In the United States, the goal of patent law is to promote technological innovation. In this regard, the Supreme Court has roundly rejected the natural rights notion that patents are a species of personal right designed to protect an inventor's interest in liberty, security, or personhood. As the Court explained at length in *Motion Picture Patents* (1917):[26]

> Since *Pennock v. Dialogue* was decided in 1829, this court has consistently held that the primary purpose of our patent laws is not the creation of private fortunes for the owners of patents, but is 'to promote the progress of science and the useful arts' (Constitution, art. 1, § 8)—an object and purpose authoritatively expressed by Mr. Justice Story, in that decision, saying:

[26] Motion Picture Patents Co. v. Universal Film Mfg. Co., 243 U.S. 502 (1917).

> > While one great object [of our patent laws] was, by holding out a reasonable reward to inventors and giving them an exclusive right to their inventions for a limited period, to stimulate the efforts of genius, the main object was "to promote the progress of science and useful arts."
>
> Thirty years later this court, returning to the subject, in *Kendall v. Winsor*, again pointedly and significantly says:
>
> > It is undeniably true, that the 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.
>
> This court has never modified this statement of the relative importance of the public and private interests involved in every grant of a patent . . . .[27]

Nor has the Court wavered from this position since *Motion Picture Patents* was decided.[28]

Moreover, scholars generally agree—not just doctrinally, but also as a policy matter—that the foundation of the patent laws should be utilitarian.[29] This prevailing view draws upon Thomas Jefferson's apt philosophy, which in the Supreme Court's words in *Graham v. John Deere* (1966), posited that "[t]he patent monopoly was not designed to secure the inventor his natural right in his discoveries. Rather, it was a reward, and inducement, to bring forth new knowledge."[30] Because the patent system rests on a utilitarian basis, as the Court explained in *Kendall v. Winsor* (1859), any *private* benefit that an inventor receives from a patent is merely a means to an end of providing a benefit "to the public or community at large."[31] As such, any

---

[27] *Id.* at 506 (citations omitted).
[28] *See* Quanta Computer, Inc. v. LG Electronics, Inc., 553 U.S. 617, 626 (2008); Aronson v. Quick Point Pencil Co. 440 U.S. 257, 262-63 (1979); Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 480-81 (1974); Mazer v. Stein, 347 U.S. 201, 219 (1954); Mercoid Corp. v. Mid-Continent Inv. Co., 320 U.S. 661, 664-65 (1944).
[29] *See* Alan Devlin & Neel Sukhatme, *Self-Realizing Inventions and the Utilitarian Foundations of Patent Law*, 51 WM. & MARY L. REV. 897, 901 (2009) ("Almost all commentators and judges agree that utilitarian considerations enjoy hegemonic status in patent jurisprudence, such that the purpose of the patent system is to induce the creation and commercialization of technology that otherwise could be easily appropriated.").
[30] Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 9 (1966); *see also* Devlin & Sukhatme, *supra* note 29, at 901.
[31] 62 U.S. at 327-28.

form of private law right afforded to the patentee is purely incidental to the aim of patent law in promoting innovation. By implication, the vindication of patent law rights via licensing or litigation is not meant to remedy a wrong inflicted on the inventor.

Thus, patent law rights stand in stark contrast to traditional private law rights, such as those that sound in real property, contract, or tort. The vindication of these kinds of rights do protect *individual* interests, and these rights grow out of a common law tradition not so much concerned with utilitarian values, but instead personal autonomy and liberty. So when a trespasser invades an owner's land, the owner—to the extent he has Blackstonian property rights that afford him "sole and despotic dominion" over his land[32]—is entitled to exclude the trespasser under all circumstances in order to vindicate his *individual* ownership interests. Any sort of exception to this rule—for instance, in the event the trespasser crosses onto the owner's land in order to avoid death—is a narrow gloss to the individualistic nature of the underlying right.

Unlike typical private law rights, intellectual property law simply uses these kinds of rights—and the remedies associated with them—as a mechanism to encourage optimal *social* levels of innovation. In a sense, the patent holder is merely a private attorney general, paid via the enforcement of his right as a reward for benefitting the public. And this view is not law-and-economics revisionist history of patent law. Rather, from the beginning, patent law in the United States has rested on a utilitarian foundation. As many scholars have rightly recognized, instead of conferring private rights on inventors, a prize system—whereby inventors are merely paid by the State or some private entity for their endeavors—could, at least in theory, function equally well

[32] 2 WILLIAM BLACKSTONE, COMMENTARIES *2; *see also* OLIVER WENDELL HOLMES, JR., THE COMMON LAW 246 (1881) ("The owner is allowed to exclude all, and is accountable to no one.").

to promote innovation.[33] It is merely for economic reasons, as I explain below, that society decided that conferring private rights via patents was—at least in most situations—more optimal than a prize, patronage, or other means to encourage innovation.

Oddly, judges and scholars came to view the means as the ends. Thus, patents are not simply are mechanism the State uses to induce innovation, but a "contract between the inventor and the public," affording private rights and remedies to the inventor-contractee.[34] Similarly, instead of viewing patents as property-like rights used by inventors to collect payment from society as inducement for their innovative efforts, patents are at root property rights.[35] And, last, patent infringement is not merely a mode of cataloguing which third parties should provide the funds to the inventor, but a species of common law tort.[36] Judge Frank Easterbrook encapsulates this sentiment when he writes, "Patents give a right to exclude, just as the law of trespass does with real property."[37]

This reification of a patent right as fundamentally a private law right, with all its attendant remedies, is not only conceptually flawed, but leads to pernicious outcomes. Several scholars have recognized as much for the contract and real property law models of patents. Shubha Ghosh has challenged the soundness of treating patents as contracts with the State. In particularly, he argues that the "patent law consists of more than a bargain between the inventor and the state; it includes other parties, such as consumers of the invention, follow-on inventors,

---

[33] *See, e.g.*, Michael Abramowicz, *Perfecting Patent Prizes*, 56 VAND. L. REV. 115 (2003).

[34] Davis Airfoils v. U.S., 124 F. Supp. 350, 352 (Ct. Cl. 1954) ("A patent is a contract between the inventor and the public, the terms of whch are formulated by the United States Patent Office. The inventor in such a contract gives as a consideration to the public a new and useful art, machine or composition of matter, and, in return, the public gives as a consideration to the inventor a monopoly expressed by the claims of the patent of a period limited by statute to 17 years, after which such monopoly expires and becomes dedicated to the public."); *see also* Shubha Ghosh, *Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After Eldred*, 19 BERKELEY TECH. L.J. 1315, 1316 (2004) ("Patents are commonly understood as a hypothetical contract between the inventor and the government resulting in a quid pro quo of innovation for exclusivity.").

[35] *See* Adam Mossoff, *Exclusion and Exclusive Use in Patent Law*, 22 HARV. J.L. & TECH. 321 (2009) (tracing the historical lineage and modern relationship between patents and real property).

[36] Mars, Inc. v. Coin Acceptors, Inc., 527 F.3d 1359, 1365 (Fed. Cir. 2008) ("Patent infringement is a tort.").

[37] Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108, 109 (1990).

students of the knowledge created by the innovation, and disseminators of the invention through market and non-market processes."[38] Mark Lemley has convincingly dismissed patent law's reliance on real property, particularly the notion that patent holders should be able to exclude infringers at-will through injunctive relief.[39]

Despite critiques such as Ghosh's and Lemley's, scholars have not recognized—at least in any systematic fashion—that classifying infringement as a common law tort is just as problematic as viewing patents as private contracts or a form of real property. Indeed, courts and scholars have promoted infringement as a form of tort. For example, in *Dowagiac Mfg. Co. v. Minnesota Moline Plow Co.* (1915), the Supreme Court remarked that "[a]s the exclusive right conferred by the patent was property, and the infringement was a tortious taking of a part of that property, the normal measure of damages was the value of what was taken."[40] Chris Newman, for instance, conceives of patent infringement as a tort-based "nuisance".[41]

Yet, as I argue in more detail in Part II, the problem with viewing patent infringement as a tort is that the private law remedies usually associated with tort law—injunctions and compensatory damages—are not always sensible for optimally encouraging innovation. Rather, I show that in many situations, denying injunctions—even to practicing patentees—and limiting damages to levels below that needed for full compensation may better promote the utilitarian aims of patent law. Akin to Lemley's critique of the view that a patent is a form of real property that should allow its owner to internalize the full social value of the invention, my critique argues that a patent should not necessarily allow its owner to collect the full value of the damages inflicted by an infringer.

---

[38] Ghosh, *supra* note 34, at 1339.
[39] *See* Lemley, *supra* note 25, at 1046-65.
[40] 235 U.S. 641, 648-49.
[41] Christopher M. Newman, *Infringement as Nuisance*, 59 CATH. U. L. REV. 61, 67-68 (2009).

II. RECONFIGURING PATENT LAW REMEDIES TO PROMOTE INNOVATION

The standard approach to patent law remedies has followed the dominant view that patent law is a form of private law. Thus, a patentee's "right to exclude" has historically been treated by courts as akin to a landowner's right to keep out trespassers, leading courts to grant injunctive relief as a matter of course to prevent ongoing infringement. Related, like an injured party in tort, Congress has legislated, and courts have held, that patentees are entitled to be "made whole" for any past infringement, with damages compensating them for the full extent of the "harm" inflicted upon them by an infringer.[42] Thus, manufacturing patentees are entitled under current law to a full measure of "lost profits" and licensing patentees to "reasonable royalties" to compensate them as they would have been paid in a market scenario in which the patent was not infringed or licensed at market rates.[43]

In the past decade, there has been assault on treating a patent as a form of absolute property entitling its holder to injunctive relief. In large part, this reaction was driven by the rise of non-practicing entities (NPEs), particularly the proliferation of lawsuits filed by them on patents perceived to be "weak" in the sense that they were likely to be held not infringed, invalid, or unenforceable, but which lead relatively large nuisance-value settlements given the high costs and risks of litigation. Commentators reasoned that if NPEs only licensed their patents in the marketplace—since, by definition they did not manufacture and sell products—then returning them to the *status quo ante* via a patent remedy need only compensate them for lost royalties. Thus, the standard remedy of providing injunctive relief to prevent ongoing infringement to

[42] *See* John W. Schlicher, *Measuring Patent Damages by the Market Value of Inventions: The* Grain Processing, Rite-Hite, *and* Aro *Rules*, 82 J. PAT. & TRADEMARK OFF. SOC'Y 503, 503 (2000).
[43] *See* Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476, 507 (1964) ("[T]hat question [is] primarily: had the Infringer not infringed, what would Patent Holder-Licensee have made?"); Yale Lock Mfg. Co. v. Sargent, 117 U.S. 536, 552 (1886) (stating that a patentee's damages are "the difference between his pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred").

NPEs was not necessary to fulfill the private law vision of patent remedies as "making the patentee whole." On this ground, Justice Kennedy concurred in *eBay v. MercExchange* to argue that NPEs should typically not be entitled to injunctive relief.

This widely followed concurrence has led to a substantial reduction in the grant of injunctive relief to NPEs. Yet, as I argued earlier, Justice Kennedy relies on the faulty assumption that make-whole private law remedies optimally promote innovative activity. As I explain in more detail in this Part, in many situations, make-whole remedies may impede efficient levels of innovation. For instance, when a patent covers merely a component of a larger product and the infringer's switching costs are high, not only NPEs *but also manufacturing entities* should regularly be denied injunctive relief. Thus, in order to fully excise the private law specter from patent law remedies, it is not only necessary to remove real property concepts, but also tort concepts, from the doctrinal mix.

In this Part, I begin by recounting the traditional model of patent law remedies. Next, I describe the recent attack on this model for incorporating contract and real property notions. Finally, I argue that in order to complete the attack, it is necessary to counter the patent law's reliance on common law tort.

A. The Standard Model of Patent Law Remedies

The usual theory explaining why inventors or their employers seek patents assumes that patentees generate greater-than-average profits on their patented products by preventing others from making, using, and selling those products.[44] According to this theory, society benefits because these supernormal returns compensate for a market defect—namely, that the copying

[44] More specifically, patents can also cover methods, processes, and services. *See* 35 U.S.C. § 101 (2000). The reference to "products" in the text is illustrative.

and selling of innovative products by others can often be achieved cheaply and quickly,[45] which can sub-optimally thwart innovation. Introducing patents and attendant liability for infringement makes copying costly. Thus, the exclusionary rights afforded by patents promote a more optimal level of innovation by providing incentives to innovators to invent, market, and sell innovative products, as well as to disclose the knowledge underlying those innovations in the form of published patent documents. Importantly, "[t]his traditional conception requires exclusivity; the value of a patent is accordingly commensurate with the value of the market or market niche it controls."[46]

Taking the traditional account of patent law on its face, the standard view holds that patent damages should return the patentee to the hypothetical state of affairs that would have existed but for the infringement.[47] For infringement prior to suit, of course, the only possible remedy is some form of monetary payment sufficient to "compensate patentees for their losses."[48] Pre-suit damages divide into two camps: lost profits and reasonable royalties.[49] Lost profits are available to manufacturing patent holders who would have made sales—and associated profits—but for the infringement.[50] When the patentee does not practice its patent, or lost profits cannot be proved, reasonable royalties are provided.[51] For post-suit damages,

---

[45] *See* Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention, reprinted in* THE RATE AND DIRECTION OF INVENTIVE ACTIVITIES: ECONOMIC AND SOCIAL FACTORS 609 (Richard R. Nelson ed., 1962).
[46] Lemley, *supra* note 6, at 657.
[47] *Id.* at 655-56; BLAIR & COTTER, *supra* note 8.
[48] *See* Lemley, *supra* note 6, at 655 (citing Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1223 (Fed. Cir. 1995)); *see also* 35 U.S.C. § 284 ("the court shall award the claimant damages adequate to compensate for the infringement"). In this regard, patent damages are not designed to require infringers "to disgorge their profits" or to "punish accused infringers," other than in the event of willful infringement. Lemley, *supra* note 6, at 655.
[49] *See* 35 U.S.C. § 284; Lemley, *supra* note 6.
[50] *See* Panduit Corp. v. Stahlin Bros. Fibre Works Inc., 575 F.2d 1152, 1156-57 (6th Cir. 1978) (Markey, J.).
[51] *See id.* at 1157 ("When actual damages, e.g., lost profits, cannot be proved, the patent owner is entitled to a reasonable royalty."); *see also* Lemley, *supra* note 6, at 671 ("Patentees whose harm is based on a loss of market exclusivity-those who reasonably could have expected to make additional sales, or sales at a higher price, absent infringement-should be entitled to lost profits damages. Patentees whose harm is lost licensing revenue, but who could not plausibly claim to have lost sales as a result of the infringement, should be entitled to reasonable royalties . . . .").

historically, the standard remedy was to provide an injunction to the patent holder to prevent further infringement.[52] Although non-practicing entities licensed their inventions in the marketplace, if at all, they did so under the threat of an injunction. Thus, despite its circularity, on the standard view, providing non-practicing entities with injunctive relief would return them to the very position that existed in the market prior to any licensing of rights to others.

B. Removing Real Property: A Partially Revised Model of Patent Law Remedies

With the rise in suits from non-practicing entities (NPEs) in the early 2000s, the standard model of patent remedies was impugned by scholars as too often providing windfalls to patentees that typically performed no R & D, and certainly did nothing to commercialize their patents.[53] In a widely cited article, *Property, Intellectual Property, and Free Riding*, Mark Lemley derided the real property foundation implicit in patent law's exclusion principle.[54] Specifically, Lemley began his critique by returning to the fundamental goal of patent law: "to give as little protection as possible consistent with encouraging innovation."[55] In this vein, he argued that "[t]he absolute protection or full-value view draws significant intellectual support from the idea that intellectual property is simply a species of real property rather than a unique form of legal protection designed to deal with public goods problems."[56] In particular, Lemley rejected the view that a patent owner should be able to internalize the full social value of his invention, because an inventor need not capture this entire value in order to be optimally incentivized to invent.[57]

---

[52] *See* eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 394-95 (2006) (Roberts, C.J., concurring) (noting the historical practice of granting injunctions in most patent cases); Lemley & Shapiro, *supra* note 13, at 2036.
[53] *See, e.g.*, Lemley & Shapiro, *supra* note 13; Amy L. Landers, *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, 46 SANTA CLARA L. REV. 307 (2006).
[54] Lemley, *supra* note 25.
[55] *Id.* at 1031.
[56] *Id.* at 1031-32.
[57] *See id.* at 1046-65.

Rather, sufficient incentive will be present as long as the inventor earns a suitable return on its investment in R & D.[58]

Yet, oddly, when it comes to specific remedies, Lemley essentially limits the implications of his critique to non-practicing entities.[59] For instance, he concludes that "if the baseline assumption of the law is that the intellectual property owner is entitled to capture the full social value of the invention, it is that baseline that will drive any *licensing* negotiations."[60] However, as I argue below, the same baseline assumption holds true for the value the manufacturing patentee is entitled to capture in the marketplace, because third parties will gauge the financial value of infringing based upon the expected of damages they will pay in court.

In a later article with Carl Shapiro, *Patent Holdup and Royalty Stacking*, these conceptual limitations are even more apparent.[61] Lemley and Shapiro begin their analysis with a convincing argument that the granting of injunctions to non-practicing entities on patents covering a mere component of a larger product can provide a windfall to the patentee that distorts optimal innovation incentives.[62] Specifically, Lemley and Shapiro determine a "benchmark royalty," which represents the optimal level of licensing fees that non-practicing licensor would earn in the "ideal patent system *without* any element of holdup" from injunctive relief.[63] Although there is no need here to recount all of the mathematical details of how the royalty is precisely calculated to make my point, importantly, the royalty is based in part on the value of the invention to the

[58] *See id.* ("In a market economy, we care only that producers make enough return to cover their costs, including a reasonable profit.").
[59] *See id.* at 1045-46.
[60] *Id.* at 1046.
[61] Lemley & Shapiro, *supra* note 13.
[62] *See id.* at 1995-2017. The same kind of analysis applies to patent claim on a complex product, the only novel elements of which are components of the product. *See* Mark A. Lemley, *Point of Novelty* (Working paper, 2010), at 27-28, *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1735045.
[63] *Id.* at 1999.

licensee (though one might suitably recharacterize it as based on the value of the invention to society).[64]

Suppose, for instance, that the patent allows the licensee to cut its production costs by $1 per product sold. In this event, the benchmark royalty is some fraction of the $1.[65] For simplicity, if we suppose the licensee is the only potential producer of the product, and it sells one million products per year, the total value produced by the innovation is $1 million per year. Also suppose that prior to the inventive technology, the producer sold the product for $100 (resulting in $100 million in annual sales), whereby each sale returned $9 in profit (resulting in $9 million in annual profit). This profit may derive, for example, from the licensee's patents, know-how, marketing, or other competitive advantages.[66]

In this example, it is relatively straightforward to see how an injunction can systematically skew licensing rates, or settlement values in litigation. If the patentee can shut down all sales of the infringing product, which it can—since the product contains the infringing component—the infringer is faced with two scenarios.[67] First, it may be able to profitably redesign the product in a non-infringing manner—for example, by returning to the prior production technique. If the redesign is costly—because, for instance, it requires significant retooling of manufacturing components—say $2 million amortized over each year of product sales (which includes lost sales of products during the period of redesign), the licensee will

[64] *See id.* In this regard, such a benchmark royalty should probably be calculated somewhat differently from how Lemley and Shapiro determine it. *See generally* John M. Golden, Commentary, *"Patent Trolls" and Patent Remedies*, 85 TEX. L. REV. 2111 (2007) (criticizing Lemley and Shapiro's mathematical model). Nonetheless, I agree that there is some hypothetical optimal level of payment to the patentee that accords with the value of the invention.

[65] *See* Lemley & Shapiro, *supra* note 13, at 1999.

[66] *See* Lemley, *supra* note 6, at 663 ("Even if there are no other relevant patents, the defendant's know-how, materials, and marketing efforts almost always contribute some value, and usually the most significant part of the value of an infringing product."); *see also* Brian J. Love, *Patentee Overcompensation and the Entire Market Value Rule*, 60 STAN. L. REV. 263, 278 (2007).

[67] I have slightly adapted Lemley and Shapiro's analysis in the following exposition. *See* Lemley & Shapiro, *supra* note 13, at 2001-2005.

negotiate a license rate far more than the optimal one of $1 per product. In particular, the licensee reasons that if it redesigns, then it standards to earn $8 million per year in profit, whereas if it does nothing, it will lose all profits. If the patent-at-issue is ironclad—meaning it would certainly be found infringed, and not invalid or unenforceable—and the parties are of equal bargaining power, then the licensee will pay $4 million per year, or $4 per product, in royalties. This value, of course, is four times higher than the cost-reducing value of the patented invention. In the second scenario, the patentee cannot design around the patent. In this case, the patentee must forgo $10 million in potential profit, and licenses the patent for $5 million per year, or $5 per product, in royalties—even more of a distortion from the optimal royalty rate. In sum, when the patent covers a component of a larger product, and the profits on the product are not due entirely to the component, if switching costs are high, in the face of court-ordered injunctive relief for infringement, the negotiated royalty will generally be systematically higher than the optimal royalty.

Yet all of Lemley and Shapiro's arguments and mathematical modeling apply with similar force to practicing entities. For instance, if a practicing patentee is granted an injunction, just as with a non-practicing entity, the infringing firm "cannot sell the infringing product and must withdraw it from the market unless and until the firm can introduce a redesigned version that does not contain the patented feature, or until the patent expires."[68] To illustrate the consequences of this observation, take the same patented invention as the earlier example, but now suppose the patentee also sells the product. Suppose prior to the patented invention, like earlier, the infringer earns $9 per product in profit and sells 500,000 products per year. Also suppose that the patentee earns the same profit and sells the same number of products per year. When the patented cost-saving feature comes along, if both parties use it—assuming the market

[68] *Id.* at 1996.

is fully competitive at the margins[69]—then the price of the product drops from $100 to $99, resulting in $1 million per year in additional consumer surplus. In the event the patentee is granted injunctive relief, it has two choices. First, it can shut down sales of the competitor's product entirely until the competitor redesigns it. During this period, if the patentee is the only seller in the market, it can price at a monopoly price, leading to deadweight losses that could easily exceed the value of the patented invention. Of course, if no redesign is possible, then these deadweight losses persist until the expiration of the patent. Additionally, if the competitor redesigns its production process, as in the earlier example, it spends $2 million per year on an amortized basis, which is more than the value of the patent, and hence a net social loss. Of course, the competitor has a financial incentive to do so to continue earning an otherwise greater profit. Second, the patentee could decide to license the competitor once it learns of the infringement. In this event, the exact analysis recounted in the non-practicing entity example above applies. In sum, just like non-practicing patentees, manufacturing patentees with injunctive threats can effectively extract or cause systematic deviations from the optimal profits or payment for a given invention.

Lemley and Shapiro, however, provide no analysis of the manufacturing entity situation. Instead, they contend without any extended discussion that:

> [W]e stress that our analysis in this Article is expressly limited to situations in which the patent holder's predominant commercial interest in bringing a patent infringement case is to obtain licensing revenues. Our policy recommendations here pertain only to this type of situation, where the patent holder can claim reasonable royalties but not lost profits, and not to settings in which the patent holder suffers significant lost profits as a result of the allegedly infringing activities of the downstream firm and seeks to use the patent to exclude a

[69] For instance, the $9 per product profit earned by each party may result from differences in product features attributable to their separate patents, leading to market differentiation, whereas the cost-saving feature merely leads each party to cut its product price by $1. *See* Greg Vetter, *Patenting Cryptographic Technology*, 84 CHI.-KENT L. REV. 757, 774-75 (2010) (noting the use of patents for product differentiation).

> competitor from the market in order to preserve its profit margins. In cases involving significant lost profits, we favor a presumption that the patent holder will be granted a permanent injunction, perhaps with a stay to allow the infringing firm to redesign its product. The presumptive right to a permanent injunction in these cases is justified in part for reasons of equity and in part because of the grave difficulties associated with calculating and awarding lost profits on an ongoing basis.[70]

As I just explained, Lemley and Shapiro's distinction between licensing and manufacturing entities is not economically justified, at least theoretically. Moreover, even if a stay allows the infringer to redesign the product, as I showed, the costs of redesign may exceed the value of the patented component, clearly a net social loss. Additionally, there may be situations for which no redesign is available. Rather, Lemley and Shapiro's resort to "reasons of equity" to justify presumptive injunctions for manufacturing patentees sounds in the same reasoning as that in tort law, because it aims to provide an injunction "exactly when the remedy of compensatory damages will not suffice to restore the status quo ante."[71] But as a matter of pure economics, tort law remedies do not always promote optimal outcomes in the patent law context.

A simple hypothetical illustrates why the distinction between non-practicing and practicing entities is problematic—at least if we take at face value the dominant reward theory of patent law, which justifies awarding exclusionary rights on the basis of allowing inventors to recoup their costs with a suitable profit.[72] In one state of the world, inventor A spends $1 million in R & D, designing, building, and testing a particular invention. The inventor then manufactures the invention and sells it for $100 per unit, earning $10 in profit (like the earlier example). Assume, further, that—consistent with the reward theory of patents—manufacturing and

[70] Lemley & Shapiro, *supra* note 13, at 2036.
[71] *See* Fellmeth, supra note 4, at 61.
[72] *See* Ted Sichelman, *Commercializing Patents*, 62 STAN. L. REV. 341, 344, 357-58 (2010) (discussing reward theory); Lemley, *supra* note 73, at 129 ("The traditional economic justification for intellectual property is well known. Ideas are public goods: they can be copied freely and used by anyone who is aware of them without depriving others of their use.").

commercialization does not incur substantial cost or risk that requires additional patent protection to ensure optimal levels of investment.[73]

In this event (following the earlier example), in the event of infringement—using the same assumptions, the inventor garners no less than a reasonable royalty of $4-5 million per year, and potentially much more than that by securing monopoly profits, say $6 million per year. In another state of the world, the inventor spends the same $1 million on R & D, but is capped at the $4-5 million in reasonable royalty damages. This disparity has no economic basis in the underlying goals of patent law in providing optimal incentives to invent. Rather, for this hypothetical, the two inventors should *earn exactly the same return* on their efforts (and, here, one much less than that returned by current remedy law). As John Golden properly recognized in a response to Shapiro and Lemley's article, "A per se rule of discrimination based on a patent holder's business model could act as an undesirable drag on the efficiency and competitiveness of markets for innovation."[74] In a reply to Golden, Lemley and Shapiro—instead of engaging in economic analysis—again fall back on the flawed conceptual tort law model of patent damages: "There is no unjustified discrimination here; in both cases, the goal of patent remedies is properly to ensure that patent owners are compensated for any unauthorized uses made by others."[75]

Similarly, in a footnote in their reply, Lemley and Shapiro recognize that:

---

[73] *See* Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129 (2004) (contending that commercialization of inventions will tend to proceed efficiently following the invention phase). *But cf.* Sichelman, *supra* note 72 (arguing that commercialization efforts typically entail supernormal costs and risks that independently justify some form of "ex post" IP protection).

[74] Golden, *supra* note 64, at 2117.

[75] Mark A. Lemley & Carl Shapiro, Reply, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 2163, 2171 (2007). In a later article Lemley argues that for practicing entities, "[t]heir compensation should be based on the value that the patented invention actually contributes as a proportion of the defendant's product, taking into account the other patents, know-how, raw materials, and labor that also contribute to the value of that product and the existence of possible alternatives to the patented technology." Lemley, *supra* note 6, at 670. This more nuanced view of compensation should be applied with equal force to practicing entities.

> While injunctions in lost-profits cases may also cause holdup problems, we do not see a practical and general way of avoiding these problems while providing adequate compensation to patent holders for infringement. There is a fundamental difference between cases involving reasonable royalties and those involving lost profits. In reasonable-royalty cases, the joint profits of the patent holder and the infringing firm are increased by the infringing firm's use of the patented invention, so the hypothetical ex ante negotiation concept makes good economic sense. In lost-profits cases, the joint profits of the patent holder and the infringing firm may well be decreased by the infringing firm's use of the patented invention. In such cases, the hypothetical ex ante negotiations concept is not helpful for assessing damages and it is not possible to find licensing terms that are commercially acceptable to the downstream firm and adequately compensate the patent holder.[76]

Although Lemley and Shapiro are correct that in lost profits cases, joint profits can be decreased by the infringing firm's use, one need not rely on a hypothetical ex ante negotiation to calculate the proper level of on-going damages. Rather, as in the simple numerical example above, the question becomes what measure of monetary reward would properly reward the patentee's invention in an incentive-based model. Because, as Lemley has recognized elsewhere, a patentee need not reap the entire social value of its invention in order to be sufficiently incentivized, it is not necessary to imagine a hypothetical set of "licensing terms that are commercially acceptable … and [that] adequately compensate the patent holder." Rather, the court need merely award the patentee some portion of the available profit stemming from infringement adequate to *incentivize the invention*. Although this condition will not hold in every case, surely it will in many.

Last, returning to their original article, Lemley and Shapiro try to escape the debate by conjecturing that on-going lost profits are difficult to calculate. Yet, he same kinds of difficulties in calculating and awarding lost profits on an on-going basis beset calculating on-going reasonable royalties. Indeed, in one of his later articles, Lemley argues that calculating lost profits is generally more straightforward than calculating reasonable royalties:

[76] *Id.* at 2173.

> But where the problem is imprecision in calculating lost profits, it is important to keep in mind that the alternative to denying lost profits is a less precise, and more distorted, reasonable royalty measure. . . . But under a strict divide approach, a patentee who can show that it is more likely than not that an infringer's sales cut into its own should be entitled to the court's best estimate of the patentee's lost profits. That estimate may not be perfect, but it is likely to be at least as accurate as the alternative reasonable royalty measure . . . . Indeed, it is somewhat ironic that courts have insisted on strict compliance with the elements of proof of a lost profits claim, given that the reasonable royalty alternative involves at least as much uncertainty and approximation.[77]

Like on-going reasonable royalties, courts would assume that on-going lost profits generally mimic historical profits, subject to adjustment for increased or decreased future sales. As such, Lemley and Shapiro's claim that on-going lost profits are too difficult to calculate is dubious. More importantly, patent law should not aim to award a manufacturing patentee lost profits on an on-going basis. Rather, the core question is what level of damages should be awarded to sufficiently induce the patentee to engage in innovation. On this ground, as I explain more fully below, courts need not look solely to tort-based compensation—lost profits or reasonable remedies—in fashioning an appropriate measure of damages.

In sum, the premise of promoting the *status quo ante* should be jettisoned as a fundamental tenet of patent law remedies. Neither non-practicing nor manufacturing entities should routinely be entitled to an injunction as a matter of equity, other than in situations for which the costs of determining damages and the error costs from wrong determinations exceed the costs of granting the injunction (an issue I address in more detail in the next section). Indeed, on the same reasoning, patentees should *not* conclusively be entitled to damages sufficient to fully compensate for the "harm" inflicted on the patentee by the "infringement." Instead, patentees should only be entitled to the level of damages that promotes optimal innovation incentives, which—as I explain in the next section—may often be less, and sometimes more,

[77] Lemley, *supra* note 6, at 672 & n.79.

than the profits or royalties that would have been earned in the marketplace but for the infringement.

C. Removing Tort: A Fully Revised Model of Patent Law Remedies

In this section, I extend my argument that tort law principles should be excised from patent law remedies. As I recounted earlier, tort law concepts immediately lead to a distinction in the types of remedies that are awarded to manufacturing and non-practicing entities that is not always economically justified. Additionally, tort law concepts have caused courts and commentators to improperly overlook holdup problems caused when injunctions are granted to practicing entities asserting patents on components of complex products. In this section, I also contend that injunctions and full compensatory damages may thwart optimal innovation incentives when they generate large consumer deadweight losses, result in substantial duplicated costs during the pre-invention R & D process, or create transaction costs far in excess of the value of the invention. On the other hand, patentees may be systematically undercompensated by mere make-whole damages when infringement is difficult to detect and when private incentives to innovate from make-whole damages are insufficient to generate optimal levels of social benefits from the innovation.

1. Correcting Patentee Overcompensation

In the last section, I argued that injunctions involving patents covering components of complex products should typically be denied—at least when switching costs are high—not only to non-practicing entities, as commentators have recognized, but also to practicing entities. In this section, I examine other areas in which make-whole damages may over-compensate patentees.

First, for reasons similar to those presented earlier for denying injunctions for component patents, overall damages for practicing entities should not always reflect the entirety of the patentee's lost profits attributable to the infringement. Like the earlier example, suppose the patentee sells a product for $100, with $9 of profit, and the patent allows it to reduce its costs by $1. However, suppose that if the competitor could not use the patented cost-saving method, the patentee could lower its price to $99 and take away all sales from the competitor, because it is forced to charge $100. In the event of infringement, under the "entire market value" rule of current law, the patentee would be entitled to full lost profits, because the competitor's customers would have bought the patentee's product precisely because of its patented production method. If each competitor sells one million products per year prior to the patent, with an award of full lost profits, the patentee would garner $9 million per each year of patent term in damages (1 million lost sales x $9 profit per product). This vast level of damages is only justifiable on tort law grounds, as a matter of compensation for the "harm" caused by infringement. Yet, from a perspective of optimizing innovation incentives, it far exceeds what is necessary to adequately compensate the patentee for its inventive efforts. Specifically, in the event the competitor uses the cost-saving method, as explained earlier, each would charge $100 per product, now earning $10 in profit per product. Supposing these companies are the only producers of the product, then the patent produces $2 million per year in net social value. Thus, from a social perspective the most the patentee should earn in damages is $2 million per year, adjusted to reflect the minimum amount necessary to incentivize the invention, rather than $9 million per year. Like arguments in favor of apportionment for reasonable royalty damages,[78] full lost profits will often not be appropriate for patents merely covering components of more complex products.

[78] *See* Lemley & Shapiro, *supra* note 13, at __.

Second, in many contexts besides component patents, the current system of patent remedies can generate excessive innovation incentives. For instance, R & D and commercialization costs and risks are substantially more in some industries than others. For instance, the costs of invention in the software industry are usually far below those in the pharmaceutical industry. Yet, the duration of software and pharmaceutical patents are exactly the same (in practice, software patents last longer), and the effective scope of software patents often exceeds the scope of pharmaceutical patents. If the broad scope and long duration afforded software patents is unnecessary to fully incentivize innovation in that industry, then the rewards provided by the patent system are excessive. This is so even if the social value of an invention far exceeds the R & D costs necessary to produce it, because society should only pay the inventor the minimum amount necessary to generate the innovation. As such, paying full damages in situations where R & D and commercialization costs and risks are low creates windfalls for innovators. Additionally, awarding injunctive relief and full damages can create deadweight losses that stem from (1) the patentee's ability to price its patented goods far over the competitive price; and (2) excessive rents generated from duplicated R & D in "racing" for too large a patent prize. Thus, when R & D costs and risks are low and deadweight losses are high—injunctions should be routinely denied and damages reduced. Indeed, Ian Ayres and Paul Klemperer[79]—as well as one of my papers[80]—have shown that allowing for probabilistic enforcement of the patent can result in superior welfare outcomes to full enforcement, particularly under these conditions.[81]

[79] *See* Ayres & Klemperer, *supra* note 18, at 993.
[80] *See* Sichelman, *supra* note 19.
[81] Reducing overall damages can be effected not only through reductions on damages for sales of products covered by the patent, but also by limiting damages on "convoyed" sales of related products. *See generally* Lemley, *supra* note 6, at 660 (discussing convoyed sales jurisprudence).

Third, in commercial situations presenting large transaction costs in negotiating licenses, traditional injunctive relief may diminish the commercialization and improvement of patented inventions.[82] Specifically, when a patentee and a third-party commercializer or improver differ over whether a given patent is infringed, valid, or enforceable, it may be economically efficient for the third party to forgo large transaction costs in negotiating a license, instead infringing. Like the theory of efficient breach in contract law,[83] efficient infringement occurs when the transaction costs of negotiation dwarf the value of the innovation-at-issue, which can occur when there is large uncertainty in the underlying patent rights or simply when the economic value of the innovation is fairly minimal.[84] In these circumstances, it may be more optimal to preclude injunctions, even for practicing patentees.[85]

One response to this entire line of reasoning is that courts would find it difficult to award an appropriate level of on-going money damages, regardless of how damages are calculated. An injunction, on the other hand, effectively forces the parties to enter into a negotiation to determine price terms—assuming, of course, that they can come to some agreement. More specifically, injunctions are optimal compared to damages when the judicial costs of determining damages and the error costs from wrong determinations exceed the costs of granting the injunction.[86] As an empirical matter, it is difficult to measure how often judicial determination and error costs outstrip the costs from granting injunctions (and make-whole damages). On the other hand, courts can arguably determine when the costs from injunctions and make-whole

[82] *See* Sichelman, *supra* note 72, at __.
[83] *See* MacNeil, *supra* note 21, at 950-53; RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 119-20 (7th ed. 2007).
[84] *Cf.* Jeffrey L. Harrison, *A Positive Externalities Approach to Copyright Law: Theory and Application*, 13 J. INTELL. PROP. L. 1, __ (2005) ("When transaction costs are high and the fair user attributes greater value to the use of the work than the loss suffered by the original author, it can be efficient to permit the fair use.").
[85] *Cf.* Julie S. Turner, *The Nonmanufacturing Patent Owner: Toward A Theory Of Efficient Infringement*, 86 CAL. L. REV. 179, 203-204 (1998) (advocating "efficient infringement" solely for "unused" patents).
[86] The same reasoning holds when the costs of determining partial damages, and related error costs, exceed the costs from awarding make-whole damages.

damages are substantial compared with the social value of the invention. For instance, courts can hear evidence on total R & D costs, increased profits vs. baseline profits, comparable royalties, the value of other patented components, and so forth, to determine when injunctions and make-whole damages might lead to gross excessively awards. At least in these situations, patent law remedies should be modified to deny injunctions and reduce overall damages. In closer cases, especially given the historical practice, a default rule of injunctive relief and make-whole damages seems appropriate.

2. Correcting Patentee Undercompensation

Eliminating the presumption of tort law that a patentee should be made whole need not merely lead to eliminating injunctions and reducing overall compensation. Here, I describe two situations in which the patentee may need *more than* injunctive relief and compensatory damages to generate optimal innovation incentives.

First, infringement is often hard to detect. For instance, if a competitor uses a patented process in manufacturing process, it may be very difficult, even impossible, to determine whether a given product was made by the process.[87] Even in the make-whole realm of tort law, when violations are not easily detected, standard law-and-economics analysis mandates that for optimal deterrence, damages must be multiplied the inverse of the probability of detection. Thus, if detection of infringement is difficult, damages should be enhanced to provide optimal innovation incentives. As Roger Blair and Thomas Cotter have recognized, "an award that merely renders the infringer no better off as a result of the infringement may be an ineffective deterrent, because only a portion of all possible infringements are susceptible of detection. This insight suggests that a substantial damages multiplier often may be necessary to achieve

[87] *See, e.g.*, Jochen Pagenberg, *The WIPO Patent Harmonization Treaty*, 19 AIPLA Q.J. 1, 13 (1991) (noting the difficulty of detecting process patent infringement).

adequate deterrence."[88] Because detection may be difficult irrespective of the infringer's behavior, this condition applies regardless of whether the infringer was "willful," unless the willfulness somehow increases the odds of non-detection.

Like the earlier recommendations, a potential counter-argument is that courts will themselves have difficulty determining when infringement is difficult to detect. One possible administrative solution is for the courts to assess whether the accused product or method was sold or used in public. If not, then courts should presume, rebuttably, that the accused product or method is difficult to detect. Assuming the presumption holds, then the question becomes, "How difficult?" This is an even thornier question. Interestingly, the oft-discredited "disgorgement" remedy—whereby the accused infringer is required to pay no less than the profits it earned from infringement—may become an effective remedy, because it achieves some multiplier on ordinary damages, yet is much less costly to administer than a exact-multiplier remedy. Of course, it would be ideal for courts to fashion a low-cost remedy that roughly determined the appropriate multiplier.

Second, make-whole damages may sometimes be too low to generate positive incentives for any private actor to invest in R & D and commercialization for a given invention, but the net social welfare of the invention may be sufficiently high that society desires the invention to be made and commercialized.[89] Alternatively, the invention may be justified purely on distributive grounds, such as drugs for rare diseases that are not otherwise profitable. In these situations, infringers, the government, or some other entity would need to supplement make-whole damages with additional funds. Presumably, infringers should not pay these additional amounts, because as I explained earlier, in many circumstances, infringement can be a kind of efficient breach that

[88] *See* Blair & Cotter, *supra* note 23.
[89] *See* Shavell & Ypersele, *supra* note 24, at 529.

diminishes the deadweight losses imposed by patents. In these cases, if we raise the costs to infringement, we lower the benefits from otherwise efficient infringement. Rather, a more appropriate approach would be for the government to step in and determine whether current R & D and commercialization incentives, which stem in part from patent remedies, are sufficient for particular kinds of inventive activity. If incentives are too low, the government could—as it does now—subsidize certain categories of inventive activity (e.g., drugs for rare diseases) both prior to and after invention.

III. PATENT LAW AS A PUBLIC REGULATORY MECHANISM

In this last Part of the paper, I first argue that the previous analysis implies that the current structure of remedies under the Patent Act is fundamentally flawed, because it rests on a make-whole notion of damages that does not optimally promote innovation in many situations. Instead, I then suggest that patent law remedies should be viewed not as a means to remedy private wrongs, but as part of a larger regulatory mechanism grounded in public law concepts.

A. The Fundamentally Flawed Foundation of the Remedies Provisions in the Patent Act

In Part II, I showed that make-whole damages can often be too high or too low to incentivize optimal levels of innovation. As I explained in Part I, the reason courts impose make-whole damages is because they are mandated by the Patent Act itself. First, 35 U.S.C. § 284 states that "[u]pon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court." In other words, the Patent Act enshrines the tort law compensatory rationale right into the statutory framework for damages. Based on the analysis I provided earlier, such an approach is misguided,

because it does not provide for optimal remedies in many circumstances. Rather, the Patent Act would encourage more optimal levels of innovation by giving the court discretion to adjust damages upward or downward from make-whole compensatory levels when (1) the novel aspect of the invention is but a mere component of a complex invention, the component is not responsible for generating all of the patentee's profits, and switching costs are high; (2) full compensatory damages substantially exceed or fall below the amount needed to incentivize research, development, and commercialization costs and risk of the invention, including opportunity costs; and (3) infringement is especially difficult to detect. Of course, there are very likely other situations that warrant damages adjustment, and further study here is necessary to enumerate all of them.

Related, the injunctive relief provision, 35 U.S.C. § 283, should be similarly amended. As it stands, it states, "[c]ourts . . . may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable." Again, this provision should not aim to "prevent the violation of any right secured by patent," but instead merely to promote optimal innovation incentives. Such a shift would imply that the current four-factor tests for preliminary and permanent injunctions should be suitably modified. Specifically, the preliminary injunction test currently examines "(1) the likelihood of the patentee's success on the merits; (2) irreparable harm if the injunction is not granted; (3) the balance of hardships between the parties; and (4) the public interest."[90] Like make-whole damages, the "irreparable harm" and "hardship" prongs focus on the private injury to the parties instead of determining what might best promote innovation incentives. Under a proper model of patent remedies, even if the patentee might experience irreparable harm that creates a burden that outweighs any experienced by an infringer, in the situations mentioned

[90] PHG Techs., LLC v. St. John Cos., Inc., 469 F.3d 1361, 1365 (Fed. Cir. 2006).

earlier—e.g., component patents and excessive incentives—a preliminary injunction could be socially detrimental. The same sort of analysis applies to permanent injunctions, which after *eBay*, turn on similar factors.[91]

Finally, the notion of willful infringement does not seem to accord well with promoting innovation incentives other than as a proxy for difficult-to-detect infringement. In tort law, punitive damages are often awarded for intentional, willful conduct in order to provide greater deterrence of harmful behavior. But infringement of a patent is not harmful *per se*; rather, infringement is only harmful to the extent it denies the patentee an opportunity to be compensated an amount sufficient to induce it to engage in innovative activity. As I explained above, in many situations, some level of infringement will promote overall welfare. In other situations, as long as the patentee can recover suitable damages in a lawsuit, whether the infringement was willful becomes a meaningless investigation. Instead, willful infringement should only play a role in determining damages when (1) it increases the difficulty with which the patentee can detect infringement; or (2) when it substantially raises the costs of the patentee collecting appropriate compensation for its innovative activity, i.e., by creating the need for a costly lawsuit relative to the value of the innovation. In this sense, willfulness damages solely inflicted as "punishment" for "wrongful" behavior should be eliminated from patent doctrine.

B. Towards a Regulatory Model of Patent Law Remedies

So far, I have argued that all private law notions—contract, real property, and tort—should play no role in how we think about patent rights and remedies. A more appropriate model

[91] eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 390-92 (2006) (holding that injunctive relief is appropriate for a patentee when the following factors weigh in its favor: "(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction").

is one that draws on a "public law vision."[92] Instead of viewing patents as conferring a *private* right on the patentee, under a public law model, a patent confers a kind of private attorney general status on the patentee that allows it to collect payment *on behalf of society*, which is then immediately remitted in full to the patentee solely in order to optimize overall social innovation incentives. Indeed, on a public law model, one could imagine the government bringing patent infringement actions, either in place of or alongside private patentees, then remitting damages to the patentee. However, because the patentee typically plays an active role in asserting legal arguments and providing factual evidence in any given case—as well as enjoys the direct benefits of a judgment—arguably it is least-cost enforcer of patent rights. As such, a patentholder will generally be more effective than the government (or some third party for that matter) to collect damages on society's behalf. But, importantly, the choice of patentee as money collector does not stem from any private right of the patentee to be compensated for harm caused to it.

In this regard, Shubha Ghosh has offered an insightful public regulatory model of patent law. In Ghosh's view, the patent system should not rest on a social contract or private property foundation, but rather should "regulat[e] primary conduct in the innovation process" as a means of "private ordering."[93] In other words, "patents serve as a way to administer an organize markets."[94] Yet, Ghosh draws particular conclusions about the structure of the patent system that do not in my view necessarily follow from a regulatory model. Specifically, he contends that a regulatory approach counsels in favor of viewing intellectual property law as involving an "assurance" game—namely, a game whereby "each player independently can be assured that the

[92] *Cf.* David Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System*, 97 HARV. L. REV. 849 (1984).
[93] Ghosh, *supra* note 34, at 1315, 1318.
[94] *Id.* at 1350; *see also* WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 35-36 (2003) (addressing the role of the state in regulating intellectual property law).

other[s] will not imitate"—as opposed to the standard prisoners' dilemma game.[95] However, there is no a priori reason why a regulatory model mandates any different game theoretic view of patent law than a private law model. The underlying economic problems associated with patent law are the same regardless of the lens through which we view the rights and remedies designed to solve the problems. Rather, the aim of regulatory approach should be more general—to optimize incentives for invention and commercialization, taking into account potential costs from diminished follow-on invention, duplicated development and rent-seeking, and consumer deadweight losses, as well as distributive interests.[96] In many situations, courts will have too difficult a time in figuring out the appropriate level of damages or whether an injunction should issue, in which case, I suggest that make-whole damages and injunctive relief serve as baseline remedies. However, in other situations—such as those involving component patents, grossly excessive damages relative to the optimal incentives, or significant problems in detecting infringement—courts will very likely be able to assess a level of damages more in line with the optimal amount (and deny injunctive relief when appropriate).

CONCLUSION

The fundamental premise of patent law remedies derives from tort law and counsels that courts should always attempt to make the patentee whole in the event of infringement. Here, I have rejected this premise, arguing that the more fundamental goal of promoting innovation sometimes requires deviations from make-whole remedies. Specifically, when a patent covers a mere component of a patented product, and an infringer's switching costs are high, it will often be more desirable to deny injunctive relief and reduce make-whole damages, regardless of

[95] *Id.* at 1335-36.
[96] Indeed, Ghosh recognizes that "[f]rom the perspective of patent law, the relevant interests include pioneer inventors, follow-on inventors, marketers, consumers, and the innumerable other interests reflected in the research and development process." *Id.* at 1355.

whether the patentee practices its patents. Additionally, an injunction may thwart optimal innovation incentives when it generates large consumer deadweight losses, results in substantial duplicated costs during the pre-invention R & D process, or creates transaction costs far in excess of the value of the invention. In other situations, such as when infringement is difficult to detect, increasing damages beyond the make-whole level may be optimal.

More generally, I have argued that the notion that patentees should be returned to the *status quo ante* is a private law concept that should play no essential role in determining optimal remedies in patent law. On this ground, the statutory remedies provisions of the Patent Act themselves rest on a flawed foundation. Instead of providing remedies for private wrongs inflicted on private parties, patent law remedies should be tailored to adequately compensate patentees, taking into account the various social costs of patenting. Such a "public law vision" of the patent system is essentially regulatory in nature. By fully removing the private law moorings of patent law remedies, patents will better fulfill their fundamental role in promoting innovation.