

Enhanced Damages, Litigation Cost Recovery, and Interest

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3.1 INTRODUCTION

In an ideal world, parties to patent suits behave efficiently and always act in good faith, knowledge is symmetric and perfect, and litigation is cost-free and accurate. In the real world, of course, none of these assumptions hold. Sometimes patentees bring weak cases that stretch claim language beyond the pale or assert claims that are almost certainly invalid. Conversely, sometimes accused infringers are found to have intentionally copied the patented technology or otherwise willfully refused to license patent rights they very likely infringe. How courts deal with opportunistic behaviors like these varies considerably from country to country, and to an even greater degree than in other areas of patent law, each country's approach reflects broader cultural and legal norms. In the United States, for example, enhanced damages – also referred to as “punitive” or “exemplary” damages – are an accepted way of sanctioning and deterring socially undesirable behavior, while in continental Europe punitive damages are often considered contrary to sound public policy. Likewise, while the “American rule” is that each party to a suit pays its own attorney, most other countries follow in some form or fashion the “English rule” of “loser pays,” a practice with roots in the judicial system of the Byzantine Empire.¹ In addition, much like fee awards and punitive damages, the availability of pre- and post-judgment interest can have a significant impact on parties' incentives to license, litigate, and settle.

In this chapter we describe the approaches countries have devised to supplement compensatory patent damages in order to deter willful copying, weak claims and defenses, and opportunistic holdout behavior. We consider the impact that these policy choices have on innovators, including their willingness to pursue or defend against allegations of infringement and their incentives to read and clear prior patents during the R&D process.

¹ Pfennigstorf 1984, 41.

3.2 ENHANCED DAMAGES

We begin with a discussion of enhanced damages in the United States, where punitive awards for patent infringement are most common.² We then take a comparative look at how other nations approach enhanced damages. Next, we consider normative arguments regarding enhanced damages, and conclude with recommendations and topics for further research.

3.2.1 Approaches to Enhanced Damages

1 The United States

In the United States, enhanced damages for patent infringement have been available as a matter of judicial discretion since 1836.³ The current statutory language regarding enhanced damages is found in § 284 of the Patent Act, which provides in relevant part that courts “may increase the damages up to three times the amount found or assessed.”⁴ The Supreme Court of the United States described this provision (albeit in dicta) as providing that “punitive or ‘increased’ damages” could be recovered “in a case of willful or bad-faith infringement.”⁵ Prior to the creation of the Federal Circuit, the regional U.S. Courts of Appeals similarly required willful infringement for imposing enhanced damages under § 284.⁶

For the first twenty-four years of the Federal Circuit’s existence, the court defined willfulness as a form of negligent infringement, holding that when “a potential infringer has actual notice of another’s patent rights, he has an affirmative duty to exercise due care to determine whether or not he is infringing.”⁷ However, in 2007

² We are not aware of any existing data comparing the prevalence of enhanced damages awards across the globe. In our experience, such awards are more common in the United States than anywhere else in the world. This is almost certainly true in terms of the absolute number of exemplary awards, and it may well also be true relative to the number of patent infringement suits filed in each nation.

³ See Act of July 4, 1836, ch. 357, § 14, 5 Stat. 117, 123 (U.S.) (“[I]t shall be in the power of the court to render judgment for any sum above the amount found by such verdict as the actual damages sustained by the plaintiff, not exceeding three times the amount thereof, according to the circumstances of the case, with costs . . .”). Prior to 1836, treble damages were automatically awarded to a prevailing patentee. Act of Feb. 1, 1793, ch. 11, § 5, 1 Stat. 318, 322 (U.S.); see also *Birdsall v. Coolidge* (U.S. 1876, p.68–69) (U.S.) (discussing the history of the patent statutes in the 1800s).

⁴ U.S. Patent Act, 35 U.S.C. § 284.

⁵ *Aro Mfg. Co. v. Convertible Top Replacement Co.* (U.S. 1964, p.508) (U.S.); see also *Dowling v. United States* (U.S. 1985, p.227 n.19) (U.S.) (“willful infringement”).

⁶ See, e.g., *Lam, Inc. v. Johns-Manville Corp.* (10th Cir. 1982, p.474) (U.S.) (“Courts have limited the increase to instances in which the infringement was willful, and even then it is committed to the trial court’s discretion.”); *Am. Safety Table Co. v. Schreiber* (2d Cir. 1969, p.378) (U.S.) (“Awards of increased damages are made sparingly and only when a clear showing of deliberate infringement justifies the exercise of the Court’s discretion. Where, however, a patent infringement is willful, intentional, and deliberate an award is proper.” (internal quotations omitted)).

⁷ *Underwater Devices Inc. v. Morrison-Knudsen Co.* (Fed. Cir. 1983, p.1389–90) (U.S.), overruled by *In re Seagate Tech., LLC* (Fed. Cir. 2007) (U.S.) (en banc).

the court changed course, holding in *In re Seagate* that to prove willful infringement, a patentee must make “at least a showing of objective recklessness” by the accused infringer.⁸ This “objective recklessness” standard involved a two-part test:

[T]o establish willful infringement, a patentee must show by clear and convincing evidence that the infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent. The state of mind of the accused infringer is not relevant to this objective inquiry. If this threshold objective standard is satisfied, the patentee must also demonstrate that this objectively-defined risk . . . was either known or so obvious that it should have been known to the accused infringer.⁹

Subsequently, the Federal Circuit clarified that the first part of the *Seagate* test – the so-called objective prong – was “best decided by the judge as a question of law subject to *de novo* review.”¹⁰ Under *Seagate* and subsequent Federal Circuit decisions, an infringer was not objectively reckless if it “raised a ‘substantial question’ as to the validity or noninfringement of the patent.”¹¹ This was true even if the infringer “was unaware of the arguable defense when he acted.”¹²

Despite this apparently substantial change in the relevant legal standard, willfulness findings remained relatively common even after *Seagate*. According to one empirical study, findings of willful infringement in patent cases that reached final judgment went from 48 percent in the three-year period prior to *Seagate* to 37 percent for a similar period after the decision.¹³ However, when willfulness was found, the district court awarded enhanced damages only 55 percent of the time after *Seagate*, compared to over 80 percent of the time before it.¹⁴ In addition, over 70 percent of enhanced-damages awards were for double damages or less, considerably below the statutory maximum of treble damages.¹⁵

The Supreme Court again weighed in on the appropriate standard for enhanced damages in *Halo Electronics, Inc. v. Pulse Electronics*.¹⁶ While recognizing that the statutory text granted discretion to the trial courts in determining enhanced damages, it also explained that such discretion “‘should be exercised in light of the considerations’ underlying the grant of that discretion.”¹⁷ Specifically, it explained that enhanced damages under § 284 were “designed as a ‘punitive’ . . . sanction for

⁸ *In re Seagate Tech., LLC* (Fed. Cir. 2007, p.1371) (U.S.) (en banc).

⁹ *Id.*

¹⁰ *Bard Peripheral Vascular, Inc. v. W. L. Gore & Assocs., Inc.* (Fed. Cir. 2012, p.1007) (U.S.).

¹¹ *Bard Peripheral Vascular, Inc. v. W. L. Gore & Assocs., Inc.* (Fed. Cir. 2015, p.844) (U.S.).

¹² *Halo Elec., Inc. v. Pulse Elec., Inc.* (U.S. 2016, p.1930) (U.S.) (citing *In re Seagate Tech., LLC* (Fed. Cir. 2007, p.1371) (U.S.)); *Spine Sol., Inc. v. Medtronic Sofamor Danek USA, Inc.* (Fed. Cir. 2010, p.1319) (U.S.).

¹³ Seaman 2012, 441 tbl.1.

¹⁴ *Id.* at 466 tbl.6.

¹⁵ *Id.* at 469 fig.3.

¹⁶ *Halo Elec., Inc. v. Pulse Elec., Inc.* (U.S. 2016) (U.S.).

¹⁷ *Id.* at 1932 (quoting *Octane Fitness, LLC v. ICON Health & Fitness, Inc.* (U.S. 2014, p.1756) (U.S.)).

egregious infringement behavior,” including “willful, wanton, malicious, bad-faith, deliberate, consciously wrongful [or] flagrant” infringement.¹⁸

Turning to the standard in *Seagate*, the Court held that while it “reflects, in many respects, a sound recognition that enhanced damages are generally appropriate under § 284 only in egregious cases,” the Federal Circuit’s two-part test was “unduly rigid, and it impermissibly encumbers the statutory grant of discretion to district courts.”¹⁹ In particular, the Court explained, the *Seagate* test “insulates the infringer from enhanced damages, even if he did not act on the basis of the defense or was even unaware of it.”²⁰ As a result, under *Seagate*, “someone who plunders a patent . . . can nevertheless escape any liability under § 284.”²¹ *Halo* changed the standard to correct for this, making it possible for the “subjective willfulness” of an alleged patent infringer to lead to enhanced damages, “without regard to whether his infringement was objectively reckless.”²² Furthermore, a patentee need only prove willfulness by a preponderance of the evidence (unlike *Seagate*, which required clear-and-convincing evidence).²³

Evidence that the infringer has copied the patented technology, when coupled with knowledge of the patent (in contrast to mere knowledge, discussed below), can be sufficient for a court to impose enhanced damages.²⁴ For instance, in *Apple Inc. v. Samsung Electronics Co., Ltd.*,²⁵ the district court held that the infringer’s continued sale of a product containing a copied feature (Apple’s swipe-to-unlock functionality) was substantial evidence to support the jury’s finding of willfulness, at least once the infringer had knowledge of the patent through the filing of plaintiff’s complaint.²⁶ Considering the *Read* factors,²⁷ the district court then imposed a 30 percent enhancement of the jury’s compensatory damages award, again basing its decision in part on undisputed evidence that the infringer had copied the

¹⁸ *Id.*

¹⁹ *Id.* (quoting *Octane Fitness, LLC v. ICON Health & Fitness, Inc.* (U.S. 2014, p.1755) (U.S.))

²⁰ *Id.* at 1932–33.

²¹ *Id.* at 1933.

²² *Id.*

²³ *Id.*

²⁴ See, e.g., *Imperium IP Holdings (Cayman), Ltd. v. Samsung Elecs. Co.* (E.D. Tex. 2016, p.763–64) (U.S.) (finding infringer engaged in egregious infringement and awarding the maximum enhancement of triple damages in part because of evidence of infringers’ copying); *PPC Broadband v. Corning Optical Commc’ns RF, LLC* (N.D.N.Y. 2016, p.6) (U.S.) (Memorandum Decision and Order) (finding that “the evidence supports the conclusion that Corning deliberately copied PPC’s patents” and awarding double damages as an enhancement).

²⁵ *Apple, Inc. v. Samsung Elecs. Co., Ltd.* (N.D. Cal. 2017) (U.S.); See also *Dominion Res. Inc. v. Alstom Grid, Inc.* (E.D. Pa. 2016, p.21) (U.S.) (finding that the infringer “had the means and opportunity to copy [the] patent” and awarding double enhanced damages); *R-BOC Repts., Inc. v. Minemyer* (N.D. Ill. 2017) (U.S.) (awarding maximum enhanced damages in light of the infringers’ “deliberate copying”).

²⁶ *Apple, Inc. v. Samsung Elecs. Co., Ltd.* (N.D. Cal. 2017, p.1027–29) (U.S.); see also *id.* at 1028 (“The fact that Samsung copied is evidence of willfulness.”).

²⁷ See *supra* note 66.

patented feature.²⁸ Similarly, efforts by the infringer to conceal its conduct may warrant enhanced damages.²⁹

2 Europe

While awarding enhanced damages in patent disputes is largely an American phenomenon, punitive damages for patent infringement are theoretically available in Europe. For example, in the United Kingdom, in *Rookes v. Barnard*, the House of Lords held that exemplary damages are generally available where, inter alia, “the Defendant’s conduct has been calculated by him to make a profit for himself which may well exceed the compensation payable to the Plaintiff,”³⁰ but the same court subsequently explained that the award of punitive damages in civil cases is an “undesirable anomaly,” that ought to be limited as much as possible.³¹ In *Catnic Components Ltd. v. Hill & Smith*,³² the Patents Court went so far as to hold that exemplary damages could not be awarded for patent infringement.³³ But while exemplary damages are now apparently available in patent cases,³⁴ we are not aware of any UK patent decisions actually awarding exemplary damages.³⁵

The EU Enforcement Directive, adopted in 2004, outlines three measures of compensatory damages for knowing infringement: hypothetical license, lost profits, and disgorgement.³⁶ All methods aim, in principle, only to compensate the patentee; indeed, although the Directive specifically directs Member States to encode provisions to prevent further infringement of property rights, it also states that the scope of this obligation does not extend to punitive damages but instead aims to

²⁸ *Apple, Inc. v. Samsung Elecs. Co., Ltd.* (N.D. Cal. 2017, p.1030) (U.S.) (“Evidence of copying weighs in favor of enhanced damages . . . On appeal, Samsung did not even dispute that it copied Apple’s slide-to-unlock feature . . . [T]his factor weighs in favor of enhanced damages.”).

²⁹ See *PPC Broadband v. Corning Optical Commc’ns RF, LLC* (N.D.N.Y. 2016, p.8) (U.S.) (finding that “Corning concealed its infringement” and concluding that “this factor strongly supports enhancement”); see also *Dominion Res. Inc. v. Alstom Grid, Inc.* (E.D. Pa. 2016, p.24) (U.S.) (holding that the infringer “decided internally not to share information,” “did not admit its ongoing actions,” and was “less than fully candid” to the patentee, and finding that this misconduct favored enhancing damages).

³⁰ *Rookes v. Barnard* (HL 1964, p.37) (UK). The *Rookes* case did not involve intellectual property rights.

³¹ *Cassell & Co. Ltd. v. Broome* (HL 1972, p.837) (UK).

³² *Catnic Components Ltd. v. Hill & Smith Ltd.* (Pat 1983) (UK).

³³ See *id.* at 541 (“In my judgment, the claim to exemplary damages is not open to the plaintiffs in the absence of any authority that exemplary damages had been awarded for infringement of patent prior to the decision of the House of Lords in *Rookes v. Barnard*.”).

³⁴ See *Kuddus v. Chief Constable of Leicestershire Constabulary* (HL 2001, ¶ 119) (UK) (holding that the categories of cases in which exemplary damages are available are not closed, while emphasizing again that the “exemplary damages principle is itself an anomaly in the civil law.”).

³⁵ See *Cotter* 2013f; see also *Bayliss et al.* 2005, 2 (“We are not aware of any exemplary damages having been sought in any patent case since the decision in *Kuddus*.”). In *Catnic Components Ltd. v. Hill & Smith Ltd.* (Pat 1983, p.540–41) (UK), Falconer J noted no prior case awarding exemplary damages in a patent case had been cited to him, and between *Catnic* and *Kuddus*, such awards were not available as a matter of law.

³⁶ Directive 2004/48/EC, rec. 26.

“allow for compensation based on objective criteria.”³⁷ In practice, however, disgorgement can go beyond mere compensation as the patentee may receive more than she would have received under an *ex ante* license. This tension is generally accepted because of the difficulty of otherwise determining an amount adequate to provide sufficient compensation.

Punitive damages are rare in continental Europe, as most EU nations “consider punitive damages to be against public policy, and for the most part this view applies to IP infringement just as it does to other torts.”³⁸ However, courts in Germany and France have occasionally awarded royalty amounts 25 percent to 100 percent higher than those compared to what the parties would have actually negotiated,³⁹ which may serve as a form of deterrence.⁴⁰

3 Australia, Canada, and Asia

In Australia, since 2006, courts have been able to increase damages upon consideration of the following: (1) “the flagrancy of the infringement”; (2) the need for deterrence; (3) the infringer’s conduct after infringement; (4) any benefit accrued to the infringer due to infringement; and (5) “all other relevant matters.”⁴¹ Despite this, few reported decisions in Australia have granted enhanced damages under this provision.⁴² Similarly, in Canada, punitive damages may be awarded “in exceptional cases of high-handed, malicious, arbitrary or highly reprehensible misconduct that represents a marked departure from the ordinary standards of decent behavior.”⁴³ But they have rarely been awarded in Canadian patent cases.⁴⁴

In China, courts may award compensatory damages that are “one to three times the patent licensing fee”⁴⁵ even though, strictly speaking, punitive damages as such

³⁷ *Id.*

³⁸ Cotter 2013a, 275.

³⁹ *Id.* at 269–70 & n.187. Based on, for example, considering factors that increase the award beyond the amount a hypothetical licensee would have paid (e.g., the fact that an infringer did not have to “open its books” to the patentee).

⁴⁰ *Id.*

⁴¹ Patents Act 1990 § 122(1A) (Austl.).

⁴² Cotter 2013a, 210. The only decision the authors are aware of is *Pacific Enter. (Aust) Pty Ltd. v. Bemen Pty Ltd.* (Fed. Ct. 2014) (Austl.), where the Federal Court awarded \$40,000 in additional damages (on top of \$355,487.16 in compensatory damages) in a patent infringement proceeding.

⁴³ *Eurocopter v. Bell Helicopter Textron Canada Ltée* (Fed. Ct. App. 2013, ¶ 163) (Can.).

⁴⁴ See Siebrasse 2013 (“Punitive damages are very rarely awarded in Canadian patent cases . . .”). For a recent, notable exception, see *Eurocopter v. Bell Helicopter Textron Canada Ltée* (Fed. Ct. App. 2013) (Can.) (affirming the patentee’s entitlement to punitive damages) and *Airbus Helicopters, S.A. S. v. Bell Helicopter Textron Canada Ltée* (Fed. Ct. 2017) (Can.) (assessing punitive damages).

⁴⁵ *Id.* at 358 (quoting Article 21 of China’s Patent Trial Guidelines). In 2015, the Chinese Supreme People’s Court provided the second amendment to this Guidelines of 2001, which deleted the specific words “one to three times” the patent licensing fee and replaced them with “times” the fee, affording Chinese judges broad discretion. However, it is unclear whether this provision is compensatory or punitive in nature. There is some suggestion that this provision was first introduced for compensatory purposes. However, “the nature and the circumstances of the infringement” factor implies that this

are not currently permitted.⁴⁶ In Japan, damages awarded for patent infringement are governed by general rules applicable in all tort actions, according to which, damages are to be compensatory in nature, and not for sanction or general deterrence. Therefore, punitive damages are not available.⁴⁷ That said, the Japanese Patent Act contains special provisions that partly shift the burden of proof for the calculation of damages to infringers, which allows courts to award damages that likely exceed the actual loss to patentees. Still, courts seldom take into account the subjective mental state of infringers (e.g., gross negligence, willfulness, or bad faith) in the calculation of damages.⁴⁸ Taiwan is one of the few jurisdictions that, like the United States, currently awards up to treble damages for intentional infringement.⁴⁹

3.2.2 Criminal Sanctions

Criminal sanctions are another potential deterrent to deliberate infringement; however, they are imposed even less frequently than punitive civil damages. While the TRIPS Agreement requires member countries to provide criminal penalties for certain forms of copyright and trademark infringement, it is silent on the criminalization of patent infringement.⁵⁰ As a result, jurisdictions have taken differing approaches. For example, while the United States has no “criminal penalties for the distribution of goods infringing valid patents,”⁵¹ the EU Enforcement Directive authorizes (though does not require) criminal penalties for IP infringement generally,⁵² and a number of jurisdictions in Europe, South America, and Asia have criminal patent infringement laws on the books.⁵³ However, actual criminal prosecutions for patent infringement appear to be extremely rare across the globe.

provision also encompasses punitive considerations. The same ambiguity characterizes the statutory damages provisions in the same Guidelines. See Li & Wang 2017, 215.

⁴⁶ The draft fourth Patent Law amendment, which is still under consideration, proposes authorizing treble damages for willful infringement. Cotter 2013c; see also Covington & Burling LLP 2015.

⁴⁷ The Japanese Supreme Court refused to recognize and enforce a decision by a court in California that awarded punitive damages to the plaintiff based on the Civil Code of the State of California, saying that the decision was against public policy and had no effect in Japan. *Northcon I v. Mansei Kogyo* (Sup. Ct. 1997) (Japan).

⁴⁸ While damages are granted only against intentional or negligent infringers, negligence is presumed by the Patent Act and infringers are rarely successful in rebutting the presumption. See Suzuki & Tamura 2011, 438–39.

⁴⁹ Cotter 2013a, 372; see also Cotter 2013c.

⁵⁰ TRIPS Agreement, art. 61.

⁵¹ *Dowling v. United States* (U.S. 1985, p.227) (U.S.).

⁵² Directive 2004/48/EC, rec. 28. After vigorous opposition, a proposal to require criminal sanctions for all intentional IPR infringements on a commercial scale as part of a Second Intellectual Property Rights Enforcement Directive (“IPRED2”) was rejected. See, e.g., Manta 2011, 471, 491.

⁵³ See, e.g., Patentgesetz [PatG] [Patent Act], 1980 § 142 (Ger.); Manta 2011, 471–72 n.8.

3.2.3 Policy Considerations Relating to Enhanced Damages

1 Enhanced Damages and Opportunism

There are two principal rationales for enhanced damages: to punish bad behavior and to discourage willful infringement by making the infringer pay more if caught. However, these rationales must be understood in context. In the pharmaceutical industry, the copying of discrete drugs by generic firms is a routine way of doing business that is regulated outside of enhanced damages as discussed below. In contrast, in component industries, non-willful or inadvertent infringement is common due to the difficulty of identifying with certainty all relevant prior art, the cumulative nature of innovation, and the weakness of certain issued patents. In addition, as discussed further below, enhanced damages have the potential to interfere with one of the primary rationales behind the patent system: the disclosure and dissemination of technical information.

The award of enhanced damages is often justified in moralistic terms. As noted above, in *Halo Electronics, Inc. v. Pulse Electronics*,⁵⁴ the Supreme Court of the United States explained that enhanced damages were “designed as a ‘punitive’ . . . sanction for egregious infringement behavior” that is “willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or – indeed – characteristic of a pirate.”⁵⁵ The Court emphasized the role of “subjective bad faith,” saying that the “subjective willfulness of a patent infringer” may in itself warrant enhanced damages, and rejected the objective prong of the Federal Circuit’s prior test.⁵⁶ UK and Canadian courts have justified enhanced damages in similar language, as addressing conduct that is “oppressive, high-handed, malicious, wanton or [the] like.”⁵⁷ However, while there is considerable agreement as to the role of enhanced damages, it appears that there is a significant divergence among jurisdictions with respect to whether this goal is properly the domain of civil law, rather than criminal law. The House of Lords has remarked that “the objections to allowing juries to go beyond compensatory damages are overwhelming. To allow pure punishment in this way contravenes almost every principle which has been evolved for the protection of offenders,” and consequently the use of enhanced damages in civil cases ought to be strictly limited.⁵⁸

We prefer to frame the question in terms of the patent system’s primary purpose of promoting innovation efficiently. Moral considerations aside, enhanced

⁵⁴ *Halo Elec., Inc. v. Pulse Elec., Inc.* (U.S. 2016) (U.S.).

⁵⁵ *Id.* at 1932.

⁵⁶ *Id.* at 1933.

⁵⁷ *Cassell & Co. Ltd. v. Broome* (HL 1972, p.837) (UK); see also *Whiten v. Pilot Ins. Co.* (Sup. Ct. 2002, p.617) (Can.), in which the Supreme Court of Canada stated that “[p]unitive damages are awarded against a defendant in exceptional cases for ‘malicious, oppressive and high-handed’ misconduct that ‘offends the court’s sense of decency.’”

⁵⁸ *Cassell & Co. Ltd. v. Broome* (HL 1972, p.837) (UK).

damages can be justified in an economic sense as a mechanism to redress and deter opportunistic infringement. Without the possibility of increased damages (or some other enhanced monetary remedy), prospective infringers may be insufficiently deterred from appropriating a patented technology.⁵⁹ At worst, if the copier is caught and adjudged to infringe, it will have to pay the patentee's actual damages for past infringement (plus face a possible injunction against future use),⁶⁰ an amount that may in some cases be less than the infringer's own profit.⁶¹ At best, the infringer avoids detection and pays nothing. This is sometimes described as a "catch-me-if-you-can" problem⁶² or "heads-I-win-tails-you-lose" scenario.⁶³

One particularly salient variation of the catch-me-if-you-can scenario arises in connection with standards-essential patents (SEPs), which are discussed in greater detail in Chapter 5.⁶⁴ An opportunistic manufacturer of standardized products may determine that the most efficient course of action is not to seek a FRAND license, but instead to delay in taking a license until sued for infringement, at which point its maximum liability will be the FRAND royalty it otherwise would have paid. This scenario has been referred to in the literature as "reverse holdup" or "holdout."⁶⁵ This kind of opportunistic behavior can impair the incentive to innovate by undermining the compensatory role of damages and unduly limiting the return to the patentee. Punitive damages serve as a counterweight and move

⁵⁹ See Cotter 2013a, 145 ("[F]rom an economic perspective, an award of enhanced damages might be socially optimal in a case in which awarding lost profits or foregone royalties alone would underdeter infringement of the type in suit.")

⁶⁰ As discussed below, until recently, attorney fees were rarely awarded in U.S. patent cases.

⁶¹ For instance, if the infringer is more efficient than the patentee.

⁶² See *Monsanto Canada Inc. v. Rivett* (Fed. Ct. 2009, ¶ 23) (Can.). For further discussion, see also Chapter 7.

⁶³ See *Panduit Corp. v. Stahl Bros. Fibre Works Inc.* (6th Cir. 1978, p.1158) (U.S.). One commonly alleged variation of the catch-me-if-you-can scenario arises in connection with standards-essential patents (SEPs), which are discussed in greater detail in Chapter 5. An opportunistic manufacturer of standardized products may determine that the most efficient course of action is not to seek a FRAND license, but instead to delay in taking a license until sued for infringement, at which point its maximum liability will be the FRAND royalty it otherwise would have paid. This scenario has been referred to in the literature as "reverse holdup" or "holdout." The availability of enhanced damages, however, can change the opportunistic manufacturer's calculus, as it would have a significant risk of exposure to enhanced damages owing to its awareness (through the standards-development and SEP disclosure process) that it is infringing.

⁶⁴ Over the past several years, significant litigation has arisen in the United States, Europe, and Asia regarding the appropriate level of such FRAND royalty rates. As discussed in Chapter 6, courts in several U.S. cases have determined that such FRAND royalty rates should be calculated in more or less the same manner as "reasonable royalty" damages for patent infringement (i.e., using a modified form of the Georgia-Pacific fifteen-factor analytical framework). Moreover, in the context of SEPs subject to FRAND commitments, it is often the case that SEP holders are quite limited in their ability to seek injunctive relief against infringers (both as a matter of contract law and under applicable competition and antitrust principles – see Chapters 5 and 6). See Chapters 1 and 6; see also Contreras & Gilbert 2015 (analyzing convergence of FRAND royalty determination and reasonable royalty damages calculations).

⁶⁵ See, e.g., Chien 2014.

the infringer's calculus back in the direction of infringement avoidance.⁶⁶ Indeed, U.S. courts consider whether an infringer has attempted to conceal its infringement – and thus reduce its risk of detection – in determining whether and how much to enhance damages under the so-called *Read* factors.⁶⁷

2 Calibrating Responses to Opportunism

Though the possible application of multipliers to damages can help deter opportunistic infringement, there are a variety of other penalties that also may serve to make the infringer worse off if it is caught than if it had licensed *ex ante*. These include litigation costs, injunctive relief, and disgorgement of the infringer's profits. Since the availability of fee shifting, injunctive relief, disgorgement, and enhanced damages all vary across jurisdictions, the general policy question is which of these provides the optimal response.

One difficulty is that while all of these alternatives to enhanced damages potentially make the infringer worse off than if it had licensed *ex ante*, none is well calibrated to the problem of opportunistic infringement. For example, the prospect of being sued, even in the United States where the risk of paying the other party's fees is relatively low, may be costly enough to deter the "catch-me-if-you-can" strategy. However, it is not clear whether litigation cost exposure is sufficiently related to the frequency and magnitude of opportunistic infringement.⁶⁸ Similarly, the prospect of injunctive relief may also deter infringement, if an injunction allows the patentee to extract holdup value from the infringer. In effect, injunctive relief operates as a form of enhanced damages – an "injunction penalty" – in which the holdup value that is extracted with the aid of injunction constitutes the enhancement. However, as with the litigation cost "penalty," the injunction "penalty" is unrelated to the magnitude of the "catch-me-if-you-can" problem, which is determined by the probability of detection. The remedy of disgorgement of the infringer's profits will also often make

⁶⁶ See generally Polinsky & Shavell 1998; see also *BMW of N. Am., Inc. v. Gore* (U.S. 1996, p.582) (U.S.) (explaining that higher punitive damages "may . . . be justified in cases in which the injury is hard to detect").

⁶⁷ These factors, first enunciated in *Read Corp. v. Portec, Inc.* (Fed. Cir. 1992, p.827) (U.S.) are (1) "whether the infringer deliberately copied the ideas of another"; (2) "whether the infringer, when he knew of the other's patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed"; (3) "the infringer's behavior as a party to the litigation"; (4) the "[d]efendant's size and financial condition"; (5) the "[c]loseness of the case"; (6) the "[d]uration of the defendant's misconduct"; (7) "[r]emedial action by the defendant"; (8) the "[d]efendant's motivation for harm"; and (9) "[w]hether the defendant attempted to conceal its misconduct."

⁶⁸ For example, if there is a 30 percent probability of detection for royalties that would have been \$10m, then litigation costs would have to be \$7m to make the "catch-me-if-you-can" strategy unprofitable. The incentive to bargain *ex ante* is increased with fee shifting, but the problem remains that it is not clear whether even this heightened incentive is generally sufficient to encourage *ex ante* bargaining. Of course, at a higher probability of detection, the incentive provided by avoiding litigation costs may be adequate.

the infringer worse off than if it had licensed *ex ante*, particularly if the patentee did not compete with the infringer and so would be entitled only to a reasonable royalty. A negotiated royalty will normally split the licensee's profit from the use of the invention between the licensee and the patentee, while a disgorgement of the infringer's profits will give the entire profit due to the infringement to the patentee.⁶⁹ While an accounting makes the infringer worse off than if it had licensed *ex ante*, again the difficulty is that the magnitude of the extra penalty is unrelated to the frequency of opportunistic behavior by infringers.⁷⁰

In contrast with the three foregoing remedies, enhanced damages can in principle be calibrated to efficiently deter intentional infringement. However, this does not appear to be attempted in practice in U.S. law, and it is not clear that it would be practical to do so with sufficient accuracy to make enhanced damages superior to the alternatives. For example, a 50 percent probability that infringement will be detected and proven would imply that damages should be doubled to provide the right incentive, but it is not clear how to assess the probability of detection. As noted above, U.S. courts do consider the likelihood of underdetection as a factor in assessing the magnitude of enhanced damages, but it is normally used as but one factor among many, and there is no attempt to determine its likelihood even approximately, so as to allow the penalty to be appropriately calibrated.

3 Incentives to Challenge and Learn from Patents

Another problem is that enhanced damages may deter otherwise-beneficial challenges to the validity of issued patents. For example, in the pharmaceutical context, there is a very large social benefit to invalidating a blockbuster pharmaceutical patent, even when the patent is likely valid. If detection is almost certain (as in the pharmaceutical context), the infringement will not impair the incentive to invent in those cases in which the patent is ultimately held to be valid, because the patentee

⁶⁹ An accounting of profits is regularly awarded in Canada, and Canadian courts have expressly recognized its role in deterring the "catch-me-if-you-can" strategy. See *Monsanto Canada Inc. v. Rivett* (Fed. Ct. 2009) (Can.); *Eli Lilly and Co. v. Apotex Inc.* (Fed. Ct. 2009) (Can.); *Varco Canada Ltd. v. Pason Systems Corp.* (Fed. Ct. 2013, ¶ 399) (Can.).

⁷⁰ Enhanced damages are not normally available if an accounting of profits has been granted, reflecting the view that these are different mechanisms for addressing the same problem: see *Eli Lilly and Co. v. Apotex Inc.* (Fed. Ct. 2009, ¶ 663) (Can.) (noting that the "egregious" nature of the infringer's conduct had already been weighted in affording the patentee with the right to elect for an accounting of the infringer's profits). Similarly, in *Kuddus v. Chief Constable of Leicestershire Constabulary* (HL 2001, ¶ 109) (UK), Lord Scott suggested that the need for exemplary damages "has been largely overtaken by developments in the common law. Restitutionary damages are available now in many tort actions as well as those for breach of contract. The profit made by a wrongdoer can be extracted from him without the need to rely on the anomaly of exemplary damages," citing the discussion by Lord Nicholls of Birkenhead in *Attorney General v. Blake* (HL 2000, p.394–98) (UK). In the one patent-law context in which U.S. courts do award disgorgement of profits (for design patent infringement), the statute is understood to forbid the court from awarding both disgorgement and enhanced damages. See *Braun Inc. v. Dynamics Corp. of Am.* (Fed. Cir. 1992, p.824) (U.S.).

will be fully compensated in damages. The profit to be made from the infringement in cases in which the patent turns out to be invalid therefore provides an incentive to undertake potentially socially beneficial patent challenges. Awarding enhanced damages in such cases risks unduly chilling desirable patent challenges. Consistent with this, deemed infringement under the U.S. pharmaceutical patent linkage system cannot give rise to enhanced damages in U.S. law.⁷¹ However, the same basic problem may arise outside the pharmaceutical industry.

Relatedly, and more relevant with respect to complex products, the availability of enhanced damages may induce innovators to engage in socially wasteful efforts to locate and license existing patent rights. For products covered by many patents, each covering an incremental innovation, preclearance of patent rights will often not be cost effective and, in fact, may be practically impossible.⁷²

Yet another significant problem with enhanced damages is that knowledge of asserted patents has historically made it more likely that infringers will owe them. As a result, seeking out and reading patent disclosures – acts that the patent system is supposed to facilitate – are instead discouraged by the possibility that they will give rise to a significant liability enhancement. In the U.S. reading patents can increase both one's risk of treble damages *and* one's risk of an attorney fees award.⁷³ As a number of commentators have noted, in the tech sector, it has been the practice of in-house attorneys to discourage the reading of patents, at least historically.⁷⁴ Perhaps as a result, one study found that knowledge of the asserted patent was only alleged in 30 percent of U.S. patent infringement complaints.⁷⁵

⁷¹ See *Glaxo Group Ltd. v. Apotex, Inc.* (Fed. Cir. 2004, p.1350–51) (U.S.) (holding that a technical act of infringement under section 271(e) of the Hatch-Waxman Act cannot form the basis of a willfulness finding).

⁷² See Mulligan & Lee 2012, 289, 304 (estimating that “[i]n software, for example, patent clearance by all firms would require many times more hours of legal research than all patent lawyers in the United States can bill in a year” because “there are around twenty-four billion new [software] patent-firm pairs each year that could produce accidental infringement”).

⁷³ U.S. Patent Act, 35 U.S.C. § 285 (specifying that “[t]he court in exceptional cases may award reasonable attorney fees to the prevailing party”). One way to show that a case is “exceptional” is by showing that the infringer engaged in “willful infringement.” See, e.g., *Minks v. Polaris Indus.* (Fed. Cir. 2008, 1375) (U.S.) (upholding exceptional case determination and award of attorney fees based on jury finding of willful infringement); *Tate Access Floors, Inc. v. Maxcess Techs., Inc.* (Fed. Cir. 2000, p.972) (U.S.) (noting an express finding of willful infringement is a sufficient basis for classifying a case as “exceptional,” and that when a trial court denies attorney fees in spite of a finding of willful infringement, the court must explain why the case is not “exceptional” within the meaning of the statute).

⁷⁴ For a review of this literature, see Means 2013, 2012–14 (describing reports by the National Research Council (2004), Federal Trade Commission (2003) and to WIPO from the Computer & Communications Industry Association documenting the *in terrorem* impact of willfulness on reading patents).

⁷⁵ See Cotropia & Lemley 2009, 1442 (reporting that, “[o]f . . . 193 cases, only 60 (or 31.1%) involved allegations that the defendant was even aware of the patent before the lawsuit”).

Not all innovators are deterred from reading patents. A recent study of 832 corresponding authors of scientific articles found that the majority of respondents reported that they sometimes read patents,⁷⁶ both for technical (~80 percent) and legal reasons (~64 percent–76 percent),⁷⁷ and that only 9 percent of patent-reading respondents and only 4 percent of nonreaders said that they had been instructed to not read patents. However, the survey was limited to researchers who publish scientific articles, which excludes industrial researchers in many sectors, particularly those where publishing is not the norm, and the results varied by technology.⁷⁸ And while post-*Halo* case law has clarified that mere knowledge of a patent is insufficient to award enhanced damages, it is not clear that this will provide adequate comfort against the prospect of treble damages.⁷⁹ Thus, the risk remains that enhanced damages may discourage innovators from using patent disclosures as a source of technical information to a socially undesirable degree.

⁷⁶ Ouellette 2017. The literature on the gains to innovation from reading patents is summarized in Chien 2016, 1859–65. According to Hall & Harhoff 2012, 550, patent reading varies greatly by industry. When inventors from the United States, Europe, and Asia were asked to quantify the time saved in their respective invention processes due to the availability of patent information, the answer depended on the industry. However, the median time savings was 5.9 hours and the mean was 12.2 hours. *Id.* In the field of organic chemistry, the average time savings from reading a patent was thirty-six hours. *Id.* In contrast, survey takers reported an average saving in digital communication technology of only one hour. *Id.* The use of chemistry patents as technical sources of information is also reflected in studies of citation patterns by scientific researchers. In their study of the thirty thousand PTO patents cited by research articles, Glänzel & Meyer 2003, 415–19, found that chemical patents captured a majority of the citations. Drug and medical patents were also highly cited. *Id.* Among individual patents, content mattered. When surveyed, researchers found the inclusion of details from practice – for example, the choice of equipment, implementation protocols, and recipes – to be most useful. *Id.*

⁷⁷ For example, to determine if the researcher's invention was patentable or infringing. Ouellette 2017, 421–22.

⁷⁸ *Id.* at 423 (reporting about concerns that 37 percent of industry researchers in electronics and software had been instructed not to read patents, the highest among all sectors). By contrast, in other fields like chemistry, patents are seen as an important part of the literature. *Id.*

⁷⁹ See, e.g., *Cont'l Circuits LLC v. Intel Corp.* (D. Ariz. 2017, p.11) (U.S.) (stating that “under *Halo*, knowledge is a necessary condition of willfulness, but not a sufficient one,” and granting the alleged infringer's motion to dismiss the claim for enhanced damages because “[p]laintiff has alleged sufficient facts to show knowledge, but not to show the additional element of egregiousness”); *CG Tech. Dev., LLC v. Big Fish Games, Inc.* (D. Nev. 2016, p.14) (U.S.) (holding that allegations that defendant was “made aware of” the patents-in-suit and “continued use of its infringing products constitutes willful and blatant infringement” was inadequate for enhanced damages because “they fail to allege any facts suggesting that Defendant's conduct is egregious . . . beyond typical infringement” (internal quotations omitted)); *Finjan, Inc. v. Cisco Sys. Inc.* (N.D. Cal. 2017) (U.S.), at 1–2, 5 (finding that the accused infringer's awareness of the plaintiff's patent portfolio, including through unsuccessful pre-suit licensing negotiations, did not state a plausible claim for willful infringement after *Halo*); see also *Varian Med. Sys., Inc. v. Elekta AB* (D. Del. 2016, p.4–8) (U.S.) (holding that knowledge of a patent by a foreign subsidiary, and “formulaic recitation of the pre-*Halo* elements of a willful infringement claim,” are insufficient to plead egregious infringement). But see *Blitzsafe Texas, LLC v. Volkswagen Grp. of Am., Inc.* (E.D. Tex. 2016) (U.S.) (holding that alleged infringer's pre-suit knowledge of the patent, through a citation to the patent application that later issued as the patent during an inter partes reexamination, alleged a plausible case of pre-suit willful infringement).

4 Conclusion

In principle, then, whether enhanced damages should be available is not a question that can be addressed in isolation. It turns on numerous other features of the patent system, including the availability of fee shifting, permanent injunctions, preliminary injunctions, and administrative review of granted patents. While all of these features of the patent system interact with enhanced damages, they also have independent justifications and there is considerable jurisdictional variation on all these issues. This makes it difficult to provide any firm recommendations related to enhanced damages in isolation.

It may be that the variation between jurisdictions that we observe with respect to awarding enhanced damages is justified by the variations in other relevant aspects of the patent system. For instance, in the United States, disgorgement of the infringer's profits is not an available remedy for utility patent infringement,⁸⁰ fee shifting is neither mandatory nor common,⁸¹ permanent injunctive relief is not automatic,⁸² preliminary injunctions against patent infringement are rarely granted,⁸³ and inter partes review (among other procedures) is available to challenge granted patents. All of these features point in the direction of relatively greater use of enhanced damages.⁸⁴ This may explain why enhanced damages are used so much more in the United States than in other jurisdictions. On the other hand, the contrast between U.S. practice and that of other jurisdictions is sufficiently strong that it may be driven by a basic philosophical difference over the appropriateness of inserting moralistic considerations into civil law remedies, rather than by an accumulation of technical differences.

3.2.4 Recommendations and Further Research

We recommend that the availability of enhanced damages be assessed with reference to the objectives of the patent system, rather than by moral criteria. In particular, we recommend that in jurisdictions in which enhanced damages are regularly awarded, namely the United States, the award of enhanced damages be assessed in light of its efficacy in addressing the problem of opportunistic infringement and, accordingly, that courts should consider as a factor in awarding enhanced damages the intentional "holdout" conduct of a potential licensee.

We further recommend the evaluation of how enhanced damages, in combination with other mechanisms, such as cost shifting, discussed above, can deter

⁸⁰ See Chapter 2.

⁸¹ See *infra* Section 3.3.2.

⁸² See Chapter 4; see also Seaman 2016 (reporting empirical data on injunction grant rates post-*eBay*).

⁸³ Gupta & Kesan 2016, 15 fig. 3 (finding that preliminary injunctions are granted less than 20 percent of the time they are requested following *eBay*).

⁸⁴ As a result, as Mark Lemley has argued, U.S. "patent law emphasizes deterrence least among [all] the intellectual property regimes." Lemley 2005, 1045.

copying and other types of deliberate infringement, and encourage *ex ante* bargaining (to the extent that is a desirable goal). This evaluation should also take into account the risk of deterring socially beneficial patent challenges, inducing excessive patent searching and licensing, and patent learning. In addition, further empirical research into the question of how often researchers read patents, and whether they are deterred from doing so by the availability of enhanced damages and other sanctions, would be useful, particularly for technological fields and jurisdictions outside the United States that have not been addressed by prior studies.⁸⁵

Beyond that, it is difficult to make firm recommendations in light of the complex interplay of relevant mechanisms. We have not reached a consensus as to the desirability of enhanced damages generally. It is probable that if we take all the other features of the patent system in different jurisdictions as given, significant jurisdictional variation in the use of enhanced damages would be justified. It is even possible that the current divergence between the United States and most other jurisdictions can be justified in light of differences in other aspects of the patent system. Conversely, if we assume that all the relevant factors discussed above are available policy levers, designing a patent system that optimizes each of these mechanisms both in its own terms and in combination, is a major research project. We propose that further research be conducted on both fronts. That is, it would be useful to investigate the extent to which the variation in existing practice related to enhanced damages can be justified in light of the existing variations among patent systems; and it would also be useful to investigate what a holistically optimized system might look like.

3.3 LITIGATION COST RECOVERY

In many countries, awards of attorney fees and disbursements are governed by general fee-shifting statutes that generally allow the prevailing party to recover some or all of its attorney fees and additional costs. In this section, we provide a brief summary of cost recovery regimes in place around the world and review the existing scholarly research related to the award of litigation expenses (principally attorney fees).

3.3.1 *Approaches to Litigation Cost Recovery*

1 Europe

Article 14 of the EU Enforcement Directive states that “Member States shall ensure that reasonable and proportionate legal costs and other expenses incurred by the successful party shall, as a general rule, be borne by the unsuccessful party, unless

⁸⁵ See *supra* notes 77–82 and accompanying text.

equity does not allow this.”⁸⁶ Individual practice nevertheless differs among EU members. In some states, for example, fees are awarded according to statutory rates that in practice are not fully compensatory, while in others fees more closely approximate the amount the prevailing party actually and reasonably incurred.⁸⁷ Overall, however, some practitioners believe that the amounts awarded generally have increased since the implementation of the Directive.⁸⁸ In addition, a 2016 judgment of the Court of Justice for the European Union (CJEU) arising from a copyright action holds that, under the Directive, member state rules requiring that the prevailing party be reimbursed at a flat rate are permissible only if those rules result in the compensation of “a significant and appropriate part of the reasonable costs” actually incurred, and also that fees for technical advisers also must be compensated if they are “directly and closely linked to” the judicial proceeding at issue.⁸⁹

2 Asia

In the major Asian jurisdictions the situation is somewhat different. In Japan, for example, although the prevailing patentee is in principle entitled to recover any attorney fees it incurred as a result of the infringement, it appears that parties often do not claim such fees. Moreover, even when fees are awarded, they usually are based on a percentage (often 10 percent) of the compensatory damages awarded, rather than on an hours-worked basis. Commentators generally agree that these awards do not fully compensate the prevailing party⁹⁰

In China, Article 65 of the Patent Law states, *inter alia*, that the compensation due for infringement “shall include the reasonable expenses paid by the patentee for putting an end to the infringement.”⁹¹ In practice, however, attorney fees are not awarded as a matter of right, and when they are awarded they tend to be low.⁹² Nonetheless, in one recent case the Beijing IP Court awarded the prevailing plaintiff 1 million RMB in costs (equal to about \$144,000 as of January 2, 2017); according to

⁸⁶ Directive 2004/48/EC, art. 14.

⁸⁷ See Cotter 2013a, 276 n.210. For other discussions, see generally Elmer & Gramenopoulos 2016; Osterieth 2015, 142–43; Rennie-Smith 2015, 109; Romet 2015, 174. In yet other circumstances, parties can recover costs as part of a damages claim despite statutory limits on fee shifting.

⁸⁸ See Cotter 2013a, 276 n.210 (citations omitted).

⁸⁹ *United Video Properties, Inc. v. Telenet NV* (CJEU 2016) (EU). For brief discussion, see Cotter 2016d.

⁹⁰ Cotter 2013a, 328 (citations omitted); see also Suzuki & Tamura 2011, 450 (stating that “[t]he amount of attorney fees compensated is usually approximately 10% of the amount of damages granted to the winning party (as held in many court decisions). However, if the amount of damages is relatively high, the percentage amount of attorney fees compensated will be lower. Conversely, if the amount of damages awarded is low, the respective amount of attorney’s fees that the winning party may claim may be higher depending on the special circumstances of each case” (citations omitted)).

⁹¹ Patent Law of the People’s Republic of China, art. 65.

⁹² See Cotter 2013a, 360 (noting, in addition, that courts sometimes award the costs of investigation) (citations omitted); Cui & Shen 2016, 16–34 to –35; Pattloch 2015, 347 (stating that, “in practice, only about one-third of the real costs will be awarded by the court”).

commentators, this may have been China's first patent case in which a court based a fee award on the time billed by the prevailing party's attorneys.⁹³ Fee awards also tend to be nominal in Korea.⁹⁴

3 The United States

The United States provides a further point of contrast with other jurisdictions. While the United States does provide for the routine recovery by the prevailing party of at least some litigation expenses,⁹⁵ the general rule in the United States (hence known as the "American Rule") is that each party bears its own attorney fees. There are some exceptions to this rule, for example by statute in the antitrust and civil rights contexts.⁹⁶ Moreover, courts have the inherent authority to award attorney fees for "willful disobedience of a court order" or "when the losing party has 'acted in bad faith, vexatiously, wantonly, or for oppressive reasons.'"⁹⁷ Aside from this inherent authority, awards of fees in patent cases are governed by 35 U.S.C. § 285, which states that "[t]he court in exceptional cases may award reasonable attorney fees to the prevailing party."⁹⁸

⁹³ For an English language discussion of the case, *WatchData Co. Ltd. v. Hengbao Co. Ltd.* (Beijing IP Ct. 2016) (China), see SIPO 2016 ("The court also supported the demand of the litigation cost, commonly known as attorney fees, considering the necessity of hiring agents, the difficulty of the case and the actual contribution of the lawyers. For the first time, the Beijing Intellectual Property Court recognized the above three factors as the principles to judge attorney fees."). See also Cotter 2016f (citing two other sources discussing *Watchdata*).

⁹⁴ See Cotter 2013a, 370 (citations omitted); Kim et al. 2016, 30–19; Kim 2015, 436.

⁹⁵ 28 U.S.C. § 1920 ("A judge or clerk of any court of the United States may tax as costs the following: (1) Fees of the clerk and marshal; (2) Fees for printed or electronically recorded transcripts necessarily obtained for use in the case; (3) Fees and disbursements for printing and witnesses; (4) Fees for exemplification and the costs of making copies of any materials where the copies are necessarily obtained for use in the case; (5) Docket fees under section 1923 of this title; (6) Compensation of court appointed experts, compensation of interpreters, and salaries, fees, expenses, and costs of special interpretation services under section 1828 of this title."). While conventional wisdom suggests that cost recoveries in U.S. civil litigation are relatively small, see Cotter 2013a, 146–47 n.283, that is not always the case, particularly in patent suits involving court-appointed expert witnesses. See *VirmetX, Inc. v. Apple, Inc.* (E.D. Tex. 2017, p.2) (U.S.) (Plaintiff's uncontested notice of costs, attorneys' fees, and prejudgment interest – later granted by stipulated order – requesting more than \$300,000 in costs and approximately \$1.8 million in attorneys' fees).

⁹⁶ See, e.g., 15 U.S.C. § 15(a) ("[A]ny person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws may sue therefor . . . and shall recover threefold the damages by him sustained, and the cost of suit, including a reasonable attorney's fee."); 42 U.S.C. § 1988 ("In any action or proceeding to enforce a provision of sections 1981, 1981a, 1982, 1983, 1985, and 1986 of this title, title IX of Public Law 92–318 [20 U.S.C. 1681 et seq.], the Religious Freedom Restoration Act of 1993 [42 U.S.C. 2000bb et seq.], the Religious Land Use and Institutionalized Persons Act of 2000 [42 U.S.C. 2000cc et seq.], title VI of the Civil Rights Act of 1964 [42 U.S.C. 2000d et seq.], or section 12361 of title 34, the court, in its discretion, may allow the prevailing party, other than the United States, a reasonable attorney's fee as part of the costs.").

⁹⁷ *Octane Fitness, LLC v. ICON Health & Fitness, Inc.* (U.S. 2014, p.1758) (U.S.) (quoting *Alyeska Pipeline Serv. Co. v. Wilderness Soc'y* (U.S. 1975, p.258–59) (U.S.)). See also FED. R. CIV. P. 11.

⁹⁸ Until fairly recently, the governing Federal Circuit precedent construing § 285 has been summarized as follows: The burden is on the moving party to establish the exceptional nature of the case by clear and convincing evidence, and "[o]nly a limited universe of circumstances warrants a finding of

Until recently, Federal Circuit precedent interpreting § 285 recognized “[o]nly a limited universe of circumstances warrant[ing] a finding of exceptionality in a patent case: ‘inequitable conduct before the PTO; litigation misconduct; vexatious, unjustified, and otherwise bad faith litigation; a frivolous suit or willful infringement.’”⁹⁹ Furthermore, a court would award fees to the prevailing alleged infringer based on the weakness of the patentee’s case only if the claims asserted were “objectively baseless” and brought “in subjective bad faith”¹⁰⁰ – a standard that mirrored the stringent requirements for stripping litigants of *Noerr-Pennington* immunity for claims of attempted monopolization premised on sham litigation.

In 2014, however, the Supreme Court of the United States in *Octane Fitness, LLC v. Icon Health & Fitness, Inc.* overruled this body of precedent, holding that courts should consider whether a case is “exceptional” for purposes of § 285 based on the “totality of the circumstances.”¹⁰¹ In a companion case, the Court also held that, contrary to Federal Circuit precedent, “an appellate court should review all aspects of a district court’s § 285 determination for abuse of discretion.”¹⁰²

Since the Supreme Court’s decision in *Octane Fitness*, the number of patent cases in which U.S. courts have awarded attorney fees has increased, though given the exceptionality requirement even under the more lenient standard that number remains small; and in most cases, courts have awarded only a fraction of the entire fees incurred in prosecution or defense of the action. Jiam (2015), for example, reports that from the date of the *Octane Fitness* decision through March 31, 2015, courts granted fee petitions in twenty-seven out of sixty-three cases – more than double the proportion reported in a 2011 study by Chien – but the awards themselves mostly ranged from just \$200,000 to \$300,000.¹⁰³ Similarly, Flanz (2016) reports a statistically significant higher percentage of successful fee petitions post-*Octane Fitness*,¹⁰⁴ while Barry et al. (2016) report

exceptionality in a patent case: ‘inequitable conduct before the PTO; litigation misconduct; vexatious, unjustified, and otherwise bad faith litigation; a frivolous suit or willful infringement.’” Once the movant establishes exceptionality, the court then determines whether a fee award is appropriate, taking into account such factors as “the closeness of the case, the tactics of counsel, the conduct of the parties, and any other factors that may contribute to a fair allocation of the burdens of litigation as between winner and loser.” The court alone determines whether a case is exceptional, subject to review for clear error; the amount of fees awarded, if any, is reviewed under the abuse of discretion standard. Cotter 2013a, 147–48 (citations omitted).

⁹⁹ *Wedgetail, Ltd. v. Huddleston Deluxe, Inc.* (Fed. Cir. 2009, p.1304) (U.S.).

¹⁰⁰ *Brooks Furniture Mfg., Inc. v. Dutailier Int’l, Inc.* (Fed. Cir. 2005, p.1381) (U.S.), abrogated in part by *Octane Fitness, LLC v. ICON Health & Fitness, Inc.* (U.S. 2014) (U.S.).

¹⁰¹ *Octane Fitness, LLC v. ICON Health & Fitness, Inc.* (U.S. 2014, p.1756) (U.S.).

¹⁰² *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.* (U.S. 2014, p.1747) (U.S.). In a footnote, however, the Court added that “[t]he abuse-of-discretion standard does not preclude an appellate court’s correction of a district court’s legal or factual error . . .” *Id.* at 1748 n.2.

¹⁰³ See Jiam 2015, 624, 627.

¹⁰⁴ See Flanz 2016.

that the average number of fee award decisions “increased from about 4 per month to 7 per month.”¹⁰⁵ The latter source also reports, however, that the median fee award post-*Octane Fitness* has been approximately \$0.3 million, with the maximum award amounting to \$12.5 million.

3.3.2 *Economic Theory and Empirical Research on the Effects of Cost Recovery*

There is general agreement in the theoretical literature that awarding expenses to prevailing parties in civil litigation will, all else equal, have two primary effects: first, that it will enhance the overall quality of the pool of lawsuits that are filed, and second that it will increase the intensity of litigation in suits that are filed.¹⁰⁶ The first effect is based on the theory that the availability of cost recovery will discourage the filing of weak (i.e., low-probability-of-winning) cases by reducing the plaintiff’s total expected recovery and, conversely, encourage the filing of strong (i.e., high-probability-of-winning) cases by increasing the plaintiff’s expected total award.¹⁰⁷ In effect, the risk of paying the infringer’s costs acts as a potential penalty for bringing weak claims, while the prospect of having one’s own costs covered by the infringer serves as a potential reward for bringing strong claims.

At the same time, however, theory suggests that cost recovery can increase the duration and complexity of legal disputes. Given that litigants typically disagree at least marginally about the likely outcome of a case, the availability of awards of attorney fees and litigation expenses will tend to exaggerate the gap between the parties’ estimates of the expected value of their respective recovery or payout if the case is litigated to a decision on the merits. The wider this gap, the less likely parties are to reach a mutually agreeable settlement. In addition to extending litigation, cost recovery can encourage well-resourced parties to devote more resources to litigation. By raising the stakes of litigation, cost awards increase the marginal benefit of additional spending on litigation. Additionally, by raising the prospect that one’s opponent will wind up paying additional amounts spent on litigation, cost awards also decrease the marginal cost of doing so. Finally, because cost shifting increases the stakes of the dispute, a party that is risk-averse may be more willing than it otherwise would be to forgo a valid claim or agree to less favorable terms of

¹⁰⁵ Barry et al. 2016, 7. Barry et al., additionally report that this median award “represented 82% of the median amount requested.” *Id.* For further discussion of the empirical studies on post-*Octane Fitness* fee awards to date, see Cotter & Golden 2018, 15–16 n.71.

¹⁰⁶ For an overview of the theoretical literature related to the effect that attorney fee awards (the primary driver of litigation expenses) have on litigation, see Spier 2007, 300–03.

¹⁰⁷ This effect assumes that the parties have relatively symmetric information about the lawsuit. Fee shifting can also have the opposite effect when the parties have asymmetric information. Polinsky & Rubinfeld 1998.

settlement.¹⁰⁸ In practice, however, the limits on the fees and disbursements recovered and the uncertainty associated with litigation outcomes dampen some of these theoretical effects.

Existing empirical studies, though limited in number, tend to support these conclusions, but not uniformly.¹⁰⁹ Studies by Edward Snyder and James Hughes of medical malpractice litigation in Florida found that, after the state's introduction of fee shifting in this area of law, plaintiffs won more often and received higher damages on average.¹¹⁰ A recent study by Helmers et al. (2018) of intellectual property cases litigated in the United Kingdom also supports the prediction that fee shifting tends to weed out weaker suits, as well as cases involving smaller entities, and thus decreases the number of suits that are filed.¹¹¹ In addition, descriptive statistics collected by Love et al. (2017) suggest a link between the prevalence of fee shifting in Europe and the continent's relative lack of suits by patent "trolls" that file large numbers of low-value suits.¹¹² When cases are actually filed, a study of U.S. litigation by Fournier and Zuehlke suggests that fee shifting tends to reduce the likelihood of settlement, all else being equal.¹¹³ On the other hand, two studies of litigation in Alaska (the only U.S. state that routinely awards attorney fees to prevailing parties),¹¹⁴ and one experimental study,¹¹⁵ have failed to find that fee shifting has significant effects on litigation incentives and behavior. Again, in practice, the decisions of individual litigants depend heavily on other factors external to the availability of attorney fees, such as the availability of insurance, third-party litigation financing, and the relationship between the cost of litigation and the value of the technology at stake.

¹⁰⁸ A risk-averse person "when faced with a choice between two gambles with the same expected value, will usually choose the one with a smaller variability of return." Nicholson & Snyder 2008, 207; *see also* Pindyck & Rubinfeld 2013, 166–67.

¹⁰⁹ For an overview of the empirical literature related to attorney fee awards, *see* Kritzer 2002.

¹¹⁰ Snyder & Hughes 1990; Hughes & Snyder 1995. *But see* Williams 2001 (finding that U.S. states with one of several forms of fee shifting rules had a higher ratio of bodily injury claims to property damage claims in suits following car accidents, and concluding that this finding contradicts the hypothesis that fee awards discourage frivolous claims).

¹¹¹ Helmers et al. 2018 (studying IP cases filed before and after the introduction of a cap on the level of costs recoverable in suits litigated in the United Kingdom's Intellectual Property Enterprise Court).

¹¹² Love et al. 2017 (finding in a study of patent suits brought in Germany and the United Kingdom a high rate of accused infringer-filed actions and a low rate of settlement relative to the United States, and concluding from these findings that fee shifting may deter patent monetization); Helmers et al. 2014 (studying patent suits filed in the United Kingdom and making similar findings).

¹¹³ Fournier & Zuehlke 1989, 193 (studying cases litigated in U.S. federal courts between 1979 and 1981).

¹¹⁴ Di Pietro et al. 1995, ES-11 ("The major conclusion of this report is that attorney fee shifting in Alaska seldom plays a significant role in civil litigation."); Rennie 2012 (comparing cases filed in the District of Alaska with cases filed in other districts, and finding no significant differences).

¹¹⁵ Inglis et al. 2005 (finding no significant difference in settlement outcomes in an experiment comparing settlements negotiated in legal environments that do and do not award attorney fees to prevailing parties).

3.3.3 Recommendations for Best Practices and Future Research

On one hand, mandatory cost shifting ensures that the prevailing patent owner is compensated to some degree for what can be a huge expense,¹¹⁶ and helps to deter weak assertions of patent rights. On another, cost shifting may also encourage litigating parties to increase the duration and complexity of their disputes. In addition, there is some risk that mandatory fee shifting may lead risk-averse parties with strong claims or defenses to abandon them, which might seem both socially inefficient and substantively unfair. Finally, shifting can require additional, costly adjudication to determine which fees and expenses are reasonable and thus compensable. While some jurisdictions like Germany set statutory rates that minimize such adjudication costs, other systems condition fee or cost awards on other factors (e.g., whether the infringement was willful), which adds to the expense of this “satellite litigation.” Consequently, it is hard to draw strong conclusions about whether fee shifting in the abstract is desirable or not, and resolution of the issue may depend as much on cultural expectations as on theoretical or empirical economics. As a practical matter, it is highly unlikely that the United States will adopt mandatory fee shifting in the foreseeable future, or that other countries in which fee shifting is commonplace will abandon it.

That said, we recommend the following: First, in countries in which fee shifting is an established part of the legal landscape, fee shifting rules should aim to compensate for the reasonable and proportionate costs actually incurred by the prevailing party in a meaningful manner unless equity prescribes otherwise (as, for example, the EU Enforcement Directive mandates), rather than only partially (as is often the case in practice). As a general rule, fee awards should not be calculated based upon a specified portion of the amount awarded, as is sometimes the case in Japan. Second, in countries in which fee shifting is not the norm, legislatures and courts arguably should consider experimenting with somewhat more generous fee shifting rules – for example, as proposed in the Innovation Act (which would have required courts to award fees to the prevailing party, “unless the court finds that the position and conduct of the nonprevailing party or parties were reasonably justified in law and fact or that special circumstances (such as severe economic hardship to a named inventor) make an award unjust”)¹¹⁷ – perhaps coupled with discovery reforms to reduce the risk that the stronger party will make unnecessary and excessive expenditures with the expectation of reimbursement.

Further research might center on, among other things, proposals for constraining the cost of satellite litigation over fees and other litigation expenses; and on an

¹¹⁶ See AIPLA 2017, I-118 to –122 (reporting mean costs through appeal of \$627,000 for cases with less than \$1 million at stake, \$1.456 million with \$1–\$10 million at stake, \$2.374 million with \$10–\$25 million at stake, and \$3.831 million with more than \$25 million at stake).

¹¹⁷ In 2013, the Innovation Act, H.R. 3309, 113th Cong. (2013), passed the U.S. House of Representatives, but ultimately stalled in the Senate. It was introduced again in the next session, Innovation Act, H.R. 9, 114th Cong. (2015), but again failed to pass.

empirical determination of (1) how often courts in the United States award fees under the Equal Access to Justice Act, after which the Innovation Act proposal was to some degree modeled, and (2) whether settlements are more or less common in countries with mandatory fee shifting. We also would welcome further empirical studies of the availability of fee shifting that take into account the practical aspects of fee shifting both with respect to market options such as insurance or third-party litigation financing and the design of fee-shifting regimes, vis-à-vis methods and procedures for determining awards, the percentage of fees that are actually awarded in practice, and the relationship between the value of the suit and the fees, though it is unclear whether or not the data are just too noisy for such analysis.

3.4 PRE- AND POST-JUDGMENT INTEREST

If damages are to fully compensate the patent owner for the losses attributable to the infringement, damages awards should take into account the time value of money. To this end, it would seem straightforward to require courts to award adequate pre- and post-judgment interest to ensure that the patent owner is no worse off than it would have been, absent the infringement.¹¹⁸ Nonetheless, awards of prejudgment interest are not standard in every country; and even in countries in which they are awarded, if the rates are not carefully chosen or interest is not compounded, they may wind up either over- or undercompensating the prevailing patentee. The problem is particularly acute when the litigation is protracted, and undercompensatory prejudgment interest can encourage a defendant to delay and prolong litigation.¹¹⁹ Consequently, undercompensatory prejudgment interest can exacerbate the problem of “holdout,” in which a user of patented technology unduly delays licensing, by effectively giving the infringer the benefit of a low-interest loan.

3.4.1 Approaches in Selected Countries

In the United States, the Supreme Court’s decision in *General Motors Corp. v. Devex Corp.*¹²⁰ interprets § 284 of the Patent Act as creating, in effect, a presumption that the prevailing patentee is entitled to prejudgment interest on the compensatory portion of a damages award. More specifically, *Devex* holds that, in enacting § 284 of the Patent Act, “Congress sought to ensure that the patent owner would in fact receive full compensation for ‘any damages’ he suffered as a result of

¹¹⁸ An interesting question, albeit one beyond the scope of the present project, is whether defendants who ultimately prevail in infringement litigation but who are temporarily excluded from the market or required to incur other costs (e.g., due to a preliminary or permanent injunction that is subsequently vacated) should be entitled to some form of compensation, and if so whether they should be entitled to pre- and post-judgment interest on any such award. For brief discussion of the compensation issue, see, e.g., Cotter 2014c; Cotter 2016e.

¹¹⁹ See *Eli Lilly and Co. v. Apotex Inc.* (Fed. Ct. 2014, ¶ 113) (Can.).

¹²⁰ *General Motors Corp. v. Devex Corp.* (U.S. 1983) (U.S.).

the infringement,” and that courts therefore should award prejudgment interest on the compensatory portion of an award “absent some justification for withholding” it (such as when the patent owner has delayed prosecution of the suit).¹²¹ Note, however, that “[b]ecause prejudgment interest has no punitive purpose, it must be applied only to the compensatory damages, not enhanced or other punitive damages.”¹²² In addition, U.S. courts are obligated to award post-judgment interest running from the date on which the judgment is entered until the date on which the award is paid.¹²³

Courts nevertheless have wide discretion to determine the appropriate interest rate and whether to award simple or compound interest, and these choices can have a substantial impact on the amount actually paid.¹²⁴ Awarding compound interest is necessary to ensure that the patentee is not rendered worse off than she would have been absent the infringement. For example, suppose that the patent owner suffers a \$1 million loss on March 1, 2008, and is awarded \$1 million plus simple interest at an annual rate of 5 percent on March 1, 2018 (the date of judgment). The total award will be \$1.5 million. If the interest had been compounded annually instead at the 5 percent rate, the total award would come to \$1,628,890, which “reflects more accurately the wealth the patentee would have had as of 201[8], had the infringement never occurred and had she invested the \$1 million profit in a relatively safe venture.”¹²⁵

¹²¹ Blair & Cotter 2001, 24, 51. Earlier in time, interest ran only from the time that damages were actually determined or, when courts submitted the damages calculation to a special master, “from the day when the master’s report was submitted to the court.” *Crosby Steam Gage & Valve Co. v. Consol. Safety Valve Co.* (U.S. 1891, p.458) (U.S.). Under this rule, “interest from the date on which damages were liquidated” effectively meant little or no prejudgment interest.

¹²² *Humanscale Corp. v. CompX Int’l Inc.* (E.D. Va. 2010, p.1) (U.S.) (citing *General Motors Corp. v. Devex Corp.* (U.S. 1983, p.355) (U.S.)).

¹²³ See 28 U.S.C. § 1961(a) (“Interest shall be allowed on any money judgment in a civil case recovered in a district court . . . Such interest shall be calculated from the date of the entry of the judgment, at a rate equal to the weekly average 1-year constant maturity Treasury yield, as published by the Board of Governors of the Federal Reserve System, for the calendar week preceding the date of the judgment.”); *id.* at § 1961(b) (stating that post-judgment “[i]nterest shall be computed daily to the date of payment except as provided in section 2516(b) of this title and section 1304(b) of title 31, and shall be compounded annually”); FED. R. APP. P. 37(a) (“Unless the law provides otherwise, if a money judgment in a civil case is affirmed, whatever interest is allowed by law is payable from the date when the district court’s judgment was entered.”). See also Michel 2010, 3 (“[T]he court may award pre-judgment interest under 35 U.S.C. § 284 on the compensatory portion of the damages award, pre-judgment interest on any award of attorney fees, and post-judgment interest under Fed. R. [App.] P. 37 on the entire award.”).

¹²⁴ See, e.g., *ActiveVideo Networks, Inc. v. Verizon Comm’ns, Inc.* (E.D. Va. 2011, p.3) (U.S.) (stating that courts have “wide latitude” in selecting a prejudgment interest rate, with most opting for “either prime rate or the U.S. Treasury rate,” while post-judgment interest is calculated under 28 U.S.C. § 1961 “at a rate equal to the weekly average 1-year constant maturity Treasury yield . . . for the calendar week preceding the date of the judgment”); Epstein 2006; Fish & Richardson, P.C. 2018.

¹²⁵ Cotter 2013a, 277; see also Epstein 2006, 10 (“From the point of view of economics, interest should always be compounded because a plaintiff would earn interest on interest when lending money. The only substantial justification for simple interest is greater ease of computation. But

As for the rate chosen, however, Epstein argues that courts generally should select a rate that reflects the infringer's cost of short-term borrowing (i.e., a restitutionary award) rather than the plaintiff's opportunity cost of capital (i.e., a compensatory award), because among other problems the latter conclusively presumes that the money the plaintiff would have had available to invest absent the infringement would have earned a positive return. Epstein further argues that courts should avoid using both the prime rate, which is often higher than the rate the infringer would have to pay to borrow an amount in excess of \$1 million, and the risk-free rate available on Treasury bills, which is unavailable to most private entities. Instead, he urges courts in the United States to use Federal Reserve survey rates to estimate the infringer's cost of borrowing in an objective (and comparatively nonintrusive) manner.¹²⁶ We are inclined to agree with Epstein's proposal.¹²⁷

The rules in other countries vary considerably. First, some countries don't award prejudgment interest at all,¹²⁸ or only sparingly.¹²⁹ Second, some countries (including Germany and the United Kingdom) routinely award prejudgment interest but do not compound it.¹³⁰ A third model is presented by Japan, where courts generally award prejudgment interest at a statutory rate of 5 percent, and post-judgment

this rationale is archaic in an age of spreadsheets. Moreover, nearly all market interest rates involve compounding.”).

¹²⁶ See Epstein 2006, 9–11. On the question of whether to use the plaintiff's expected rate of return, Epstein further argues that doing so could induce plaintiffs to protract litigation, and that such a rate would be premised on the assumption that the plaintiff could not have borrowed the money to invest from another source.

¹²⁷ Ideally, it might be best for a legislative body to mandate a uniform policy so as to decrease the risk of forum shopping, though whether litigants would actually choose an otherwise inconvenient forum for such a benefit alone is debatable. See *Arctic Cat Inc. v. Bombardier Recreational Prod., Inc.* (S.D. Fla. 2017, p.8) (U.S.) (expressing concern that applying the Florida interest rate “would encourage forum-shopping by patent litigants hoping to take advantage of states with high interest rates on judgments”).

¹²⁸ See Cotter 2013a, 276; see also Elmer & Gramenopoulos 2016, 9–12 to –13 (noting the unavailability of prejudgment interest in Russia and Mexico); *id.* at C-48 tbl. A (table listing information on pre- and post-judgment interest in selected countries).

¹²⁹ See Cotter 2013a, 276 n.211 (stating “while post-judgment interest is awarded in France, prejudgment interest generally is not,” and quoting a translation of Code Civil [C. civ.] art. 1153–1 (Fr.): “In all matters, the award of a compensation involves interest at the statutory rate even failing a claim or a specific provision in the judgment. Save as otherwise provided by legislation, that interest runs from the handing down of the judgment unless the judge otherwise rules.”); see also, *Knight v. AXA Assurance* (QB 2009) (UK) (reporting experts' agreement that prejudgment interest generally is not available in France). However, there are exceptions to this rule. See, e.g., *S.A. Technogenia v. S.A.R. L. Martec* (TGI Paris 2010) (Fr.) (awarding prejudgment interest calculated yearly at the legal interest rate, from 1990). In addition, “French judges also are authorized to increase the amount of a damages award to reflect the increase in the inflation rate from the date of infringement.” Cotter 2013a, 276 n.211 (citations omitted).

¹³⁰ See Cotter 2013a, 277 n.212–13 (citations omitted). Relatedly, when German courts award lost profits, they compute them from the date on which the plaintiff demands payment, not from the date on which the injury is suffered, thus risking substantial undercompensation. See *id.* at 277 (citations omitted).

interest following a one-year grace period.¹³¹ This flat rate can, depending on the time value of money, lead to over- or undercompensation.¹³² Of course, any such risk of overcompensation should be taken with a grain of salt, given the typically low damages awards rendered by Japanese courts as discussed in the Reasonable Royalties Paper.

3.4.2 Recommendations for Best Practices and Future Research

Consistent with the above discussion, we recommend that courts be required to award pre- and post-judgment compound interest, nominally at rates that reflect the infringer's cost of borrowing. Such a requirement would prevent the rules with respect to interest from either over- or undercompensating patent owners (and from either over- or underdetering implementers) and would require courts to award pre- and post-judgment compound interest, arguably at rates that reflect the infringer's cost of borrowing. To the extent such reforms would be difficult to implement in the short run (e.g., due to cultural resistance to awards based on compound interest, as may be the case in Germany) we recommend as a second-best solution the periodic reconsideration of statutory interest rates in countries such as Japan in which those rates may differ substantially from market rates.

As for future research, to our knowledge there has been no systematic empirical study of the interest rates U.S. courts select in patent infringement cases, or the frequency with which they award simple versus compound interest. Such research would be helpful in evaluating whether or to what extent the choices courts make with regard to interest likely result in systematic over- or undercompensation, or enable infringers to benefit from delay. Resolution of these matters in turn would help to illuminate, among other things, the debate over "patent holdout" discussed in Chapter 7.¹³³

¹³¹ *Id.* at 328 (describing the availability of compound interest under Civil Code Article 405 if payment is delayed by one year or more after the creditor demands payment). Somewhat analogous to German practice, *see also supra* note 27, "although interest 'theoretically' accrues from the date of the commission of a tortious act, in practice the plaintiff demands interest only from the date following service of the complaint." *Id.* (citing Hoshi 1998, 12). The 5 percent rate comes from Minpō [Civ. C.] art. 404 (Japan), which states that "[u]nless the parties otherwise manifest their intention with respect to a claim which bears interest, the rate of such interest shall be 5% per annum."

¹³² Cotter 2013a, 328.

¹³³ *See General Motors Corp. v. Devex Corp.* (U.S. 1983, p.655 n.10) (U.S.) ("A rule denying prejudgment interest not only undercompensates the patent owner but may also grant a windfall to the infringer and create an incentive to prolong litigation. There is no reason why an infringer should stand in a better position than a party who agrees to pay a royalty and then fails to pay because of financial difficulties."). The same could be said for a rule that awards inadequate pre- or post-judgment interest.