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Enhancing Ongoing Royalties: The Inequitable Equitable Remedy

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ENHANCED ONGOING ROYALTIES: THE INEQUITABLE EQUITABLE REMEDY

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I. INTRODUCTION

Before the Supreme Court's decision in *eBay v. MercExchange, LLC*[1] a finding of patent infringement almost always meant that the defendant would be enjoined from future infringement.[2] The Federal Circuit operated under a "'general rule,' unique to patent disputes, 'that a permanent injunction will issue once infringement and validity have been adjudged.'"[3] In *eBay*, the Supreme Court changed this landscape by delineating a "traditional four-factor framework" under which to evaluate the propriety of injunctive relief.[4]

In the wake of *eBay*, many courts have declined to enjoin the defendant's infringement, instead awarding ongoing royalties, which require that the defendant pay a specified royalty for each future act of infringement.[5] Unfortunately, courts have yet to develop a unifying theory to properly quantify this new remedy. Some courts have awarded supracompensatory ongoing royalties, either on the theory that any ongoing infringement is necessarily willful and calls for an enhanced award,[6] or on the proposition that the jury's verdict of infringement and validity would strengthen the patentee's bargaining position relative to the infringer.[7] Other courts, however, have awarded ongoing royalties at the jury rate.[8]

In this article, I suggest that ongoing royalty enhancements are improper in most cases. To set up this argument, I identify the primary reasons for denying injunctions in post-*eBay* patent cases as the same reasons that courts have denied injunctions in traditional property contexts.

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1 547 U.S. 388 (2006).

2 *See* Mallinckrodt, Inc. v. Masimo Corp., 147 F. App'x 158, 177 (Fed. Cir. 2005); *see also* Daniel A. Crane, *Intellectual Liability*, 88 TEX. L. REV. 253, 264 (2009).

3 *eBay*, 547 U.S. at 393–94.

4 *Id.* at 394.

5 *See, e.g.*, Paice LLC v. Toyota Motor Corp., 504 F.3d 1293, 1314 (Fed. Cir. 2007); Telcordia Tech., Inc. v. Cisco Sys., Inc., No. 04-876-GMS, 2014 WL 1457797, at *4 (D. Del. Apr. 14, 2014); Clear With Computs., LLC v. Hyundai Motor Am., Inc., No. 6:09-CV-479, 2012 WL 8144915, at *8 (E.D. Tex. Jan. 9, 2012).

6 *E.g.*, Affinity Labs of Tex., LLC v. BMW N. Am., LLC, 783 F. Supp. 2d 891, 899 (E.D. Tex. 2011); Paice LLC v. Toyota Motor Corp., 609 F. Supp. 2d 620, 626 (E.D. Tex. 2009); I/P Engine, Inc. v. AOL Inc., No. 2:11cv512, 2014 WL 309245, at *4 (E.D. Va. Jan. 28, 2014).

7 *E.g.*, Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc., 670 F.3d 1171, 1193 (Fed. Cir. 2012), *vacated in part*, 682 F.3d 1003 (Fed. Cir. 2012) *and* 476 F. App'x 747 (Fed. Cir. 2012) (en banc); Morpho Detection, Inc. v. Smiths Detection Inc., No. 2:11cv498, 2013 WL 5701522, at *8 (E.D. Va. Oct. 17, 2013); Tomita Techs. USA, LLC v. Nintendo Co., No. 11 Civ. 4256(JSR), 2013 WL 6504394, at *2 (S.D.N.Y. Dec. 11, 2013); *Paice*, 609 F. Supp. 2d at 630.

8 *See, e.g.*, Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., No. 09-290, 2014 WL 1320154, at *38–39 (W.D. Pa. Mar. 31, 2014), *ongoing royalty aff'd*, 807 F.3d 1283 (Fed. Cir. 2015).

I am not the first to draw analogies between injunctive relief in patent law and other property doctrines. Commentators have drawn parallels between ongoing royalties and accession,[9] between ongoing royalties and nuisance,[10] and between ongoing royalties and the necessity doctrine.[11] Indeed, Richard Epstein has suggested that "huge returns lie from systematizing intellectual property by analogy and extension to successful legal regimes elsewhere."[12] But in this Article I attempt to draw out the core remedial principles at work in both the intellectual property and traditional property contexts, reflecting reasoned consideration, practical experience, and important value judgments.[13] I then use these fundamental remedial principles to assess courts' awards of ongoing royalties, particularly the practice of awarding ongoing royalties in excess of the jury-determined royalty rate, arguing that enhancements of ongoing royalties frequently run counter to traditional remedial values.

Part I of this Article discusses reasons that courts may deny injunctive relief in cases of the invasion of property rights. Specifically, Part I looks to the *eBay* factors and their historical underpinnings. Building on Part I, Part II examines the reasons that, since *eBay*, courts have been inclined to award ongoing royalties as a patent remedy. Part II surveys the relative advantages and disadvantages of four potential remedial courses: (1) an ongoing royalty; (2) prohibitory injunctions; (3) lump-sum awards; and (4) leaving the patentee to vindicate its rights in future litigation.

Finally, Part III evaluates courts' methods of assessing ongoing royalties. Part III argues that courts have too liberally awarded supracompensatory ongoing royalties. Part III specifically takes issue with two common practices: elevating ongoing royalties on the basis of changed circumstances governing the parties' hypothetical negotiations, and enhancing ongoing royalties as a matter of course under the theory that the defendant's future use of the patented invention amounts to willful infringement. Part III closes by examining potential reasons to award supracompensatory ongoing royalties under the willfulness rubric.

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9 *See* Peter Lee, *The Accession Insight and Patent Infringement Remedies*, 110 MICH. L. REV. 175, 205 (2011).

10 *See* Christopher M. Newman, *Patent Infringement as Nuisance*, 59 CATH. U. L. REV. 61, 63 (2009).

11 *See* Karen E. Sandrik, *Reframing Patent Remedies*, 67 U. MIAMI L. REV. 95, 131–32 (2012).

12 Richard A. Epstein, *The Disintegration of Intellectual Property? A Classical Liberal Response to a Premature Obituary*, 62 STAN. L. REV. 455, 458 (2010).

13 *See, e.g.*, Crocker v. Manhattan Life Ins. Co., 70 N.Y.S. 492, 497 (N.Y. App. Div. 1901) ("The principle which grants or withholds equitable relief is precisely the same in each case. . . . If the right to its enforcement may be denied in one case, it may also be denied in the other, for the equitable principle operates alike upon both."). I do not mean to suggest that the authors of these referenced articles maintain that patent law perfectly mirrors their chosen analogy, but only that I hope to extract broad, overarching equitable considerations that underlie all of these fields, including the analogized property law.

II. REASONS TO DENY INJUNCTIVE RELIEF

A. *Historical Overview*

Injunctions were long held to be virtually automatic as a remedy for the invasion of property rights.[14] Previously, this was true for property rights in general, whether intellectual or tangible. For example, under traditional rules, mistaken improver cases almost always resulted in an injunction for the property owner—the court would require the removal of the offending structure without regard to considerations of waste, burden on the defendant, or value to the plaintiff.[15] Where the improver mistakenly built on another's property, "the trespass victim had the right to force the encroaching builder to remove the structure, no matter how valuable it was, no matter how much it cost to build, no matter how minimal the intrusion on the neighbor's land, and no matter how excusable or understandable the mistake was."[16] More recently, however, courts have turned to the doctrine of relative hardship to deny injunctive relief[17] and, in some cases, have required the landowner to sell the improved property for the pre-improvement market value.[18]

The law related to breaches of land covenants has similarly evolved from a doctrine of automatic injunction to the more flexible doctrine that a "covenant will not be enforced if to do so would harm one landowner without substantially benefiting another landowner."[19] And, in the famous nuisance case of *Boomer v. Atlantic Cement Co.*,[20] the New York Court of Appeals rejected the earlier rule

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14 *See* Richard A. Epstein, *A Clear View of the Cathedral: The Dominance of Property Rules*, 106 YALE L.J. 2091, 2101 (1997).

15 Joseph William Singer, *The Rule of Reason in Property Law*, 46 U.C. DAVIS L. REV. 1369, 1396 (2013).

16 *Id.*

17 The balancing of the equities outside of the restitution context is largely a development of the 19th century. *See* George P. Smith, II, *Nuisance Law: The Morphogenesis of an Historical Revisionist Theory of Contemporary Economic Jurisprudence*, 74 NEB. L. REV. 658, 690 (1995) ("In 1868, Pennsylvania became the first jurisdiction to allow a balancing of hardships between parties in a nuisance action.").

18 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 10 cmt. a (AM. LAW INST. 2011) ("Modern decisions allow restitution for mistaken improvements more liberally than in the past because the tendency of the modern law is to judge the equities between the parties on a case-by-case basis."); Singer, *supra* note 15, at 1397 ("Because courts view the old rule as both unfair and inefficient, they have relaxed the clear immunity rights of the land owner in cases of mutual mistake . . . in a way that subjects property rights to a reasonableness standard that requires judgment . . . rather than rigid application of formal boundary designations.").

19 Grove Hill Homeowners' Ass'n v. Rice, 90 So. 3d 731, 735 (Ala. Civ. App. 2011) (quoting trial court's recognition of transition toward modern approach, and holding that the relative hardship test applies as third prong of test for permanent injunction, unless breach occurs with actual or constructive notice).

20 257 N.E.2d 870 (N.Y. 1970).

that had been "consistently reaffirmed in several leading cases . . . that where a nuisance has been found and where there has been any substantial damage shown by the party complaining an injunction will be granted[,]" even where there was a "marked disparity . . . in economic consequence between the effect of the injunction and the effect of the nuisance."[21]

Patent law seems to have followed the same trajectory as other property law regarding injunctive relief, though perhaps lagging a bit behind. Before *eBay*, the Federal Circuit had imposed what amounted to an almost per se injunction rule, and *eBay* itself reached the Supreme Court after the Federal Circuit reversed the district court's decision denying injunctive relief.[22] But, after *eBay*, courts have employed the four-factor test, which includes the balance of harms resulting from injunctive relief or lack thereof,[23] much as courts in real property cases have invoked the relative hardship doctrine.

Despite the former presumption of an injunction in patent infringement cases, a few pre-*eBay* decisions denied injunctive relief in favor of ongoing-royalty-type remedies. In *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*,[24] the district court entered a "compulsory license" on the patented invention after denying injunctive relief.[25] The Federal Circuit later cited *Shatterproof Glass* as precedent for an award of ongoing royalties.[26] Similarly, in *Foster v. American Machine & Foundry Co.*,[27] the Second Circuit affirmed the district court's injunction denial and order of a compulsory license where the injunction would have been only "a club to be wielded by a patentee to enhance his negotiating stance."[28]

Other older cases occasionally awarded remedies analogous to ongoing royalties. For example, in *Nerney v. New York, New Haven & Hartford Railroad Co.*,[29] the court reversed a permanent injunction that would have had little benefit to the patentee, other than "to strengthen its position in negotiating a settlement,"

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21 *Id.* at 872.

22 eBay Inc. v. MercExchange, LLC, 547 U.S. 388, 391, 393–94 (2006).

23 *See, e.g.*, Hynix Semiconductor Inc. v. Rambus Inc., 609 F. Supp. 2d 951, 966, 984–85 (N.D. Cal. 2009).

24 758 F.2d 613 (Fed. Cir. 1985).

25 *Id.* at 616.

26 Paice LLC v. Toyota Motor Corp., 504 F.3d 1293, 1314 (Fed. Cir. 2007). In *Petrella v. Metro-Goldwyn-Mayer, Inc.*, the Supreme Court noted the possibility of ongoing royalties in the copyright context with apparent approval, although it did not explicitly condone the use of ongoing royalties. 134 S. Ct. 1962, 1979 (2014).

27 492 F.2d 1317 (2d Cir. 1974).

28 *Id.* at 1324.

29 83 F.2d 409 (2d Cir. 1936).

but would have caused "a much greater injury" to an accidental infringer.[30] Instead, the court ordered an accounting.[31] In *Hoe v. Boston Daily Advertiser Corp.*,[32] the court denied a preliminary injunction after balancing the parties' respective hardships, and the court, noting that this was "much like a final hearing" because the facts had all been established, announced its intention to deny a permanent injunction, conditioned on the defendant's payment of a royalty.[33] For the most part, however, injunctions followed almost automatically after a finding of patent infringement, until the Supreme Court's decision in *eBay*.

B. The eBay *Factors*

In *eBay*, the Supreme Court announced an injunction test gleaned from "well-established principles of equity," requiring an injunction-seeking plaintiff to prove that (1) it has suffered an irreparable injury; (2) the remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) when considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) the public interest would not be disserved by a permanent injunction.[34] Although the rigidity of a four-pronged test may not fully capture the nuance involved in the equitable considerations that historically have been taken into account, this test generally corresponds to traditional reasons for denying injunctive relief.[35]

Justice Clarence Thomas's opinion for the Court emphasized that the considerations identified in the four-factor test apply both inside and outside of the patent context; nothing in the Patent Act makes patents unique.[36] Thus, seeing the equitable principles applied in other contexts allows us to thoughtfully apply them to patent cases. This is not because patents, which are neither scarce nor rivalrous, are identical to traditional property, but because key remedial concerns of our legal system—such as restoring and maintaining the plaintiff's rightful position[37]—are often the same. In this section, I use the structure of the four-part *eBay* test to examine reasons that courts have denied injunctive relief outside of the patent context.

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30 *Id.* at 411.

31 *Id.*

32 14 F. 914 (C.C.D. Mass. 1883).

33 *Id.* at 915–16.

34 eBay Inc. v. MercExchange, LLC, 547 U.S. 388, 391 (2006).

35 Mark P. Gergen et al., *The Supreme Court's Accidental Revolution? The Test for Permanent Injunctions*, 112 COLUM. L. REV. 203, 207–08 (2012).

36 *eBay*, 547 U.S. at 391–92.

37 *See generally* Marco Jimenez, *Remedial Consilience*, 62 EMORY L.J. 1309, 1312–13 (2013).

1. Irreparable Harm and Inadequacy of Legal Remedies

As many courts[38] and commentators[39] have recognized, the first and second factors of the *eBay* test—irreparable injury and the inadequacy of the plaintiff's legal remedies to cure the injury—reflect the same consideration: namely, whether money damages (or, in theory, some other legal remedy) will adequately compensate the patentee for any harm to its property interests. The adequacy of a particular legal remedy may vary by context, at least to the extent that, as Anthony Kronman argued in his influential article, this consideration reflects a concern about whether courts can fix damages "without imposing an unacceptably high risk of undercompensation on the injured promisee."[40]

Judge Richard Posner elaborated on this concept when he equated "disproportion between harm to the patentee from infringement and harm to the infringer and to the public from an injunction" with Justice Anthony Kennedy's point in *eBay* that "legal damages may well be sufficient" in cases of patented components of larger products.[41] Relatedly, Professor Douglas Laycock contends that the irreparable injury rule is anachronistic, and that courts invoke it only when they have some other reason to deny an injunction, such as when the plaintiff's losses can be replaced in the market.[42] Thus, the first two factors often shade into the third factor,[43] which examines the relative harms to each party from the absence or presence of an injunction.

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38 ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc., 694 F.3d 1312, 1337 (Fed. Cir. 2012); Acumed LLC v. Stryker Corp., 551 F.3d 1323, 1327 (Fed. Cir. 2008); Bianco v. Globus Med., Inc., No. 2:12-CV-00147-WCB, 2014 WL 1049067, at *1 (E.D. Tex. Mar. 17, 2014); MercExchange, LLC v. eBay, Inc., 500 F. Supp. 2d 556, 569 n.11 (E.D. Va. 2007) ("The irreparable harm inquiry and remedy at law inquiry are essentially two sides of the same coin . . . .").

39 *See, e.g.*, 42 AM. JUR. 2D *Injunctions* § 41 (2016); DOUG RENDLEMAN & CAPRICE ROBERTS, REMEDIES: CASES AND MATERIALS 266 (8th ed. 2011); DOUGLAS LAYCOCK, THE DEATH OF THE IRREPARABLE INJURY RULE 8 (1991); Gergen et al., *supra* note 35, at 207–08 ("[T]he test redundantly states requirements of irreparable injury and inadequacy of legal remedies.").

40 Anthony T. Kronman, *Specific Performance*, 45 U. CHI. L. REV. 351, 362 (1978); *see also* i4i Ltd. v. Microsoft Corp., 598 F.3d 831, 862 (Fed. Cir. 2010) ("Difficulty in estimating monetary damages is evidence that remedies at law are inadequate."); Van Wagner Advert. Corp. v. S & M Enters., 492 N.E.2d 756, 759–60 (N.Y. 1986) (citing Kronman, *supra*).

41 Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 918 (N.D. Ill. 2012), *rev'd in part*, 757 F.3d 1286 (Fed. Cir. 2014).

42 LAYCOCK, *supra* note 39, at 37.

43 This injunction "checklist" was created from equitable principles—factors that informed the discretion of the chancellor, rather than a list of requirements. Gergen et al., *supra* note 35, at 211–12.

2. Hardship Balancing Considerations

The third *eBay* factor is that, "considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted."[44] The Supreme Court's formulation does not discuss any applicable presumptions on this factor.[45] In the traditional property context, for example, some courts have placed a heavy thumb on the scale in favor of an injunction, so that an injunction would be denied only if the balance of equities tips strongly in favor of the defendant.[46] More recently, many courts have lifted the thumb from the scale, balancing the equities afresh, but giving the benefit of any doubt about potential hardships to the property owner seeking an injunction.[47]

After *eBay*, "lower courts appear to have adopted a binary approach, granting injunctions as a matter of course to patent holders found to be active in the marketplace and denying injunctions to entities found not to have practiced their inventions."[48] This makes sense, given the strong relationship between the adequacy of the legal remedies and the balance of hardships. Thus, in 1877, one treatise author wrote that, if compensation would provide the patentee with a sufficient remedy, "[a] rash or indiscreet exercise of [the injunction] power may be very oppressive, of no use to the complainant and ruinous to the defendant."[49]

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44 eBay Inc. v. MercExchange, LLC, 547 U.S. 388, 391 (2006).

45 *See* Gergen et al., *supra* note 35, at 227 ("Notably, when balance-of-hardships concerns enter through the undue-hardship defense, the right violator bears a considerable burden of production from the start, a situation that contrasts with that under an *eBay* test unsupplemented by any presumptions in favor of the right holder.").

46 *See, e.g.*, Tauscher v. Andruss, 401 P.2d 40, 42 (Or. 1965) ("Since the defendants are in effect asking the court to recognize a kind of eminent domain for private purposes, the disproportion between their damage resulting from the removal of the encroachment and the plaintiffs' damage if the injunction is denied must be great."); Tashakori v. Lakis, 126 Cal. Rptr. 3d 838, 843 (Cal. Ct. App. 2011) ("[T]he hardship to the defendant from granting the injunction 'must be greatly disproportionate to the hardship caused plaintiff by the continuance of the encroachment and this fact must clearly appear in the evidence and must be proved by the defendant.'"); Cogdell v. 1999 O'Ravez Family, LLC, 220 P.3d 1259, 1262 (Wash. Ct. App. 2009) (requiring "an enormous disparity in the resulting hardships").

47 *See* Gergen et al., *supra* note 35, at 227.

48 Matthew Tokson, *Judicial Resistance and Legal Change*, 82 U. CHI. L. REV. 901, 943 (2015).

49 ORLANDO F. BUMP, THE LAW OF PATENTS, TRADE-MARKS, AND COPY-RIGHTS 301 (1877) (quoting Sanders v. Logan, 21 F. Cas. 321 (C.C.W.D. Pa. 1861)). Bump continued to quote *Sanders*:

> As a remedy it should be administered only for prevention or protection. Where it is not necessary for these purposes it is merely vindictive, injuring one party without benefit to the other. To issue an injunction in a case where neither prevention nor protection is sought or required, but only compensation, would be an abuse of power.

Id.

Here again, we can gain insight from the application of this remedial "relative hardship" analysis in other property doctrines.[50] Property ownership generally includes the right to exclude others and, correspondingly, the right to keep one's property, including through injunctive relief.[51] But those rights are not absolute—in certain situations, forced property transactions may conform to natural rights,[52] avoid inefficiencies,[53] or conform to natural law,[54] corresponding to one's theory of property.[55]

The Uniform Trade Secrets Act ("UTSA") allows for injunctions that "condition future use upon payment of a reasonable royalty for no longer than the period of time for which use could have been prohibited," at least in "exceptional circumstances."[56] Thus, where a defendant inadvertently acquires the plaintiff's trade secret (such as from a third party), the defendant's "material and prejudicial change of position prior to acquiring knowledge or reason to know of misappropriation [might] render[] a prohibitive injunction inequitable."[57] In such a case, the defendant—whose heavy investments in the use of the trade secret would be wasted if an injunction is granted—would be significantly harmed by an injunction. The UTSA also takes into account the harm to the plaintiff that would result from the defendant's continued use of the trade secret.[58] But, if the plaintiff will not be significantly harmed by the defendant's continued use, equity will permit the defendant to continue to use the trade secret in exchange for payment of a royalty.

We see the same consideration in the continuing nuisance context, which Justice Tom C. Clark described as "forc[ing] the courts into difficult situations where modern hybrids of the traditional concepts of nuisance law and equity must be fashioned."[59] In such a case, the court "must decide whether injunctive relief, damages, or some combination of the two best satisfies the particular demands of the case before it."[60] There are several reasons that a court may choose

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50 Singer, *supra* note 15, at 1395–96; DOUGLAS LAYCOCK, MODERN AMERICAN REMEDIES 341 (4th ed. 2012) ("It should not matter whether that investment was in a building or a business or a technology. If defendant was not reckless with regard to plaintiff's patent rights, the undue hardship defense readily applies.").

51 Singer, *supra* note 15, at 1391.

52 Deepa Varadarajan, *Improvement Doctrines*, 21 GEO. MASON L. REV. 657, 676–78 (2014).

53 *Id.*

54 *See generally* ADAM J. MACLEOD, PROPERTY AND PRACTICAL REASON 1–4 (2015).

55 *See* Singer, *supra* note 15, at 1396.

56 UNIF. TRADE SECRETS ACT § 2 (UNIF. LAW COMM'N 1985).

57 *Id.*

58 *Id.* § 2 cmt. (counseling to "weigh[] an aggrieved person's interests").

59 Harrison v. Indiana Auto Shredders Co., 528 F.2d 1107, 1120 (7th Cir. 1975) (Clark, J., sitting by designation).

60 *Id.* at 1122.

to enforce a property right with a liability rule rather than a property rule,[61] but these courts usually first determine that the defendant's use will not interfere with the plaintiff's plans for her property.[62]

i. Opportunism

Courts balancing the parties' hardships consider "the object for which an injunction is being sought."[63] A plaintiff seeking an injunction is sometimes not really interested in excluding the defendant from the property, but is instead seeking an injunction to create negotiating leverage,[64] or merely for "harassment of [a] bitter rival."[65] This is most likely to be true where an injunction would require a costly redesign or factory retooling,[66] where the patent is part of an industry standard,[67] or where the patented invention is a small component of a much larger device, and the device would have to be pulled from the market during redesign efforts.[68] "If injunctions have in practice been more targeted toward party opportunism than damages, this makes sense: The reasons for both

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61 *See* Epstein, *supra* note 14, at 2107 (discussing Roman law's willingness to use a liability rule in "the situation created by the mistaken joinder of the property or labor of two or more individuals").

62 *See, e.g.*, Goldbacher v. Eggers, 76 N.Y.S. 881, 885 (N.Y. Sup. Ct. 1902) ("The plaintiff makes no special or peculiar use of her lot which requires the use of the strip encroached upon. The lot is for sale, and, although diminished in value, it is just as available for purposes of building or sale as heretofore.").

63 AM. JUR. 2D *Injunctions*, *supra* note 39, § 38.

64 Ricoh Co. v. Quanta Comput., Inc., No. 06-cv-462-bbc, 2010 WL 1607908, at *1 (W.D. Wis. Apr. 19, 2010) (denying injunction sought "to increase . . . leverage in negotiations for a higher licensing fee").

65 Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 921 (N.D. Ill. 2012), *aff'd in part, rev'd in part*, 757 F.3d 1286 (Fed. Cir. 2014); *see also* Innogenetics, N.V. v. Abbott Labs., 512 F.3d 1363, 1381 (Fed. Cir. 2008) ("Injunctive relief ought not to act as a form of 'extra damages' to compensate for litigation costs.").

66 *See Apple*, 869 F. Supp. 2d at 920–21, *rev'd in part*, 757 F.3d 1286 (Fed. Cir. 2014).

67 *See* Daryl Lim, *Standard Essential Patents, Trolls, and the Smartphone Wars: Triangulating the End Game*, 119 PENN ST. L. REV. 1, 3–4 (2014).

68 eBay Inc. v. MercExchange, LLC, 547 U.S. 388, 396–97 (2006) (Kennedy, J., concurring). In this respect, we can gain significant insight from the application of the accession doctrine to personal property. *See, e.g.*, Wetherbee v. Green, 22 Mich. 311, 319 (1871) (discussing the doctrine as it would pertain to a stolen beam of lumber used in a house). Peter Lee has offered a thorough discussion of the accession doctrine as it might be applied to patent injunctions. *See* Lee, *supra* note 9. He is not the first to apply accession to intellectual property doctrines—Jay Koh did so with respect to the inevitable misappropriation doctrine of trade secrets. *See* Jay L. Koh, *From Hoops to Hard Drives: An Accession Law Approach to the Inevitable Misappropriation of Trade Secrets*, 48 AM. U. L. REV. 271 (1998).

giving and withholding injunctions make direct reference to the possibility of individual opportunism."[69]

Encroachment cases provide an excellent example of injunctions that may be sought for bargaining leverage. For example, if a trespass consists of a small encroachment by a structure located primarily on the defendant's property, the plaintiff is likely to be significantly enriched by leveraging a mandatory injunction that would order the encroachment removed at great expense to the defendant.

To avoid what is perceived as a wasteful or unjust leveraging opportunity by the property owner, an "[i]njunction against a trespass is sometimes refused because the hardship, injury, or inconvenience that it would cause the defendant is out of all proportion to the benefit it would bring to the plaintiff."[70] Or, as Dan Dobbs put it:

> if an injunction issues to compel defendant to remove the building, the plaintiff may be tempted to engage in extortion by offering to sell the land to the defendant at an exhorbitant [sic] price. If the cost of removing the encroaching structure is very high, defendant may well be forced to buy plaintiff's land, or part of it, at a price many times its worth, rather than destroy the building that encroaches an inch or two. Thus, to grant an injunction compelling removal of the building may be a prelude to extortion by the plaintiff.[71]

Once the injunction is denied and the property owner is relegated to an action at law for damages, the practical effect is a forced sale.[72] The property owner recovers the value of the encroached property, and the property owner's remedy for the continuing trespass will be exhausted.

Injunctions (or the threat of injunctions) create negotiating leverage by allowing the property owner to capitalize on the defendant's switching costs—costs tied not to the value of the property but to the costs of migrating to a non-trespassing alternative (such as changing the manufacturing process, redesigning an article, or even exiting the business altogether).[73] Because of switching costs,

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69 Gergen et al., *supra* note 35, at 239.

70 AM. JUR. 2D *Injunctions*, *supra* note 39, § 110.

71 Dan B. Dobbs, *Trespass to Land in North Carolina Part II—Remedies for Trespass*, 47 N.C. L. REV. 334, 366 (1969).

72 Crocker v. Manhattan Life Ins. Co., 70 N.Y.S. 492, 500 (N.Y. App. Div. 1901) ("It is quite possible to embody in a judgment a protection of defendant's right to maintain its wall on the payment of damages, without requiring a grant of the easement, but the result is not different if the easement be conveyed.").

73 Robert W. Hahn & Hal J. Singer, *Assessing Bias in Patent Infringement Cases: A Review of International Trade Commission Decisions*, 21 HARV. J.L. & TECH. 457, 486 (2008).

an injunction can arm patentees with leverage to obtain supracompetitive licensing fees. With that in mind, patentees may request injunctions to obtain licensing leverage even where they are not interested in preventing infringement—even where, in the absence of an injunction, the patentee would actually *prefer* the defendant to continue infringing, so that it could continue to monetize its patent via damages. Thus, in cases of high switching costs, courts will be especially wary of the plaintiff's motive in seeking an injunction.[74]

ii. Laches

The concern about patentee opportunism stems from prospective switching costs—the defendant's sunk investment in the infringing product or process is relevant only as a proxy for switching costs.[75] But this does not mean that an infringer's past investments are unimportant in the injunction analysis. Past investments have always been relevant to determinations of equitable relief such as injunctions, because they may demonstrate that the plaintiff's delay in filing suit prejudiced the defendant.[76] Laches results from the plaintiff's inexcusable delay in taking action, if the delay results in prejudice to the defendant.[77] A finding of laches militates against injunctive relief.[78] Thus, if the plaintiff should have sued earlier but failed to do so, and if the defendant suffered economic prejudice as a result of investments during the delay period that an injunction would nullify, injunctive relief may be unavailable to the plaintiff.[79]

Laches may correlate to the level of injury that the plaintiff suffers by virtue of the defendant's infringement. If the patentee is truly irreparably injured by the defendant's infringement, and if the patentee's plans are better served by

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74 *See, e.g.*, VirnetX Inc. v. Apple Inc., 925 F. Supp. 2d 816, 826–27 (E.D. Tex. 2013), *aff'd in part, rev'd in part, vacated in part sub nom.*, Virnet X, Inc. v. Cisco Sys., Inc., 767 F.3d 1308, 1324 (Fed. Cir. 2014) (denying injunction where cost of compliance would exceed $50 million).

75 Note that some have discussed the infringer's past investments as creating injunction leverage. *See, e.g.*, Barnard v. Gibson, 48 U.S. 650, 657 (1849); Nicholas P. Chan, Comment, *Balancing Judicial Misvaluation and Patent Hold-Up: Some Principles for Considering Injunctive Relief After Ebay*, 59 UCLA L. REV. 746, 746 (2012). But this is true only insofar as the past investments are a proxy for prospective switching costs. If, for example, an infringer invested $5 million in an infringing process but, because of technological advances, could later switch to a non-infringing process for no additional costs, those past investments would not create injunctive leverage, even if it meant that the $5 million sunk cost would be rendered worthless.

76 Petrella v. Metro-Goldwyn-Mayer, Inc., 134 S. Ct. 1962, 1978–79 (2014).

77 Jacobsen v. Deseret Book Co., 287 F.3d 936, 949 (10th Cir. 2002) (copyright infringement); A.C. Aukerman Co. v. R.L. Chaides Constr. Co., 960 F.2d 1020, 1032 (Fed. Cir. 1992).

78 *Petrella*, 134 S. Ct. at 1978–79.

79 This is similar to the considerations governing equitable estoppel by silence. *See generally* Ex'rs of Wendell v. Van Rensselaer, 1 Johns. Ch. 344, 354 (N.Y. Ch. 1815). Similarly, the doctrine of unjust enrichment may be thought to apply, given that the patentee may be unjustly enriched by the increased value of his patent resulting from the defendant's successful commercialization and marketing of the patented invention.

removing infringers from the market than by collecting money from them, one would expect the patentee to be vigilant about monitoring for infringement and filing suit against infringers.[80]

iii. Interference with the Property Owner's Plans

Underlying all of the factors discussed so far—the adequacy of the plaintiff's legal remedy, the likelihood that the patentee seeks the injunction for opportunistic purposes, and the plaintiff's diligence in pursuing legal action—is a consideration of the property owner's plans for the property, and the degree to which those plans would be impeded by the defendant's actions. Thus, a plaintiff who is using the patented invention to compete in the marketplace will almost certainly be held to suffer irreparable harm absent an injunction,[81] and will also be less likely to be seeking the injunction merely as negotiating leverage. Consequently, a property owner with plans for the property is much less likely to be subject to a forced transaction.[82]

On the other hand, a forced transaction "might well be acceptable in the case of property held purely for investment, the owner's expectations being limited to a subsequent resale."[83] California's betterment statute specifies that, "[i]n determining the appropriate form of relief under this section, the court shall take

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80 *See* SCA Hygiene Prods. Aktiebolag v. First Quality Baby Prods., LLC, 807 F.3d 1311, 1331 (Fed. Cir. 2015) (en banc) ("Unreasonable delay in bringing suit may also be relevant to a patentee's claim that continued infringement will cause it irreparable injury.").

81 *See, e.g.*, Presidio Components, Inc. v. Am. Tech. Ceramics Corp., 702 F.3d 1351, 1363–64 (Fed. Cir. 2012) (reversing lower court's denial of injunctive relief as abuse of discretion where patentee and infringer were direct competitors); Cordance Corp. v. Amazon.com, Inc., 730 F. Supp. 2d 333, 337–38 (D. Del. 2010) ("Courts awarding permanent injunctions typically do so under circumstances where plaintiff practices its invention and is a direct market competitor." (quoting Callaway Golf Co. v. Acushnet Co., 585 F. Supp. 2d 600, 619 n.21 (D. Del. 2008), *rev'd on other grounds*, 576 F.3d 1331 (Fed. Cir. 2009))); Laserdynamics, Inc. v. Quanta Comput., Inc., No. 2:06-cv-348-TJW, 2010 WL 2574059, at *2 (E.D. Tex. June 22, 2010) ("The best case for obtaining a permanent injunction often occurs when the plaintiff and defendant are competing in the same market. In that context, the harm in allowing the defendant to continue infringing is the greatest.").

82 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 10 cmt. a (AM. LAW INST. 2011) (stating that a forced transaction "would probably be unacceptably harsh in the case of property occupied by the owner, or property as to which the owner had formed definite expectations of future use"); *see also* Cogdell v. 1999 O'Ravez Family, LLC, 220 P.3d 1259 (Wash. Ct. App. 2009) (requiring that there be "ample remaining room for a structure suitable for the area and there is no real limitation on the property's future use").

83 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 10 cmt. a (AM. LAW. INST. 2011); *see also* Clear With Computs., LLC v. Hyundai Motor Am., Inc., No. 6:09-CV-479, 2012 WL 8144915, at *9 (E.D. Tex. Jan. 9, 2012) ("[D]ue to CWC's business model as a licensing entity, monetary damages are particularly appropriate.").

into consideration any plans the owner of the land may have for the use or development of the land upon which the improvement was made."[84]

It is no surprise, then, that courts regularly emphasize the importance of avoiding interference with the property owner's plans for the property.[85] Thus, where the owner has plans for the property in a mistaken improver case, and those plans make the new building an encumbrance to the owner rather than a benefit, the owner will not be forced to pay for the building or sell the lot.[86] Indeed, the owner may be entitled to recover demolition costs from the improver, at least if no other property will serve the owner's purposes.[87] As the Restatement (Third) of Restitution puts it, "A remedy for mistaken improvement that subjects the owner to a forced exchange will be qualified or limited to avoid undue prejudice to the owner."[88]

Courts have applied a similar reasoning to ongoing royalties in patent infringement—their decisions have been based on, among other things, whether the defendant's infringement impairs the patentee's plans to commercialize the patent.[89] Where the patentee uses its right to exclude to create a competitive advantage in the industry, the patentee is likely to suffer harm that is difficult to quantify, making the hardships much more difficult to balance.[90]

iv. Intentional Misconduct

A wrongdoer's intentional misconduct impacts courts' willingness to balance the hardships of an injunction. An intentional wrongdoer is unlikely to

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84 CAL. CIV. PROC. CODE § 871.5 (West 2016).

85 In speaking of unjust enrichment, Professor Ernest J. Weinrib notes that the law treats a defendant as having accepted a beneficial transfer in certain cases "because, given the nature of the defendant's activities and projects, the defendant has no reason not to accept it." ERNEST J. WEINRIB, CORRECTIVE JUSTICE 211 (2012).

86 *See id.* at 198 ("At bottom, subjective devaluation is not about the nature of the enrichment, but about the transferee's freedom to make his or her own choices. This . . . important consideration . . . concerns not the existence of an enrichment but the justness of the defendant's retaining it.").

87 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 10 cmt. g, illus. 17 (AM. LAW INST. 2011); *see also* Douglas Laycock, *Restoring Restitution to the Canon*, 110 MICH. L. REV. 929, 933 (2012). This corresponds nicely with Professor Adam MacLeod's argument in a recently published book discussing a natural-law theory of property resting in part on owners' capacities as practically-reasonable beings to make plans with respect to their property. *See* MACLEOD, *supra* note 54.

88 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 10 (AM. LAW INST. 2011).

89 Presidio Components, Inc. v. Am. Tech. Ceramics Corp., No. 08-cv-335-IEG-NLS, 2013 WL 4068833, at *4 (S.D. Cal. Aug. 12, 2013) ("Presidio and ATC are direct competitors. Therefore, the Court finds that Presidio has shown irreparable harm." (citation omitted)).

90 ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc., 694 F.3d 1312, 1337–39 (Fed. Cir. 2012) (district court erred in finding irreparable harm where the patentee and the defendant did not compete, and where the "losses to [the patentee] are clearly quantifiable").

garner much sympathy for its concerns about the harms that would result from an injunction. This has long been true both in the traditional property context, as well as in the patent context.

a. Outside of the Patent Context

If the defendant intentionally appropriated the plaintiff's property, the defendant will be precluded from claiming the protection of the balance of harms.[91] Thus, where the defendant intentionally builds an encroaching structure on someone else's property, a mandatory injunction is all but certain. The requirement that the property invasion be unintentional avoids conferring on private parties a right of private eminent domain.[92]

In some cases, however, a trespasser's encroachment begins innocently, but the trespasser becomes aware of the other party's property rights during the construction and nevertheless proceeds to build on the plaintiff's property.[93] In these cases, courts must decide how to characterize the defendant's culpability. For example, in *Tyler v. City of Haverhill*,[94] the court affirmed an injunction where the defendant "entered upon the land of the plaintiff . . . in good faith" but "notice was given by the plaintiff, within a few days after excavations [sic] for the wall were begun."[95] But the court recognized that, if the innocent investment were significant enough prior to notice of the other party's rights, the injunction might properly be denied even if the defendant continued the encroachment after notice:

> Undoubtedly there may be circumstances which a court of equity will regard as full justification for refusing to require removal of a nuisance created under claim of right and endured when it might have been stopped; especially when great and disproportionate loss results to its creator, and the value of the land is not affected.[96]

Similarly, in a case under California's mistaken-improver laws, the plaintiff had warned the defendant that an improvement was on plaintiff's land while the defendant was still constructing the improvement. The California ap-

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91 Whitlock v. Hilander Foods, Inc., 720 N.E.2d 302, 307 (Ill. App. Ct. 1999); RENDLEMAN & ROBERTS, *supra* note 39, at 117. *But see* Morrison v. Jones, 430 S.W.2d 668 (Tenn. Ct. App. 1968).

92 *See, e.g.*, Ottavia v. Savarese, 155 N.E.2d 432, 436 (Mass. 1959).

93 Raab v. Casper, 124 Cal. Rptr. 590, 594–95 (Cal. Ct. App. 1975) (trespass may be "characterized by good faith at its inception . . . but suffering a shift in that characteristic when a warning of possible trespass or encroachment is received before completion").

94 172 N.E. 342 (Mass. 1930).

95 *Id.* at 342.

96 *Id.* at 343.

pellate court noted that, "[i]n weighing the grant, denial or apportionment of relief, a trial court should consider any interim warning, the character and relative cost of the improvements made before and after the warning and the unitary or separable character of the improvements."[97]

In *Whitlock v. Hilander Foods*,[98] the Illinois appellate court reversed the trial court's grant of summary judgment in favor of the defendant, holding that a trial would be required on remand to determine whether the defendant willfully disregarded the plaintiff's rights (which would foreclose a hardship-balancing analysis). In that case, the plaintiff had protested the defendant's trespass at some point during the construction.[99] But it was unclear exactly when during the construction process the plaintiff "told defendant that he would not simply accept the encroachment."[100]

Sometimes, the improver will know of the other party's claim of ownership and nevertheless proceed to build on the property based on the improver's good faith belief that he is the lawful owner. In such a case, the court may decline to balance hardships, even though the improver is not an intentional wrongdoer. *Goulding v. Cook*[101] offers one such example.

In *Goulding*, the Cooks and Gouldings disputed ownership of a parcel of land where the Cooks sought to locate a septic tank, although they had not yet placed the tank on the property when the dispute began.[102] After the Gouldings sued and the requested preliminary injunction was denied, the Cooks placed the septic system on the disputed property.[103] The trial court held that the Gouldings owned the property, but it granted an easement to the Cooks for the septic system.[104]

The Massachusetts Supreme Judicial Court reversed, holding that the trial court misbalanced the hardships and, more importantly, although the Cooks had a good faith claim to the disputed land supported by objective facts, "they were told that they proceeded at their peril, and the matter was in litigation and awaiting disposition when they went ahead and acted."[105] We also find a rough parallel in the unjust enrichment context, in which the Restatement (Third) would

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97 *Raab*, 124 Cal. Rptr. at 595. The court continued: "it is not practical to fasten separate findings of good and bad faith upon separate physical parts of an indivisible physical project. The court may conclude that the improver's intransigence equates with negligence rather than dishonesty." *Id.*

98 720 N.E.2d 302, 308–09 (Ill. App. Ct. 1999).

99 *Id.* at 307–08.

100 *Id.*

101 661 N.E.2d 1322, 1324 (Mass. 1996).

102 *Id.* at 1323.

103 *Id.*

104 *Id.*

105 *Id.* at 1325.

foreclose restitution of money "voluntarily paid in the face of a recognized uncertainty as to the existence or extent of the payor's obligation to the recipient . . . ."[106]

As the *Goulding* court noted, "notice of an opposing claim is not decisive on the question of good faith . . . ,"[107] but it matters. The court's discretion will be guided by determinations about the reasonableness of the defendant's post-notice conduct.[108] Thus, in a case in which the defendant's wall footings encroached between one and three inches underneath the plaintiff's property, and the defendant had ordered a second survey conducted after the plaintiff complained that the defendant was digging on her land, and where the defendant made reasonable (even if ultimately unsuccessful) efforts to ensure that its wall was entirely on its own land, the court held that an injunction was not warranted.[109]

For unjust enrichment, the Restatement (Third) defines "notice" of a fact as either knowing the fact or having reason to know it.[110] Reason to know a fact exists if (1) the person "has received an effective notification," (2) knowledge is imputed by statute (such as provisions for notice by filing or recording), or (3) other facts would make it reasonable to infer the existence of the fact or would cause a prudent person to conduct further inquiry that would reveal it.[111] This definition of notice can be usefully applied in the patent context as well.

b. Application in the Patent Context

The law's requirement that the injunction-avoiding defendant not be an intentional wrongdoer "focuses attention on a recurring question" in these cases: "Would it have been feasible to make a contract to cover this transaction before either side took action?"[112] A contract is preferable where feasible because the property owner can then rely on his own subjective value of his property, considering his plans for the property, instead of the need to collectively assess an

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106 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 6 cmt. e (AM. LAW INST. 2011).

107 *Goulding*, 661 N.E.2d at 1324 n.4.

108 Cogdell v. 1999 O'Ravez Family, LLC, 220 P.3d 1259, 1262 (Wash. Ct. App. 2009) ("[T]he encroacher must prove . . . by clear and convincing evidence . . . [that, among other things, the encroacher] did not simply take a calculated risk or act in bad faith, or act negligently, willfully, or indifferently in locating the encroaching structure." (quoting Procter v. Huntington, 192 P.3d 958 (2008))); Singer, *supra* note 15, at 1397 ("[Courts] have . . . [relaxed the owner's rights] in a way that subjects property rights to a reasonableness standard that requires judgment about the excusability of the builder's conduct rather than rigid application of formal boundary designations.").

109 Golden Press, Inc. v. Rylands, 235 P.2d 592, 596 (Colo. 1951) (en banc).

110 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 69 (AM. LAW INST. 2011).

111 *Id.*

112 Laycock, *supra* note 87, at 933.

objective value, and the defendant will not yet have incurred any switching costs.[113] Thus, the willful wrongdoer, who could have contracted for use of the property, will not get the benefit of hardship balancing and will be subjected to a property rule rather than a liability rule.

But this does not mean that the court should decline to balance the equities in every patent case in which the patentee is held to "willfully" infringe under the patent laws.[114] Patent Act willfulness may permit treble damages,[115] and, until very recently, the plaintiff bore the burden to prove willfulness by clear and convincing evidence.[116] But what starts out as innocent infringement may become willful infringement over time, once the defendant learns of the patent's existence.[117] For equities-balancing purposes, however, the important question is whether we should fault the defendant for failing to procure a contract prior to investing significant unrecoupable resources in the infringement.[118] This is not

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113 *See* Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1125 (1972).

114 Sandrik, *supra* note 11, at 99, 145 (discussing "tension" that "occurs when an infringer is deemed a willful one that may be subject to enhanced damages, but then that same willful infringer is allowed to continue infringing the patented technology").

115 35 U.S.C. § 284 (2012) does not provide a limiting standard for enhanced damages but, until recently, judicial gloss limited enhancements to willful infringement. 35 U.S.C. § 284; *see In re* Seagate Tech., LLC, 497 F.3d 1360, 1368 (Fed. Cir. 2007), *abrogated by* Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923 (2016). In *Halo*, the Supreme Court implied that most enhanced damages should be the result of willful infringement, although it rejected the Federal Circuit's overly rigid test for willfulness. Halo, 136 S. Ct. at 1932. The Court also left open a narrow possibility that enhanced damages may be warranted even in cases of non-willful infringement. *Id.* at 1933–34.

116 WesternGeco L.L.C. v. ION Geophysical Corp., 791 F.3d 1340 (Fed. Cir. 2015), *cert. granted, judgment vacated*, 136 S. Ct. 2486 (2016). In *Halo*, the Supreme Court rejected the "clear and convincing" standard for willfulness. *See Halo*, 136 S. Ct. at 1934.

117 Sandrik, *supra* note 11, at 107 (discussing the dynamicity of willfulness). The Federal Circuit has sometimes indicated that willfulness is determined as of the time infringement began, but at other times it has indicated that willfulness is determined when the infringer receives notice of the patent, and individual judges have sometimes suggested that willfulness changes over the course of infringement because patent infringement is a continuing tort. 4 ROBERT A. MATTHEWS, JR., ANNOTATED PATENT DIGEST § 31:24 (collecting cases for each).

118 Hynix Semiconductor Inc. v. Rambus Inc., 609 F. Supp. 2d 951, 984–85 (N.D. Cal. 2009) ("To be sure, one who elects to build a business on a product found to infringe cannot be heard to complain if an injunction against continuing infringement destroys the business so elected. But by the time Hynix became aware of Rambus's asserted patents, Rambus's technologies were entrenched in the industry standard DRAM interface." (quoting Windsurfing Intern. Inc. v. AMF, Inc., 782 F.2d 995, 1003 n.12 (Fed. Cir. 1986) (internal quotation omitted)). This is similar to Justice Stephen Breyer's emphasis in his concurrence in *Halo*, in which he stressed that the threshold is egregiousness, and not every case of what might be termed "willful" infringement amounts to such egregiousness as to warrant treble damages. *Halo*, 136 S. Ct. at 1936 (Breyer, J., concurring).

unlike the trade secret context, in which the Uniform Trade Secrets Act is concerned not with whether the defendant intentionally misappropriated the trade secret at any point prior to judgment, but instead with whether the defendant acted intentionally at the time the defendant poured resources into the trade secret.[119]

For the purposes of balancing the interests of the parties in assessing appropriate injunctive relief, the question should be the reasonableness of the infringer's conduct once it had "notice" of the patentee's rights.[120] Switching costs will be a factor in the reasonableness of that conduct.[121] Applying this standard, if the patentee can show that the defendant had notice of the patent's existence before switching costs became significant, this would generally foreclose a balancing of the harms in a request for an injunction, unless the infringer can show a strong reason to believe that the patent was not infringed or was invalid.[122]

In one pre-*eBay* case, the court rejected the defendant's request for a compulsory license, noting that "Congress did not see fit to include [compulsory licenses] in the Patent Laws."[123] But, importantly, the court also noted that the argument must be rejected because "[t]he Court has found the infringement in this case to be willful and wanton."[124] In that case, the defendant had obtained and reverse engineered the patentee's products before bringing its own product to market, and had obtained a copy of the patent.[125] Thus, the defendant intentionally took the patentee's property before switching costs became an issue, warranting injunctive relief.

It is clear that not all "willful" patent infringements amount to the intentional wrongdoing of the type to foreclose a balancing of the hardships. But, as the *Goulding* case demonstrates, some non-"willful" patent infringements, at least under the old *Seagate* standard for willfulness, may nevertheless preclude

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119 UNIF. TRADE SECRETS ACT § 2(b) (UNIF. LAW COMM'N 1985) (requiring "prejudicial change of position prior to acquiring knowledge or reason to know of misappropriation . . .").

120 The precision of the notice will matter as well. Thus, Justice Kennedy's concurrence in *eBay* noted that the "potential vagueness and suspect validity" of business method patents would affect the four-factor analysis. eBay Inc. v. MercExchange, LLC, 547 U.S. 388, 397 (2006) (Kennedy, J., concurring).

121 Remember that notice consists of actual notice, statutory notice, or inquiry notice. *See* RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 69 (AM. LAW INST. 2011).

122 Peter Lee's accession proposal would similarly place the burden of proof on the infringer to prove that the economic value of the infringer's contribution substantially exceeds the economic value of the original patented invention. *See* Lee, *supra* note 9, at 205.

123 Shiley, Inc. v. Bentley Labs., Inc., 601 F. Supp. 964, 971 (C.D. Cal. 1985), *aff'd*, 794 F.2d 1561 (Fed. Cir. 1986).

124 *Id.*

125 *Id.* at 967–69.

hardship balancing.[126] In *Goulding*, the Cooks' conduct—proceeding to install a septic tank underneath disputed property—would not have amounted to willful infringement under the Patent Act, because their argument of ownership was "supported by objective facts" and, therefore, not objectively unreasonable (as was formerly required under *Seagate* for willful infringement).[127]

Once the burden is on the defendant to show that he had good reason to believe his actions did not infringe a valid patent, a mere suspicion that the patent *might* be invalid or not infringed—even a reasonable suspicion that would avoid a "willfulness" determination—should be insufficient for hardship-balancing purposes.[128] An infringer with nothing more than a plausible argument of invalidity would likely be proceeding in the face of a recognized uncertainty, and could not claim to have acted reasonably after receiving notice of the patentee's property rights.[129] In a case like this, the infringer's most reasonable course of action likely would have been to negotiate for a license (discounting for uncertainty of infringement and validity) or to minimize harm by pursuing a declaratory judgment before the infringement began.[130] It is the infringer's state of mind at the time of infringement—not its ability to muster a credible argument by the time trial rolls around—that matters for these purposes.[131] This is similar to cases in the real property context that have criticized defendants for acting unreasonably, such as neglecting to conduct a survey after being put on notice of the plaintiff's claim of ownership.[132] Thus, balancing will depend on the infringer's pre-

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126 The *Seagate* standard, requiring objective recklessness, was struck down by the Supreme Court in *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1932 (2016).

127 Goulding v. Cook, 661 N.E.2d 1322, 1325 (Mass. 1996).

128 For this proposition in the mistaken improvement context, see James v. Bailey, 370 F. Supp. 469, 472 (D.V.I. 1974) and Vulovich v. Baich, 143 N.Y.S.2d 247, 250 (N.Y. App. Div. 1955) ("[E]quity will refuse its aid where the claim [of title] is frivolus [sic], presumptuous or merely conjectural . . . .").

129 *See* Laycock, *supra* note 87, at 934–35.

130 This is especially true where the infringement has not yet begun, so that the time and expense associated with determining infringement damages will not be an issue in the litigation. Nevertheless, patent infringement litigation, including declaratory judgment actions (which inevitably result in infringement counterclaims where the defendant has already begun its planned course of conduct), are expensive to litigate. *See* AM. INTELLECTUAL PROP. LAW ASS'N, REPORT OF THE ECONOMIC SURVEY 2015 37–38 (2015) (for suits with $1 million to $10 million in disputes, median costs of $950,000 through discovery and $2 million to litigate). Where the infringer files for a declaratory judgment action with a good argument of non-infringement or invalidity but, during the litigation's pendency, invests in infringement for a good reason, such as a closing market window, the infringer would be more likely to be able to benefit from a hardship-balancing analysis at the injunction stage.

131 In *Halo*, the Supreme Court redirected the enhanced damages standard to reflect this notion. *Halo*, 136 S. Ct. at 1933.

132 *See, e.g.*, Raab v. Casper, 124 Cal. Rptr. 590, 594 (Cal. Ct. App. 1975) (criticizing the improver, who had begun building a cabin, for "disregard[ing] the [owner's] warning and spen[ding]

notice incurrence of switching costs considered together with the reasonableness of its post-notice conduct.

3. Public Interest and Burden on the Court

The final *eBay* factor is whether the public interest would be disserved by a permanent injunction.[133] Although many courts have justified injunctions on the ground of a public interest in strong patent rights, those courts focus on the wrong question under the Supreme Court's *eBay* guidance. Indeed, as the Federal Circuit noted, "If the general public interest in upholding patent rights alone was sufficient to mandate injunctive relief when none of the other three factors support injunctive relief, then we would be back to the general rule that a patentee should always receive an injunction against infringement."[134] The question at issue is whether there is anything particular to this patent or this defendant's infringement such that, if the defendant's infringement were enjoined, the public interest would suffer in some significant way,[135] or, as the Court put it, whether "the public interest would not be disserved by a permanent injunction."[136] Usually, that requires more than simply that prices might increase, or

an additional $2,206.85 to complete the cabin . . . without a survey and without offering to share in the cost of a survey").

133 eBay, Inc. v. MercExchange, LLC, 547 U.S. 388, 390 (2006).

134 ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc., 694 F.3d 1312, 1341 (Fed. Cir. 2012).

135 Presidio Components, Inc. v. Am. Tech. Ceramics Corp., 702 F.3d 1351, 1362 (Fed. Cir. 2012) ("Of course the axiomatic remedy for trespass on property rights is removal of the trespasser. However, particularly with an eye to protecting the public interest, the decision to deny a permanent injunction remains within the equitable discretion of the district courts." (citations omitted)).

136 *eBay*, 547 U.S. at 391.

that a product would be removed from the market.[137] This factor's strongest influence has been in health care related cases,[138] as well as some technology cases.[139]

In some cases, injunctive relief is denied because the court anticipates a heavy burden on the judiciary if an injunction is entered. Thus, in one British case involving breach of a property lease, the court held that, even though the legal remedy was inadequate, the parties were likely to dispute the sufficiency of defendant's compliance with the injunction, and the injunction could not be framed sufficiently specifically to provide advance certainty to the court and parties about the level of compliance prior to any given dispute.[140] Consequently, the court held that an injunction was not warranted.[141] Similarly, in *Apple, Inc. v. Motorola, Inc.*, Judge Posner suggested that an injunction should be denied if it would have a significant "cost to the judiciary" because it was sought for the purpose of "harassment of [the patentee's] bitter rival, requiring particularly watchful supervision by the court should it issue the injunction . . . ."[142] And, in *eBay*, the district court discussed the probability of "contempt hearing after contempt hearing" that would result "in extraordinary costs to the parties, as well as considerable judicial resources."[143]

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137 Douglas Dynamics, LLC v. Buyers Prods. Co., 717 F.3d 1336, 1345–46 (Fed. Cir. 2013); *see also* Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 920–21 (N.D. Ill. 2012) ("Also ignored are the harm that an injunction might cause to consumers who can no longer buy preferred products because their sales have been enjoined . . . ."), *aff'd in part, rev'd in part*, 757 F.3d 1286 (Fed. Cir. 2014), *and overruled by* Williamson v. Citrix Online, LLC, 792 F.3d 1339 (Fed. Cir. 2015).

138 Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., 670 F.3d 1171, 1192 (Fed. Cir. 2012) ("The district court denied Bard's request for a permanent injunction finding that it was in the public interest to allow competition in the medical device arena . . . ."), *vacated in part*, 682 F.3d 1003 (Fed. Cir. 2012); Conceptus, Inc. v. Hologic, Inc., No. C 09-02280 WHA, 2012 WL 44064, at *4 (N.D. Cal. Jan. 9, 2012) ("[T]he public benefit of having two products with different qualities in the transcervical hysteroscopic sterilization market militates strongly against an injunction."); *see also* Christopher B. Seaman, *Permanent Injunctions in Patent Litigation After* eBay*: An Empirical Study*, 101 IOWA L. REV. 1949, 1996–99 (2016) (describing correlation between medical patent cases and denial of injunctive relief).

139 *See, e.g.*, MercExchange, L.L.C. v. eBay, Inc., 500 F. Supp. 2d 556, 586–87 (E.D. Va. 2007).

140 Coop. Ins. Soc'y, Ltd. v. Argyll Stores (Holdings) Ltd. [1998] AC 1 (HL).

141 *Id.*

142 *Apple*, 869 F. Supp. 2d. at 920–21.

143 MercExchange, LLC v. eBay, Inc., 275 F. Supp. 2d 695, 714 (E.D. Va. 2003) *aff'd in part, rev'd in part*, 401 F.3d 1323 (Fed. Cir. 2005), *vacated*, 126 S. Ct. 1837 (2006).

III. ONGOING ROYALTIES AS THE PREFERRED REMEDY

In general, courts concerned about future patent infringement have three remedial options, largely corresponding to the options discussed in Guido Calabresi and A. Douglas Melamed's famous "Cathedral" article.[144] They can (1) enter an injunction prohibiting any future infringement, on penalty of contempt; (2) deny the injunction, and simply leave any future infringement to a potential future lawsuit filed by the plaintiff;[145] or (3) deny the injunction and assess ongoing royalties, effectively ordering the defendant to pay the plaintiff a set amount for every act of infringement.[146]

The concerns discussed in Part I all factor into the court's decision to deny an injunction.[147] But the court is not required to award an ongoing royalty every time it denies an injunction,[148] so we must examine the reasons that courts have preferred ongoing royalties over future infringement litigation or future damages in the form of a lump-sum award. As discussed below, ongoing royalties offer at least three benefits relative to future periodic lawsuits: they increase certainty, they decrease the burden on the parties, and they may decrease the burden on the court. And, relative to a lump-sum award, ongoing royalties have the benefit of more accurately compensating the patentee.

A. Ongoing Royalties Compared to Future Litigation

1. Certainty and the Burden on the Parties

We can again turn to other property areas to understand why courts prefer ongoing royalties may be superior to leaving the patentee to future lawsuits.

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144 *See generally* Calabresi & Melamed, *supra* note 113.

145 *See* Van Wagner Advert. Corp. v. S & M Enters., 492 N.E.2d 756, 760–62 (N.Y. 1986) (affirming denial of specific performance for real property lease, but modifying and remanding trial court's order finding damages only through trial, holding that "[d]amages should have been awarded through the expiration of [the] lease"); *see also* Paul M. Janicke, *Implementing the "Adequate Remedy at Law" for Ongoing Patent Infringement After* eBay v. MercExchange, 51 IDEA 163, 204 (2011) (arguing that courts should generally leave plaintiffs to future litigation, except in cases in which the injunction is denied for public interest).

146 Calabresi & Melamed, *supra* note 113, at 1115. Under the Calabresi/Melamed matrix, the court could also theoretically enjoin future infringement if the plaintiff pays the defendant. *Id.* at 1116.

147 *See also* Williams v. Bridgeport Music, Inc., No. LA CV13-06004 JAK (AGRx), 2015 WL 4479500, at *39 (C.D. Cal. July 14, 2015) (noting, in the copyright context, that "a continuing royalty may be an appropriate alternative to the 'harsh and drastic' remedy of injunctive relief under 'special circumstances.'" (quoting Abend v. MCA, Inc., 863 F.2d 1465, 1479 (9th Cir. 1988), *aff'd sub nom.*, Stewart v. Abend, 495 U.S. 207 (1990))).

148 Whitserve, LLC v. Comput. Packages, Inc., 694 F.3d 10, 36 (Fed. Cir. 2012) (referring to the ongoing royalty as a "compulsory license" and remanding for the district court to explain its reasons for declining to award ongoing royalty).

Return to the defendant who mistakenly builds on the plaintiff's property. The plaintiff files a lawsuit, asking the court to enjoin the defendant from trespassing on the property. If the court denies the injunction, and simply orders the defendant to pay the use value from the time of the improvement through trial (that is, rental value), the parties will be uncertain as to the status of the property going forward.[149] Can the property owner tear the structure down or alter the structure? Can the improver use the structure without interference from the property owner? Neither party will be able to form plans for the property, or to conduct its affairs with any certainty and, correspondingly, the improvement will not be put to its optimal use. The defendant's use will be suppressed by the possibility that the plaintiff might be able to obtain an injunction in the next lawsuit,[150] or that, because the defendant's future entries onto the property will be intentional, the plaintiff could obtain punitive damages next time. Neither the plaintiff nor the defendant is likely to further improve the property, or to repair the current structure if it is damaged. This is true whether the encroaching structure is completely on the plaintiff's property, or whether it merely extends slightly over the parties' property line.

Likewise, the certainty created by the doctrines of continuing trespass (in which future damages are awarded and the defendant receives an easement) and permanent nuisance (in which future damages are awarded) and by the buy/sell remedy in unjust enrichment cases enables both parties to form plans for the property, which also makes it more likely that the property is used efficiently. For this reason, courts in the trespass context have concluded that something more than the denial of injunctive relief is needed. In *Hirshfield v. Schwartz*,[151] the court noted that the denial of injunctive relief effectively resulted in a "judicially created easement." But "courts are not limited to judicial passivity as in merely refusing to enjoin an encroachment. Instead, in a proper case, the courts may exercise their equity powers to affirmatively fashion an interest in the owner's land which will protect the encroacher's use."[152]

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149 This is not a calculated risk, but is instead the kind of uncertainty in which the parties face a great number of possible outcomes and cannot assess all possible results from later litigation and the probabilities of each possible result. *See* Henry E. Smith, *Property and Property Rules*, 79 N.Y.U. L. REV. 1719, 1724 (2004).

150 Something similar to this occurred in *Vandeleigh Industries*, a real property easement case in which the trial court denied the prohibitory injunction, but made clear that, should the plaintiff later demonstrate an imminent and viable plan to use the property so that its damages from the forced relinquishment of its right to exclude would become more difficult to quantify, a prohibitory injunction may issue. Vandeleigh Indus., LLC v. Storage Partners of Kirkwood, LLC, 901 A.2d 91, 96 (Del. 2006).

151 110 Cal. Rptr. 2d 861, 871 (Cal. Ct. App. 2001).

152 *Id.* Thus, it may not be entirely accurate to say that a "court, even when refusing a permanent injunction, has no such magical power to convert unlawful activity into lawful conduct." Janicke, *supra* note 145, at 189.

The certainty that arises from an ongoing royalty enables the parties to allocate their resources productively. In the absence of an ongoing royalty, the infringer will not know what resources it should devote to the products at issue. Specifically, the infringer cannot know whether future litigation will result in treble damages for willful infringement or even an injunction against further infringement, making the products perhaps unprofitable or nullifying any potential investments.[153] Similarly, the patentee cannot confidently value its patent rights or sell the patent rights, nor will it know when future infringement litigation becomes worthwhile relative to the resources required in terms of time and money.[154]

At the very least, the parties will be forced to periodically expend time and money on future litigation.[155] Moreover, the uncertainty existing in the absence of a reasonable royalty increases the likelihood of litigation. Litigation stems from uncertainty—if the plaintiff believes that it is likely to recover treble damages in the next suit, and the defendant thinks that the plaintiff will recover damages at the level of only a reasonable royalty, trial is more likely than if both parties knew what the outcome of the litigation would be.[156] If both parties know the outcome of the litigation, the chances of settlement increase.[157]

Historically, courts have said that a plaintiff's legal remedy is not adequate if the plaintiff would be required to file multiple successive lawsuits to achieve full compensation.[158] There is something intuitively unfair about burden-

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153 Even willful infringement does not necessarily require enhanced damages, as the Supreme Court's majority opinion and Justice Breyer's concurrence in *Halo* make clear. *See* Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923, 1933–38 (2016) (Breyer, J., concurring) ("As with any exercise of discretion, courts should continue to take into account the particular circumstances of each case in deciding whether to award damages, and in what amount.").

154 Note that future infringement litigation would focus on a damages award; assuming the product is not meaningfully different, collateral estoppel will bar retrial of infringement or validity.

155 *See* Apple, Inc. v. Samsung Elecs. Co., No. 12-CV-00630-LHK, 2014 WL 6687122, at *9 (N.D. Cal. Nov. 25, 2014) ("[A]warding ongoing royalties at this stage may avoid 'an endless succession of lawsuits presenting the same issue.'") (quoting Mark A. Lemley, *The Ongoing Confusion Over Ongoing Royalties*, 76 MO. L. REV. 695, 697 (2011)). Curiously, one court thought that, in setting the ongoing royalty, it should account for the amount that the defendant (but not the plaintiff) would save by avoiding future litigation. Affinity Labs of Tex., LLC v. BMW N. Am., LLC, 783 F. Supp. 2d 891, 904–05 (E.D. Tex. 2011).

156 *See* Henry Delcamp, *Are Patent Pools a Way to Help Patent Owners Enforce Their Patent Rights?*, 41 INT'L REV. L. & ECON. 68, 72 n.29 (2015).

157 *Id.*

158 *See* City of Harrisonville v. W.S. Dickey Clay Mfg. Co., 289 U.S. 334, 339–40 (1933) ("[T]o oblige the company to bring, from time to time, actions at law for its loss in rental would be so onerous as to deny to it adequate relief."); Hadley v. Dep't. of Corr., 840 N.E.2d 748, 756 (Ill. App. Ct. 2005); AM. JUR. 2D *Injunctions*, *supra* note 39, § 41; BUMP, *supra* note 49, at 301 ("There is no adequate remedy at law . . . . for the inventor might be ruined by the necessity of perpetual litigation . . . .").

ing the plaintiff with the obligation to file successive suits to achieve compensation and, even then, the American Rule means that the plaintiff may be undercompensated by the amount of its attorneys' fees.[159] Thus, one of equity's objectives "is to avoid a multiplicity of actions, which might be brought in case only past damages could be recovered."[160]

But, even though the patentee's legal remedy—requiring successive lawsuits—is not adequate under traditional equitable principles, money may nevertheless be adequate compensation for infringement. As we have seen above, money may in some cases adequately substitute for the loss of a right to exclude, at least as long as we can confidently assess the amount required to fully compensate the plaintiff. In such cases, the ongoing royalty enables the court to equitably alleviate the harm to the plaintiff from the denial of the injunction. It is thus unsurprising that, in the vast majority of cases awarding an ongoing royalty, the plaintiff has requested,[161] rather than objected to, the award of an ongoing royalty.[162]

2. Burden on the Court

Serial litigation burdens not only the parties, but also the courts. An ongoing royalty, which can avoid the serial litigation, may lessen that burden. Of course, ongoing royalties can raise new issues that create court burdens, such as whether a slightly modified product falls within the scope of the court's order for

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159 The Patent Act allows for fee shifting in "exceptional cases." 35 U.S.C. § 285 (2012).

160 Amerman v. Deane, 30 N.E. 741, 742 (N.Y. 1892).

161 Often the patentee requests the award alternatively in case the injunction is denied. *E.g.*, Fleming v. Escort, Inc., No. 1:09-CV-105-BLW, 2014 WL 713532, at *4 (D. Idaho Feb. 21, 2014), *amended in part by* 2014 WL 3445023 (D. Idaho July 11, 2014); WBIP, LLC v. Kohler Co., No. 11-10374-NMG, 2014 WL 585854, at *1 (D. Mass. Feb. 12, 2014); XpertUniverse, Inc. v. Cisco Sys., Inc., No. 09-157-RGA, 2013 WL 6118447, at *12–14 (D. Del. Nov. 20, 2013); CardSoft, Inc. v. VeriFone Holdings, Inc., No. 2:08-CV-98-RSP, 2013 WL 5862762, at *2 (E.D. Tex. Oct. 30, 2013); VirnetX Inc. v. Apple Inc., 925 F. Supp. 2d 816, 847 (E.D. Tex. 2013), *aff'd in part, rev'd in part, vacated in part*, 767 F.3d 1308 (Fed. Cir. 2014). And sometimes the patentee requests the award in lieu of seeking prohibitory injunctive relief. *E.g.*, Morpho Detection, Inc. v. Smiths Detection Inc., No. 2:11CV498, 2013 WL 5701522, at *8 (E.D. Va. Oct. 17, 2013); Syntrix Biosystems, Inc. v. Illumina, Inc., No. C10-5870 BHS, 2013 WL 3089448, at *2 (W.D. Wash. June 18, 2013). Of course, the patentee might object to the insufficiency of the royalty awarded, but it is often the patentee who requests the ongoing royalty.

162 The primary exception appears to be *Paice*, in which the court sua sponte awarded the ongoing royalty in lieu of the injunction, and the plaintiff objected. Paice LLC v. Toyota Motor Corp., 504 F.3d 1293, 1316 (Fed. Cir. 2007). Occasionally, the plaintiff declines to seek an ongoing royalty, opting instead for a future damages action. *E.g.*, Conceptus, Inc. v. Hologic, Inc., No. C 09-02280 WHA, 2012 WL 44064, at *4 (N.D. Cal. Jan. 9, 2012). Nevertheless, in cases in which uncertainty would cripple the defendant, prudence may suggest a court-ordered ongoing royalty even if the plaintiff declines to seek one, as in *Paice* (because the plaintiff can leverage the threat of potential treble damages in future litigation). *Paice*, 504 F.3d at 1315.

ongoing royalties, or whether the defendant has properly accounted for all of its infringing sales.[163] But, even without an ongoing royalty, these issues would be the subject of either injunction contempt proceedings or of new litigation.[164] Thus, the ongoing royalty may reduce the overall judicial burden, since the awarding court, which is already familiar with the parties, the patent claims, and the issues, will retain ongoing equity jurisdiction to hear the new issues, which will not necessarily be the case for later-filed litigation.[165]

B. Ongoing Royalties Compared to a Lump-Sum Award

There is another alternative to ongoing royalties if injunctive relief is denied, besides simply leaving the plaintiff to file future suits. The court could instead award a lump sum amount to compensate the plaintiff for future infringement.[166] Typically, the American legal system awards lump-sum damages to compensate for future harms from past wrongs.[167] For example, a plaintiff who is permanently injured can recover future wages that the plaintiff would have been able to earn but for the injury.[168] The harm (the loss of those wages) has not yet occurred, although the wrong (the injury-causing conduct) has. In such a case, the factfinder will be required to determine the salary that the plaintiff would have earned in the future, accounting for likely raises and promotions, and will also have to estimate how long the plaintiff likely would have worked.[169] This requires some prognostication on the factfinder's part. Similarly, the New York Court of Appeals held that equity could award future damages resulting from the

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163 *See, e.g., XpertUniverse, Inc.*, 2013 WL 6118447 at *11 (D. Del. Nov. 20, 2013); Transamerica Life Ins. Co. v. Lincoln Nat'l Life Ins. Co., 691 F. Supp. 2d 946, 954 (N.D. Iowa 2010); Creative Internet Advert. Corp. v. Yahoo!, Inc., 674 F. Supp. 2d 847, 849 (E.D. Tex. 2009).

164 *See* Additive Controls & Measurement Sys., Inc. v. Flowdata, Inc., 154 F.3d 1345, 1349 (Fed. Cir. 1998) (discussing district courts' determinations regarding contempt for permanent injunction violation with respect to modified products).

165 This helps to explain the categorization of ongoing royalties as a form of equitable relief since, as Professor Samuel Bray has discussed, equitable remedies can be distinguished from legal remedies in that they are more likely to require ongoing judicial management. Samuel L. Bray, *The System of Equitable Remedies*, 63 UCLA L. REV. 530, 544–45 (2016).

166 Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 919 (N.D. Ill. 2012), *aff'd in part, rev'd in part*, 757 F.3d 1286 (Fed. Cir. 2014); *see also* Janicke, *supra* note 145, at 174–75.

167 *See generally* Jones & Laughlin Steel Corp. v. Pfeifer, 462 U.S. 523 (1983).

168 To arrive at awards of future damages, the factfinder must make certain assumptions about the world, such as promotions or other raises that the plaintiff would have received, or the inflated cost of future medical treatment. *Id.* at 533–41. The ongoing royalty differs materially from these cases, however, because in the case of an ongoing royalty, the future harm to the plaintiff arises from future actions by the defendant.

169 *Id.*

breach of a covenant not to build tenement housing, even though no harm to the plaintiff would occur unless the tenement housing was occupied.[170]

Like the ongoing royalty, the lump-sum award for future infringement would provide the parties with the certainty that they need to order their affairs going forward. It would also decrease the burden on the court—probably to a level even less than the ongoing royalty, because court intervention may be required in the ongoing royalty where the parties dispute whether a particular change to a product takes it outside of the ongoing royalty order, or whether the defendant is fully accounting for its sales.[171] For a lump-sum award, the court may still be involved in the first dispute, but, because the defendant would not have to account for its infringing sales to the plaintiff, the second dispute would never arise.

But the lump-sum award has its own drawbacks, primarily with respect to the adequacy of compensation. First, it requires an additional level of speculation. For either the ongoing royalty or the lump-sum, the factfinder must determine the proper amount that would adequately compensate the patentee for each act of infringement. But, in the ongoing royalty context, the court orders the infringer to pay that amount in the future for each act of infringement. In the lump-sum context, the factfinder must further speculate as to how many times the defendant will infringe in the future.[172]

Future infringement will often be tough to predict, and past infringements may not be a helpful indicator of future infringement for at least two reasons. First, the growth rate could change, and second, the infringer, now that it knows its product infringes, could attempt to alter the product over time to avoid infringement. Determining the likely success of the infringer's future research and development is a particularly speculative enterprise. By unnecessarily forcing this calculation in advance, the lump sum risks substantially overcompensating the patentee, at the infringer's expense, or substantially undercompensating the patentee, particularly to the extent we require the plaintiff to prove likely future infringement with reasonable certainty, so that the risk of failure of proof falls on the plaintiff. As the Federal Circuit recently noted in a different context, "using per-unit royalties for measuring the value of use of a technology . . . ties

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170 Amerman v. Deane, 30 N.E. 741, 742 (N.Y. 1892). Despite the court's talk of awarding future damages and the speculative harm that might be suffered, the court's measure of damages—the decrease in the plaintiff's property's value resulting from the tenement buildings being built on defendant's lot—seems to reflect past damages.

171 *See supra* Part III.A.2.

172 Drone Techs., Inc. v. Parrot S.A., No. 14CV0111, 2015 WL 3756318, at *8 (W.D. Pa. June 12, 2015) ("To that end, the jury was not instructed or obliged to award past and future damages using the same reasonable royalty rate, and its varied rates for damages reflects the difficulty in determining an appropriate amount of damages, especially where sales have not yet occurred."), *vacated on other grounds*, No. 2015-1892, 2016 WL 5439806 (Fed. Cir. Sept. 29, 2016).

compensation paid to revealed marketplace success, minimizing under- and over-payment risks from lump-sum payments agreed to in advance."[173]

Moreover, a lump sum award forces the defendant to pay now based on profits it hopes to reap in the future. When the infringer pays after the fact for its infringing sales, it can be expected to have the funds to pay for the infringement. But the infringer may not have advance access to the funds required to pay the lump-sum award, or payment may reduce the level of the infringer's funds in such a way that it can no longer capitalize on its market opportunities. The ongoing royalty, then, has the advantages of both reducing the risk of inaccurately compensating the patentee and mitigating the harm to the infringer from pre-sale lump sums.

IV. DETERMINING ONGOING ROYALTIES

Courts have generally applied the *Georgia-Pacific* framework to ongoing royalty determinations, asking, in essence, what rate would be agreed upon in a hypothetical license negotiation between a willing licensee and a willing patentee.[174] For the most part, courts have used the jury's damages verdict as a starting point,[175] but they often adjust the ongoing royalty upward as the result of one or more of several factors. Some courts adjust the royalty on the belief that the jury's award is undercompensatory. Other courts adjust the jury award based on changes in the parties' circumstances or legal status—because the defendant is now an adjudged infringer of a valid patent, these courts believe that the plaintiff would occupy a stronger bargaining position in the parties' hypothetical negotiation. A related adjustment comes when courts enhance damages based on the infringer's willfulness—when the infringer sells the patented article in the future, it will know that the patent is both valid and infringed. Thus, some courts reason that any future infringement will necessarily be willful, and they enhance the ongoing royalty on that basis. Below, I consider each one in turn, drawing on analogies to the real property context.

A. Jury Undercompensation

One of the principles of measuring the remedy in mistaken improver cases is that an innocent property owner should never be made worse off (net of

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173 *See* Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., 807 F.3d 1283, 1304 (Fed. Cir. 2015).

174 *See generally* Georgia-Pacific Corp. v. U.S. Plywood Corp., 318 F. Supp. 1116 (S.D.N.Y. 1970); *see also* On Track Innovations Ltd. v. T-Mobile USA, Inc., 106 F. Supp. 3d 369, 373–407 (S.D.N.Y. 2015); Unisplay, S.A. v. Am. Elec. Sign Co., 69 F.3d 512, 517 (Fed. Cir. 1995); Hanson v. Alpine Valley Ski Area, Inc., 718 F.2d 1075, 1077–78 (Fed. Cir. 1983).

175 Apple, Inc. v. Samsung Elecs. Co., No. 12-CV-00630-LHK, 2014 WL 6687122, at *14 (N.D. Cal. Nov. 25, 2014) ("Generally, the jury's damages award is a starting point for evaluating ongoing royalties.").

litigation costs) than if the improvement had not occurred.[176] Stated differently, the owner should not be undercompensated for the value of its property.[177] Similarly, courts declining to award injunctive relief in patent cases should ensure that the patentee is fully compensated for any ongoing infringement.[178] Anything less leaves the patentee short of her rightful position and under-deters infringement.[179] Thus, courts should ensure that an ongoing royalty adequately compensates the patentee, and should resolve any doubt in favor of the patentee.

Courts' tendencies to increase the jury award for post-judgment infringement might stem from the belief that the jury's reasonable royalty award is under-compensatory because it reflects a patent strength discount—that is, it reflects a discount from the value of the patent based on uncertainty about whether the patent is valid and infringed by the defendant's product. Indeed, many courts have held that ongoing royalties should be set higher than the jury rate because the defendant is now an adjudicated infringer of a valid patent.[180] These courts have reasoned that this change in the legal status of the parties—and in what the parties would know going into their hypothetical negotiation—would change the outcome of the hypothetical negotiation from the outcome that the jury determined.[181] The Federal Circuit has seemingly endorsed this approach, holding that

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176 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 50 (AM. LAW INST. 2011).

177 *See* LAYCOCK, *supra* note 50, at 506.

178 Paice LLC v. Toyota Motor Corp., 609 F. Supp. 2d 620, 630 (E.D. Tex. 2009) ("[A]n ongoing royalty rate must still adequately compensate a patentee . . . . That is, the law must ensure that an adjudged infringer who voluntarily chooses to continue his infringing behavior must adequately compensate the patent holder for using the patent holder's property.").

179 A & H Sportswear Co. v. Victoria's Secret Stores, Inc., 967 F. Supp. 1457, 1480 (E.D. Pa. 1997) (trademark case stating "[t]he ambiguities in fashioning relief based on a reasonable royalty require 'a court to take special care to ensure that the royalty payment has not undercompensated the victim [so that] the malefactor, and not the victim, bears the burden of any uncertainty in its calculation.'" (quoting Sands, Taylor & Wood v. Quaker Oats Co., 34 F.3d 1340, 1351 (7th Cir. 1994))), *rev'd on other grounds*, 166 F.3d 197 (3d Cir. 1999).

180 *E.g.*, Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., 670 F.3d 1171, 1193 (Fed. Cir. 2012), *aff'd in part, vacated in part*, 682 F.3d 1003 (Fed. Cir. 2012); *Paice*, 609 F. Supp. 2d at 630 ("[T]he fact that [the defendant] is an adjudged infringer who chooses to continue infringing simply cannot be ignored."); Tomita Techs. USA, LLC v. Nintendo Co., No. 11 Civ. 4256(JSR), 2013 WL 6504394, at *2 (S.D.N.Y. Dec. 11, 2013) ("[A]fter a finding of infringement[,]. . . the status of the parties has changed, as would the result of the hypothetical negotiation between them.").

181 *See* Morpho Detection, Inc. v. Smiths Detection Inc., No. 2:11cv498, 2013 WL 5701522, at *9 (E.D. Va. Oct. 17, 2013) ("Morpho offers a compelling argument that after the jury found Morpho's patent valid and found that Smiths' commercialized product infringed on Morpho's patent, Morpho was in a far superior bargaining position than it was in more than a year earlier, the date the jury relied on in affixing the pre-verdict royalty rate at $7,500. Notably, at this earlier date, Smiths not only had a reasonable basis to argue that its product was non-infringing, but clearly believed, as demonstrated by its vehement arguments throughout this case, that Morpho's patent was invalid as anticipated and/or invalid as obvious based on prior art.").

the patentee's bargaining position "is even stronger" after findings of validity and infringement.[182]

And there may be good reason for concern that the jury award is under-compensatory, given the risk of over-reliance on existing license agreements. Existing licenses are among the strongest evidence that juries use in setting the reasonable royalty,[183] but these licenses almost always reflect considerations not tied to the value of the patented invention.[184] Actual licenses are negotiated in the shadow of probable litigation outcomes, meaning that the parties to a license negotiation will necessarily take into account the likelihood that the patent would be found to be valid and infringed, as well as the likely litigation expenses necessary to reach the legal outcome.[185] Given that the parties negotiating a license will rarely, if ever, be absolutely certain that the patent would be held valid and infringed if litigated, a voluntary license agreement will almost always incorporate some patent strength discount.[186] And, if juries rely too heavily on such an existing license in setting the reasonable royalty, the reasonable royalty will likewise reflect a patent strength discount.[187]

On the other hand, existing licenses may reflect not only a patent strength discount, but also a switching costs kicker, at least if the parties believed that a court might enjoin infringement if the parties litigated the issue.[188] Thus, existing license rates are a function of the downward pressure of patent strength discounts and the upward pressure of switching costs, as well as other considerations, such as litigation expenses.[189] Consequently, there is reason to suspect that jury awards may not perfectly compensate the plaintiff, at least where they rely on existing licenses.[190]

But that is a problem that should be remedied by attorneys and experts emphasizing to the jury the non-value aspects of existing patent licenses and the assumptions that should go into the reasonable royalty determination. Moreover,

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182 ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc., 694 F.3d 1312, 1343 (Fed. Cir. 2012).

183 *See, e.g.*, Medtronic, Inc. v. Catalyst Research Corp., 547 F. Supp. 401, 415 (D. Minn. 1982).

184 *In re* Mahurkar Double Lumen Hemodialysis Catheter Patent Litig., 831 F. Supp. 1354, 1379 (N.D. Ill. 1993); *see also* Brunswick Corp. v. United States, 36 Fed. Cl. 204, 212 (Fed. Cl. 1996), *aff'd*, 152 F.3d 946 (Fed. Cir. 1998).

185 *In re Mahurkar*, 831 F. Supp. at 1379.

186 *See* Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2019–20 (2007).

187 Jonathan S. Masur, *The Use and Misuse of Patent Licenses*, 110 NW. U. L. REV. 115, 131–32 (2015).

188 Lemley & Shapiro, *supra* note 186, at 2022.

189 *See* Wang Labs., Inc. v. Mitsubishi Elecs. Am. Inc., 860 F. Supp. 1448, 1452–53 (C.D. Cal. 1993); *see also supra* text accompanying note 130 (discussing average litigation expenses).

190 Lemley & Shapiro, *supra* note 186, at 2021.

as many courts have pointed out in response to arguments about the patentee's "even stronger" bargaining position, juries are instructed that the reasonable royalty should reflect the license that would have been negotiated between a willing patentee and willing licensee who believed the patent to be valid and infringed,[191] so that the reasonable royalty should not incorporate a patent strength discount.[192] Once the parties have presented their competing experts—who will undoubtedly explain to the jury why a given license does not necessarily reflect the value of the patented invention—and once the jury has been instructed to assume validity and infringement in calculating the reasonable royalty, the court should not, as part of its determination of the ongoing royalty, reevaluate the jury's determination based on factors the jury was previously instructed to consider. As Professor Mark A. Lemley put it, "There is no reason to think that asking the same question twice should produce different answers in most cases."[193] Thus, unless the jury verdict itself is subject to attack under traditional principles (e.g., judgment as a matter of law, motion for a new trial), the ongoing royalty should generally reflect the jury's verdict.[194]

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191 SimpleAir, Inc. v. Google Inc., 77 F. Supp. 3d 569, 573 (E.D. Tex. 2014), *vacated sub nom.*, 820 F.3d 419 (Fed. Cir. 2016).

192 Univ. of Pittsburgh v. Varian Med. Sys., Inc., No. 08CV1307, 2012 WL 1436569, at *11 (W.D. Pa. Apr. 25, 2012) ("Thus, all that has occurred since the damages portion of the trial is that the jury and/or the Court confirmed what the jury was to assume for that portion of the trial."), *aff'd in part, vacated in part*, 561 F. App'x 934 (Fed. Cir. 2014); Presidio Components Inc. v. Am. Tech. Ceramics Corp., No. 08-CV-335-IEG NLS, 2010 WL 3070370, at *4 (S.D. Cal. Aug. 5, 2010) (footnote omitted) ("Where, as here, an injunction is no longer proper, the Court is hard pressed to find in what material respect the situation is different now than it was during trial. In determining the reasonable royalty rate during trial, both parties assumed the '356 patent was valid and infringed."), *aff'd in part, vacated in part*, 702 F.3d 1351 (Fed. Cir. 2012); Ariba, Inc. v. Emptoris, Inc., 567 F. Supp. 2d 914, 918 (E.D. Tex. 2008); Cummins-Allison Corp. v. SBM Co., 584 F. Supp. 2d 916, 918 (E.D. Tex. 2008); Orion IP, LLC v. Mercedes-Benz USA, LLC, No. 6:05CV322, 2008 WL 8856865, at *9 (E.D. Tex. Mar. 28, 2008).

193 Lemley, *supra* note 155, at 704.

194 Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 919 (N.D. Ill. 2012) (citing Amado v. Microsoft Corp., 517 F.3d 1353, 1361–62 (Fed. Cir. 2008), *aff'd in part, rev'd in part*, 757 F.3d 1286 (Fed. Cir. 2014), *overruled by* Williamson v. Citrix Online LLC, 792 F.3d 1339 (Fed. Cir. 2015)). Judge Posner rightly recognized that, in most cases, the jury verdict should provide the ongoing royalty. Judge Posner gave a nod to the Federal Circuit's holding in *Amado* "that the retrospective reasonable royalty (damages 'going backward') should be lower than the prospective royalty ('going forward') to reflect the parties' greater certainty in the latter case—infringement having been determined by a court and not merely claimed by the patentee." *Apple, Inc.*, 869 F. Supp. 2d at 919. This, he says, "is consistent with the proposition that the forward royalty is an injunction substitute, so not really damages." *Id.* But he earlier pointed out that injunctions are, in essence, compensatory, and not meant to be punitive. *Id.* at 917.

B. *Changes in Circumstances and Status: Switching Costs*

Although circumstances such as market conditions may sometimes change between the time of the hypothetical negotiation and the award of an ongoing royalty, necessitating a change in the royalty rate,[195] neither of the two most common "changed circumstances" that courts rely on in enhancing ongoing royalties are valid considerations. The first—the finding of infringing and non-invalidity—is discussed above. But the second—the infringer's switching costs—bears further discussion.

By the time of trial, the infringer likely would face switching costs that it would not have faced at the time of the first hypothetical negotiation (that is, just before the infringement began). The first hypothetical negotiation comes at a time when the infringer would have to prospectively select between the patented product or process and a non-infringing alternative, while the second comes at a time where the infringer will have to switch from the patented product or process to a non-infringing alternative.

Some courts have suggested that the ongoing royalty should award the patentee more than the market value of the patented invention by incorporating these switching costs into the calculus. For example, in *Paice LLC v. Toyota Motor Corp.*,[196] although the court initially suggested that the ongoing royalty should be compensatory,[197] it went on to suggest that switching costs should be included in the ongoing royalty calculation: "In a post-judgment negotiation, where the licensee is an adjudged infringer and continues to willfully infringe by choice, the cost of switching to an alternative design is a factor that the parties would consider in arriving at an appropriate ongoing royalty rate."[198]

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195 The hypothetical negotiation for a reasonable royalty occurs before any infringement takes place. Wordtech Sys., Inc. v. Integrated Networks Sols., Inc., 609 F.3d 1308, 1319 (Fed. Cir. 2010). Arguably post-infringement changes in the market or in the patent's value could be considered under the "book of wisdom" rubric discussed in *Sinclair Refining Co. v. Jenkins Petroleum Process Co.*, 289 U.S. 689, 698 (1933). *See* Soverain Software LLC v. J.C. Penney Corp., 899 F. Supp. 2d 574, 588–89 (E.D. Tex. 2012), *rev'd sub nom.*, Soverain Software LLC v. Victoria's Secret Direct Brand Mgmt., LLC, 778 F.3d 1311 (Fed. Cir. 2015); Lemley, *supra* note 155, at 706. But the "book of wisdom" concept has been of little use in most cases. *See* Aqua Shield v. Inter Pool Cover Team, 774 F.3d 766, 772 (Fed. Cir. 2014).

196 609 F. Supp. 2d 620 (E.D. Tex. 2009).

197 *Id.* at 624 ("In many ongoing royalty negotiations, the threat of a permanent injunction serves as a big stick, essentially framing negotiation in terms of how much an adjudged infringer would pay for a license to continue its infringing conduct[,]" but "when an injunction is not proper under *eBay*, the question instead becomes: what amount of money would reasonably compensate a patentee for giving up his right to exclude?").

198 *Id.* at 627.

Similarly, in *Boston Scientific Corp. v. Johnson & Johnson*,[199] the court indicated that the ongoing royalty should be set at a rate that reflects the patentee's potential to opportunistically leverage an injunction, even though the court had denied the injunction.[200] The court stated that, in assessing ongoing royalties, "it must assume that the jury finding of liability in this case would have strengthened [the patentee's] bargaining position had the parties negotiated a license after the jury verdict" because of "the parties' knowledge that [the patentee] could have forced [the infringer's] product off the market" until the patent expired.[201] In other words, the court, after finding that an injunction was not warranted, engaged in a fiction that suggests that the parties would believe that the alternative to an agreement in the hypothetical negotiation was exclusion through an injunction.[202] The *Boston Scientific* court believed that to not consider switching costs would require "the Court to assume that a jury verdict [of infringement] in a patent case has no meaning."[203] This position has also been staked out by commentators, who have claimed that factfinders should consider "what the infringer would pay to avoid a future injunction" because, to do otherwise is to "completely eviscerate[]" the patent holder's statutory right to exclude.[204]

Certainly with respect to the original hypothetical negotiation, the parties to the negotiation should assume that, in the absence of agreement, the defendant's only alternative is non-use of the patent.[205] This helps to identify the market value of the patent by comparing the patented invention with non-infringing alternatives before the defendant sinks money into a particular design.[206] Thus, the Federal Circuit has noted,

> [that a] key inquiry in the analysis is what it would have been worth to the defendant, as it saw things at the time, to obtain the authority to use the patented technology, considering the benefits it would expect to receive from using the technology and the alternatives it might have pursued.[207]

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199 No. C 02-00790 SI, 2009 WL 975424 (N.D. Cal. Apr. 9, 2009).

200 *Id.* at *2.

201 *Id.* at *5.

202 *Id.* at *4.

203 *Id.* at *3.

204 Ronald J. Schutz & Patrick M. Arenz, *Uncharted Waters: Determining Ongoing Royalties for Victorious Patent Holders Denied an Injunction*, 11 SEDONA CONF. J. 75, 82 (2010).

205 *See* J. Gregory Sidak, *Bargaining Power and Patent Damages*, 19 STAN. TECH. L. REV. 1, 16 (2015).

206 *See* Riles v. Shell Expl. & Prod. Co., 298 F.3d 1302, 1312 (Fed. Cir. 2002) ("The economic relationship between the patented method and non-infringing alternative methods, of necessity, would limit the hypothetical negotiation."); Sidak, *supra* note 205, at 15.

207 Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., 807 F.3d 1283, 1304 (Fed. Cir. 2015); *see* Aqua Shield v. Inter Pool Cover Team, 774 F.3d 766, 772 (Fed. Cir. 2014) ("[A]nticipated

No switching costs are included in this formulation because the hypothetical negotiation occurs before the defendant's infringement began.[208] In *Boston Scientific* and *Paice*, however, the courts' analyses posit that the hypothetical negotiation taking place *after* the jury verdict[209] should assume (fictitiously) that the patentee can remove the infringer's product from the market, thus incorporating switching costs into the equation.[210]

This analysis begs the question. By suggesting that the ongoing royalty ought to incorporate switching costs (or by imposing the "undefinable kicker" above market value as discussed by Calabresi and Melamed),[211] the court assumes that the patentee's right to exclude should be protected by a property rule rather than a liability rule. But that is the very question at issue in these cases.[212] Calabresi and Melamed argue that, in a case where negotiation theoretically would be possible but holdout problems increase transaction costs in a way that makes a market solution unlikely, a liability rule (that is, damages at market value) is appropriate.[213] They use the example of permanent nuisance,[214] but their reasoning also applies to the infringer's post-judgment infringement.

We could use a property rule to encourage a negotiated market solution, but, as discussed above,[215] the patentee who believes that it can obtain injunctive relief will likely engage in opportunistic behavior in order to capitalize on the defendant's switching costs, making a negotiated market solution unlikely. In such a scenario, Calabresi and Melamed argue for the use of a liability rule.[216] Use of a liability rule does not eviscerate the owner's property right any more

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incremental profits . . . [above the next-best non-infringing alternative] are conceptually central to constraining the royalty negotiation.").

208 Hanson v. Alpine Valley Ski Area, Inc., 718 F.2d 1075, 1079 (Fed. Cir. 1983) ("The key element in setting a reasonable royalty . . . is the necessity for return to the date when the infringement began." (quoting Panduit Corp. v. Stahlin Bros. Fibre Works, 575 F.2d 1152, 1158 (6th Cir. 1978))).

209 Boston Sci. Corp. v. Johnson & Johnson, No. C 02-00790 SI, 2009 WL 975424, at *1 (N.D. Cal. Apr. 9, 2009) ("[T]he Court directed the parties to assume that they had negotiated a license on October 31, 2007, the date the jury returned a special verdict in favor of Cordis.").

210 *See generally* Presidio Components Inc. v. Am. Tech. Ceramics Corp., No. 08-CV-335-IEG NLS, 2010 WL 3070370, at *3 (S.D. Cal. Aug. 5, 2010) ("Where, as here, an injunction is no longer proper, the Court is hard pressed to find in what material respect the situation is different now than it was during trial."), *aff'd in part, vacated in part*, 702 F.3d 1351 (Fed. Cir. 2012).

211 Calabresi & Melamed, *supra* note 113, at 1126.

212 *See* Epstein, *supra* note 14, at 2096 (noting that, even in the case of what appears to be a liability rule, "courts can use the calculation of damages to reinstitute a de facto property rule.").

213 Calabresi & Melamed, *supra* note 113, at 1127.

214 *Id.*

215 *See supra* Part II.B.2.i.

216 Calabresi & Melamed, *supra* note 113, at 1127.

than use of a liability rule for property damage in the case of a car accident eviscerates the owner's property right; indeed, it is only because of the property right that the plaintiff recovers anything. Instead, in these cases, the debate is whether to enforce the right through a liability rule or a property rule given the competing concerns at hand. And the answer to that question depends in part on the blameworthiness and inefficiency of the infringer's conduct, which will be discussed in the next section.

C. *Willfulness Enhancement*

Closely related to the idea of adjusting the ongoing royalty because the patent has been held valid and infringed is an adjustment of the ongoing royalty as a measure of "enhanced damages."[217] Enhanced damages are authorized for some willful infringements under the Patent Act.[218] The enhanced damages available under the Patent Act are a legal remedy, and they do not directly apply to ongoing royalties, because the Federal Circuit has categorized ongoing royalties as an equitable remedy.[219] Nevertheless, some courts have applied enhanced-damages principles, resting largely on willfulness, to ongoing royalties. Willfulness enhancements have been analyzed using nine factors articulated in the Federal Circuit's opinion in *Read Corp. v. Portec, Inc.*[220]

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217 *See, e.g.*, Morpho Detection, Inc. v. Smiths Detection Inc., No. 2:11CV498, 2013 WL 5701522, at *8–9 (E.D. Va. Oct. 17, 2013) (awarding ongoing royalties at 25% above the jury verdict based on the parties' "changed legal status," and noting that the patentee had not requested enhanced damages but that, had enhanced damages been requested, the court would have enhanced them by the same 25%); DataTreasury Corp. v. Wells Fargo & Co., No. 2:06-CV-72 DF, 2011 WL 8810604, at *19 n.3 (E.D. Tex. Aug. 2, 2011) ("Alternatively, if the Court were to consider . . . enhancement analysis under *Read* . . . the Court would nonetheless reach the same ongoing royalty rate." (citation omitted)).

218 Section 284 does not provide a limiting standard for enhanced damages, see 35 U.S.C. § 284 (2012), but Federal Circuit judicial gloss has in the past limited enhancements to willful infringement. *See In re* Seagate Tech., LLC, 497 F.3d 1360, 1368 (Fed. Cir. 2007), *abrogated by* Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923 (2016). In *Halo*, the Supreme Court left open the possibility that enhanced damages could conceivably be warranted in some other set of cases of "egregious cases of culpable behavior." *Id.* at 1932. It held that enhanced damages "should generally be reserved for egregious cases typified by willful misconduct." *Id.* at 1934.

219 *See* Paice LLC v. Toyota Motor Corp., 504 F.3d 1293, 1316 (Fed. Cir. 2007). *But see* Lemley, *supra* note 155, at 697 (suggesting that ongoing royalties might be justified as an award of future damages under § 284).

220 970 F.2d 816, 827 (Fed. Cir. 1992), *superseded on other grounds as recognized by* Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc., 670 F.3d 1171 (Fed. Cir. 2012). The factors are: (1) "whether the infringer deliberately copied"; (2) the infringer's investigation and good-faith belief of invalidity or non-infringement; (3) the infringer's litigation behavior; (4) the infringer's "size and financial condition"; (5) "[c]loseness of the case"; (6) "[d]uration of defendant's misconduct"; (7) "[r]emedial action by the defendant"; (8) "[d]efendant's motivation for harm"; and (9) attempts to conceal infringement. *Id.* (citations omitted). These considerations seem to fit well with

The verdict of validity and infringement means that future acts of infringement by the defendant will be willful in the patent sense.[221] Consequently, many courts have set the ongoing royalty rate higher than the jury verdict rate, on the theory that the rate should be "enhanced" because any post-judgment infringement is necessarily willful.[222] As the Supreme Court recently noted, however, and as Justice Breyer's concurrence emphasized, enhancement is not required "simply because the evidence shows that the infringer knew about the patent *and nothing more*."[223] Instead, "[a]s with any exercise of discretion, courts should continue to take into account the particular circumstances of each case in deciding whether to award [enhanced] damages . . . ."[224]

1. Enhancement in Traditional Property Contexts

In mistaken improver, encroachment, and nuisance cases, courts do not award supracompensatory damages. In order for the court to deny injunctive relief and to, in some cases, order a forced exchange, it usually will have found that the defendant was not an intentional wrongdoer, at least at the beginning of the disputed conduct.[225] Of course, as is the case in the patent realm, once the court denies injunctive relief, if the defendant continues to access the property, then any trespass would be intentional in the sense that the defendant knowingly entered the plaintiff's property.[226] But courts have not awarded punitive damages

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the Supreme Court's decision in *Halo*, which struck down the Federal Circuit's *Seagate* test. *See generally Halo*, 136 S. Ct. 1923.

221 WBIP, LLC v. Kohler Co., No. 11-10374-NMG, 2014 WL 585854, at *9 (D. Mass. Feb. 12, 2014) ("Many district courts have therefore set the post-verdict rate higher than the pre-verdict rate based on the fact that the post-verdict infringer knows that it is infringing and the post-verdict patentee has a strong claim to enhanced damages should it abandon the hypothetical royalty negotiations and pursue a patent infringement lawsuit."); Soverain Software LLC v. J.C. Penney Corp., 899 F. Supp. 2d 574, 590 (E.D. Tex. 2012), *rev'd sub nom.*, Soverain Software LLC v. Victoria's Secret Direct Brand Mgmt., LLC, 778 F.3d 1311 (Fed. Cir. 2015); Mondis Tech. Ltd. v. Chimei InnoLux Corp., 822 F. Supp. 2d 639, 645–46 (E.D. Tex. 2011), *aff'd*, 530 F. App'x 959 (Fed. Cir. 2013); Affinity Labs of Tex., LLC v. BMW N. Am., LLC, 783 F. Supp. 2d 891, 899 (E.D. Tex. 2011); I/P Engine, Inc. v. AOL Inc., No. 2:11CV512, 2014 WL 309245, at *4 (E.D. Va. Jan. 28, 2014).

222 *See WBIP, LLC*, 2014 WL 585854, at *8; *Soverain Software LLC*, 899 F. Supp. 2d at 590; *Mondis Tech. Ltd.*, 822 F. Supp. 2d at 645–46; *Affinity Labs of Texas, LLC*, 783 F. Supp. 2d at 902 ("Given the willful nature of the ongoing infringement and the fact that a new lawsuit could potentially result in an award of treble damages, the court will consider the factors traditionally taken into account when determining whether to enhance a past damages award upon a finding of willfulness."); *I/P Engine, Inc.*, 2014 WL 309245, at *4.

223 *Halo*, 136 S. Ct. at 1936 (Breyer, J., concurring).

224 *Id.* at 1933 (majority opinion).

225 *See supra* Part II.B.2.iv.

226 That is, unless the court orders an easement, a forced exchange, or some other form of relief.

in these cases. Instead, compensation for the plaintiff has been set at market value.[227]

For example, in *City of Harrisonville v. W.S. Dickey Clay Manufacturing Co.*, the Supreme Court found a nuisance, but, noting the disproportionate hardship to the defendant and the public that would result from an injunction, the Court ordered payment at the value of the plaintiff's land's depreciation.[228] In *Proctor v. Huntington*,[229] the Washington Supreme Court affirmed a judgment denying an injunction in a mistaken improvement case and assessing damages at the fair market value of the land. In *Knuth v. Vogels*,[230] in which the defendant's garage encroached on the plaintiff's property, the Wisconsin Supreme Court gave the owner the election of whether to sell the encroached portion of the property to the defendant for fair market value or to remain the owner and recover damages for past and future trespass for the expected life of the encroaching garage, subject to an order enjoining the property owner from filing later suits over the encroaching garage.

In *Boomer v. Atlantic Cement Co.*,[231] the plaintiffs argued that damages should not be assessed at fair market value, because that would give the defendants the power of private eminent domain. Instead, the plaintiffs sought damages at the "amount that a private corporation would have to pay where it needs such servitude to continue in operation as against a seller who is unwilling to sell his land."[232] In other words, the *Boomer* plaintiffs sought damages reflecting the defendant's switching costs, just as the *Boston Scientific* court held that the ongoing royalty could reflect patentee opportunism predicated on switching costs.[233] In *Boomer*, however, the court recognized that the plaintiff was "[s]imply . . . asking for punitive damages . . .," and declined to adopt such a standard, given that it did not believe "that the wrong complained of [was] morally culpable, or [was]

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227 *See* Wacker v. Price, 216 P.2d 707, 712 (Ariz. 1950); Goldbacher v. Eggers, 76 N.Y.S. 881, 885 (N.Y. Sup. Ct. 1902); Crocker v. Manhattan Life Ins. Co., 70 N.Y.S. 492, 495, 500 (N.Y. App. Div. 1901); Dobbs, *supra* note 71, at 348, 367 (permanent damages for encroaching structure should be measured "by the value of the land taken"). *But cf.* Owenson v. Bradley, 197 N.W. 885, 889 (N.D. 1924) (noting that value of encroached property "does not exceed $250," that the encroacher "is apparently willing to pay a liberal award of damages," and setting damages at $125, apparently without determining actual value of the encroached portion); Methodist Episcopal Soc'y v. Akers, 46 N.E. 381, 383 (Mass. 1897) (ordering payment of $225 for portions of land without explaining the basis for the award).

228 City of Harrisonville v. W.S. Dickey Clay Mfg. Co., 289 U.S. 334, 339–40 (1933).

229 238 P.3d 1117 (Wash. 2010).

230 61 N.W.2d 301, 304–05 (Wis. 1953).

231 Boomer v. Atl. Cement Co., 340 N.Y.S.2d 97 (N.Y. Sup. Ct. 1972).

232 *Id.* at 100.

233 *See supra* Part III.B.

actuated by evil and reprehensible motives."[234] The final award was compensatory—it was determined by awarding the decrease in the property's market value as a result of the nuisance.[235]

In the trade secret context, in which the Uniform Trade Secrets Act permits an ongoing royalty for use by innocent defendants, the ongoing royalty is not enhanced for the defendant's intentional misappropriation going forward.[236] This is true even though the UTSA permits exemplary damages in cases of "willful and malicious misappropriation."[237] And, drawing on analogies to trade secret law as well as patent law, a court in a trademark case awarded an ongoing royalty at the "reasonable royalty" rate without enhancing it, although it rightly measured the ongoing royalty to "resolve[] all uncertainties [about the adequacy of the compensation] in favor of Plaintiffs."[238]

Any defense of the enhancement of ongoing royalties must distinguish the patent context from these other contexts to explain why enhancement is appropriate in one and not the other.[239] As the Supreme Court said long ago,

> [T]here is no good reason why taking a man's property in an invention should be trebly punished, while the measure of damages as to other property is single and actual damages. [W]here the injury is wanton or malicious, a jury may inflict vindictive or exemplary damages, not to recompense the plaintiff, but to punish the defendant.[240]

One distinction is that, in the real property context, encroachment may be relatively easy to spot. (This is not always the case, but it often will be.) In the patent context, infringement may go undetected for years. Perhaps, then, enhanced ongoing royalties are awarded out of concern that the infringer will at-

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234 *Boomer*, 340 N.Y.S.2d at 100–01 (internal quotation omitted).

235 Kinley v. Atl. Cement Co., 349 N.Y.S.2d 199, 201 (N.Y. App. Div. 1973).

236 *See, e.g.*, Cacique, Inc. v. Robert Reiser & Co., 169 F.3d 619, 624 (9th Cir. 1999); Skycam, LLC v. Bennett, No. 09-CV-294-GKF-FHM, 2012 WL 4483610, at *3 (N.D. Okla. Sept. 27, 2012); Elec. Data Sys. Corp. v. Heinemann, 493 S.E.2d 132, 135 (Ga. 1997). *See generally* Bianco v. Globus Med., Inc., 53 F. Supp. 3d 929, 937–38 (E.D. Tex. 2014) (declining to enhance ongoing royalty in trade secret case, but distinguishing patent cases).

237 UNIF. TRADE SECRETS ACT § 3 (UNIF. LAW COMM'N 1985).

238 A & H Sportswear Co. v. Victoria's Secret Stores, Inc., 967 F. Supp. 1457, 1477 (E.D. Pa. 1997), *rev'd on other grounds*, 166 F.3d 197 (3d Cir. 1999).

239 Under the 19th-century Mill Acts, the statutes allowed the building of dams that caused upstream flooding of surrounding land. Before the dams were built, the builders were obligated to pay for the land that would be flooded at a premium of fifty percent above market. *See* Epstein, *supra* note 14, at 2114–15.

240 Seymour v. McCormick, 57 U.S. 480, 488–89 (1854).

tempt to conceal its infringement—that is, after all, one of the factors for enhanced damages under § 284.[241] But this would be reflected in the court's decision of whether or not to balance the hardships to the parties in granting or denying injunctive relief—if the defendant concealed its infringement, it likely would not be able to benefit from a balancing of the hardships.[242] Moreover, the concealed infringement will be past infringement, and, if it is found to be willful, it would be subject to enhanced damages for the past infringement.[243] The defendant likely will not be able to conceal its future infringement—courts awarding ongoing royalties generally order a periodic accounting by the defendant.[244] If the defendant conceals infringement from the accounting or from the patentee's audit, it will be subject to contempt sanctions for violating the court's order.

It is also the case that, because of the non-rivalrous nature of intellectual property, the law can use something less extreme than the buy/sell remedy that is sometimes necessary with real property. The real property owner subjected to the forced exchange not only loses her own right to exclude others (including the builder) from the property, but she herself becomes subject to some degree of exclusion by the other party.[245] The remedy in the patent context is less drastic because although the plaintiff cannot enforce her right to exclude this particular defendant with a property rule, the plaintiff retains the right to use the patented invention herself, (that is, the infringer is not granted a right to exclude) and she retains the ability to exclude others.[246] But it is not obvious that this distinction should matter in the decision of whether to enhance damages or not—it does not, for example, make the infringer's ongoing trespass any more culpable than it would be in the real property context.

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241 *See* Read Corp. v. Portec, Inc., 970 F.2d 816, 827 (Fed. Cir. 1992).

242 *See generally* Sigma Chem. Co. v. Harris, 586 F. Supp. 704, 711 (E.D. Mo. 1984) (finding, in preliminary injunction context, that equities did not favor defendant who breached restrictive covenant and attempted to conceal breach), *rev'd in part, aff'd in part*, 794 F.2d 371 (8th Cir. 1986); Gold v. Holiday Rent-A-Car Int'l, Inc., 627 F. Supp. 280, 283 (W.D. Mo. 1985) (same for breach of covenant not to compete).

243 *See* 35 U.S.C. § 284 (2012); *In re* Seagate Tech., 497 F.3d 1360, 1369 (Fed. Cir. 2007), *abrogated by* Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923 (2016).

244 *See, e.g.*, Paice LLC v. Toyota Motor Corp., 504 F.3d 1293, 1314 (Fed. Cir. 2007); Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., No. 09-290, 2014 WL 1320154, at *39 (W.D. Pa. Mar. 31, 2014), *aff'd in part, rev'd in part, vacated in part*, 807 F.3d 1283 (Fed. Cir. 2015) (ongoing royalties affirmed).

245 *See* Hirshfield v. Schwartz, 110 Cal. Rptr. 2d 861, 871 (Cal. Ct. App. 2001) (discussing court's ability to grant affirmative relief to mistaken builder).

246 The ability to implement a less drastic remedy in patent cases may counsel in favor of removing the plaintiff-favoring thumb from the scale in balancing the parties' hardships in the patent context. *See supra* notes 44–47.

2. Enhancement in the Patent Context

The jury in a patent case sometimes concludes that the parties in a hypothetical negotiation would have agreed to a fully paid up lump sum royalty for the defendant's license rather than a running royalty that the defendant would pay based on sales of products incorporating the patented invention.[247] In these cases, the plaintiff will have no remedy for the defendant's future acts of infringement, under the theory that the plaintiff has already been compensated for them.[248] Lump-sum award cases, like ongoing royalty cases, effectively immunize the defendant from future lawsuits based on its ongoing use of the patented invention.[249] In these cases, however, courts do not enhance the award on the ground that any future use of the patent by the defendant necessarily constitutes willful infringement.[250]

No court that has enhanced an ongoing royalty on future willfulness grounds has articulated any reason that ongoing royalties should be enhanced on this basis while lump-sum awards should not. In fact, no court seems even to have taken notice of this inconsistency. The lump-sum award should, in theory, fully compensate the patentee for the defendant's future use of the patent,[251] but that is also true of an unenhanced ongoing royalty. In the lump-sum reasonable royalty context, courts intuitively recognize that there is no need to enhance the fully compensatory award for the defendant's future infringement, but they fail to apply this same reasoning in the context of an ongoing royalty. The defendant's ability to convince a jury that the parties would have agreed to a lump-sum royalty instead of a running royalty does not change the culpability of the defendant's prospective infringement.

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247 *See* Pers. Audio, LLC v. Apple, Inc., No. 9:09CV111, 2011 WL 3269330, at *4 (E.D. Tex. July 29, 2011) (collecting cases). These awards have received some criticism. *See generally* Barry Ungar, *The Paid-in-Full, Lump-Sum Damage Award: A Perversion of* Georgia-Pacific, Lucent v. Gateway *and the Right to Exclude*, 41 AIPLA Q.J. 205 (2013).

248 *See Pers. Audio, LLC*, 2011 WL 3269330, at *8.

249 In lump-sum cases, this may be true even where the defendant introduces new products using the patented invention. *Id.* at *4. In this way, the lump sum cases differ from ongoing royalty cases, which should be limited to the product at issue and merely colorable variations.

250 *See, e.g.*, Fleming v. Escort, Inc., No. CV 09-105-S-BLW, 2013 WL 1290418, at *3 (D. Idaho Mar. 27, 2013); Fleming v. Escort, Inc., No. 1:12-CV-066-BLW, 2013 WL 3995259, at *1–2 (D. Idaho Aug. 5, 2013) (finding that $750,000 jury award represented a lump-sum, paid-up award); *Pers. Audio, LLC*, 2011 WL 3269330, at *8.

251 *See* Apple, Inc. v. Samsung Elecs. Co., 67 F. Supp. 3d 1100, 1118 (N.D. Cal. 2014).

Enhancement, as a form of punitive damages,[252] is intended to punish and deter.[253] Enhancement is reserved for "egregious cases typified by willful misconduct."[254] Thus, a court enhancing the ongoing royalty should identify the morally culpable behavior that it seeks to punish,[255] or the inefficient behavior that it seeks to deter.[256] In cases where an injunction would impose heavy switching costs on an innocent (or relatively innocent) defendant, the court will have determined that the balance of equities supports defendant's continued use of the patented invention rather than an injunction.[257] Presumably, the court would not take that approach if the defendant's conduct were considered morally culpable or repugnant to our sense of decency, or if the defendant's future infringement ought to be deterred.[258] Interestingly, one 1861 case, discussing in dicta the reasons to deny an injunction that was sought "as an execution or for extortion," said that a "court of equity can inflict no exemplary or punitive damages as a court of law may."[259]

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252 SRI Int'l, Inc. v. Advanced Tech. Labs., Inc., 127 F.3d 1462, 1464 (Fed. Cir. 1997) ("[E]nhanced damages are not compensatory but punitive."). There is some suggestion that enhanced damages may serve a compensatory purpose, at least in some cases, such as where the judge feels that the jury undercompensated the patentee. *See* 7–20 CHISUM ON PATENTS § 20.03(4)(b)(iii) (2015). But, in the ongoing royalty context, there is no reason to additionally compensate the plaintiff under the guise of enhanced damages, because the trial judge sets the ongoing royalty as an equitable remedy. Paice LLC v. Toyota Motor Corp., 504 F.3d 1293, 1315–16 (Fed. Cir. 2007); *see also supra* Part IV.A.

253 Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923, 1928–29 (2016); *SRI Int'l*, 127 F.3d at 1468.

254 *Halo*, 136 S. Ct. at 1934. (emphasizing willful *misconduct*, rather than merely willful *infringement*).

255 In *Affinity Labs*, the court described the ongoing infringement as culpable despite pre-trial good-faith reliance on an attorney non-infringement opinion, because the good faith "would be relevant to the [infringer's] culpability with respect to pre-verdict infringement" but "carries little to no weight with respect to ongoing post-judgment infringement . . . ." Affinity Labs of Tex., LLC v. BMW N. Am., LLC, 783 F. Supp. 2d 891, 902–03 (E.D. Tex. 2011). The court did not explain why the future infringement would be culpable, other than that it was "willful," nor did the court discuss its reasons for denying the plaintiff's request for an injunction. *See id.* at 896.

256 *See generally* Sepulveda v. Burnside, 432 F. App'x 860, 865 n.4 (11th Cir. 2011) (per curiam) (courts assessing punitive damages should identify state's interest in deterring relevant conduct and degree of reprehensibility of conduct). *Compare Affinity Labs of Tex., LLC*, 783 F. Supp. 2d at 899 (stating that the court should consider "[g]eneral deterrence of infringing activity," and determine an amount "that reduces the defendant's profit motive to infringe and serves to deter infringing conduct in general"), *with* Univ. of Pittsburgh v. Varian Med. Sys., Inc., No. 08CV1307, 2012 WL 1436569, at *12 (W.D. Pa. Apr. 25, 2012) (declining to enhance ongoing royalties on willfulness grounds), *aff'd in part, vacated in part*, 561 F. App'x 934 (Fed. Cir. 2014).

257 *See supra* Part II.B.2.

258 Other mechanisms, such as an injunction with a sunset period, or perhaps an ongoing royalty on an increasing scale, would serve that purpose.

259 Sanders v. Logan, 21 F. Cas. 321, 323 (C.C.W.D. Pa. 1861) (No. 12, 295).

Similarly, economic theory suggests that overcompensating the plaintiff at defendant's expense would be inefficient rather than efficient, at least in cases where the defendant did not intentionally bypass the market and help itself to the plaintiff's property.[260] The defendant will have to pass those costs on to customers, or will produce less of the product than it would at the optimal price.[261]

When an injunction would impose a great burden on the defendant, would allow the patentee to command a royalty based on the defendant's switching costs rather than the value of the patent, and would not significantly benefit the plaintiff, there seems little reason to enhance an ongoing royalty under a willfulness determination.[262] But when the Supreme Court's *eBay* constrictions require the denial of injunctive relief in a case of intentional wrongdoing by the defendant, the situation is altogether different. In a case in which the prohibitory injunction is denied, not because of the equities, but instead only because of the default preference for money damages, the defendant's continued infringement may very well be the kind of infringement for which enhancement is appropriate.[263]

In that situation, the reasonable royalty award for past infringement will often be enhanced, and, regardless, there may be good reason to enhance future damages. The reason to award an ongoing royalty instead of leaving the plaintiff to future suits in such cases will be to protect the plaintiff from the time and expense of filing multiple successive lawsuits (and, perhaps, from the infringer's capitalizing on those costs to negotiate a settlement below the level of harm that its infringement causes). That purpose for the ongoing royalty is not inhibited by the award of enhanced damages and, in fact, would be hindered without an enhancement, since the plaintiff would likely recover enhanced damages in future litigation.

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260 *See* Joanna M. Shepherd, *Ideal Versus Reality in Third-Party Litigation Financing*, 8 J.L. ECON. & POL'Y 593, 610 (2012) ("[P]rolonged overcompensation leads to over-deterrence—wasteful, inefficient defensive actions by potential defendants that fail to provide significant social benefits.").

261 *See* Lemley & Shapiro, *supra* note 186, at 2012 n.43 ("Of course, in practice, higher royalty burdens will lead to higher prices and reduced output, with associated deadweight loss.").

262 In one notable case, the court awarded ongoing royalties at the jury rate despite finding willfulness and enhancing pre-judgment damages by 23%. Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., No. 09-290, 2014 WL 1320154, at *38–39 (W.D. Pa. Mar. 31, 2014) *rev'd in part, vacated in part*, 807 F.3d 1283 (Fed. Cir. 2015). The willfulness finding was later reversed on appeal, although the ongoing royalty rate was affirmed. Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., 807 F. 3d 1283, 1302 (Fed. Cir. 2015).

263 Laycock suggests that this type of case does not—or at least should not—exist. *See* Douglas Laycock, *The Death of the Irreparable Injury Rule*, 103 HARV. L. REV. 687, 692 (1990). And, in fact, it may make little sense to deny a prohibitory injunction on the grounds of the absence of irreparable injury, if the irreparable injury rule serves only or primarily to express a preference for remedies that do not require ongoing judicial supervision, see generally Bray, *supra* note 165, at 569, because, as discussed above, the ongoing royalty requires ongoing judicial supervision. *See supra* Part III.A.2.

One example of such a case is *Internet Machines LLC v. Alienware Corp.*,[264] in which the court noted that the defendant claimed that it could cease infringement within three months of a final, nonappealable judgment, suggesting that the defendant's hardship from an injunction would not have been significant. In that case, the court enhanced the post-judgment royalty rate by increasing it 50% over the jury's rate.

If the injunction is denied primarily because of the public interest, rather than as a result of balancing the hardships to the parties, enhancement may also be appropriate. In such a case, it may well be that the plaintiff competes in the marketplace so that the defendant's infringement creates irreparable harm to the plaintiff for which a compensatory monetary award cannot be satisfactorily calculated.[265] In a case like this, the court has essentially said that the public good should permit defendant's continued infringement, so the court will likely want to set the royalty at a rate that retains defendant's incentive to produce (that is, that leaves the product profitable) but that, subject to that limitation, compensates the patentee as much as possible.[266] Injunction denials on the basis of the public interest arise most often in the medical field.[267]

3. Ongoing Royalties and Infringer Incentives

One might worry that an ongoing royalty at only the compensatory rate permits the infringer to exercise a form of private eminent domain, taking the patentee's right to exclude at the objective market value. As the Sixth Circuit put it long ago,

> [t]he setting of a reasonable royalty after infringement cannot be treated, as it was here, as the equivalent of ordinary royalty negotiations among truly 'willing' patent owners and licensees. That view would constitute a pretense that the infringement never happened. It would also make an election to infringe a handy means for competitors to impose a 'compulsory license' policy upon every patent owner.[268]

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264 No. 6:10-CV-23, 2013 WL 4056282, at *21 (E.D. Tex. June 19, 2013), *aff'd*, 575 F. App'x 895 (Fed. Cir. 2014).

265 *See* Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc., 670 F.3d 1171, 1192 (Fed. Cir. 2012) (district court appropriately awarded higher ongoing royalty for certain infringing products where patentee directly competed with infringer), *aff'd in part, vacated in part*, 682 F.3d 1003 (Fed. Cir. 2012), *and* 476 F. App'x 747 (Fed. Cir. 2012) (*reh'g en banc granted*).

266 *See, e.g.*, *Bard*, 670 F.3d 1171 (injunction denied for medical devices on public interest grounds, but reasonable royalty enhanced beyond jury award).

267 *See supra* notes 138–139.

268 Panduit Corp. v. Stahlin Bros. Fibre Works, 575 F.2d 1152, 1158 (6th Cir. 1978).

This concern has been well-developed in the context of real property, such as in trespass cases. In trespass cases, for example, Pomeroy recognized that "[t]o deny the injunction is . . . to allow the wrong-doer to compel innocent persons to sell their right at a valuation, and to refuse him altogether any equitable relief in a case where, on the ground of avoiding multiplicity of suits at least, . . . his injury may be irreparable."[269] But Pomeroy answered that objection by pointing out "that a willful trespasser cannot in this way acquire an inch of land, because the mandatory injunction must issue as to him . . . ."[270]

Although we may prefer to avoid the initial infringement where possible, the denial of injunctive relief is often premised on the absence of significant culpability on the part of the infringer in undertaking the infringing conduct. If the infringer acted willfully, recklessly, or, in some formulations, even negligently, the court would not balance the hardships from an injunction, and would instead likely grant the injunction.[271] Thus, setting ongoing royalties at the unenhanced rate should not increase incentives to infringe. Because additional damages or an injunction would not significantly prevent a similar occurrence in the future, or would do so by creating excessive search costs,[272] there is nothing to punish or deter, and damages for the trespass are appropriately assessed at market value.

Other incentive-based concerns have been described in the ongoing royalty context. The *Paice* court stated, and several courts have since reiterated,[273] that "[f]ailing to consider the parties' changed legal status would create an incentive for every defendant to fight each patent infringement case to the bitter end because without consideration of the changed legal status, there is essentially no downside to losing."[274] The concern is that defendants, by simply paying after

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269 5 JOHN NORTON POMEROY, POMEROY'S EQUITY JURISPRUDENCE AND EQUITABLE REMEDIES 854 (3d ed. 1905).

270 *Id.* at 855–56 (quoting Goldbacher v. Eggers, 76 N.Y.S. 881, 885 (N.Y. 1902)). To the extent that, post-*eBay*, Pomeroy's answer does not hold true—that is, that even an intentional wrongdoer can avoid the injunction on the ground that the plaintiff's legal remedy is adequate—enhancement could be warranted in such cases. *See supra* notes 263–264.

271 *See* Dobbs, *supra* note 71, at 367 (to prevent private eminent domain, injunction should be granted "in any case in which the defendant intentionally builds a portion of his building upon the plaintiff's land," and it "should operate as a strong factor against the defendant if he negligently builds across the line").

272 In many cases, for example, the trespassing party relies on surveys. Perhaps multiple surveys would have avoided the issue, but that cost will be wasted in the vast majority of circumstances, in which the first survey accurately depicts property boundaries. Similarly, an exhaustive search of the patent records and extensive consultation with counsel might identify infringed patents before a product is released, but such precautions are impractical and prohibitively expensive, and would create significant delays.

273 *See, e.g.*, Telcordia Tech., Inc. v. Cisco Sys., Inc., No. CV 04-876-GMS, 2014 WL 1457797, at *4 (D. Del. Apr. 14, 2014).

274 Paice LLC v. Toyota Motor Corp., 609 F. Supp. 2d 620, 628 (E.D. Tex. 2009).

litigation what they would have paid before litigation, or in the absence of litigation, will have no incentive to settle. "For that reason, courts frequently impose a post-verdict ongoing royalty rate that is higher than the reasonable royalty found at trial for past infringement."[275]

But that assumes that the jury did not, in fact, conduct the hypothetical negotiation on the assumption that the parties knew that the patents were valid and infringed. If the reasonable royalty rate set by the jury for past damages was properly set, then defendants have an incentive to settle based on litigation uncertainty and litigation costs. In the end, because the reasonable royalty should not reflect a patent strength discount, the reasonable royalty should be set at a level higher than what the infringer could have taken a license for pre-litigation.[276]

It is possible that courts believe that the equities require denying injunctive relief because of immediate harm to the defendant from the injunction, but that the defendant could costlessly or cheaply switch to a non-infringing alternative over time. The enhanced ongoing royalty might be a way of encouraging the defendant to opt for the noninfringing alternative over time. But, if that were the case, it would be better to award either an injunction with a sunset period of royalties at the reasonable royalty rate, or to award an escalating ongoing royalty that starts out at the reasonable royalty (that is, compensatory) rate and increases over time during the life of the patent.[277]

4. Deterrence and Market Incentives Revisited

Perhaps, despite all of the forward-looking talk about the need to enhance the ongoing royalty based on the willfulness of future infringement, courts enhancing ongoing royalties are actually, if unconsciously, basing the enhancement on the infringer's pre-suit conduct and the incentives created thereby.[278]

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275 *Telcordia*, 2014 WL 1457797, at *4; *see also id.* at *5 ("Further, the court agrees with Telcordia that the interests of justice would not be served if Cisco was afforded an ongoing royalty under the same favorable terms as a voluntary licensee.").

276 *See* John D. Taurman, *The Reasonable Royalty for Patent Infringement Theory and Practice*, INTELL. PROP. L. NEWSL., Spring 2005, at 16, 19.

277 *See* Transamerica Life Ins. Co. v. Lincoln Nat'l Life Ins. Co., 691 F. Supp. 2d 946, 954 (N.D. Iowa 2010) (describing prior injunction with escalating royalty rates); Shiley, Inc. v. Bentley Labs., Inc., 601 F. Supp. 964 (C.D. Cal. 1985) (entering injunction with six-month sunset period involving an escalating royalty, starting at the jury award for the first two months and increasing thereafter), *aff'd*, 794 F.2d 1591 (Fed. Cir. 1986); *see also* Sandrik, *supra* note 11, at 146. Of course, this kind of award would require the court to engage in some predictions about the likely future of the defendant's products and the market, but an ongoing royalty requires such predictions as well. And they require less prediction a lump-sum award for future damages, which also requires the fact-finder to speculate about the number of products the defendant is likely to sell, and at what price.

278 *See generally* Matthew S. Levine, *Punishment and Willingness to Pay*, 40 GONZ. L. REV. 329, 336 (2005) (discussing punitive damages to remedy underdeterrence).

Specifically, there may be concerns about the defendant's front-end patent clearance; perhaps the defendant's negligence in failing to discover the patent was not so great as to warrant injunctive relief and the harms that it would entail, but perhaps the defendant should have conducted a better patent search, or taken more precautions against infringement. Thus, fear of an injunction might paralyze innovators to an inefficient degree (causing them to over-search), whereas a moderately-enhanced ongoing royalty might not result in this paralysis.

Remember that the defendant's front-end activities, such as recklessly ignoring indications of infringement or, perhaps, conducting an insufficient clearance search, are taken into account under the rubric of intentionality and balancing the parties' hardships. For a court to award enhanced damages for an insufficient front-end search, the court must conclude that the defendant's conduct is culpable, but not so culpable as to warrant injunctive relief. This is consistent with the idea stated in mistaken improver cases that courts considering an equitable disposition should take account of the degree of negligence involved on the part of the improver.[279] But, again, even in these cases, the result has not been awarding title or an easement to the improver at an above-market rate—the improver is uniformly required to pay only market value.[280]

Full treatment of the merits of this rationale for enhancement would require a separate discussion—indeed, the level of patent searches (clearance costs) that the patent system should require has been the subject of extensive and varied commentary.[281] But, if that is the rationale for the enhancement of the ongoing royalty, courts have misdirected their attentions by emphasizing the "willful" nature of the defendant's continued infringement. Instead, the courts should have focused on the insufficient nature of the defendant's clearance activities.[282]

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279 RESTATEMENT (THIRD) OF RESTITUTION & UNJUST ENRICHMENT § 10 cmt. e (AM. LAW INST. 2011) ("[T]he degree of care exercised by the mistaken improver is better described as a factor relevant to loss allocation."); *see also* Raab v. Casper, 124 Cal. Rptr. 590, 593–94 (Cal. Ct. App. 1975) (discussing California betterment statute that, "[w]ithout evoking conventional choices between ordinary and gross negligence . . . invites consideration of varying intensities of negligence").

280 *See supra* note 227.

281 *See, e.g.*, Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1614 (2003) (arguing that patent law must permit the quick and easy clearance of overlapping patent rights); John M. Golden, *Principles for Patent Remedies*, 88 TEX. L. REV. 505, 565 (2010) (discussing clearance costs and noting that "even a remedies regime lacking injunctions can encourage clearance"); Christina Mulligan & Timothy B. Lee, *Scaling the Patent System*, 68 N.Y.U. ANN. SURV. AM. L. 289, 317 (2012) (arguing that patent clearance is largely impossible).

282 *See* Stewart E. Sterk, *Property Rules, Liability Rules, and Uncertainty About Property Rights*, 106 MICH. L. REV. 1285, 1307 (2008) (arguing that liability rules avoid incentive to conduct inefficient searches where the cost of using a non-infringing alternative exceeds harm from infringement).

Enhanced damages are generally "reserved for egregious cases,"[283] which is presumably a higher degree of culpability than a merely negligent clearance search.[284] Thus, it might seem inconsistent to allow enhancement of the ongoing royalty on the basis of the defendant's clearance search. On the other hand, the Federal Circuit's willfulness precedent largely arose at a time when an injunction against post-judgment infringement was all but certain.[285] Fear of injunctions offered significant incentive for parties who were heavily investing in a technology to undertake reasonable patent clearance; the specter of an injunction resulting in wasted investments would prompt some level of diligence prior to the investments. Perhaps allowing enhancement of ongoing royalties for something less than willfulness would permit courts to retain patent clearance incentives even in cases where injunctive relief will not be available.[286]

To the extent that enhancement is designed to promote patent clearance incentives, it suggests that courts believe that the infringer could have located the patent, determined validity and infringement, and negotiated a license in advance with relatively low transaction costs,[287] or perhaps it suggests a moral judgment about the level of the infringer's disregard of the property rights of others.[288] But, if these considerations form the core concerns of courts enhancing ongoing royalties, courts should jettison the talk of willful infringement. Instead, courts should candidly acknowledge the focus on search incentives, so that they can attempt to create a remedies regime that will set incentives appropriately.

V. CONCLUSION

It is time for courts to systematically evaluate the proper level of ongoing royalties. The current practices have resulted in disparate awards, with some courts concluding that ongoing royalties should be set at compensatory levels[289]

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283 Halo Elecs. Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923, 1933–34 (2016).

284 Marc Hubbard & Jennifer Brooks, *The Effect of Seagate on Patent Infringement Risk Management Strategies*, 22 INTELL. PROP. & TECH. L.J., Mar. 2010, at 1, 2–3.

285 *See supra* Part I.A. *But see In re* Seagate Tech., 497 F.3d 1360, 1369 (Fed. Cir. 2007) (important willfulness precedent decided just after *eBay*).

286 That said, because the manufacturer will not know until *after* it conducts a clearance search or is accused of infringement whether a particular patentee is likely to be able to obtain injunctive relief or merely an ongoing royalty, the marginal clearance incentives provided by enhanced ongoing royalties may be relatively small.

287 *See* Calabresi & Melamed, *supra* note 113, at 1126–27.

288 *See id.* at 1102–03. Remember that what matters here is the infringer's action when there are not yet significant switching costs—once switching costs enter the picture, patentee holdout becomes a potential problem, and Calabresi and Melamed's concerns may call for "nonaccidental and unconsented taking of an entitlement" at market value. *Id.* at 1127.

289 *See, e.g.*, Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., No. 09-290, 2014 WL 1320154, at *38–39 (W.D. Pa. Mar. 31, 2014), *aff'd in part, vacated in part*, 807 F.3d 1283 (Fed. Cir. 2015) (but the court affirmed the ongoing royalty).

and other courts setting ongoing royalties at supracompensatory levels.[290] In this Article, I have attempted to frame the ongoing royalty award by examining the reasons that injunctive relief may be denied, and the reasons for awarding ongoing royalties over the alternatives, such as a lump-sum award or leaving future infringement to future litigation. In the process, I have highlighted remedial principles developed from analogous traditional-property contexts.

I have argued that, in many cases, injunctions are denied because of concerns about the potential hardship on a relatively innocent defendant, who would incur significant switching costs as the result of an injunction. These situations create the potential for patentee opportunism. I have also argued that ongoing royalties help to create certainty in order for both parties to order their affairs going forward and that they are less likely than lump-sum awards to over- or under-compensate the patentee.

Where these concerns drive the ongoing royalty award, compensatory awards will suffice. Where ongoing royalties serve as the patent laws' equivalent to a forced transaction in an encroachment case—that is, where the innocent infringer has inadvertently "built" a product that encroaches slightly on the patentee's property (such as where the patented invention is a small component of a larger product)—there is no reason to award supracompensatory ongoing royalties. In fact, most of the reasons that courts have offered for awarding supracompensatory ongoing royalties, such as the "willfulness" of future infringement—do not withstand scrutiny.

In most cases, courts should award only compensatory ongoing royalties. Nevertheless, there may be times in which supracompensatory awards are appropriate. One such example would be cases in which the infringer engaged in intentional misconduct before incurring significant prospective switching costs. Another example may be a case in which the court believes that the infringer's inadequate pre-infringement patent clearance activities prevented the parties from reaching a negotiated license. But, in these cases, courts should recognize and articulate their true reasons for heightened awards, so that a proper remedial system may be developed.

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290 *See, e.g.*, Morpho Detection, Inc. v. Smiths Detection, Inc., No. 2:11CV498, 2013 WL 5701522, at *8 (E.D. Va. Oct. 17, 2013); DataTreasury Corp. v. Wells Fargo & Co., No. 2:06-CV-72 DF, 2011 WL 8810604, at *19 (E.D. Tex. Aug. 2, 2011).