Injunctions as More (or Less) than “Off Switches”: Patent-Infringement Injunctions’ Scope

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Injunctions have often been viewed as mere “off switches” that prevent future violations of rights protected by so-called property rules. But injunctions in fact come in a variety of forms having different objects, scopes, and degrees of effectiveness. In practical situations, an injunction might amount to little more than a threat of higher-than-normal monetary sanctions delivered at substantially higher-than-normal speed.

This Article builds on these insights by investigating the potential and actual scopes of injunctions against patent infringement. An economic model for infringer incentives shows how concerns of injunction scope are substantially analogous to widely examined concerns of patent scope. A new taxonomy provides named classifications for different forms of injunctions. A systematic study of patent-infringement injunctions issued by U.S. district courts in 2010 indicates how often these different forms appear in practice. Startlingly, this study suggests that the majority of such patent-infringement injunctions take an “obey the law” form that violates the Federal Rules of Civil Procedure, at least as the U.S. Court of Appeals for the Federal Circuit has traditionally understood those rules. In another indication of patent law’s technology specificity, only 12% of the injunctions directed to biomedical-substance technology feature such apparent error. Meanwhile, courts frequently issue specially tailored injunctions that protect patent rights more or less than a conventional “do-not-infringe” order would. Prophylactic injunctions and other specially tailored injunctions should be recognized as legitimate forms of relief that can enable better balancing of concerns of notice, rights protection, rights limitation, and administrability.

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I. Introduction

Much recent debate on patent-infringement remedies has focused on two issues: when injunctive relief should be available\(^1\) and how damages

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should be calculated. This Article addresses a comparatively neglected question: what the scope of a patent-infringement injunction should be when it is granted. Neglect of this issue might help explain a startling fact that this Article’s empirical study reveals: the majority of patent-infringement injunctions issued by U.S. district courts in 2010 appear to violate the Federal Rules of Civil Procedure as traditionally interpreted by the U.S. Court of Appeals for the Federal Circuit.

The fact that many injunctions have taken an apparently improper form highlights the underlying capacity of injunctions to take many different forms. Although much commentary treats injunctions as mere “off switches” that enforce property rules, injunctions can take any of a number of different shapes having differing degrees of effectiveness. Even if there is no debate over the timing and duration of an injunction, there can be debate over an injunction’s scope—i.e., over the extent and nature of the matter and

an infringer substantially improves on an underlying patented invention”). Denials of patent-infringement injunctions have raised questions of when and how a court should award an “ongoing royalty” to compensate for expected activity that the court does not enjoin. See Paice LLC v. Toyota Motor Corp., 504 F.3d 1293, 1314 (Fed. Cir. 2007) (“Under some circumstances, awarding an ongoing royalty for patent infringement in lieu of an injunction may be appropriate.”); H. Tomás Gómez-Arostegui, Prospective Compensation in Lieu of a Final Injunction in Patent and Copyright Cases, 78 FORDHAM L. REV. 1661, 1664–65 (2010) (seeking “to demonstrate that federal courts have no authority to award compulsory prospective compensation . . . for postjudgment copyright and patent infringements”). Exploration of the proper limits and form of ongoing-royalty orders is outside the scope of this Article.


3. See infra text accompanying note 162.


5. See Doug Rendleman, The Trial Judge’s Equitable Discretion Following eBay v. MercExchange, 27 REV. LITIG. 63, 74 (2007) (“The judge’s decisions in drafting an injunction are contextual and discretionary: these are the details of what to forbid or require and the timing of whether or not to give the defendant a period to adjust and, if so, how long.”); cf. OWEN M. FISS, THE CIVIL RIGHTS INJUNCTION 7 (1978) (describing the law as having “long embraced a pluralism with regard to injunctions” and proposing a new scheme for classifying injunctions as “preventive,” “reparative,” or “structural”).

activities that an injunction forbids or requires. 7 Further, issuance of an injunction does not necessarily halt potentially infringing activity. In practical situations, an injunction might amount to little more than a threat of higher-than-normal monetary sanctions delivered at higher-than-normal speed. As the recent en banc case of *TiVo Inc. v. EchoStar Corp.*, 8 suggests, a rational enjoined party might choose to take deliberate action that risks a later holding of contempt. 9 Consequently, an injunction can be fundamentally ineffective at enforcing a property rule—at least to the extent such a rule is understood to involve a state “guarantee[] [of] property right assignments against infringement.” 10

The potential ineffectiveness of an injunction in enforcing a property rule calls into question the generality and depth of a commonly invoked dichotomy between legal regimes enforced through injunctions and those enforced through monetary relief alone. As Louis Kaplow and Steven Shavell have previously pointed out, this dichotomy dissolves once monetary relief can come in “any quantum”: in their words, “a liability rule with very high damages is equivalent to property rule protection of victims.” 11 This Article emphasizes the further point that the dichotomy can likewise dissolve where, as seems probable in much civil litigation, an injunction fundamentally acts as a mere gateway to a risk of monetary sanctions that an enjoined party can rationally choose to bear. 12

In any event, the likely limitations and potential leakiness of injunctive relief highlight questions about how a patent-infringement injunction can best be crafted to balance protection of patentee rights with protection of

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7. See, e.g., Supplemental Brief of Defendants-Appellants on Rehearing En Banc at 34, *TiVo Inc. v. EchoStar Corp.*, 646 F.3d 869 (Fed. Cir. 2011) (en banc) (No. 2009-1374) (contending that, “at least for a first-time infringer, [an] injunction may not legally go further” than “prevent[ing] the violation of any right secured by patent” (quoting 35 U.S.C. § 283 (2006))). For purposes of this Article, “injunction scope” is not considered to be concerned with the nature and extent of the individuals or entities whose compliance with the injunction is ordered.

8. 646 F.3d 869 (Fed. Cir. 2011) (en banc).

9. *TiVo Inc. v. EchoStar Corp.*, No. 2009-1374, 2010 U.S. App. LEXIS 4543, at *39 (Fed. Cir. Mar. 4, 2010) (“Given EchoStar’s refusal to disable the DVR functionality in its existing devices and the fact that its original attempts to design around TiVo’s patent were wholly unsuccessful, the district court had ample justification for . . . determin[ing] that court pre-approval of any new design-around effort was necessary to prevent future infringing activity.”), vacated, 376 F. App’x 21 (Fed. Cir. 2010).

10. Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713, 715 (1996) (contrasting such a state guarantee under a property rule with “liability rules, under which [the state] merely discourages violations by requiring transgressors to pay victims for harms suffered” (emphasis omitted)); see also id. at 723 (defining a property rule as involving “absolute protection of [an] entitlement”).

11. *Id*. at 724; cf. *Id*. at 756 (discussing the possibility of “[v]iewing property rules and the conventional liability rule as members of a continuum of liability rules”).

12. *Cf*. *Id*. at 757 (“When we consider how property and liability rules are actually applied, we also see that the view that they lie on a continuum is descriptively helpful, because the rules often turn out to be different from both true property rules and the liability rule with damages equal to harm.”).
legitimate public and infringer interests. 13 This Article consequently studies issues of injunction scope theoretically, empirically, and normatively. Part II takes a theoretical approach. After discussing how injunctions are enforced through contempt proceedings and sanctions, Part II presents an economic model for an infringer’s incentives that illustrates how, practically speaking, the frequently drawn distinction between injunctive and monetary relief can be substantially illusory. The model further illustrates how concerns about injunction scope parallel concerns about the scope of underlying rights—at least when the scope of those rights, like patent rights, tends to remain uncertain even after a prior judgment of infringement. 14 Part III follows with a taxonomy of injunction types and a primer on U.S. law regulating patent-infringement injunctions’ scope. Part IV uses Part III’s taxonomy to present and analyze results from a systematic study of patent-infringement injunctions issued by U.S. district courts in 2010. Part V then provides normative recommendations for how courts should craft injunctions in light of concerns of administrability, notice, patent-right protection, and avoidance of undue chilling of potentially legitimate activity.

Part III’s taxonomy and Part IV’s empirical results warrant a fuller preview. Part III’s taxonomy features five categories that reflect the express language of court orders. These taxa can be described as follows:

- Measure-zero “do-not-infringe” injunctions (also characterized as Type-0 injunctions) explicitly forbid only future infringement that involves the exact products or processes already adjudged to infringe (e.g., “Do not make, use, offer to sell, sell, or import into the United States the SuperHypo widget held to infringe claims 1 through 5 of the ‘777 patent.”). 15

13. With respect to concerns of potential patent “holdup” or “holdout,” crafting of injunctive language might be particularly effective in addressing concerns about the chilling of design-around activity from overly broad or vague injunctions. On the other hand, as long as injunctive language requires an infringer to abandon its existing course of activity, careful tailoring of injunctive language might do little to address holdup or holdout concerns that result from a lock-in effect under which any significant change in the infringer’s course will impose large costs that have essentially nothing to do with the merits of the patented invention. Consequently, consideration of problems of injunction scope might help disentangle holdout concerns that arise from two different causes: (1) an injunction so broadly written that all feasible design-arounds risk a holding of contempt, and (2) lock-in effects that mean that any design-around, no matter how legally permissible, entails high cost.


15. In mathematics, a measure “is a rule that assigns a non-negative number (or +∞) . . . to each set . . . in a collection” of sets. 2 PAUL BAMBERG & SHLOMO STERNBERG, A COURSE IN MATHEMATICS FOR STUDENTS OF PHYSICS 801 (1990). The assigned number is generally representative of the size of the set with which it is associated. Cf. id. (observing that one axiom of measure theory is that the measure of a “countable union of disjoint sets” equals the sum of the measures of the individual disjoint sets included in the union). Hence, according to one standard
• Colorable-differences do-not-infringe injunctions (also characterized as Type-1 injunctions) add to a Type-0, measure-zero injunction an explicit prohibition of infringement that involves only relatively insignificant variations of the products or processes specified by accompanying Type-0 language (e.g., “Do not make, use, offer to sell, sell, or import into the United States the SuperHypo widget or any widget no more than colorably different from the SuperHypo widget.”).16

• “Obey-the-law” injunctions (also characterized as Type-2 injunctions) use language that, at least on its face, generally prohibits infringement of a patent or patent claim without tying the scope of the prohibition to products or processes already adjudged to infringe (e.g., “Do not infringe the ’777 patent”; alternatively, “Do not infringe claim 1 of the ’777 patent.”).

• Purely reparative injunctions have as their sole direct purpose the correction of harm caused by past infringement (e.g., “Destroy all SuperHypo widgets manufactured in the United States that are now located abroad, even though there is no expectation that they will return to the United States.”17).

• Specially tailored injunctions do at least one of the following: (i) prohibit at least some activity that might be noninfringing (e.g., “Do not display SuperHypo widgets on a website.”); (ii) require action, such as destruction of infringing devices, that might not be absolutely required to prevent future infringement (e.g., “Destroy all SuperHypo widgets that are in the United States and under your control.”); (iii) define their scope without reference either to underlying patent rights or to matter already adjudged to infringe (e.g., “Do not make, use, offer to sell, sell, or import into the United States

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16. Because a Type-1, colorable-differences injunction generally includes a foundational Type-0, measure-zero injunction, this Article will commonly refer to an order that has Type-0 and Type-1 aspects simply as a “Type-1 injunction.”

17. Because United States patent law generally does not forbid the use abroad of a product or process whose use in the United States would infringe a U.S. patent, a product or process located abroad would, generally speaking, not be expected to factor into future U.S. patent infringement unless there were reason to expect that the product or something generated by the process would be brought to the United States. See 35 U.S.C. § 271 (2006) (describing forms of patent infringement); see also Microsoft Corp. v. AT&T Corp., 550 U.S. 437, 441 (2007) ("It is the general rule under United States patent law that no infringement occurs when a patented product is made and sold in another country.”).
any widgets.”); or (iv) include an explicit carve out for infringing (or likely infringing) behavior (e.g., “Do not use, offer to sell, sell, or import any SuperHypo widget, although you are not prohibited by this order from making one or more SuperHypo widgets.”).

These five categories of injunctions—Type-0, Type-1, Type-2, purely reparative, and specially tailored—are nonexclusive. A single court order can feature injunctive language from multiple taxa. Indeed, as defined in this Article, a Type-1, colorable-differences do-not-infringe injunction essentially requires the simultaneous existence of a Type-0, measure-zero injunction. In practice, such a Type-0/Type-1 combination is commonly supplemented by a Type-2, obey-the-law injunction or a specially tailored injunction.

Nonetheless, the five injunction types are not equal under U.S. law. The Federal Circuit has held that the U.S. Patent Act does not authorize courts to grant purely reparative injunctions.18 Similarly, the Federal Circuit has held that the Federal Rules of Civil Procedure generally forbid Type-2, obey-the-law injunctions.19

Strikingly, Part IV’s empirical analysis reveals vastly different rates of compliance with these bans. In a dataset of 143 patent-infringement injunctions issued in 2010, only one contains purely reparative language. In contrast, nearly 60% contain Type-2, obey-the-law language. Although active contestation of injunctions or their bases by an adversarial party seems to correlate with a reduced percentage of injunctions containing disfavored Type-2 language, the error rate for such actively contested injunctions is still about 44%. Part IV provides potential explanations for the high error rates.

Part IV also discusses empirical results indicating that U.S. district courts issue specially tailored injunctions in nontrivial numbers and in a number of subtypes. With these subtypes in mind, Part V suggests that, although Type-1, colorable-differences injunctions might provide an appropriate general default, specially tailored injunctions might often enable a better balancing and promotion of patentee, infringer, and societal interests.

II. Comparability of Concerns with Patent Scope and Injunction Scope

Problems of patent scope have figured much in the minds of patent commentators and practitioners.20 Problems of injunction scope have been comparatively neglected despite involving substantially overlapping normative concerns. Most centrally, patent and injunction scope both implicate a fundamental interest in balancing the goals of rewarding innovative patentees

and ensuring that patent rights do not excessively impede the use or further development of innovations.\(^{21}\) In the context of an existing injunction, the difficulty of balancing comes into sharp focus as courts and parties try to determine the proper legal status of an alleged “design-around”—a term used here to refer to a functional substitute for an infringing product or process that an adjudged infringer posits to be at least potentially noninfringing or injunction-compliant. Despite the potential inefficiency of design-around activity, U.S. patent law has tended to take the position that “legitimate design-around efforts should always be encouraged.”\(^{22}\) Of course, U.S. patent law also looks to protect the competing interests of patent holders, the result being that courts must seek to distinguish between legitimate design-around activity and illegitimate attempts at circumvention.\(^{23}\)

### A. Design-Arounds and Persistently Ambiguous Patent Rights

To fully understand the difficult line-drawing problems associated with enforcing patent rights, one needs to appreciate how the malleability of technology can complicate the task of defining the proper scope of such rights. Consider, for example, a selection of the language from claim 1 of U.S. Patent No. 4,963,736 (the ‘736 patent):

> A mass spectrometer . . . comprising:
> (a) first and second vacuum chambers separated by a wall, . . .
> (c) a first rod set in said first vacuum chamber . . . and a second rod set in said second vacuum chamber . . . .\(^{24}\)

For patent-claim language, this selection might be thought remarkably clear. But suppose an adjudged infringer of claim 1 redesigns its mass spectrometer so that it has an additional vacuum chamber that does not contain any rods and that is located between the only two vacuum chambers containing rod sets.\(^{25}\) What chamber should now be considered to be the “second vacuum chamber”? If the second vacuum chamber is the newly added middle chamber, claim 1 is no longer literally infringed because there is no rod set in this chamber. If, instead, one of the outside vacuum chambers is considered to be the second vacuum chamber and the other outside vacuum chamber is considered to be the first vacuum chamber, then there

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\(^{21}\) See Merges & Nelson, supra note 14, at 843 (“Without extensively reducing the pioneer’s incentives, the law should attempt at the margin to favor a competitive environment for improvements . . . .”).

\(^{22}\) TiVo Inc. v. EchoStar Corp., 646 F.3d 869, 883 (Fed. Cir. 2011) (en banc).

\(^{23}\) See id. (“But an assertion that one has permissibly designed around a patent should not be used to mask continued infringement.”).


\(^{25}\) See Applera Corp. v. Micromass UK Ltd., 186 F. Supp. 2d 487, 501, 504 (D. Del. 2002) (observing that a device accused of infringing the ’736 patent included “an empty vacuum chamber before the hexapole ion bridge chamber alleged by [the plaintiffs] to be the ‘first vacuum chamber’ in the ’736 patent”).
will be an argument that the “first and second vacuum chambers” are no longer “separated by a wall.” 26 Instead, they are separated by an entire additional vacuum chamber. A frustrated patentee might respond that the claim language does not say “separated only by a wall” and thus that the inclusion of an additional separating wall and some space between the two separating walls does not take the redesigned device outside the scope of the claim. 27 The adjudged infringer might counter that the patentee’s response renders the “separated by a wall” language superfluous: even without this language, we would know that the first and second vacuum chambers are separated by at least one wall or wall equivalent; otherwise, they could not be distinct first and second chambers.

Moreover, the “first,” “second,” and “separated by a wall” language is not the only potential basis for dispute. What, for example, is meant by the term rod? The term might have been thought so clear in an initial round of litigation that it was not even construed; that appears to have been the case in an actual dispute that involved the ’736 patent. 28 Faced with the problem of construing rod for the first time in contempt proceedings, a court might think that it was defining the term reasonably and even quite broadly by viewing rod as signifying, for example, a continuous solid structure having a length along a substantially straight longitudinal axis that is significantly greater than its maximum width transverse to that axis. 29 But this definition’s use of the adjective continuous could leave a significant technological loophole: it would appear to exclude from literal infringement a structure that consists of a series of cubes that are arrayed in a straight line with small spaces between them. Should the use of such an array of cubes make impossible a holding of contempt? Regardless of how one answers this question, the main point is the potential existence of significant, latent ambiguity even in patent claims whose meaning has already been litigated.

Such ambiguity is potentially significant and problematic because of competing interests in protecting already-infringed rights against further violation and, at the same time, allowing the continuation of legitimate, competitive activity involving potentially quite similar but nonetheless noninfringing technology—perhaps the canonical form of design-around activity. Such activity is commonly considered to be socially beneficial because it can contribute to a number of apparently desirable ends:

26. See id. at 509 (noting that the defendants “propose[d] a construction of ‘separated by a wall’ and ‘interchamber orifice’ that would require the wall and interchamber orifice to join or link the two vacuum chambers and spaces”).
27. See id. at 510 (noting the plaintiffs’ argument that “‘separated by a wall’ should be construed to mean only that ‘there is at least a wall between the first and second vacuum chambers’”).
28. See id. at 508 (finding “the proper construction of rod to be self-evident” and that the term does not need construction “because “a rod is a rod””).
29. Cf. MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY 1079 (11th ed. 2003) (defining rod as “a slender bar (as of wood or metal)”).

maintaining a competitive technological marketplace, ensuring exploration of
a variety of technological options before large sectors of society become
locked into potentially suboptimal standards, and curbing the potential for
patentee holdout or other causes of patent-rights overvaluation.30 In the face
of a holdout or another cause of exorbitant patentee demands, a competitor or
other potential user of technology can investigate the possibility of a design-
around—a technological replacement or alternative to what is covered by a
rights holder’s patents—and can use the expected cost of this design-around
to set a cap on what the potential user is willing to pay for a patent license.
The cap might still be high enough that the patentee can exercise
considerable holdout power, but the patentee might not know this.31 The
threat of even an imperfectly specified design-around might commonly cause
patentees to exercise restraint in their demands, and a plausible design-
around will at least limit the holdout power that a patentee possesses.

Indeed, commentators sometimes argue that a positive justification for a
patent system is “the incentive to design around” that patent rights provide.32
The Federal Circuit itself has declared that “[o]ne of the benefits of a patent
system is its so-called ‘negative incentive’ to ‘design around’ a competitor’s
products, . . . thus bringing a steady flow of innovations to the
marketplace.”33 Mindful of Fritz Machlup’s counterarguments that design-
around activity tends to be socially wasteful,34 as well as Edmund Kitch’s
related suggestion that patents can help limit duplicative work on follow-on

30. See, e.g., SUBCOMM. ON PATENTS, TRADEMARKS, & COPYRIGHTS, S. COMM. ON THE
JUDICIARY, 85TH CONG., AN ECONOMIC REVIEW OF THE PATENT SYSTEM 50 (Comm. Print 1958)
(prepared by Fritz Machlup) [hereinafter ECONOMIC REVIEW OF THE PATENT SYSTEM] (describing
how “invent[ing] around” a competitor’s patent can enable a rival to compete with a patent
holder); F. SCOTT KIEFF ET AL., PRINCIPLES OF PATENT LAW 71 (4th ed. 2008) (arguing that the
“secondary inventive activity” of designing around patents is generally desirable because it helps
ensure fuller exploration of technological alternatives); Golden, supra note 6, at 2130 (noting that
under a specified model of party incentives where the expected cost of a design-around is less than
the expected cost of simply litigating and potentially being subjected to court-ordered remedies,
“the possibility of a design-around improves the potential infringer’s position . . . [and] should
reduce the amount for which the potential infringer is willing to settle”).

31. Cf. Golden, supra note 6, at 2132 (“[A] patent holder will likely approach negotiations at a
significant informational disadvantage with respect to the potential infringer’s expected costs.”).

32. KIEFF ET AL., supra note 30, at 70; see id. at 71 (arguing that “[w]hile at first blush
[designing around] may seem wasteful, as redundant, it becomes immediately apparent that such
secondary inventive activity is usually a very good thing” because “[o]ften, a second-generation
product is better than the first”); ROGER E. SCHECHTER & JOHN R. THOMAS, INTELLECTUAL
Patent Act is also thought to stimulate technological advancement by inducing individuals to ‘invent
around’ patented technology.”); see also ECONOMIC REVIEW OF THE PATENT SYSTEM, supra note
30, at 51 (“[F]rom merely defending the need of ‘inventing around a patent’ as a minor item of
waste, the discussion has recently proceeded to eulogize it as one of the advantages of the system,
indeed as one of its ‘justifications.’” (footnotes omitted)).

33. State Indus., Inc. v. A.O. Smith Corp., 751 F.2d 1226, 1236 (Fed. Cir. 1985).

34. See ECONOMIC REVIEW OF THE PATENT SYSTEM, supra note 30, at 51 (“The production of
the knowledge of how to do in a somewhat different way what we have already learned to do in a
satisfactory way would hardly be given highest priority in a rational allocation of resources.”).
innovation,\textsuperscript{35} I view design-around activity primarily as a means to mitigate the patent system’s costs. If one can tolerate an analogy between patent law and roadwork, one might similarly recognize that roadwork often produces temporary blockages or slowdowns that can cause drivers to experiment with new ways to travel.\textsuperscript{36} The likelihood of causing such experimentation is unlikely to be considered a positive justification to undertake the roadwork in the first instance, but such design-around activity can reduce the social costs of the work, therefore helping to make those costs tolerable.

\section*{B. Injunctions as Gateways to Potential Contempt}

If one accepts at least a weak-form argument for the desirability of design-around activity, one is then likely to face a special concern with injunctions. An injunction of unclear scope can generate a special risk that socially desirable design-around activity will be chilled. This is largely because of the stronger and quicker sanctions that proceedings to enforce an injunction can make available. Generally speaking, injunctions are in personam orders that are enforced through comparatively summary proceedings invoking a court’s contempt power.\textsuperscript{37} Such proceedings can be criminal or civil in nature.\textsuperscript{38} If an enjoined party is found guilty of criminal contempt, a court may order determinate sanctions, such as an unconditional fine or jail term, to punish the contemnor and “vindicate[] the court’s authority.”\textsuperscript{39} Unless contempt is committed directly in the presence of the court,\textsuperscript{40} however, criminal contempt proceedings need to comply with rules

\begin{itemize}
\item 35. Edmund W. Kitch, \textit{The Nature and Function of the Patent System}, 20 J.L. \& ECON. 265, 276 (1977) (describing how patent law “puts the patent owner in a position to coordinate the search for technological and market enhancement of the patent’s value so that duplicative investments are not made and so that information is exchanged among the searchers”).
\item 36. Cf. \textit{ECONOMIC REVIEW OF THE PATENT SYSTEM}, supra note 30, at 52 (“The continental blockade in the Napoleonic War led to the development of beet sugar; the blockade in World War I led to the process of obtaining nitrogen from air; the U-boat blockade in World War II led to the invention of atabrine as a substitute for quinine; etc., etc. Does it follow that it would be a good idea to institute more blockades?”).
\item 37. See 1 \textit{DAN B. DOBBS, DOBBS LAW OF REMEDIES} § 2.8(1), at 186 (2d ed. 1993) (“Because [equitable decrees] are personal orders, they are often enforced coercively, through the contempt power.”).
\item 38. Id. at 187 (discussing the possibility of civil or criminal contempt proceedings); see also KSM Fastening Sys., Inc. v. H.A. Jones Co., 776 F.2d 1522, 1524 & n.2 (Fed. Cir. 1985) (noting the possibility of “civil and criminal contempt proceedings”), \textit{overruled on other grounds}, TiVo Inc. v. EchoStar Corp., 646 F.3d 869 (Fed. Cir. 2011) (en banc); James C. Nemmers, \textit{Enforcement of Injunctive Orders and Decrees in Patent Cases}, 7 \textit{IND. L. REV.} 287, 291 (1973) (discussing the use of civil and criminal contempt in patent cases).
\item 39. 1 \textit{DOBBS, supra} note 37, § 2.8(3), at 196–97; see also Spindelfabrik Suessen-Schurr v. Schubert \& Salzer Maschinenfabrik Aktiengesellschaft, 903 F.2d 1568, 1578 (Fed. Cir. 1990) (“A civil contempt sanction is remedial, and for the benefit of the complainant[,] while a criminal contempt sentence is punitive, to vindicate the authority of the court.” (internal quotation marks omitted)).
\item 40. \textit{FED. R. CRIM. P.} 42(b) (“Notwithstanding any other provision of these rules, the court (other than a magistrate judge) may summarily punish a person who commits criminal contempt in
of criminal procedure, presumably including a requirement for proof beyond a reasonable doubt that the violation of the injunction was intentional. Perhaps in substantial part because of this, criminal contempt for violation of a patent-infringement injunction appears to be so rare in U.S. patent practice that its possibility is likely to be negligible for most practical purposes.

In contrast, civil contempt can loom as a very real threat for an adjudged infringer. Civil contempt sanctions may be coercive or compensatory—i.e., designed “coercively to induce compliance with the court’s decree or remedially to obtain for the plaintiff a substitute for the defendant’s compliance.” The general legal rule is that compensatory civil contempt

its presence if the judge saw or heard the contemptuous conduct and so certifies; a magistrate judge may summarily punish a person as provided in 28 U.S.C. § 636(e)

41. 1 Dobbs, supra note 37, § 2.8(1), at 187 (observing that for purposes of imposing “a criminal sanction,” “the incidents of trial must comport with all the relevant rules of criminal procedure, including the constitutional protections afforded to those charged with crime” and possibly including a right to a jury trial and a requirement of “proof beyond a reasonable doubt”); see also Fed. R. Crim. P. 42(a) (providing notice and other procedural requirements for criminal contempt proceedings); Victor Stanley, Inc. v. Creative Pipe, Inc., 269 F.R.D. 497, 537–38 (D. Md. 2010) (noting that in criminal contempt proceedings, “the court must refer the matter to the United States Attorney for prosecution,” “appoint a private prosecutor” if the U.S. Attorney declines “a highly probable outcome in most instances,” demand proof “beyond a reasonable doubt,” and provide for “a jury trial if the sentence will be longer than six months” (citations omitted)).

42. See TWM Mfg. Co. v. Dura Corp., 722 F.2d 1261, 1272 (6th Cir. 1983) (stating, in reviewing a holding of criminal contempt for violation of a patent-infringement injunction, that “[i]n criminal contempt, willful disobedience must be proved beyond a reasonable doubt” and that “[w]illfulness, for this purpose, implies a deliberate or intended violation, as distinguished from an accidental, inadvertent or negligent violation”); Nemmers, supra note 38, at 295 (“A criminal contempt proceeding is a crime ‘in the ordinary sense,’ and therefore the acts of the accused must be shown beyond a reasonable doubt to have been willful and deliberate.” (footnotes omitted)).

43. An electronic search of all federal court opinions in the Westlaw database since 1970 that used “criminal contempt” and “patent” in the same paragraph turned up no case in which a district court made a holding of criminal contempt that was not reversed on appeal, and two cases in which such holdings were reversed. See Spindelfabrik, 903 F.2d at 1580 (holding that a “$2 million fine” “constituted punishment for criminal contempt, and cannot stand because it was imposed without following the requisite procedures for criminal contempt”); TWM, 722 F.2d at 1272 (holding that “the evidence [did] not support a finding of criminal contempt”). In 1973, James Nemmers reported that he was able to identify only two reported cases “in which criminal contempt was clearly charged for violation of an injunction in a patent case”—one from 1970 and another from 1911. Nemmers, supra note 38, at 291 n.20 (citing United States ex rel. Shell Oil Co. v. Barco Corp., 430 F.2d 998 (8th Cir. 1970); Kreplik v. Couch Patents Co., 190 F. 565 (1st Cir. 1911)). More generally, Nemmers reported that courts have historically tended to find criminal contempt principally in situations involving “‘direct’ contempts”—i.e., contemptuous behavior “committed in the presence of the court.” Id. at 289, 291. See generally Fed. R. Crim. P. 42(b) (“Notwithstanding any other provision of these rules, the court (other than a magistrate judge) may summarily punish a person who commits criminal contempt in its presence if the judge saw or heard the contemptuous conduct and so certifies; a magistrate judge may summarily punish a person as provided in 28 U.S.C. § 636(e).”). Violation of patent-infringement injunctions can be expected rarely, if ever, to constitute such direct contempt. See Nemmers, supra note 38, at 289–90 (“Since violations of injunctive relief in patent cases do not occur in the presence of the court, contempt considered hereinafter will be in the category of ‘indirect’ contempts . . . .”).

44. 1 Dobbs, supra note 37, § 2.8(3), at 197; see also Spindelfabrik, 903 F.2d at 1578 (“Judicial sanctions in civil contempt proceedings may, in a proper case, be employed for either or
sanctions are confined to the “complainant’s actual loss.” Nonetheless, the Federal Circuit has held, perhaps questionably, that in civil contempt proceedings, district courts may enhance awards for actual damages up to at least treble damages just as they may enhance damages up to treble their actual size in ordinary infringement proceedings. On the other hand, treble damages might well represent a practical limit on the sort of noncoercive civil sanctions the Federal Circuit will tolerate, and they appear likely to be reserved for particularly obnoxious—and thus readily avoidable—forms of contempt. In *Spindelfabrik Suessen–Schurr v. Schubert & Salzer Maschinenfabrik Aktiengesellschaft*, the Federal Circuit upheld treble damages for civil contempt in a situation where the district court “justifiably characterized [the contemnor’s] actions as ‘flagrant contemptuous conduct.’” Likewise, in *Stryker Corp. v. Davol Inc.*, the Federal Circuit upheld an award of treble damages for (presumably civil) contempt in light of “the conclusory nature of the opinion of counsel used . . . to justify selling [a] revised device and the minor changes made to the original [infringing] device.”

For civil contempt, courts may impose larger monetary sanctions in the form of fines, but these fines must generally be conditional on future noncompliance. Specifically, a coercive civil contempt decree may order imprisonment or payment of a fine unless or until the contemnor complies with the underlying injunction.

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45. See United States v. United Mine Workers, 330 U.S. 258, 304 (1947) (declaring that a compensatory “fine must of course be based upon evidence of [the] complainant’s actual loss”).
46. See Broadview Chem. Corp. v. Loctite Corp., 311 F. Supp. 447, 453 (D. Conn. 1970) (“To the extent that double or treble damages serve a punitive purpose, they may not be awarded in a civil contempt proceeding.”); Nemmers, *supra* note 38, at 306 (“The increased damages provisions of [35 U.S.C. §] 284 for a deliberate infringement are punitive; and although the contemnor may lose his profits, he cannot be assessed punitive damages in a civil contempt proceeding.”).
47. *Spindelfabrik*, 903 F.2d at 1578 (holding that where a district court “justifiably characterized . . . actions as ‘flagrant contemptuous conduct[,]’” “the district court did not abuse its discretion in trebling the damages and awarding attorney fees” in a civil contempt proceeding, but that the district court erred in imposing a $2 million fine without following criminal contempt procedures because the fine was not conditional on noncompliance and thus constituted “punishment for criminal contempt”).
48. See 35 U.S.C. § 284 (2006) (empowering district courts to “increase the damages up to three times the amount found or assessed”).
49. 903 F.2d 1568 (Fed. Cir. 1990).
50. *Id.* at 1578.
51. 234 F.3d 1252 (Fed. Cir. 2000).
52. *Id.* at 1260.
53. *Dobbs, supra* note 37, § 2.8(3), at 197; see *Spindelfabrik*, 903 F.2d at 1578–79 (“The ability of the contemnor to avoid the sanction by complying with the court order is an important factor in determining whether a contempt adjudication is civil or criminal.”). See generally United States v. United Mine Workers, 330 U.S. 258, 304 (1947) (stating that, in civil contempt proceedings, a court seeking to use a fine “to make the defendant comply” with the court’s earlier order “must . . . consider the character and magnitude of the harm threatened by continued
Alternatively or additionally, courts have held that a civil contempt decree may order disgorgement of the contemnor’s profits attributable to contempt and payment of the rights holder’s court costs and attorneys’ fees. A district court may also modify the initial injunctive decree, perhaps expanding its scope in hopes that the resulting amplified injunction will provide greater protection of the patentee’s legitimate interests. Such contempt sanctions can result from proceedings that “are generally summary in nature and may be decided by the court on affidavits and exhibits without the formalities of a full trial, although the movant bears the heavy burden of proving violation by clear and convincing evidence.” Further, “lack of intent to violate an injunction alone cannot save an infringer from a finding of [civil] contempt,” although “diligence and good faith efforts . . . may be considered in assessing penalties.”

Nonetheless, despite the potential procedural speed of contempt proceedings and the heavier sanctions that they can make available, there is a good chance that an adjudged infringer made subject to a patent-infringement injunction will find concerns with patent scope and injunction scope to be directly comparable. When any threat of being found in contempt is realistically limited to a threat of civil contempt and when, furthermore, any stigma associated with civil (as opposed to criminal) contempt can be assumed negligible, a risk of being found in contempt can essentially contumacy, and the probable effectiveness of any suggested sanction in bringing about the result desired”).

54. See Schaefer Fan Co. v. J&D Mfg., 265 F.3d 1282, 1290 (Fed. Cir. 2001) (upholding a district court’s award of contempt sanctions equaling the contemnor’s “total profit” from the sale of two types of fans); Brine, Inc. v. STX, L.L.C., 367 F. Supp. 2d 61, 71 (D. Mass.) (“[A] sanction in the amount of gross profit from the sales of the X2+ provides a natural means of imposing a penalty that is proportionate to the severity of the contempt.”), aff’d, 139 F. App’x 281 (Fed. Cir. 2005); Nemmers, supra note 38, at 305 (“It appears settled that the complainant is entitled to the contemnor’s profits” “even though ‘profits’ of the infringer are not recoverable in the ordinary patent infringement action.”). As with treble damages for contempt, disgorgement of the entirety of a contemnor’s profits appears to be considered an extreme sanction reserved for egregious behavior. See Schaefer, 265 F.3d at 1290 (holding disgorgement of the contemnor’s “total profit” to be justified where the contemnor had previously been found in contempt and had “acted willfully by failing to obtain any opinion of counsel on whether [certain products] would breach the agreement and the court’s orders”).

55. Nemmers, supra note 38, at 307 (noting a contempt complainant’s ability “to recover his attorney’s fees and costs and expenses incurred in conducting the civil contempt proceeding,” subject to the trial court’s discretion); see also Stryker, 234 F.3d at 1260 (holding that the district court “did not abuse its discretion in awarding treble the compensatory royalty damages, attorney fees, and costs”).

56. See Spindelfabrik, 903 F.2d at 1577 (holding that in contempt proceedings, “[t]he district court did not abuse its discretion in broadening the injunction to cover ‘any automated rotor spinning machine,’ without the qualifying word ‘infringing’”).


58. TiVo, 646 F.3d at 880.

59. Concerns about serious stigma associated with contempt seem more strongly associated with criminal contempt than with civil contempt. See, e.g., Richard B. Kuhns, The Summary
amount to no more than a risk of being subjected to heightened but still limited monetary sanctions. Moreover, these heightened monetary sanctions will only attach if the patentee succeeds in showing violation of an injunction under a heightened burden of proof—one requiring clear and convincing evidence. Under such circumstances, an injunction, rather than acting as a clear off switch for infringement, serves instead primarily as a gateway to a potential set of enhanced monetary remedies.

Contempt Power: A Critique and a New Perspective, 88 YALE L.J. 39, 79 n.235 (1978) (expressing concern for “the stigma of a conviction” for criminal contempt); F. Joseph Warin & Michael D. Bopp, Corporations, Criminal Contempt and the Constitution: Do Corporations Have a Sixth Amendment Right to Trial by Jury in Criminal Contempt Actions and, if So, Under What Circumstances?, 1997 COLUM. BUS. L. REV. 1, 40 n.161 (“The collateral effects of a criminal contempt finding include the stigma that attaches in such circumstances.”); Douglas C. Berman, Note, Coercive Contempt and the Federal Grand Jury, 79 COLUM. L. REV. 735, 758 (1979) (“[C]oercive contempt incarceration does not entail the limitations of civil rights (such as disenfranchisement) that normally attend a felony conviction, and . . . the stigma of being a convicted criminal does not attach.”); Kathleen A. Burdette, Comment, Making Parents Pay: Interstate Child Support Enforcement After United States v. Lopez, 144 U.PA. L. REV. 1469, 1527 (1996) (“[C]riminal convictions carry a much more severe social stigma than do civil contempt orders.”). At least one commentator has suggested that even criminal contempt tends not to carry much stigma. See Eric L. Jensen, The Waiver of Juveniles to Criminal Court: Policy Goals, Empirical Realities, and Suggestions for Change, 31 IDAHO L. REV. 173, 174 n.4 (1994) (excluding “criminal contempt violations” from the scope of a discussion of the treatment of criminal activity by juveniles because of “the absence of strong criminal stigma attached” to such violations). But other commentators have suggested that even civil contempt can inflict significant stigma. See, e.g., Earl C. Dudley, Jr., Getting Beyond the Civil/Criminal Distinction: A New Approach to the Regulation of Indirect Contempt, 79 VA. L. REV. 1025, 1065 (1993) (“It may seriously be doubted whether any nonlawyers are sufficiently aware of—let alone appreciate the import of—the [civil-versus-criminal contempt] distinction for it to make any real difference in the opprobrium attaching to a contempt judgment.”); Recent Case, International Bhd. of Teamsters v. NLRB (D.C. Cir. 1958), 72 HARV. L. REV. 1577, 1580 (1959) (expressing concern that even when “only civil penalties” are likely to be imposed, “the threat of a large fine and the stigma of citation for contempt may inhibit [labor] activities beyond those specifically restrained” (footnote omitted)); Note, Procedures for Trying Contempts in the Federal Courts, 73 HARV. L. REV. 353, 357 (1959) (suggesting “the possibility [that] stigma . . . may result from the imposition of sanctions similar in form to criminal punishment”).

60. An infringer might perceive the heightening of sanctions as especially sharp if the infringer were insured for ordinary and perhaps even willful infringement but not for contempt. But patent-litigation insurances of any stripe appears to be relatively rare. See CIA CONSULTANTS LTD., PATENT LITIGATION INSURANCE: A STUDY FOR THE EUROPEAN COMMISSION ON POSSIBLE INSURANCE SCHEMES AGAINST PATENT LITIGATION RISKS § 7.7.1 (2003) (“Contrary to received belief, the extent of Patent litigation insurance in the USA in relation to the extent of litigation appears to be small, and limited to defence, including damages.”); see also Colleen V. Chien, Predicting Patent Litigation, 90 TEXAS L. REV. 283, 295 (2011) (“[T]he market for patent insurance is extremely small and highly inefficient. Offerings are limited and expensive. Defensive policies . . . fail to cover many situations.” (footnotes omitted) (internal quotation marks omitted)). Thus, an adjudged infringer is not likely to perceive a special pinch from lack of insurance coverage for contempt sanctions.

61. TiVo, 646 F.3d at 883 (“The patentee bears the burden of proving violation of the injunction by clear and convincing evidence . . . .”)

62. Because monetary sanctions for civil contempt are generally limited to quite finite values, contempt sanctions and the injunctions that they back up do not act as the sort of limiting endpoint for a liability-rule continuum that Kaplow and Shavell have associated with a true property rule. Kaplow & Shavell, supra note 10, at 756 (“[T]he property rule protecting victims mirrors a liability
Particularly in situations where the expected cost of complying with an injunction is great—or alternatively stated, where the expected value of continuing to violate patent rights is large—an adjudged infringer can face a set of options substantially analogous to those faced when mulling the risk of an infringement suit alone. A course of action that risks a finding of contempt might nonetheless be profitable; indeed, it might be an adjudged infringer’s most profitable option. One might speculate that this was the situation in *TiVo Inc. v. EchoStar Corp.*, where, in determining contempt sanctions, the district court had settled on an award for EchoStar’s contempt of approximately $200 million after refusing TiVo’s request for disgorgement of approximately $1 billion in profits that TiVo contended was attributable to EchoStar’s contempt.

More generally, civil contempt sanctions—which judicial practice suggests are likely to amount to treble damages or less—will predictably act as only imperfect deterrents when the damages awarded in the original infringement proceedings constitute only a small percentage of the infringer’s profits. Such a situation is likely to occur reasonably frequently because a patented invention often forms only one part of a much more intricate infringing product or process and thus, particularly in light of a recent push to ensure proper proportionality of reasonable-royalty damages, will justify compensatory damages equaling only a fraction of the infringer’s profits. The resulting discrepancy between infringer profits and assessed patent value might make particularly probable a court’s denial of an injunction on grounds that the discrepancy will give the patentee undue leverage in subsequent licensing negotiations. Such was the case in *Paice LLC v. Toyota Motor Corp.*, where the jury award of $25 per vehicle amounted to no more than about 0.1% of each infringing vehicle’s typical total price. But when

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rule with extremely high, or infinite, damages.


64. *Id.* at 665 (“TiVo’s suggested disgorgement of nearly $1 billion is unreasonable under the circumstances of this case.

65. See supra note 54 and text accompanying notes 46–52.

66. *Cf.* Lemley & Shapiro, supra note 2, at 2009 (“A microprocessor may include 5,000 different inventions . . . .”)

67. *See* Bo Zeng, Note, *Lucent v. Gateway: Putting the “Reasonable” Back into Reasonable Royalties*, 26 BERKELEY TECH. L.J. 329, 366 (2011) (observing that in various recent cases, “the Federal Circuit made a critically important effort to ensure that reasonable royalty damage awards are actually reasonable”).


69. *Id.* at *3 (quoting defendants’ observation that the jury’s award amounted to “1/8th of one percent of the $20,000 price of a Prius and even less of a percentage of the price of the Highlander ($33,000) and the RX400h ($42,000)”).
In short, at least when sanctions for criminal contempt are no more than a remote possibility, injunctions’ effects on the behavior of their targets can be substantially similar to those of injunctions’ oft-supposed opposite—“liability rules, under which [the state] merely discourages violations by requiring transgressors to pay victims for harms suffered.”\textsuperscript{70} In at least superficial conformity with Louis Kaplow and Steven Shavell’s suggestion that merely “probabilistic invasions of property interests” are frequently governed properly and “primarily by a liability rule,”\textsuperscript{71} the liability-rule-like nature of injunctions might extend to various situations where courts issue an injunction because there is a strong interest in providing extra deterrence or recompense for continued infringement\textsuperscript{72} but where the scope of underlying rights is uncertain and there is also a strong social interest in not discouraging, or even in affirmatively encouraging, activity that treads close to underlying rights’ boundaries.

\textbf{C. Modeling Infringer Incentives}

Whatever the generality of the insight about injunctions’ potential liability-rule-like nature, options available to a party enjoined for patent


\textsuperscript{71} Kaplow & Shavell, \textit{supra} note 10, at 716.

\textsuperscript{72} Deterrence or recompense made available through an injunction can be viewed as “extra” to the extent net contempt sanctions or awards to the patentee are expected to exceed those available through ordinary infringement proceedings, whether because contempt proceedings are expected to yield higher monetary awards or because enforcement through contempt is more likely to occur due to contempt proceedings’ greater speed and presumably lower cost, etc. Of course, there is a background question of when such a higher level of effective remedies should be viewed as desirable at all. \textit{See id.} at 773 (contending that in situations involving “harmful externalities” and an “absence of bargaining between victims and injurers, a liability rule with damages equal to estimated harm is unambiguously superior to property rules even though actual harm in a given case may be difficult to determine”).
infringement commonly include (1) paying the patentee for a license, (2) halting all activity potentially barred by the injunction, and (3) redesigning the infringing product or process. Patent and injunction scope affect the relative desirability of these options. Greater patent scope increases the range of redesigns that are likely to infringe and thus tends to raise the cost of redesign either by forcing the infringer to choose a more radical redesign or by raising the risk that a given redesign will infringe. Likewise, greater injunction scope increases the range of redesigns that will put the infringer at risk of contempt, with similar implications for the likely cost of redesign. If the probability of a contempt holding or the penalty for contempt is sufficiently small, a rational infringer might choose to implement a redesign that risks contempt, just as the infringer might previously have chosen an original design that risked a holding of infringement.

A relatively simple mathematical model helps illustrate the nature of an adjudged infringer’s potential decision-making calculus. Consider a situation where a product has been found to infringe, and a rational, profit-maximizing infringer has three basic alternatives:

1. Pay for a license, which for simplicity we assume will require payment of a lump-sum licensing fee, $F$;
2. Implement an “ironclad” redesign that will cost $D_1$ to implement and that will be generally recognized, by the patentee as well as the courts, to be both injunction compliant and noninfringing;
3. Implement a more doubtful redesign that will cost a lower amount, $D_2$ (i.e., $D_2 < D_1$), but that carries (i) a nonzero chance, $\theta_{\text{con}}$, of resulting in a holding of contempt and (ii) a further nonzero chance, $\theta_{\text{inf}}$, of resulting in a holding of infringement even when no contempt is found.

Because the adjudged infringer’s willingness to pay for a license will depend on the expected profitability of redesign options (2) and (3), I focus on these options below.

To model the profitability of options (2) and (3), I use a variant of a model that Carl Shapiro developed with an eye to infringement concerns only. In particular, I suppose that in the absence of additional threats of litigation, the product resulting from either redesign will generate a constant profit.

profit margin $M$ per unit sold, with $N$ units expected to be sold, and $MN \geq D$. I also assume that the patentee will not sue in response to the ironclad redesign in option (2) but that, if the adjudged infringer implements the more doubtful redesign in option (3), the patentee will file a motion for contempt. By assumption, the parties will not settle, and the probability that the patentee’s motion will yield a holding of contempt is $\theta_{\text{con}}$, where $0 \leq \theta_{\text{con}} \leq 1$. If contempt is not found, the patentee will file a new suit alleging patent infringement. Once again, the parties will not settle. The patentee’s probability of success in the new suit will be $\theta_{\text{inf}}$, where $0 \leq \theta_{\text{inf}} \leq 1$.

Significantly, the probabilities $\theta_{\text{con}}$ and $\theta_{\text{inf}}$ should correlate with injunction scope and patent scope, respectively. Invalidity and enforceability of underlying patent claims are assumed not to be at issue in the proceedings contemplated, whether due to the law of the case for contempt proceedings or estoppel in a subsequent suit for infringement. Thus, a broader injunction will likely generate a greater probability of patentee success in a contempt proceeding, $\theta_{\text{con}}$, and a broader patent will likely generate a greater probability of patentee success in an infringement suit, $\theta_{\text{inf}}$. A model incorporating the values $\theta_{\text{con}}$ and $\theta_{\text{inf}}$ can therefore suggest how injunction and patent scope affect the decision-making calculus of an adjudged infringer.

But there are additional variables that enter this calculus. Suppose that by the time contempt proceedings are concluded, the adjudged infringer will have made and sold $n_{\text{con}}$ units of the redesigned product and will also have incurred $L_{\text{con}}$ in contempt-proceeding litigation costs. If the infringer is held not to be in contempt, the infringer will then sell an additional $n_{\text{inf}}$ units and incur an additional $L_{\text{inf}}$ in litigation costs before the conclusion of the infringement proceedings. On the other hand, if the infringer is held in contempt, the infringer will have to pay the equivalent of a monetary penalty.

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75. For simplicity, I neglect time discounting for products sold after a period of time has elapsed.


77. To the extent defenses of invalidity and unenforceability were available, the adjudged infringer will likely have challenged validity and enforceability in the original litigation. See Mark A. Lemley, Rational Ignorance at the Patent Office, 95 Nw. U. L. Rev. 1495, 1502 (2001) (“Virtually every patent infringement lawsuit includes a claim that the patent is either invalid or unenforceable . . . (or commonly both).”). Thus, the infringer might be precluded from making such challenges in later litigation. See, e.g., Roche Palo Alto LLC v. Apotex, Inc., 531 F.3d 1372, 1381 (Fed. Cir. 2008) (affirming a district court’s holding that “validity challenges . . . were barred by the doctrine of claim preclusion”); Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc., 763 F. Supp. 2d 671, 678–79 (D. Del. 2010) (holding that various arguments for invalidity were barred by issue preclusion); cf. Foster v. Hallco Mfg. Co., 947 F.2d 469, 480–81 (Fed. Cir. 1991) (“[I]f a consent judgment, by its terms, indicates that the parties thereto intend to preclude any challenge to the validity of a particular patent, even in subsequent litigation involving a new cause of action, then that issue can be precluded.”).
\( P \) and will have its postcontempt expected profits reduced by \( \delta_{\text{con}} \) from \( M(N - n_{\text{con}}) \) to \( \pi_{\text{con}} \). Finally, if the infringer prevails in the contempt proceeding but the redesigned product is later held to infringe, the infringer will pay a damages award \( A \) and have its postjudgment expected profits reduced by \( \delta_{\text{inf}} \) from \( M(N - n_{\text{con}} - n_{\text{inf}}) \) to \( \pi_{\text{inf}} \).

Under these circumstances, the infringer’s expected gains from the two redesigns are as follows:

1. expected gain from pursuing the ironclad redesign:
   \[ G_1 = MN - D_1; \]  
   (Eq. 1)

2. expected gain from pursuing the more doubtful redesign:
   \[
   G_2 = M n_{\text{con}} - D_2 - L_{\text{con}} + \theta_{\text{con}}(\pi_{\text{con}} - P) \\
   + (1-\theta_{\text{con}})(M n_{\text{inf}} - L_{\text{inf}} + \theta_{\text{inf}}(\pi_{\text{inf}} - A) + (1-\theta_{\text{inf}})M(N-n_{\text{con}}-n_{\text{inf}})). \]  
   (Eq. 2)

The formula for \( G_2 \) looks complicated but can be significantly simplified by (1) recognizing that \( \delta_{\text{con}} = M(N - n_{\text{con}}) - \pi_{\text{con}} \) and \( \delta_{\text{inf}} = M(N - n_{\text{con}} - n_{\text{inf}}) - \pi_{\text{inf}} \) and (2) defining new variables \( A_{\text{con}} = P + \delta_{\text{con}} \) and \( A_{\text{inf}} = A + \delta_{\text{inf}} \). These last variables, \( A_{\text{con}} \) and \( A_{\text{inf}} \) represent sums of (a) the cost of a court-imposed penalty or damages award (\( P \) or \( A \)) and (b) the decrease in postjudgment profits expected to result from an adverse court decision (\( \delta_{\text{con}} \) or \( \delta_{\text{inf}} \)). Hence, in this relatively simple model, \( A_{\text{con}} \) and \( A_{\text{inf}} \) equal the total expected costs to the adjudged infringer of adverse judgments in contempt and infringement proceedings, respectively.

Use of the new \( A \) variables leads to the following equation for \( G_2 \):
\[
G_2 = MN - D_2 \]  
(Eq. 3)
where the total effective cost of the more questionable redesign \( D_2 \) satisfies the formula
\[
D_2 = D_2 + L_{\text{inf}} + \theta_{\text{inf}}A_{\text{inf}} + L_{\text{con}} + \theta_{\text{con}}A_{\text{con}} \]  
(Eq. 4)
with
\[
A_{\text{con}} = A_{\text{con}} - L_{\text{inf}} - \theta_{\text{inf}}A_{\text{inf}}. \]  
(Eq. 5)

Subtraction of \( L_{\text{inf}} + \theta_{\text{inf}}A_{\text{inf}} \) from \( A_{\text{con}} \) to give the value of \( A_{\text{con}} \) reflects the fact that if an adjudged infringer is found in contempt, it at least “saves” on the expected costs of facing subsequent infringement litigation.

Equations 3 through 5 neatly illustrate the comparability of questions of patent scope and injunction scope. Further, they put mathematical emphasis on a point made at the very beginning of this Article: injunctions are not mere off switches for infringement. An injunction’s relative capacity to bring a halt to infringement is influenced by the scope of the injunction, the cost of compliance with the injunction, and the backstop penalties or remedies for a finding of contempt. Despite the issuance of an injunction, an adjudged infringer can continue to have a multiplicity of plausible options, perhaps particularly when violation of an injunction is unlikely to lead to
proceedings for criminal contempt.78 As Doug Rendleman has observed, instead of complying straightforwardly with an injunction, an adjudged infringer “may dissemble, may claim that the injunction is vague and impossible or difficult to understand, may seek delay, may search for loopholes, and may change as little as possible to ‘obey.’”79

In particular, under the model presented here, a rational economic actor will favor the ironclad redesign over the questionable redesign only when \( G_1 \geq G_2 \) or, equivalently, \( D_1 \leq D_2 \). Other than adding another source of foreseeable litigation costs, the prospect of contempt proceedings deters choice of the more questionable redesign by adding to \( D_2 \) a quantity that equals the product of the likelihood of a contempt finding, \( \theta_{\text{con}} \), and the total effective cost, \( A_{\text{con}} \), of a finding of contempt.80 The prospect of an infringement suit similarly deters choice of the more questionable redesign by adding to \( D_2 \) a quantity that equals the product of the likelihood of an infringement finding, \( \theta_{\text{inf}} \), and the total effective cost, \( A_{\text{inf}} \), of a finding of infringement.81

Moreover, in situations where the rational infringer prefers the questionable redesign to the ironclad redesign (i.e., where \( D_2 < D_1 \)) and where \( A_{\text{con}} > 0 \), higher values of \( \theta_{\text{con}} \) and \( \theta_{\text{inf}} \) correspond to higher values for the maximum licensing fee, \( F_{\text{max}} \leq D_2 < D_1 \), that the rational infringer is willing to pay.82

Consequently, to the extent \( \theta_{\text{con}} \) and \( \theta_{\text{inf}} \) serve as proxies for injunction and patent scope, Equations 3 through 5 show injunction and patent scope to play fundamentally analogous roles in protecting patent value through deterrence and likely enhancement of licensing fees. Conversely, limitations on injunction and patent scope facilitate various kinds of postinjunction activity by discounting costs of potential infringement or contempt by the less-than-100% probabilities that infringement or contempt will actually be found. Patent law that seeks to optimize social welfare must try to tune injunction and patent scope—and thus quantities such as \( \theta_{\text{con}} \) and \( \theta_{\text{inf}} \)—to strike a proper

78. DOUGLAS LAYCOCK, MODERN AMERICAN REMEDIES: CASES AND MATERIALS 766–69 (4th ed. 2010) (discussing the categories of “criminal contempt, coercive civil contempt, and compensatory civil contempt” and describing a potential three-step process in which a court first “issues the injunction,” second, “adjudicates the first violations and threatens specific fines for further violations,” and third, “adjudicates further violations and collects the fines”).


80. See id. (stating that an adjudicated infringer’s “intuitive calculation considers his gain from [an] activity, reduced by the probability and severity of a sanction”).

81. Facial lack of parallelism between \( A_{\text{inf}} \) and \( A_{\text{con}} \) can be explained as follows. The relevant effective cost of a contempt holding equals the quantity \( A_{\text{con}} = A_{\text{con}} - L_{\text{inf}} - \theta_{\text{inf}} A_{\text{inf}} \), rather than \( A_{\text{con}} \), because in the absence of a contempt finding, the infringer will face infringement proceedings having an expected cost, \( L_{\text{inf}} + \theta_{\text{inf}} A_{\text{inf}} \). The quantity \( A_{\text{con}} \) equals the extent to which \( A_{\text{con}} \) exceeds this alternative expected cost. As there is, by assumption, no alternative remedy for the patentee once contempt and infringement proceedings fail, \( A_{\text{inf}} \) by itself equals the extent to which \( A_{\text{inf}} \) exceeds the residual alternative expected cost—zero—of such nonexistent alternative remedies.

82. Regrouping terms on the right-hand side of Equation 4 yields

\[
D_1 = D_2 + L_{\text{con}} + \theta_{\text{con}} A_{\text{con}} + (1 - \theta_{\text{con}}) (L_{\text{inf}} + \theta_{\text{inf}} A_{\text{inf}}).
\]

The conclusion in the text follows from noting that \( (1 - \theta_{\text{con}}) \geq 0 \) and, by assumption, \( A_{\text{inf}} \geq 0 \).
balance between competing concerns of protecting patent value and optimizing productive activity by others.83

III. U.S. Law and a Taxonomy of Injunction Types

To a large extent, existing U.S. law on patent-infringement injunctions suggests a taxonomy that informs much of the discussion in this Article. This taxonomy consists of the five injunction types—Type-0, Type-1, Type-2, purely reparative, and specially tailored—that Part I described. In this part, I first discuss the taxonomy’s three types of do-not-infringe injunctions and then discuss purely reparative and specially tailored injunctions.84

A. Type-0 Through Type-2 Do-Not-Infringe Injunctions

The simplest of the taxonomy’s do-not-infringe injunctions is what I term a Type-0, measure-zero injunction. Such an injunction explicitly prohibits only infringement that involves the specific devices or processes already adjudged to infringe. For example, if manufacture or sale of Energizer Holdings’ Schick Quattro razor were held to infringe patent rights associated with the blade arrangement in Gillette’s Mach3 razor,85 an injunction permanently enjoining Energizer Holdings “from making, using, selling, offering to sell, or importing Schick Quattro razors” would be a Type-0, measure-zero injunction.

From the patentee’s standpoint, potential problems with such an order are obvious. What if Energizer takes its Schick Quattro, alters the design of the handle so that it is arguably more ergonomic, and markets the resulting “new and improved” product as the “Schick Quarto”? If minor or irrelevant design-arounds can avoid the force of a Type-0 injunction, that injunction will often have little real-world significance. In mathematical terms, the Type-0 injunction will effectively be of “measure zero,” a practical nullity in any effort to vindicate a patentee’s substantive rights.86

83. In reality, the proper balance will likely reflect a variety of other concerns as well. See, e.g., Golden, supra note 1, at 509–11 (discussing various goals and behaviors that patent law might seek to promote or affect).
84. The three “supercategories” of (a) do-not-infringe injunctions, (b) purely reparative injunctions, and (c) prophylactic injunctions might be viewed as at least somewhat parallel to the three classifications proposed by Owen Fiss in 1978: (a) “the preventive injunction, which seeks to prohibit some discrete act or series of acts from occurring in the future”; (b) “the reparative injunction, which compels the defendant to engage in a course of action that seeks to correct the effects of a past wrong”; and (c) “the structural injunction, which seeks to effectuate the reorganization of an ongoing social institution.” Fiss, supra note 5, at 7.
86. See supra note 15.
Courts have taken two primary approaches to dealing with this Type-0 problem. First, they commonly issue Type-1, colorable-differences injunctions that explicitly prohibit infringement not only via the precise products or processes already adjudged to infringe, but also via products or processes “no more than colorably different” from them. Second, courts generally recognize that despite Type-0 injunctions’ measure-zero language, Type-0 injunctions should be understood to have Type-1 effect. The Federal Circuit has explained:

Where an injunction is written narrowly against a particular infringing device, contempt may, nevertheless, be found on the basis of a modified infringing device. An enjoined party under a narrow decree will not be permitted to escape [its force] on a purely “in rem” theory that only a particular device is prohibited, where it is evident that the modifications do not avoid infringement and were made for the purpose of evasion of the court’s order. Again, the standard is whether the differences between the two devices are merely colorable.

At least in principle, the third category of do-not-infringe injunctions—Type-2, obey-the-law injunctions—offers another way to protect against the facial narrowness of a Type-0 order. A Type-2 injunction generally prohibits continued infringement of a particular patent or claim. In contempt proceedings, however, Type-2 language will not be read to have such broad, obey-the-law effect. The requirement of “clear and convincing” evidence for a holding of contempt, as opposed to the normal preponderance-of-the-evidence standard for proof of infringement, provides one reason why such language generally does not make all forms of subsequent infringement sub-

87. See, e.g., Ariba, Inc. v. Emptoris, Inc., No. 9:07-CV-90, slip op. at 1–2 (E.D. Tex. Jan. 22, 2009) (prohibiting activities involving “1. the Emptoris software (versions 5.2, 6.0, 6.1 and 7.0) heretofore marketed by Emptoris; and 2. all other software not more than colorably different therefrom”), aff’d per curiam, No. 09-1230, 2010 WL 55625 (Fed. Cir. Jan. 8, 2010); Callaway Golf Co. v. Acushnet Co., No. 06-091-SLR, slip op. at 2 (D. Del. Nov. 10, 2008) (prohibiting activity involving “any of the Pro V1® line of golf balls . . . or any variations thereof not more than colorably different”), vacated, 576 F.3d 1331 (Fed. Cir. 2009).

88. KSM Fastening Sys., Inc. v. H.A. Jones Co., 776 F.2d 1522, 1526 (Fed. Cir. 1985), overruled on other grounds, vacated on other grounds, 776 F.2d 1522, 1526 (Fed. Cir. 1985).


90. Abbott Labs. v. TorPharm, Inc., 503 F.3d 1372, 1382 (Fed. Cir. 2007) (“There must be clear and convincing evidence of patent infringement to support a district court’s finding of contempt.”).

ject to contempt. More to the point, however, the Federal Circuit has held that in contempt proceedings, a Type-2, obey-the-law injunction should be narrowly construed to apply only to products or processes “previously admitted or adjudged to infringe, and to other devices which are no more than colorably different therefrom and which clearly are infringements.”92 In other words, when presiding over contempt proceedings, a judge should effectively reform a Type-2, obey-the-law injunction so that its effective scope is no greater than that of a Type-1, colorable-differences order.

Authority for such judicial reformation derives at least partially from the Federal Circuit’s separate conclusion that Type-2, obey-the-law injunctions are technically prohibited and thus subject to vacatur on direct appeal. The U.S. Patent Act gives district courts power to “grant injunctions . . . on such terms as [they] deem[] reasonable.”93 But consistent with due process concerns of notice,94 Federal Rule of Civil Procedure 65(d) demands that any such injunction “state its terms specifically” and “describe in reasonable detail—and not by referring to the complaint or other document—the act or acts restrained or required.”95 Pursuant to this demand, the Federal Circuit has repeatedly “rejected as overly broad . . . permanent injunction[s] that simply prohibit[] future infringement of a patent.”96 The Circuit has indicated

92. KSM, 776 F.2d at 1526. The KSM court observed:
The unreasonableness of a decree incorporating a vague or broad prohibition against “infringement” of a “patent” is alleviated because of the universal rule . . . that contempt proceedings, civil or criminal, are available only with respect to devices previously admitted or adjudged to infringe, and to other devices which are no more than colorably different therefrom and which clearly are infringements of the patent.

Id.; cf. 11A CHARLES ALAN WRIGHT, ARTHUR R. MILLER & MARY KAY KANE, FEDERAL PRACTICE AND PROCEDURE § 2955, at 311 (2d ed. 1995) (“A court’s failure to comply with the prerequisites in Rule 65(d) as to the proper scope or form of an injunction or restraining order does not deprive it of jurisdiction or render its order void.” (footnotes omitted)).


94. H.K. Porter Co. v. Nat’l Friction Prods. Corp., 568 F.2d 24, 27 (7th Cir. 1978) (“Because of the risks of contempt proceedings . . . interests of liberty and due process make it indispensable for the chancellor or his surrogate to speak clearly, explicitly, and specifically if violation of his direction is to subject a litigant . . . to coercive or penal measures [and] to payment of damages.”).

95. F ED. R. CIV. P. 65(d)(1); see also 11A WRIGHT, MILLER & KANE, supra note 92, § 2955, at 308–09 (“The drafting standard established by Rule 65(d) is that an ordinary person reading the court’s order should be able to ascertain from the document itself exactly what conduct is proscribed.”).

96. E.g., Int’l Rectifier Corp. v. IXYS Corp., 383 F.3d 1312, 1316 (Fed. Cir. 2004) (vacating an injunction that “by its terms . . . applies to ‘any device’ made or sold by IXYS that is within the scope of the patent claims”); see also Forest Labs., Inc. v. Ivax Pharm., Inc., 501 F.3d 1263, 1272 (Fed. Cir. 2007) (narrowing an injunction by “delet[ing] the language ‘any products that infringe the ’712 patent, including’”); Marketa Trimble, Cross-Border Injunctions in U.S. Patent Cases and Their Enforcement Abroad, 13 MARQ. INTELL. PROP. L. REV. 331, 340 (2009) (noting the Federal Circuit’s indication that injunctions broadly prohibiting infringement of a patent violate Rule 65(d)); cf. PETER S. MENELL ET AL., PATENT CASE MANAGEMENT JUDICIAL GUIDE § 3.8.1, at 3-25 (2009) (stating that an injunction “must . . . specifically describe the infringing actions enjoined, with reference to particular products”). An injunction simply stating that further infringement of a specific patent or patent claim is prohibited would appear to require “reference [to] materials in other documents” and thus, on that ground alone, would be at least technically contrary to the plain
that a do-not-infringe injunction generally needs to “limit its prohibition to the manufacture, use, or sale of the specific infringing device, or to infringing devices no more than colorably different from the infringing device.” In other words, a do-not-infringe injunction generally must have a Type-0, measure-zero or a Type-1, colorable-differences form.

On the other hand, in at least two instances, the Federal Circuit has tolerated violation of the general prohibition against Type-2, obey-the-law injunctions. In 1999, a Federal Circuit panel upheld a permanent injunction forbidding “any further infringement of the ’522 patent.” The panel essentially found that, under the circumstances, use of Type-2 language constituted only harmless error. According to the panel, “any danger of unwarranted contempt actions [was] minimal, if not completely non-existent, because of the detailed record on which this injunction was entered.” More than a decade later, in *Streck, Inc. v. Research & Diagnostic Systems, Inc.*, a 2012 panel of the Federal Circuit followed this 1999 decision, using it to justify upholding an injunction that included Type-0 and Type-1 language but that also included Type-2 language forbidding “otherwise infringing the asserted claims [of the patents in suit].”

At least for the moment, these 1999 and 2012 panel decisions appear to be substantially anomalous. In both 2004 and 2007, the Federal Circuit reaffirmed its more traditional interpretation of Rule 65(d), holding that “the only acts the injunction may prohibit are infringement of the patent by the adjudicated devices and infringement by devices not more than colorably different from the adjudicated devices. In order to comply with Rule 65(d), the injunction should explicitly proscribe only those specific acts.” In 2004, the circuit further suggested that the 1999 decision should be viewed either as correct but limited to a relatively exceptional set of facts, or as incorrect and not controlling “to the extent [it] is inconsistent with the rule [previously] pronounced.” The Federal Circuit’s 2012 decision upholding language of Rule 65(d). See *Dupuy v. Samuels*, 465 F.3d 757, 758 (7th Cir. 2006) (arguing for and applying a relatively strict, “literal interpretation” of Rule 65(d)’s requirement “that an injunction be a self-contained document rather than [one] incorporat[ing] by reference materials in other documents”); cf. *H.K. Porter*, 568 F.2d at 27 (“It is beyond cavil that when it merely incorporated by reference the Settlement Agreement, the April 15, 1968 order ignored that rule’s mandatory requirement that an injunction ‘shall describe in reasonable detail, and not by reference to the complaint or other document, the act or acts sought to be restrained.’”). *But see* *Landmark Legal Found. v. EPA*, 272 F. Supp. 2d 70, 74 (D.D.C. 2003) (“Courts are split on whether Rule 65(d) requires a strict interpretation.”). 97. *Additive Controls & Measurement Sys., Inc. v. Flowdata, Inc.*, 986 F.2d 476, 479–80 (Fed. Cir. 1993). 98. *Signtech USA, Ltd. v. Vutek, Inc.*, 174 F.3d 1352, 1359 (Fed. Cir. 1999). 99. *Id.* 100. 665 F.3d 1269 (Fed. Cir. 2012). 101. *Id.* at 1293 (internal quotation marks omitted). 102. *Int’l Rectifier Corp. v. IXYS Corp.*, 383 F.3d 1312, 1316 (Fed. Cir. 2004); accord *Forest Labs., Inc. v. Ivax Pharm., Inc.*, 501 F.3d 1263, 1271 (Fed. Cir. 2007) (quoting *Int’l Rectifier*). 103. *Int’l Rectifier*, 383 F.3d at 1317.
a Type-2 injunction did not cite, distinguish, or otherwise engage with the
court’s at least potentially contrary 2004 and 2007 precedents.\textsuperscript{104} Even if the
2012 decision had, it would have been powerless to overrule them.\textsuperscript{105}

Thus, under currently controlling precedent, Type-2, obey-the-law
injunctions appear to remain a generally prohibited form of injunctive relief.
On the other hand, as appears commonly to be the case with violations of
Rule 65(d) in U.S. law,\textsuperscript{106} the practical significance of this prohibition is
limited because the Federal Circuit has instructed that if a forbidden Type-2
injunction is not challenged on direct appeal, the injunction should not be
treated as void in contempt proceedings but should instead be effectively
“reformed”\textsuperscript{107} by being understood to be restricted to the scope of a Type-1,
colorable-differences order.\textsuperscript{108}

\textbf{B. Purely Reparative Injunctions}

Type-2, obey-the-law injunctions are not the only kind of patent-
infringement orders that existing law forbids. The Federal Circuit has held
that district courts lack authority to issue purely reparative injunctions\textsuperscript{109} that
appear to be directly concerned only with correcting for harm caused by past
infringement.

An example of a purely reparative order would be an order that
Energizer destroy all Schick Quattros manufactured in the United States that
are now in Argentina, even though the court knows that the Argentinian
Quattros will never make their way back to the United States.\textsuperscript{110} Such an
order works to limit the harm to Gillette—as well as the gain to Energizer—

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{104} \textit{Streck}, 665 F.3d at 1293 (citing only \textit{Signtech} and Federal Rule of Civil Procedure 65(d)
in reasoning about the propriety of Type-2 language).
\item \textsuperscript{105} \textit{See} Newell Cos. v. Kenney Mfg. Co., 864 F.2d 757, 765 (Fed. Cir. 1988) (“Where there is
direct conflict [between prior decisions of Federal Circuit panels], the precedential decision is the
first.”).
\item \textsuperscript{106} \textit{See 11A WRIGHT, MILLER & KANE, supra note 92, § 2955, at 311 (“A court’s failure to
comply with the prerequisites in Rule 65(d) as to the proper scope or form of an injunction or
restraining order does not deprive it of jurisdiction or render its order void.” (footnotes omitted)).
\item \textsuperscript{107} \textit{BLACK’S LAW DICTIONARY} 1394 (9th ed. 2009) (defining \textit{reformation} as “[a]n equitable
remedy by which a court will modify a written agreement to reflect the actual intent of the parties”).
\item \textsuperscript{108} \textit{See KSM Fastening Sys., Inc. v. H.A. Jones Co.}, 776 F.2d 1522, 1526 (Fed. Cir. 1985)
(noting that, even when a decree “incorporat[es] a vague or broad prohibition against ‘infringement’
of a ‘patent[,]’ . . . contempt proceedings, civil or criminal, are available only with respect to
devices previously admitted or adjudged to infringe, and to other devices which are no more than
colorably different therefrom and which clearly are infringements of the patent”), \textit{overruled on
other grounds}, TiVo Inc. v. EchoStar Corp., 646 F.3d 869 (Fed. Cir. 2011) (en banc).
\item \textsuperscript{109} \textit{See Tracy A. Thomas, The Continued Vitality of Prophylactic Relief}, 27 REV. LITIG. 99,
102 (2007) (“Reparative injunctions repair the ongoing consequences of the past harm, and might
order the reinstatement of an employee fired because of discrimination.”).
\item \textsuperscript{110} \textit{See Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc.}, 620 F.3d 1305, 1320
(Fed. Cir. 2010) (holding that because overseas sales “cannot infringe any U.S. patent, and there is
little risk that the infringing devices will be imported,” the district court “abused its discretion in
imposing . . . extraterritorial restraints”).
\end{itemize}
\end{footnotesize}
from Energizer’s past infringing manufacture. But the order does nothing directly to help prevent infringement.

Although reparative injunctions are commonly available in other areas of U.S. law, the Federal Circuit has held that they are not available under the U.S. Patent Act. The basis for this holding is § 283 of the Act, which states, “The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.”

The Federal Circuit has held that § 283’s authorization of injunctions to “prevent the violation” of patent rights establishes an exclusive purpose for the permitted exercise of injunctive power. In the circuit’s words, “An injunction is only proper to prevent future infringement of a patent, not to remedy past infringement.” Although the Federal Circuit’s conclusion that § 283 forbids purely reparative injunctions might be contestable, this Article will leave to another day potential debate over this issue. For present purposes, what matters is that purely reparative injunctions are—like Type-2, obey-the-law injunctions—generally forbidden under existing law. District courts’ rates of compliance with the ban on purely reparative injunctions can therefore provide a reference point for study of district courts’ rates of compliance with the ban on Type-2 injunctions.

111. 1 Dobbs, supra note 37, § 2.9, at 225 (“The reparative injunction goes when the evidence shows that an existing right has been violated but can be repaired or restored effectively.”).


113. Spine Solutions, 620 F.3d at 1320; see also Johns Hopkins Univ. v. CellPro, Inc., 152 F.3d 1342, 1365 (Fed. Cir. 1998) (“In accordance with the clear wording of [§ 283], an injunction is only proper to the extent it is to prevent the violation of any right secured by patent.” (internal quotation marks omitted)).

114. One might argue that the prospect of a reparative order can have a deterrent effect that can help prevent infringement in general, even if it is too late to prevent infringement in the case at hand. Further, one might note that the case to which the Federal Circuit’s ban on reparative orders tends to be traced involved a situation in which matter abroad had been produced in the U.S. prior to issuance of the relevant patent and thus was never directly involved in infringement. See Johns Hopkins, 152 F.3d at 1366 (“An injunction requiring return of [an] exported machine, which was never made, used, or sold during the term of the patent in the United States, is beyond the scope of Section 283 and hence an abuse of discretion.”). Only later did the Federal Circuit apply language from that case to justify forbidding destruction of matter abroad that was directly involved in an infringement of an issued U.S. patent. See Spine Solutions, 620 F.3d at 1320 (“[T]he extraterritorial portion of the injunction appears to be premised solely on Medtronic’s past infringement, not on the prevention of future infringement.”); see also Non-confidential Brief for Defendants–Appellants Medtronic Sofamor Danek USA, Inc. & Medtronic Sofamor Danek, Inc. at 64, Spine Solutions, 620 F.3d 1305 (No. 2009-1538) (“The district court stated that . . . it is quite possible that some of Medtronic’s exported devices were manufactured in violation of [the relevant] patent.” (internal quotation marks omitted)).
C. Specially Tailored Injunctions

1. Characteristics of Specially Tailored Injunctions.—The en banc case of *TiVo Inc. v. EchoStar Corp.* featured an additional type of patent-infringement injunction: the specially tailored injunction. Although directly concerned with preventing infringement, such injunctions either (a) explicitly feature prohibitions or requirements that extend beyond what is formally necessary to prevent infringement, (b) define their bounds without reference either to patent rights or to matter already adjudged to infringe, or (c) include an explicit carve out for infringing (or likely infringing) behavior. A hypothetical injunction of subtype (a) might require the destruction of all Schick Quattro products in Energizer’s possession. This injunction is formally extraprotective of Gillette’s patent rights because there might be ways for Energizer to modify or otherwise to continue possessing an already manufactured Quattro without infringing Gillette’s patent for a three-blade razor. Likewise, a subtype-(b) injunction that forbids Energizer Holdings from further activity involving multiblade razors would be formally extraprotective in that it would forbid activity involving two-blade razors that do not seem even arguably covered by Gillette’s patent on razors having at least three (and perhaps exactly three) blades.

The injunction in *TiVo* was a “partial disablement” variant of the hypothetical subtype-(a) order requiring destruction of Schick Quattros. In *TiVo*, the district court issued an order for injunctive relief requiring that the adjudged infringer “disable the DVR functionality (i.e., disable all storage to and playback from a hard disk drive of television data) in all but 192,708 units of the Infringing Products.” Like a destruction order, this disablement order was extraprotective to the extent it forbade implementation of a redesign that might have rendered a product noninfringing while maintaining the specified functionality.

Notably, however, a specially tailored injunction, at least as defined here, need not be extraprotective in the manner of a destruction order, which

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115. The distinction between a purely reparative injunction and a prophylactic injunction can be subtle and, arguably, excessively formal. Many prophylactic injunctions—such as a hypothetical order to destroy all Schick Quattros in Energizer’s possession in the United States—can be viewed as at least partly reparative. Destruction prevents further infringement with the destroyed Quattros but also helps nullify the effects of past infringing manufacture and is thereby reparative. For purposes of legal characterization in relation to existing law, however, the key point appears to be that, regardless of any additional reparative effect or purpose, a prophylactic injunction has a direct connection to the statutorily sanctioned goal of preventing future infringement.


117. Cf. Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1374 (Fed. Cir. 2005) (“Based on the preliminary record before this court, the district court erred in limiting the claims of [Gillette’s] patent to encompass safety razors with solely three blades”).

might be viewed as a form of prophylactic relief. A specially tailored injunction can provide less protection, at least facially, than a conventional do-not-infringe injunction. A prophylactic injunction might, for example, fail to encompass all merely colorable variants of subject matter already adjudged to infringe. More particularly, whereas a Type-1, colorable-differences injunction might forbid use of “no more than colorable” variants of an adjudged-to-infringe purification process running at a pH of 5.0, a specially tailored injunction might only forbid use of purification processes running at a pH of between 4.6 and 5.4. The latter injunction might forbid a smaller range of activity than the former, colorable-differences injunction because a process running at, say, a pH of 4.5 would be outside the scope of the specially tailored injunction but might be a “no more than colorable” variant of the original infringing process. If one accepts that a conventional, colorable-differences injunction provides a proper point of reference, one might then characterize the specially tailored injunction as subprotective, rather than extraprotective, of patentee interests.

Why might courts—or the parties who commonly draft injunction orders as a matter of actual fact—bother themselves with the trouble of crafting specially tailored relief? Why might a court issue extraprotective orders in some circumstances and subprotective orders in others? Recall that in issuing an injunction, a court needs to consider not only patentee interests but also legitimate interests of the adjudged infringer and society at large. A specially tailored injunction can be prophylactically extraprotective of patentee interests or, alternatively, subprotective of those interests in a way that might be viewed as prophylactically protective of infringer or general social interests. Moreover, a specially tailored injunction might simply look to strike a reasonable balance between patentee and infringer interests in

119. In the constitutional law context, the term prophylactic rule has inspired “a wealth of sometimes widely divergent definitions.” Mitchell N. Berman, Constitutional Decision Rules, 90 VA. L. REV. 1, 30 (2004). Sometimes commentators view only extraprotective rules as prophylactic rules. See, e.g., id. (describing a prophylactic rule as “that sort of extraconstitutional rule that overenforces what the Constitution, as judicially interpreted, would itself require”); id. at 40–42 (distinguishing prophylactic rules from “underenforcement rule[s]” and hybrid “overlapping rule[s]”). At least one prior commentator has characterized both subprotective and extraprotective legal rules as prophylactic, using reasoning like that presented in this Article’s text. David A. Strauss, The Ubiquity of Prophylactic Rules, 55 U. CHI. L. REV. 190, 204–06 (1988) (characterizing both rules of “strict scrutiny” and “rational basis review” as prophylactic rules, although the former is likely extraprotective and the latter is likely subprotective of the constitutional interests most centrally at issue).

120. The example is inspired by the fact pattern associated with Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 520 U.S. 17 (1997), in which the U.S. Supreme Court considered whether a purification process running at a pH of 5.0 could infringe a patent claim under the doctrine of equivalents. See id. at 23 (describing the case’s underlying facts).

121. A subprotective injunction from a patentee’s perspective is likely to be an extraprotective injunction from the perspective of an infringer or society. Such an injunction might, for example, provide prophylactic protection to legitimate infringer interests in pursuing a good-faith redesign without fear of being held in contempt.
a way that is likely to be more administrable and to hold greater promise for compliance than a conventional do-not-infringe order.

This last point bears emphasis. Regardless of whether a specially tailored injunction is extraprotective or subprotective of patentee interests, such an injunction can, when well crafted, substantially ease the tasks of determining an injunction’s bounds and identifying violations. Because of improvements in notice and enforceability, substitution of such injunctions for conventional do-not-infringe orders can both increase compliance and reduce chilling of socially desirable redesigns. In short, even to the extent a specially tailored injunction’s relative subprotection or extraprotection of underlying rights is undesirable when considered in isolation, that suboptimality might be more than “paid for” by improvements to notice, enforceability, and administrability.

2. Legal Status of Specially Tailored Injunctions.—Are specially tailored injunctions legitimate under U.S. patent law? Given the Federal Circuit’s views on Type-2, obey-the-law injunctions and purely reparative injunctions, one might worry about the legal legitimacy of specially tailored injunctions, particularly when they are prophylactic in the sense that they likely prohibit some noninfringing activity or require other activity that is beyond what is necessary to avoid infringement. Indeed, in declaring Type-2 injunctions to be illegitimate, the Federal Circuit sometimes has used language that facially suggests that only Type-0, measure-zero or Type-1, colorable-differences injunctions are proper.122

A first point in response is that prophylactic injunctions can be drawn in a way that addresses both of the Federal Circuit’s grounds for rejecting Type-2, obey-the-law injunctions and purely reparative injunctions. Prophylactic injunctions can be written in a way that provides the adequate notice required by Federal Rule of Civil Procedure 65(d)123 and directly operates to prevent future infringement.124

Moreover, prophylactic injunctions—and specially tailored injunctions more generally—have a substantial foundation in the traditional equity power that § 283 affirms.125 Courts’ use of extraprotective injunctions in a variety of areas of law reflects recognition that “sometimes the chancellor can assure plaintiffs their rights only by giving them more than they are entitled to.”126

122. See supra text accompanying note 102.
123. See supra text accompanying notes 94–97.
125. See supra text accompanying note 112.
126. 1 Dobbs, supra note 37, § 2.4(7), at 121; see also Russian Media Grp., LLC v. Cable Am., Inc., 598 F.3d 302, 307 (7th Cir. 2010) (“The district court may even enjoin certain otherwise lawful conduct when the defendant’s conduct has demonstrated that prohibiting only unlawful conduct would not effectively protect the plaintiff’s rights against future encroachment.”); cf. Taco Cabana Int’l, Inc. v. Two Pesos, Inc., 932 F.2d 1113, 1126 (5th Cir. 1991) (“In fashioning relief against a party who has transgressed the governing legal standards, a court of equity is free to
As Tracy Thomas has argued, a prophylactic injunction can “develop[] almost instinctively” as an alternative to remedies that amount to no more than “empty commands simply to stop [certain] behavior.”

High-profile support for the notion that specially tailored and at least partially prophylactic injunctions can be acceptable forms of relief has come through anti-abortion protest cases in which the U.S. Supreme Court upheld injunctions requiring that protestors keep a certain distance from clinic entrances. Such injunctions illustrate the capacity of specially tailored injunctions to balance competing interests—rights to free speech, rights “to seek lawful medical or counseling services,” and concerns with public safety, order, property rights, and privacy. These injunctions also illustrate the potential use of special tailoring to generate relatively clear lines that can help private parties and public officials know what constitutes compliance and when noncompliance has occurred.

Indeed, prophylactic injunctions might be viewed as a subset of a larger family of prophylactic measures that U.S. law frequently uses to implement and enforce legal norms. At least since 1988, various scholars have contended that “[p]rophylactic’ rules are, in an important sense, the norm, not the exception.” Whether in the context of requiring *Miranda v. Arizona*
protection against self-incrimination,\textsuperscript{133} strictly limiting content-based restrictions on speech,\textsuperscript{134} or applying strict scrutiny to suspect forms of legal classification,\textsuperscript{135} courts frequently enforce legal norms through prophylactic rules that, by avoiding the need for fully individualized assessment of rights’ exact bounds, help limit uncertainty and improve compliance, enforceability, and administrability.\textsuperscript{136} Consistent with the sense that prophylactic rules can render difficult legal problems more manageable, prophylactic injunctions often issue in contentious public law cases “involving schools, prisons, [or] sexual harassment.”\textsuperscript{137} In such cases, courts commonly require reporting or monitoring, new institutional policies and procedures, or personnel training to try to transform violation-fostering cultures.\textsuperscript{138}

But prophylactic injunctions also issue in cases that are more narrowly focused on commercial interests. In a leading casebook, Douglas Laycock illustrates such relief through a case in which a court protected “PepsiCo trade secrets and confidential information” by ordering a former PepsiCo employee to delay starting work for a competitor.\textsuperscript{139} This decree thus prohibited activity beyond the disclosure or use of confidential information that the law formally forbade.

Antitrust law is an area where prophylactic injunctions are particularly well established. A structural injunction at the conclusion of an antitrust case can require the breakup of an offending firm as a means to protect against future monopolization.\textsuperscript{140} Less dramatic antitrust decrees can also have

\textsuperscript{133} See, e.g., Strauss, supra note 119, at 190 (discussing the “‘prophylactic’ character [of] the Miranda rule”).

\textsuperscript{134} See, e.g., id. at 198 (discussing how significant aspects of First Amendment doctrine, such as “a nearly conclusive presumption against [the] constitutionality” of most “content-based” restrictions on speech, might be viewed as prophylactic).

\textsuperscript{135} See, e.g., id. at 204–05 (discussing how equal protection doctrine might be viewed as embodying prophylactic rules).

\textsuperscript{136} Cf. id. at 200 (describing the courts’ “categorical approach to content-based [speech] restrictions and the Miranda rules [as] relatively rigid doctrines designed to reduce the likelihood that the authors . . . will violate the law, and designed to improve a reviewing court’s chances of identifying violations where they occur”).

\textsuperscript{137} See Thomas, supra note 109, at 99, 100 (describing prophylactic injunctions as tending to “reach[] the facilitators of harm in order to prevent continued illegality”); cf. Rendleman, supra note 79, at 34 (“We will encounter many injunctions that forbid defendants’ preparatory, ancillary, and related behavior.”); Rendleman, supra note 5, at 89 (“Public-nuisance injunctions against street gangs often extend defendants’ prohibitions beyond the criminal law . . . .”).

\textsuperscript{138} Thomas, supra note 109, at 101–02 (describing potential types of prophylactic measures).

\textsuperscript{139} Laycock, supra note 78, at 284–87 (reproducing portions of PepsiCo, Inc. v. Redmond, 54 F.3d 1262 (7th Cir. 1995)).

\textsuperscript{140} Herbert Hovenkamp, The Antitrust Enterprise: Principle and Execution 300 (2005) (“Early in the history of antitrust enforcement courts tended to favor ‘structural’ remedies in cases involving significant § 2 violations. A structural remedy . . . typically breaks the defendant firm into two or more pieces . . . .”); cf. Howard A. Shelanski & J. Gregory Sidak, Antitrust Divestiture in Network Industries, 68 U. Chi. L. Rev. 1, 15–16 (2001) (describing “structural remedies” as “redistributing competitive assets” either “by breaking the defendant company into two or more pieces” or “by requiring the defendant to sell or otherwise make available to its competitors some input, right, or facility”).
prophylactic aspects. In United States v. Microsoft Corp.,¹⁴¹ the district court acknowledged that its consent decree included a requirement that “plainly exceed[ed] the scope of [Microsoft’s] liability”¹⁴²—namely, the requirement that “Microsoft license . . . any communications protocol installed on a Windows client which is used to interoperate or communicate with a Microsoft server operating system product without the addition of software code to the client.”¹⁴³ The court reasoned that this requirement was justified because it was “closely connected with the theory of liability . . . and further[ed] efforts to ensure that there remain[ed] no practices likely to result in monopolization in the future.”¹⁴⁴

Such examples of prophylactic injunctions from a variety of legal areas support Tracy Thomas’s notion that prophylactic injunctions are particularly likely to be warranted when two conditions apply: (1) the underlying principles of substantive law are difficult to enforce or articulate with precision,¹⁴⁵ and (2) otherwise lawful conduct appears likely to facilitate, accompany, or be difficult to distinguish from an oft-associated offense.¹⁴⁶

At least as of this writing, the Federal Circuit has not insisted on a contrary view. In TiVo, seven judges of the circuit’s en banc majority determined that challenges to a partial-disablement injunction as overbroad had been waived through the defendants’ failure to make them on direct appeal.¹⁴⁷ In a footnote, the majority added a statement emphasizing that such a challenge would not necessarily succeed:

We note . . . that, although we have strongly discouraged judicial restraint of noninfringing activities, we have never barred it outright and instead have repeatedly stated that district courts are in the best position to fashion an injunction tailored to prevent or remedy

¹⁴². Id. at 190.
¹⁴³. Id. at 189.
¹⁴⁴. Id. at 190 (internal quotation marks omitted). The district court’s reasoning substantially parroted the D.C. Circuit’s earlier instruction that insurance against future monopolization was one of the necessary goals of an antitrust decree. United States v. Microsoft Corp., 253 F.3d 34, 103 (D.C. Cir. 2001) (“[A] remedies decree in an antitrust case must seek to . . . ensure that there remain no practices likely to result in monopolization in the future.” (citations omitted) (internal quotation marks omitted)).
¹⁴⁵. See Tracy A. Thomas, The Prophylactic Remedy: Normative Principles and Definitional Parameters of Broad Injunctive Relief, 52 BUFF. L. REV. 301, 372 (2004) (“The intangible rights at issue in the prophylactic remedies cases present challenges to the court as to how to translate those rights into tangible meaning.”).
¹⁴⁶. See id. at 334 (“The affiliated conduct included in the prophylactic relief must demonstrate a sufficient causal nexus to the established harm.”); id. at 339–40 (“The causal nexus is established where the affiliated conduct bears a factual relationship to the harm and the relationship is of sufficiently close degree to justify the inclusion of the conduct in the prophylactic order.”).
¹⁴⁷. TiVo Inc. v. EchoStar Corp., 646 F.3d 869, 890 (Fed. Cir. 2011) (en banc) (“We therefore conclude that EchoStar’s arguments on overbreadth of the district court’s injunction have been waived by its failure to raise them earlier.”).
infringement. Because it is not before us in this case, we make no en banc holding on that issue.148

What will be prophylactic injunctions’ fate if the Federal Circuit squarely faces the issue? It might be a close call. The en banc majority’s footnote suggests that the majority remained open to such relief but was at least somewhat suspicious of it. Moreover, five judges dissented from the portion of the majority opinion that contained this footnote. Their dissenting opinion used language that might be understood to indicate that the dissenters were significantly less open to the use of prophylactic injunctions:

[This court has recognized that an injunction is only proper to the extent it is to prevent the violation of any right secured by patent. . . . [In a prior case], we held that an injunction which precludes [the defendant] from activities that are not necessary to prevent infringement of the patented process cannot stand.149

Notably, however, Federal Circuit precedent on injunctive relief is more nuanced than the dissenters’ language might suggest. In the case usually cited as the source of the rule that the U.S. Patent Act does not authorize purely reparative injunctions, the circuit panel stated that an injunction to “prevent infringement of a United States patent” “can reach extraterritorial activities . . . , even if these activities do not themselves constitute infringement.”150 Moreover, the circuit has repeatedly upheld prophylactic injunctions in situations where an adjudged patent infringer violated a prior court order.151 For example, in Additive Controls & Measurement Systems, Inc. v. Flowdata, Inc.,152 the Federal Circuit upheld a broad injunction forbidding a contemnor “from undertaking any activities with respect to positive displacement flowmeters without first obtaining leave of court.”153

148. Id. at 890 n.9 (citations omitted). Does the en banc majority’s indication that an injunction can be designed “to prevent or remedy infringement” mean that the judges in the majority are looking to step back from the Federal Circuit’s prior rejection of purely reparative patent-infringement injunctions? Not necessarily. The majority might simply have meant to recognize that some injunctions, such as an order to destroy specified devices, can serve dual purposes of preventing further infringement and helping to correct for past infringement.

149. Id. at 893–94 (Dyk, J., dissenting) (fourth alteration in original) (citations omitted) (internal quotation marks omitted).

150. Johns Hopkins Univ. v. CellPro, Inc., 152 F.3d 1342, 1366–67 (Fed. Cir. 1998) (emphasis omitted); cf. Trimble, supra note 96, at 367 (“U.S. courts . . . have issued orders requesting or prohibiting behavior abroad that is not infringing per se but is behavior that the courts have decided to target in order to prevent further infringements of U.S. patents.”).

151. See, e.g., Spindelfabrik Suessen–Schurr v. Schubert & Salzer Maschinenfabrik Aktiengesellschaft, 903 F.2d 1568, 1577 (Fed. Cir. 1990) (holding that “repeated and ‘flagrant’ violations of the district court’s earlier injunction fully justified these broad provisions” against “directly or indirectly engaging in any activity which in any way relates to the manufacture, sale, use, servicing, exhibition, demonstration, promotion or commercialization of any automated rotor spinning machines”); see also Kimberly A. Moore et al., Patent Litigation and Strategy 715 (3d ed. 2008) (discussing Spindelfabrik).

152. 154 F.3d 1345 (Fed. Cir. 1998).

153. Id. at 1356.
The Federal Circuit held that this ban from an entire sphere of commercial activity reflected a “reasonable conclusion that such measures were necessary . . . to compel compliance with the court’s orders.” Although the Federal Circuit has also indicated that broad prophylactic orders like that in Additive Controls “should be used only in exceptional cases,” this indication itself appears to leave open the possibility that comparatively narrow prophylactic orders can be proper in a wider range of cases. There thus appears much for litigants and judges to work out in future battles over the proper bounds of both prophylactic relief and the larger category of specially tailored relief of which prophylactic relief forms a part.

IV. District Court Practice in Issuing Patent-Infringement Injunctions

Part III described five categories of injunctions. To what extent do these injunction types appear in practice? To answer this question, I used the Lex Machina database to search for patent-infringement injunctions issued by U.S. district courts in 2010. Through systematic review of injunction-related orders, I identified 143 patent-infringement injunctions. I obtained the text of the 143 orders via Lex Machina or PACER.

The 143 orders were coded for various characteristics, including (a) whether the order was a permanent injunction, preliminary injunction, or temporary restraining order; (b) whether, as part of a consent agreement, the parties agreed to the injunction prior to its issue—i.e., whether, in this Article’s terminology, the injunction was “consented to”; (c) whether a patent that formed part of the basis for the order was a utility patent as opposed to a design or plant patent; (d) whether patent rights at issue focused

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154. Id.
155. Id.
156. Some additional search results were apparently added to the Lex Machina database after the author’s review of search results for injunctions issued in 2010 began. Thus, the results reported in this Article might not reflect all 2010 injunctions that are ultimately indicated in the Lex Machina database.

157. Four orders for injunctive relief were excluded from the ultimate dataset because their text leaves unclear whether they were motivated by concerns with patent infringement, as opposed to infringement of other rights such as trademark or trade dress. Bon-Aire Indus., Inc. v. Mitchell Prods., No. 3:10-cv-01602-MLC-TJB, slip op. at 2 (D.N.J. Apr. 26, 2010) (permanently enjoining various acts involving “any hose nozzle having a trade dress that is identical to, substantially similar to, or a colorable imitation of the appearance of the ULTIMATE® hose nozzle”); Bon-Aire Indus., Inc. v. Mitchell Prods., No. 3:10-cv-01602-MLC-TJB, slip op. at 2–3 (D.N.J. Apr. 13, 2010) (preliminarily enjoining, in the same case, various acts involving such a nozzle); ICON Health & Fitness, Inc. v. Solo Sports Grp., Inc., No. 1:10-cv-00020-TC, slip op. at 1 (D. Utah Mar. 4, 2010) (permanently enjoining activities involving “the Elite Fitness Dual Action Upright Exercise Bike Model EB275, and any other product that incorporates the same or substantially the same features of ICON’s trade dress design contained in its Weslo Pursuit E28 bike”); Metraflex Co. v. Flex-Hose Co., No. 1:10-cv-00302, slip op. at 1–2 (N.D. Ill. Feb. 16, 2010) (preliminarily enjoining “utilizing, displaying, or distributing [the] Seismic Movement Brochure,” statements about whether certain products “meet building code requirements or specifications” and reproduction of “drawings and/or photographs of U-shaped or V-shaped flexible loops that are original to and/or the copyrighted property of Metraflex”).
on a biomedical substance (BMS) or another form of subject matter (non-BMS); and (e) whether at least a portion of the order explicitly incorporated Type-0, Type-1, Type-2, purely reparative, or specially tailored language, or any combination of such language. To help ensure consistency of coding, I personally coded all results.\textsuperscript{158}

Arguably, there is double counting in the 143-order dataset because some of the orders were issued in the same case and even on the same day. In a single case, \textit{Reah v. Re.source, Inc.}, a district court issued nine different permanent injunctions directed at nine different defendants in a little over two months.\textsuperscript{159} For purposes of this Article, I have counted separately such same-case orders because, although many of the orders use substantially identical language, this is not true of all of them.\textsuperscript{160} Observed differences suggest that parties or judges might be properly understood to have given separate consideration to each individual order’s scope. In any event, same-case orders from a total of ten different cases accounted for only twenty-eight orders total. The general impressionistic significance of the results from the 143-order dataset appears unlikely to be dominated by how this counting

\footnotesize{158. Coding appears to have generally been straightforward, but it did sometimes require review of underlying patents, briefing, or other documents. Further, characterization of injunction language as Type-1 or as a specially tailored injunction targeting correlated activity could involve some reasoning about the meaning of the injunction’s text and its relation to the statutory delineation of infringing activities in 35 U.S.C. § 271. For example, if an injunction forbade “manufacturing,” rather than the “making” specifically defined as infringing by § 271, I reasoned that this difference in specific language did not amount to a classification-relevant difference in scope that might result in the injunction being classified as a specially tailored injunction, rather than a do-not-infringe injunction. Likewise, I characterized various, occasional forms of injunctive language explicitly targeting “similar” or “substantially equivalent” products or processes as Type-1 even though this language did not appear precisely in more typical colorable-differences form. \textit{Cf.}, e.g., Extreme Tool & Eng’g, Inc. v. Bear Cub Enters., LLC, No. 2:08-cv-257, slip op. at 2 (W.D. Mich. Mar. 29, 2010) (including “similar products that lack colorable distinctions” within the injunction’s scope); Canon Inc. v. Densigraphix Kopi Inc., No. 1:10-cv-00034-CMH-DD, slip op. at 2–3 (E.D. Va. Mar. 9, 2010) (including “substantially equivalent” products within the injunction’s scope); Mannatech, Inc. v. Techmedica Health, Inc., No. 3:06-CV-00813-P, slip op. at 3 (N.D. Tex. Jan. 12, 2010) (including “colorable imitations” and products “substantially equivalent in composition” within the injunction’s scope). These approaches to classification were consistent with my general effort to be relatively conservative in characterizing injunctive language as Type-2 or specially tailored, rather than falling within the more generally acknowledged categories of Type-0 or Type-1 do-not-infringe orders.


160. \textit{Compare, e.g.}, Reah v. Re.source, Inc., No. 2:09-cv-00601-CW-DN, slip op. at 10–11 (D. Utah Mar. 25, 2010) (prohibiting LBM Corp. from “making, using, selling, offering for sale, or importing products that come within one or more claims of U.S. Patent No. 6,982,542, or otherwise infringing . . . U.S. Patent No. 6,982,542, including without limitation the Power Station and Power Station Traveller”), with Denmel Holdings, LLC v. Re.source, Inc., No. 2:09-cv-00601-CW-DN (D. Utah Mar. 25, 2010) (prohibiting Electronicsshowplace.com from “making, using, offering for sale, and/or importing charging valets and/or charging stations that come within one or more claims of U.S. Patent No. 6,982,542, or otherwise infringing . . . U.S. Patent No. 6,982,542”).}
problem is resolved, particularly as various aspects of these same-case results seem entirely in line with those of the dataset as a whole.161

A. Systematic Violation of Federal Rule of Civil Procedure 65(d)

The most striking empirical result is that a substantial majority of the 143 orders appear to violate the Federal Circuit’s understanding of Federal Rule of Civil Procedure 65(d).162 Eighty-two injunctions, about 57% of the total, contain Type-2 language. This figure is striking, if not shocking. It has long been suspected that despite Rule 65(d), obey-the-law injunctions are relatively common in patent law163 and elsewhere.164 But I do not know of any prior indication that courts commit apparent Rule 65(d) error in the majority of such a significant subset of cases.165

1. Consented-To, Uncontested, and Actively Opposed Orders.—The prevalence of apparent Rule 65(d) error—hereinafter commonly described simply as “error” or “Type-2 error”—does not merely reflect a large number of consent judgments. One might posit that although courts are supposed to be attentive to the proper limits of injunctions even when issuing consent decrees,166 courts might be less rigorous in enforcing Rule 65(d) when parties have agreed on the form of relief or when, for other reasons, the propriety of

161. The overall Type-2 error rate for the 28 same-case injunctions is about 54% (15 of 28). The Type-2 error rate for the 25 consented-to orders among these 28 injunctions is about 56% (14 of 25). These percentages appear substantially consistent with the approximately 58% Type-2 error rate for the other 115 non-same-case orders (67 of 115) and the approximately 57% Type-2 error rate for the 58 non-same-case consented-to orders (33 of 58). When the results for the 28 same-case injunctions and the 115 non-same-case injunctions are compared, two-sample, two-tailed t-tests assuming equal variances and assuming unequal variances yield, respectively, $t(141) = -0.45, p = 0.66; and t(40) = -0.44, p = 0.66$. An F-test for equality of variances did not indicate a statistically significant difference between variances ($F = 1.1, p = 0.41$). Likewise, when the results for the 25 same-case consented-to orders and the 58 non-same-case consented-to orders are compared, two-sample, two-tailed t-tests assuming equal variances and assuming unequal variances yield, respectively, $t(81) = -0.075, p = 0.94; and t(45) = -0.074, p = 0.94$. An F-test for equality of variances did not indicate a statistically significant difference between variances ($F = 1.0, p = 0.45$).

162. See supra text accompanying notes 92–108.

163. See KSM Fastening Sys., Inc. v. H.A. Jones Co., 776 F.2d 1522, 1526 (Fed. Cir. 1985) (“[I]njunctions are frequently drafted or approved by the courts in general terms, broadly enjoining ‘further infringement’ of the ‘patent,’ despite the language of Rule 65(d) . . . .”); TiVo Inc. v. EchoStar Corp., 646 F.3d 869 (Fed. Cir. 2011) (en banc).

164. See LAYCOCK, supra note 78, at 274 (“Defendants do not object to obey-the-law clauses as often as one would expect in light of [the case law].”).

165. Perhaps the nearest known analog is Marketa Trimble’s study of thirteen cases involving patent-infringement “[i]njunctions issued against foreign entities.” Trimble, supra note 96, at 339. Trimble noted in passing that at least two of the injunctions in the study contained language that, according to Federal Circuit precedent, violates Rule 65(d). Id. at 340.

166. See, e.g., Harris v. City of Phila., 47 F.3d 1342, 1349 (3d Cir. 1995) (stating that Rule 65(d) is “also applicable to consent decrees”); Converse Inc. v. Reebok Int’l Ltd., 328 F. Supp. 2d 166, 176 (D. Mass. 2004) (“[T]he Court must ensure that the consent decree conforms to the strictures of Federal Rule of Civil Procedure 65(d) . . . .”). See generally LAYCOCK, supra note 78, at 345 (discussing the principle that parties cannot contract for an injunction otherwise beyond a court’s power to grant).
issuing an injunction is generally unopposed—for example, because of
default. At the very least, a trial judge might rightly suspect that a
consented-to or default-judgment injunction is substantially less likely to be
subjected to appellate scrutiny than an injunction issued over party
opposition. Lack of fear of appellate reversal might result in less care to
avoid legal error.

Indeed, the three categories of consented-to injunctions, otherwise-
unopposed injunctions, and the rest, which I term “actively opposed
injunctions,” exhibit facially distinct Type-2 error rates. In the 2010 dataset,
the percentage of consented-to injunctions featuring Type-2 error is essen-
tially the same as the overall average: about 57% (47 of 83). A higher rate of
Type-2 error characterizes the dataset’s nineteen otherwise unopposed
injunctions—mostly default-judgment injunctions and one temporary
restraining order issued without prior notice to the other side.169  These
unconsented-to but unopposed injunctions have a Type-2 error rate of just
over 89% (17 of 19). The Type-2 error rate for actively opposed injunctions
is lower, with about 44% (18 of 41) of this last category of injunctions
including Type-2 language.

Although the observed Type-2 error rates for these three subclasses of
injunctions are distinct, they all seem relatively high. Moreover, these high
levels do not appear to be mere flukes resulting from a limited sample size.
According to a standard $t$-test, the distinction between the approximately
57% error rate observed for the eighty-three consented-to injunctions and a
hypothesized 45% error rate is statistically significant at a 95% confidence

167. The question of whether an injunction should be classified as opposed or unopposed is not
necessarily entirely straightforward. In this category of otherwise unopposed injunctions, I do not
include injunctions whose underlying bases—e.g., the validity of the patents the injunctions sought
to enforce—were contested by not presently defaulting parties that were targets of the injunction,
even if, following determinations on the merits of liability, the issuance of an injunction itself does
not seem to have been specifically opposed or if the merits were contested before a magistrate judge
but not subsequently before the relevant district judge. Cf. Docket Entry No. 218, Duramed
(recording the filing of an “Unopposed Motion for Entry of Final Judgment”). The qualification
about the parties at issue being not presently defaulting reflects contemplation of the “anomalous”
procedural situation surrounding an injunction in Ocean Innovations, Inc. v. Quarterberth, Inc., No.
1:03-CV-0913, slip op. at 6–7 (N.D. Ohio May 14, 2010) (memorandum opinion and order) (“[T]he
procedural history and posture of this case is certainly anomalous.”), which issued after various
parties had defaulted on the merits but then had appeared to contest the default. Cf. Ocean
permanent injunction enjoining defendants from various activities).

Compliance, 37 LAW & SOC’Y REV. 579, 603 (2003) (suggesting that “trial judges in virtually every
court system” might be particularly sensitive, compared to U.S. circuit court judges, to “[t]he threat
of reversal”).

169. See Temporary Restraining Order, Valvtechnologies, Inc. v. North, No. 4:10-cv-03943
level. The same holds true for the distinction between the approximately 44% error rate observed for the forty-one actively opposed injunctions and a hypothesized 25% error rate. Likewise, statistical analysis suggests that the over 89% error rate observed for the nineteen unconsented-to but unopposed injunctions is significantly distinct from a hypothesized error rate for such orders of 70%.

The lower observed error rate for actively opposed orders as opposed to consented-to orders or otherwise unopposed orders might suggest that truly adversarial proceedings in the district courts help prevent improperly drafted decrees. Litigators should probably not congratulate themselves too much, however, for this apparent gain from adversarial process. For starters, the difference between the approximately 44% error rate observed for actively opposed injunctions and the approximately 57% error rate observed for consented-to injunctions does not appear to be statistically significant even at a relatively low 85% confidence level. Further, the discrepancy between the observed error rates for these categories all but disappears after the sample is truncated to eliminate patent-infringement injunctions directed exclusively to either of two idiosyncratic forms of subject matter: biomedical-substance technology and ornamental designs. By contrast, the differences between the approximately 89% observed error rate for unconsented-to but unopposed injunctions (predominantly defaults) and either of the error rates for consented-to orders and actively opposed orders appears to be statistically significant at a 99% confidence level. These

170. More specifically, under a one-sample, two-tailed \( t \)-test applied to the sample of eighty-three consented-to injunctions, a null hypothesis that the real error rate is 45% is rejected at a 95% confidence level, with \( t(82) = 2.1, p = 0.04 \). If a one-tailed \( t \)-test is used to test a null hypothesis that the real error rate is less than or equal to 45%, the null hypothesis is rejected at a 95% confidence level by a more substantial margin, \( t(82) = 2.1, p = 0.02 \).

171. Under a one-sample, two-tailed \( t \)-test applied to the sample of forty-one actively opposed injunctions, a null hypothesis that the real error rate is 25% is rejected at a 95% confidence level, with \( t(40) = 2.4, p = 0.02 \). If a one-tailed \( t \)-test is used to test a null hypothesis that the real error rate is less than or equal to 25%, the null hypothesis is rejected at a 95% confidence level by a more substantial margin, \( t(40) = 2.4, p = 0.01 \).

172. Under a one-sample, two-tailed \( t \)-test applied to the sample of nineteen unconsented-to but unopposed injunctions, a null hypothesis that the real error rate is 70% is rejected at a 95% confidence level, with \( t(18) = 2.7, p = 0.015 \). If a one-tailed \( t \)-test is used to test a null hypothesis that the real error rate is less than or equal to 70%, the null hypothesis is rejected at a 95% confidence level by a more substantial margin, \( t(18) = 2.7, p = 0.0075 \).

173. When the results for the eighty-three consented-to injunctions and the forty-one actively opposed injunctions are compared, two-sample, two-tailed \( t \)-tests assuming equal variances and assuming unequal variances yield, respectively, \( t(122) = 1.3, p = 0.18 \); and \( t(79) = 1.3, p = 0.19 \). An \( F \)-test for equality of variances did not indicate a statistically significant difference between variances (\( F = 0.98, p = 0.47 \)).

174. See infra text accompanying notes 190–91.

175. When the results for the eighty-three consented-to injunctions and the nineteen otherwise-unopposed injunctions are compared, two-sample, two-tailed \( t \)-tests assuming equal variances and assuming unequal variances yield, respectively, \( t(100) = −2.7, p = 0.007 \); and \( t(42) = −3.6, p = 0.0008 \). An \( F \)-test for equality of variances indicated a statistically significant difference between variances at a 95% confidence level (\( F = 2.15, p = 0.015 \). When the results for the forty-one
differences appear to remain significant only at a lower confidence level once results are truncated to eliminate biomedical-substance and ornamental-design orders. 176 In any event, a conclusion that active opposition and agreement both reduce error rates relative to default but that active opposition does not reduce error rates relative to agreement would seem no great triumph for the adversarial process.

Finally, regardless of comparisons with the observed error rates for consented-to and otherwise-unopposed injunctions, the 44% observed error rate for actively opposed injunctions seems high in light of the fact that compliance with the ban on Type-2, obey-the-law injunctions does not appear to be particularly difficult. Neither Type-0, measure-zero nor Type-1, colorable-differences language is hard to draft. Yet nearly 50% of the eighteen actively opposed injunctions that feature Type-2 language do not feature either Type-0 or Type-1 language. The only orders of a do-not-infringe form that these injunctions contain is of the forbidden, obey-the-law type. Even if one views it as predictable that successful plaintiffs will seek, and often obtain, facially overreaching orders for injunctive relief, one might have thought those plaintiffs would also be careful to include legally proper Type-0 or Type-1 language so that any later-discovered impropriety in injunction scope might be viewed as easily severed from an otherwise proper order. Indeed, ten of the eighteen actively opposed injunctions featuring Type-2 language do include Type-0 language, and five of these ten also include Type-1 language. Of course, in such instances, one might wonder why opposing parties and courts have together failed to “get things right” by having the offending obey-the-law language stricken while leaving the rest of the order intact.

In any event, even if legal compliance were not so easy, a statistically significant error rate of more than 25% with respect to the scope of an actively opposed remedial order might be viewed as surprisingly high. An appellate reversal rate of about 35% or so on questions of claim construction is commonly thought to signal serious problems with the way U.S. courts work. 177 This is true even though (a) claim construction is generally an interlocutory issue that is often difficult to resolve 178 and (b) claim-construction issues pursued in an appeal might be assumed, on average, to be

actively opposed injunctions and the nineteen unconsented-to but unopposed injunctions are compared, two-sample, two-tailed t-tests assuming equal variances and assuming unequal variances yield, respectively, \(t(58) = -3.6, p = 0.0006\); and \(t(53) = -4.3, p = 0.00008\). An F-test for equality of variances indicated a statistically significant difference between variances at a 95% confidence level \((F = 2.5, p = 0.018)\).

176. See infra note 191 and accompanying text.

177. See, e.g., Golden, supra note 20, at 324 & n.15 (noting that “claim construction jurisprudence continues to bear hallmarks of unpredictability” and that “[r]eversal rates of district court claim constructions stand at roughly 34%”).

178. Cf. id. at 386 (“[E]ven a more coherent claim construction jurisprudence will leave room for uncertainty regarding the meanings of particular claims . . . .”).
unusually tricky. In contrast, Type-2 error can be far from even arguably subtle. In *Monsanto Co. v. Bowman*, for example, Monsanto obtained an actively opposed permanent injunction of breathtaking breadth: rather than restricting itself to enforcement of the patent rights at issue, this order “permanently enjoined [the defendant] from making, using, selling or offering to sell any of Monsanto’s patented crop technologies.”

2. Preliminary Versus Permanent Injunctions.—The 2010 dataset can be used to test another potential hypothesis: judges or parties should be less susceptible to Type-2 error in the preliminary-relief context. Preliminary injunctions and temporary restraining orders are rarer than permanent injunctions and, because of less lead time from the date of suit, more likely to significantly disrupt prior, reasonable expectations. Further, from a court’s perspective, such injunctions are naturally more suspect because they become effective before the court has made a final decision on the merits according to ordinary procedure. A supposedly wronged rights holder might ultimately turn out to own no valid rights or at least no valid rights that were violated. In light of the preceding, courts and parties might be expected to be especially careful in policing the form of preliminary injunctions and temporary restraining orders.

Consistent with this expectation, the percentage of permanent injunctions featuring Type-2, obey-the-law language is greater than the percentage of preliminary injunctions or temporary restraining orders doing the same. Just over 60% of permanent injunctions (75 of 124) and about 37% of preliminary injunctions or temporary restraining orders (7 of 19) feature Type-2 language. According to a *t*-test, this difference is significant at a 90% confidence level.

179. See id. at 324 n.15 (“Of course, the relatively high reversal rates for patent claim construction could be explained by litigants’ greater selectivity in choosing which claim constructions to appeal, rather than any atypical failure on the part of courts.”).


181. Id. at 1.

182. See DOUGLAS LAYCOCK, THE DEATH OF THE IRREPARABLE INJURY RULE 111, 116 (1991) (noting that “a preliminary order may inflict serious costs on a defendant who had little time to prepare a defense” and that “[i]t is almost universally true that courts are more willing to grant permanent injunctions than preliminary injunctions”); Golden, supra note 6, at 2159 n.178 (“During the several years that it can take to obtain a permanent injunction, the defendant may redesign its accused product or process multiple times, or perhaps stop manufacturing or using it simply because it has become obsolete.”).

183. See id. at 111 (noting that one “reason[] for being cautious with preliminary relief” is that a “court must act without a full trial, sometimes on sketchy motion papers and affidavits”).

184. When the results for the 124 permanent injunctions and the 19 preliminary injunctions (including temporary restraining orders) are compared, two-sample, two-tailed *t*-tests assuming equal variances and assuming unequal variances yield, respectively, *t*(141) = 2.0, *p* = 0.053; and *t*(24) = 1.9, *p* = 0.06. An *F*-test for equality of variances does not indicate a statistically significant difference between variances (*F* = 0.98, *p* = 0.44).
But this superficially significant difference between the observed error rates for preliminary and permanent injunctions is likely deceiving. As discussed below, once orders directed to biomedical-substance or ornamental-design patents are eliminated from consideration, the discrepancy between observed Type-2 error rates for preliminary and permanent injunctions essentially disappears. \(^{185}\) Generally speaking, the 2010 dataset does not appear to provide strong support for a hypothesis that, under comparable circumstances, there is a significant difference in Type-2 error rates for preliminary and permanent relief.

3. \textit{Subject-Matter Specificity of Error Rates and Earlier Error Rates Revisited}.—In addition to highlighting distinctions between preliminary and permanent relief, the 2010 dataset reinforces a common impression that the practical operation of patent law can be very technology specific. \(^{186}\) One substantial subset of orders leaps out as one in which the observed Type-2 error rate is very low. This is the subset of orders focused on biomedical-substance technology, predominantly pharmaceuticals. Only three out of twenty-five BMS orders in the dataset use Type-2, obey-the-law language. The Type-2 error rate for BMS orders is thus only 12%. For the twenty-two BMS orders dealing with a pharmaceutical substance apparently subject to Food and Drug Administration regulation, the error rate is even lower: only one of the twenty-two orders (about 5%) contains Type-2 language. \(^{187}\)

General lack of Type-2, obey-the-law language is merely one aspect of BMS orders’ idiosyncrasy. Remarkably, only two of the twenty-five BMS orders (8%) even bother to include Type-1, colorable-differences language. The overwhelming majority of BMS orders are simple Type-0, measure-zero orders lacking explicit extension even to matter “no more than colorably different” than that expressly described. There seem to be at least two related explanations for this unusual satisfaction with Type-0 orders: such orders appear to have more than measure-zero weight in this context because (a) the quantum nature of matter renders it unusually difficult if not impossible to make satisfactory “tweaks” (e.g., addition or omission of an atom here or there) to design around many BMS technologies, perhaps particularly small-molecule pharmaceuticals; and (b) as an indirect result of this fact, an injunction directed at BMS drug technology can often be directed at an Abbreviated New Drug Application, in which an applicant seeking Food

\(^{185}\) See infra notes 192–94 and accompanying text.

\(^{186}\) See, e.g., John M. Golden, \textit{Innovation Dynamics, Patents, and Dynamic-Elasticity Tests for the Promotion of Progress}, 24 Harv. J.L. & Tech. 47, 105 (2010) (noting further reason “to believe that a policy mechanism like patent law will have disparate effects for different technologies and industries”).

\(^{187}\) The majority of BMS orders (15 of 25) were actively opposed, and none involved situations of actual or effective default. Somewhat interestingly, Type-2 language appears exclusively in actively opposed BMS orders: three of the fifteen actively opposed BMS orders feature Type-2 language, whereas no consented-to BMS order includes such language.
and Drug Administration approval for drug commercialization commonly looks to establish that a proposed generic drug has the same active ingredients as, and bioequivalence to, the patentee’s brand-name pharmaceutical. These peculiarities of the BMS context appear to enable patentees to receive adequate protection without the hazy language of a Type-1, colorable-differences order. In short, whether because of relatively inherent qualities of the subject matter, heavy government regulation, or perhaps some other cause, BMS technology lends itself to a peculiarly high degree of precision in rights definition and enforcement.

Indeed, outside BMS orders, Type-2 error is rife. Over 63% of utility-patent orders coded as not involving BMS technology (67 of 105) contain Type-2, obey-the-law language. For orders relating to design patents and no other types of patents (purely design-patent orders), Type-2 language is nearly ubiquitous: twelve of the thirteen such orders in the 2010 dataset (about 92%) contain Type-2 language.

The dominance of Type-2 error for purely design-patent orders and the general lack of Type-2 error for BMS orders suggests that we should revisit the figures discussed in earlier subsections after excluding such orders. In large part because, unlike other types of patent-infringement injunctions, most BMS orders are actively opposed, the main notable effect of excluding BMS and purely design-patent orders is that the numerical discrepancy between the Type-2 error rates for consented-to and actively opposed injunctions—which was already suggested to lack statistical significance—essentially disappears. About 61% of the remaining consented-to injunctions (39 of 64) feature Type-2 error. For the remaining actively opposed injunctions, the Type-2 error rate is about 58% (15 of 26). But the Type-2 error rate for unconsented-to but unopposed injunctions (mostly from

188. See 21 U.S.C. § 355(j)(2)(A) (2006) (mandating that “an abbreviated application for a new drug shall contain . . . information to show that the active ingredients of the new drug are the same as those of the listed drug” and “information to show that the new drug is bioequivalent to the listed drug”); see also David E. Adelman & Christopher M. Holman, Misplaced Fears in the Legislative Battle Over Affordable Biotech Drugs, 50 IDEA 565, 580 (2010) (“In the case of traditional drugs, [follow-on drug] assessment turns on the chemical identity and purity of a generic drug (i.e., whether it is ‘bioequivalent’ and employs the ‘same’ active ingredient), both of which involve testing methods that are accurate and precise.”).

189. See JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 152 (2008) (“The usual explanation for the superior performance of patents in [chemical and pharmaceutical] technologies is that the boundaries of chemical patents are clearer . . . the structure of a molecule or the composition of a mixture can be defined with precision.”). One large subclass of BMS patent litigation is litigation based on § 271(e) of the U.S. Patent Act, which makes the filing of an application for Food and Drug Administration approval of a patented drug an act of infringement. 35 U.S.C. § 271(e)(2) (2006). Subsection 271(e)(4) makes distinct and exclusive provision for the remedies that are available for such an act of infringement, declaring, in effect, that in many cases the only available relief will be “injunctive relief . . . to prevent the commercial manufacture, use, offer to sell, or sale within the United States or importation into the United States of an approved drug or veterinary biological product.” Id. § 271(e)(4).

190. See supra text accompanying note 173.
defaults) remains atypically high: thirteen of the fifteen remaining injunctions in this subcategory (nearly 87%) feature Type-2 error. Unsurprisingly, the differences between the approximately 61% and 58% error rates observed for the remaining consented-to and actively opposed injunctions, respectively, do not appear to be statistically significant at any plausibly meaningful confidence level. On the other hand, the differences between the observed error rates for each of these two classes of injunctions and the observed error rate for the remaining unconsented-to but unopposed injunctions might be significant, with $t$-tests indicating such significance at a 90% or 95% confidence level.

With respect to preliminary versus permanent injunctions, the dataset for preliminary injunctions is so small after BMS and purely design-patent orders are excluded that little of significance can be said. For permanent injunctions outside the BMS and purely design-patent categories, the Type-2 error rates are about 65% overall (62 of 96) and about 60% for actively opposed orders (12 of 20). Meanwhile, five of the nine preliminary injunctions in the residuum (about 56%) feature Type-2 error. Three of the six of these preliminary injunctions that were actively opposed (exactly 50%) feature such error. None of the differences in comparable preliminary-versus-permanent error rates in these residual samples appear to be statistically significant.

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191. When the results for the sixty-four remaining consented-to injunctions and the twenty-six remaining actively opposed injunctions are compared, two-sample, two-tailed $t$-tests assuming equal variances and assuming unequal variances yield, respectively, $t(88) = 0.28, p = 0.78$; and $t(45) = 0.28, p = 0.78$. An $F$-test for equality of variances does not indicate a statistically significant difference between variances ($F = 0.95, p = 0.42$).

192. When the results for the sixty-four remaining consented-to injunctions and the fifteen remaining unconsented-to but unopposed injunctions are compared, two-sample, two-tailed $t$-tests assuming equal variances and assuming unequal variances yield, respectively, $t(77) = -1.9, p = 0.06$; and $t(28) = -2.3, p = 0.03$. An $F$-test for equality of variances does not indicate a statistically significant difference between variances at a 95% confidence level but does indicate such a difference at a 90% confidence level ($F = 2.0, p = 0.08$). When the results for the twenty-six remaining actively opposed injunctions and the fifteen remaining unconsented-to but unopposed injunctions are compared, two-sample, two-tailed $t$-tests assuming equal variances and assuming unequal variances yield, respectively, $t(39) = -1.9, p = 0.06$; and $t(37) = -2.2, p = 0.04$. An $F$-test for equality of variances does not indicate a statistically significant difference between variances at a 95% confidence level but does indicate such a difference at a 90% confidence level ($F = 2.1, p = 0.08$).

193. No preliminary injunctions in the residuum were consented-to. When the results for the ninety-six remaining permanent injunctions and the nine remaining preliminary injunctions (including temporary restraining orders) are compared, two-sample, two-tailed $t$-tests assuming equal variances and assuming unequal variances yield, respectively, $t(103) = 0.53, p = 0.59$; and $t(9) = 0.49, p = 0.63$. An $F$-test for equality of variances does not indicate a statistically significant difference between variances ($F = 0.83, p = 0.31$). Likewise, when the results for the twenty of these permanent injunctions that were actively opposed and the six of these preliminary injunctions that were actively opposed are compared, two-sample, two-tailed $t$-tests assuming equal variances and assuming unequal variances yield, respectively, $t(24) = 0.42, p = 0.68$; and $t(8) = 0.40, p = 0.70$. An $F$-test for equality of variances does not indicate a statistically significant difference between variances ($F = 0.84, p = 0.35$).
preliminary and permanent injunctions in the relatively small samples of BMS and purely design-patent orders do not appear statistically significant or, for that matter, very substantial even on their face.194

4. Geographic Ubiquity of Error.—Type-2 error exhibits substantial geographic ubiquity as well as substantial technologic ubiquity. Among districts that issued at least two non-BMS injunctions in 2010, only one—the Southern District of Ohio—avoided Type-2 error.195 Among districts issuing three or more non-BMS injunctions, the Southern District of California had the best batting average: its six non-BMS injunctions feature only two that contain Type-2, obey-the-law language. Among districts that issued five or more of the injunctions in the dataset, Table 1 shows that the Districts of Delaware and New Jersey were best at avoiding Type-2 error. But this might largely reflect the dominance of BMS-oriented patent cases in these districts. All five of the District of Delaware’s injunctions deal with a particular form of BMS subject matter: regulated pharmaceuticals. Twelve of the District of New Jersey’s injunctions can be similarly described, and the remaining three injunctions from that district are purely design-patent orders that account for all three of the district’s orders using Type-2 language. In short, the relative success of the Districts of Delaware and New Jersey in complying with the Federal Circuit’s interpretation of Rule 65(d) might be more attributable to technologic subject matter than to any special legal acumen on the part of these courts or the attorneys who practice before them.

194. The observed Type-2 error rates for the sixteen BMS permanent injunctions and the nine BMS preliminary injunctions (including temporary restraining orders) are approximately 13% (2 of 16) and 11% (1 of 9), respectively. The observed Type-2 error rates for the twelve purely design-patent permanent injunctions and the one purely design-patent preliminary injunction are approximately 92% and 100%, respectively. Given the closeness of the preliminary and permanent injunction error rates and the small sizes of the samples, it virtually goes without saying that the observed differences within the respective BMS and purely design-patent classes do not appear to be statistically significant.

Table 1. Leading Districts for Injunctive Relief in the 2010 Dataset

<table>
<thead>
<tr>
<th>District</th>
<th>Number of Injunctions</th>
<th>Number of Injunctions with Type-2 Language</th>
<th>Number of Non-BMS and Non-Purely-Design-Patent Injunctions</th>
<th>Number of Non-BMS and Non-Purely-Design-Patent Injunctions with Type-2 Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.D. Cal.</td>
<td>19</td>
<td>11</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>D.N.J.</td>
<td>15</td>
<td>3</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>D. Utah*</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>E.D. Tex.</td>
<td>9</td>
<td>6</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>N.D. Tex.</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>S.D. Cal.</td>
<td>6</td>
<td>2</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>N.D. Ga.</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>S.D. Fla.</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>D. Del.</td>
<td>5</td>
<td>0</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

* Nine of the injunctions issued by the District of Utah were issued by one judge in a single case.

5. Potential Explanations for High Rule 65(d) Error Rates.—What explains the district courts’ mass violation of the Federal Circuit’s understanding of Rule 65(d)? Limitation of a violation’s expected consequences provides one plausible explanation. As discussed earlier, if Type-2 error is not corrected on direct appeal, the general result is simply that Type-2, obey-the-law language will be enforced as if it were Type-1, colorable-differences language. Consequently—and particularly as Type-1 or Type-0, measure-zero language often accompanies Type-2 language—courts and parties might commonly view Type-2 error as essentially harmless. This might be especially true when parties have settled their differences, perhaps through a broad licensing or cross-licensing agreement, and seek an injunction essentially only to reinforce their settlement despite lack of any apparent reason for serious concern about a risk of future infringement. A perception of relative lack of harm from Type-2 error might also result in relative lack of attention by trial judges and attorneys to Federal Circuit opinions identifying and correcting such error.

196. See supra text accompanying notes 106–08.
197. Of course, attorneys and their clients still need to consider the risk that, whether through error or a legal course change, courts will later either enforce Type-2, obey-the-law language as written (a risk for the adjudged infringer and its attorneys) or refuse to enforce the injunction at all (a risk for the patentee and its attorneys). Given the apparent ease of avoiding such risks, one might have expected attorneys to more strictly avoid Type-2 language.
This last potential result of a perception of harmlessness dovetails with another possible explanation for the frequency of Type-2 error—namely, that the very prevalence of such error generates noncorrective inertia. The familiarity of Type-2, obey-the-law language might result in its being perceived as unsuspicious. Such a perception is likely encouraged by the fact that Type-2 orders and even Type-2 orders in combination with Type-0, measure-zero orders have pedigrees that stretch back well over a century. The proposition that such pedigrees can contribute to relatively unthinking inertia, even when seemingly simple fixes might better serve a client’s interests, appears to have some support in the observation made by contracts scholars that “standard commercial contract[s]” can “pass relatively untouched through the hands of generations of lawyers” even when, in view of later legal developments, “one might have expected the elite practicing bar to have reacted immediately and decisively” to deviate from the previously established standard form.

A further contributor to Type-2 error could be Type-2, obey-the-law orders’ partial specificity. This might be important because, in applying U.S. law generally, courts commonly frown on injunctions that “do[ ] no more than instruct a defendant to ‘obey the law.’” But Type-2 do-not-infringe

198. Evidence of Type-2 orders appears at least as early as the mid-nineteenth century. See Cal. Artificial Stone Paving Co. v. Moltor, 113 U.S. 609, 613, 617–18 (1885) (refusing to determine the scope of an injunction against “making, selling, or using, or in any manner disposing of, any artificial stone-block pavements embracing the invention and improvements described in the said reissued letters patent”); Corning v. Troy Iron & Nail Factory, 56 U.S. (15 How.) 451, 456 (1854) (reporting the trial court’s grant of an injunction against “in any manner infringing or violating any of the rights or privileges granted or secured by said patent”); see also KSM Fastening Sys., Inc. v. H.A. Jones Co., 776 F.2d 1522, 1533 n.1 (Fed. Cir. 1985) (Newman, J., concurring in part) (“The majority posits the ‘unreasonableness of a decree incorporating a vague or broad prohibition against “infringement” of a “patent.”’ A century of precedent weighs to the contrary.”), overruled on other grounds, TiVo Inc. v. EchoStar Corp., 646 F.3d 869 (Fed. Cir. 2011) (en banc). The same is true for injunctions including both Type-2 and Type-0 orders. See Barnard v. Gibson, 48 U.S. (7 How.) 650, 653 (1849) (reporting the trial court’s grant of an injunction against “any further constructing or using in any manner . . . of the two planing-machines mentioned in said bill . . . and [against] infringing upon or violating the said patent in any way whatsoever”). The practice of limiting the effective scope of injunctions to matters judged to be infringing and only colorable variants thereof appears to have comparable lineage. See, e.g., Crown Cork & Seal Co. of Balt. City v. Am. Cork Specialty Co., 211 F. 650, 653 (2d Cir. 1914) (“It has been the practice in this circuit not to deal with modifications of a machine held to be an infringement, on motions to punish for contempt, unless the change was plainly a mere colorable equivalent . . . .” (citations omitted)); Onderdonk v. Fanning, 2 F. 568, 569 (E.D.N.Y. 1880) (concluding that a difference from a device previously adjudged to infringe “was not so plainly colorable as to entitle the plaintiff to an attachment against him for contempt”); cf. ALBERT H. WALKER, TEXT-BOOK OF THE PATENT LAWS OF THE UNITED STATES OF AMERICA § 708, at 555 (4th ed. 1904) (“And an attachment will not issue where the character of the defendant’s doings, after the injunction, is doubtful.”).


200. Burton v. City of Belle Glade, 178 F.3d 1175, 1201 (11th Cir. 1999) (“As [an] injunction [against racial discrimination in annexation] would do no more than instruct the City to ‘obey the law,’ we believe that it would not satisfy the specificity requirements of Rule 65(d) . . . .”); see also
orders typically refrain from generally forbidding any future violations of 35 U.S.C. § 271 or the U.S. Patent Act as a whole. Instead, these orders ordinarily forbid future infringement only of specific patents or patent claims that the defendant is adjudged to have infringed already. Even among those familiar with the general rule against obey-the-law orders, this partial specificity could nurture an uninformed confidence that a patent-specific Type-2 order complies with Rule 65(d). This confidence might be particularly strong in the design-patent context because the definition of infringement for a design patent typically already has something like Type-1 scope—albeit Type-1 scope centered on a central, patent-described embodiment, rather than the embodiment previously used by an adjudged or accused infringer: U.S. design patents generally claim only one or more ornamental designs specifically illustrated by diagrams included in the patent,201 and the test for infringement is whether an allegedly infringing design is substantially similar to one or more of those shown.202 Thus, for design patents, parties and district courts might be well justified in viewing a Type-2 injunction’s literal, as well as effective, scope as fundamentally equivalent to that of a legitimate Type-1 injunction.

In any event, even with respect to what U.S. law calls utility patents, courts in other common law jurisdictions have indicated that patent-limited injunctions of Type-2 form are sufficiently detailed to provide proper notice of bases for finding contempt. Canadian courts have indicated that an order prohibiting future infringement of a particular patent or patent claim is adequately instructive.203 Likewise, courts in the United Kingdom (U.K.)

Payne v. Travenol Labs., Inc., 565 F.2d 895, 898 (5th Cir. 1978) (holding that an antidiscrimination injunction “more specific than Title VII itself only in that it does not prohibit employment discrimination based on religion and natural origin . . . cannot be sustained”); cf. LAYCOCK, supra note 78, at 274 (describing Rule 65(d) as “generally preclud[ing] injunctions that merely tell defendant to ‘obey the law’”).


202. See Egyptian Goddess, Inc. v. Swisa, Inc., 543 F.3d 665, 678 (Fed. Cir. 2008) (describing proof of infringement as requiring the patentee to “prove[e] the two designs would appear ‘substantially the same’ to the ordinary observer”).

203. Weatherford Can. Ltd. v. Corlac Inc., [2010] F.C. 667 paras. 17, 20 (Can. Ont. Fed. Cl.) (observing that an injunction against “infringing [patent] claims as interpreted whether [via] the named products or not” was “consistent with other orders of this Court, as affirmed by the Court of Appeal, restraining sale and distribution of infringing products generally”); see also Merck & Co. v. Apotex Inc., [1999] 293 N.R. 316 (Can. Fed. Ct. App.) (rejecting a request to narrow an injunction prohibiting infringement of a specified patent so that an adjudged infringer might participate in activities involving “newly developed compounds” not available at the time of the trial judgment); cf. ROBERT J. SHARPE, INJUNCTIONS AND SPECIFIC PERFORMANCE (2d ed. 1997). Justice Sharp of the Ontario Court of Justice observes:

[I]t has often been said that for negative injunctions a general form is to be used, provided it gives sufficient guidance, and orders prohibiting the defendant from acting ‘in the manner hitherto pursued by him or in any other manner so as to cause a nuisance’ and ‘in the manner complained of . . . or otherwise so as to cause a nuisance’ have been approved by appellate courts.
have viewed “the standard form of injunction” as one that “restrain[s] the defendant from infringing the patent.”\textsuperscript{204}  To the extent the scope of such an injunction is not entirely clear, the U.K.’s Court of Appeal has indicated that “it is the infringer who should seek guidance from the court if he wishes to sail close to the wind.”\textsuperscript{205}  Courts in Australia have taken a similar position. The Federal Court of Australia has stated, “Particularly when the validity of the patent has been an issue, the patentee is entitled to an injunction restraining all infringement, and not just the particular form of infringement which was the subject of evidence at the trial.”\textsuperscript{206}

Courts in these common law jurisdictions are, like U.S. courts, sensitive to the need for injunctions to have clear scope.\textsuperscript{207}  Their acceptance of Type-2, obey-the-law injunctions thus lends support to a notion that, at least as interpreted by the Federal Circuit, Rule 65(d)’s requirements are less than intuitive.\textsuperscript{208}

On the other hand, the positions of these other courts might be wrong or at least suboptimal. Obtaining timely and adequate prior approval as suggested by the U.K.’s Court of Appeal might not be as easy as it sounds, particularly given the potentially evolving shape of a design-around product

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\textit{Id. ¶ 1.400, at 1-17 (footnotes omitted)}.  \\
\textsuperscript{204}  Coflexip S.A. v. Stolt Comex Seaway MS Ltd., [2001] 5 R.P.C. 182 (Ct. App.) 186–87 (Eng.) (Aldous, L.J.); see also id. (“The draft order contained an injunction in the usual form which restrained the defendants from infringing European Patent (U.K.) No. 0478742.”); Nutrinova Nutrition Specialties & Food Ingredients GMBH v. Scanchem UK Ltd. (No. 2), [2000] F.S.R. 831 (Patents Ct.) 838–39 (Eng.) (noting that although “there is no rule that in any case of infringement of an intellectual property right the injunction granted will be a general injunction against infringing that right[,]” “the discretion is a wide one [and] injunctive relief . . . may be in the wide form hitherto customary”). \textit{See generally} Microsoft Corp. v. Plato Tech. Ltd., [1999] Masons C.L.R. 370 (Ct. App.) (Eng.) (Nourse, L.J.) (agreeing that cited authorities “undoubtedly support . . . as a general proposition” “that in the case of infringement of intellectual property rights . . . it is well established . . . that, once the claimant has established any infringements of his rights at all, he is entitled as of right to an injunction in the usual wide form to restrain all future infringements”).

\textsuperscript{205}  \textit{Coflexip}, [2001] 5 R.P.C. at 188.

\textsuperscript{206}  \textit{Welcome Real-Time SA v Catuity Inc.} [2001] F.C.A. 785, para. 9 (Austl.); see also id. para. 11 (“The invariable practice in the High Court has been to grant an injunction which simply restrained infringing the patent . . . .”).

\textsuperscript{207}  \textit{See, e.g.,} SHARPE, supra note 203. ¶ 1.390, at 1-16 (“Quite clearly, in formulating injunction orders, the courts should avoid vague or ambiguous language which fails to give the defendant proper guidance or which in effect postpones determination of what actually constitutes a violation of the plaintiff’s rights.”).

\textsuperscript{208}  Nonetheless, I can cite two instances where district courts appear to have actively corrected a party’s attempt to obtain a Type-2, obey-the-law injunction. In one, a court denied an injunction altogether. Plastic Tubing Indus., Inc. v. Blue Diamond Indus., LLC, No. 6:10-cv-1227-GAP-KRS (M.D. Fla. Dec. 28, 2010) (denying parties’ “Joint Motion for Entry of Consent Final Judgment and Permanent Injunction” because “[t]he proposed consent judgment [was] essentially an extremely broad ‘obey the law’ injunction”). In the other, the court blacklined Type-2, obey-the-law language in a party’s draft order. Proveris Scientific Corp. v. InnovaSystems, Inc., No. 05-12424-WGY, slip op. at 2–3 (D. Mass. May 11, 2007) (striking language that would have prohibited activities involving “any other product that embodies the patented inventions recited in claims 3-10 and 13” of U.S. Patent No. 6,785,400 and striking language requiring the destruction of “any other infringing products”).
\end{flushleft}
or process and the possible need to commit significant resources before the product’s final shape is fully determined. Further, where the adjudged infringer and patentee are competitors, the cost to an adjudged infringer of effectively having to signal through court proceedings the nature of a future product line might be inadequately appreciated or limited by courts and the protective orders that they issue.

In any event, the fact that a legal rule is less than entirely intuitive does not necessarily mean that it should not be expected to be understood or applied. Failure to understand or apply the rule might be explained by a combination of the inertia described above and the likely harmlessness of Type-2 error in many cases. Particularly where there are a variety of other grounds for potential appeal or trial-level dispute still at hand, the information costs involved in learning or recalling a rule of potentially only marginal importance might make efforts to avoid procedural error not worth the candle.

On the other hand, at least with respect to actively opposed injunctions, one might conjecture that other forces are at work. Because the overwhelming majority of patent-infringement disputes settle before an injunction issues, one might conjecture that a seemingly surprising level of Type-2 error, even during continued adversarial litigation, reflects the idiosyncratic nature of the parties or attorneys involved in those cases that do not settle. Among other things, failure of parties to settle a case before an injunction issues could signal (1) a relatively large continuing discrepancy in their views of the case’s likely disposition on and after appeal or (2) asymmetrically high stakes for the rights holder under conditions where, for strategic or other reasons, reverse payments from the rights holder to an accused infringer are not a viable settlement option. Such circumstances could correlate with comparatively lower quality attorney representation or

209. See Lemley & Shapiro, supra note 2, at 1992 (stating that “far more patents are licensed or settled than litigated to judgment”).

210. See Keith N. Hylton & Sungjoon Cho, The Economics of Injunctive and Reverse Settlements, 12 AM. L. & ECON. REV. 181, 185 (2010) (developing a model that corroborates standard notions that asymmetric stakes or different probability-of-outcome expectations can prevent settlement where reverse payments are not an option). Reverse payments might fail to be a viable option because they are legally prohibited by, for example, antitrust laws. See Henry N. Butler & Jeffrey Paul Jarosch, Policy Reversal on Reverse Payments: Why Courts Should Not Follow the New DOJ Position on Reverse-Payment Settlements of Pharmaceutical Patent Litigation, 96 IOWA L. REV. 57, 61 (2010) (noting that both the U.S. Department of Justice and the Federal Trade Commission have “pursu[ed] antitrust liability for reverse-payment settlements”). Alternatively, reverse payments might fail to be a viable option because they undermine a right holder’s ability to credibly threaten others with enforcement that does not entail payment to the others to avoid or cease infringement. Cf. Kaplow & Shavell, supra note 10, at 722 (noting that under a liability rule, “even though I would be willing to pay Jack not to take my car if it were inadequately valued by the courts, there would be no point in paying him to desist—for Jill, or someone else, could come along and take it the next day”).
lower quality use of attorney representation (from a rational profit maximizer’s perspective) on one or another side of the case.\textsuperscript{211}

In any event, further work is needed to determine whether cases in which Type-2 error appears are, for example, peculiarly likely to feature attorneys less familiar with the nuances of Federal Rule of Civil Procedure 65(d) and its interpretation by the Federal Circuit. For purposes of this Article, key lessons from the prevalence of Type-2 error are that current practice with respect to do-not-infringe injunctions appears to leave much room for improvement and that patentees do not seem generally content with asking for injunctions of no more than Type-1, colorable-differences scope.

\textbf{B. Purely Reparative Injunctions in U.S. Practice}

In stark contrast to the mass violation of Federal Circuit precedent against Type-2, obey-the-law injunctions, district courts appear generally to heed Federal Circuit precedent holding that injunctions to enforce patent rights cannot be purely reparative.\textsuperscript{212} Among the 143 orders in the 2010 dataset, I identified only one that contained a purely reparative injunction. Further, this purely reparative injunction had a relatively trivial form: it was a consented-to order commanding an infringer to “provide a written letter of apology . . . that recognizes [the] infringement of the patents-in-suit, and apologizes for it.”\textsuperscript{213} In short, compliance with Federal Circuit precedent against purely reparative injunctions appears to be quite good.

\textbf{C. Specially Tailored Injunctions in U.S. Practice}

The situation with respect to specially tailored patent-infringement injunctions is more complex, in part because such orders come in many different forms. Among the orders issued in 2010, I have identified four basic subcategories of specially tailored injunctions that are discussed in more detail below: (i) correlated-activity injunctions (Type-C); (ii) destruction, disablement, or delivery injunctions (Type-D);
“reformulated-bounds” injunctions (Type-B); and (iv) moderated injunctions (Type-M). Overall, injunctions having one or more of these specially tailored forms appear in about one-third of the 143 orders in the dataset. By far the most common of these specially tailored forms is the correlated-activity injunction.

1. Correlated-Activity Injunctions.—On over thirty occasions, courts issued a Type-C, correlated-activity injunction directed at activities that overlap significantly, but not entirely, with activities that by themselves can constitute infringement. Thus, for example, one district court prohibited not only “directly or indirectly infring[ing],” but also “causing, inducing or contributing to . . . infringement . . . by others.” As only specific forms of causation of others’ infringement, such as active inducement or contributory infringement, constitute infringement under the U.S. Patent Act, the court’s prohibition can be viewed as at least somewhat prophylactic. The prophylactic language might have been intended to protect against situations where required elements of indirect infringement are difficult to prove but indirect infringement is justifiably suspected.

Prohibition of other types of potentially noninfringing activity might reflect bleed over from other legal regimes. The U.S. Patent Act lists five kinds of acts that form bases for the most typical claims of direct infringement: “mak[ing], us[ing], offer[ing] to sell, or sell[ing] any patented invention, within the United States or import[ing] into the United States any patented invention.” District courts commonly enjoin these five kinds of activity. But in the 2010 dataset, district courts also repeatedly forbade activities such as “distributing” or “shipping” infringing items, or even merely “displaying” images of these items. Such language might be a carryover from other forms of intellectual property protection like trademark or copyright. U.S. copyright law explicitly gives copyright owners an exclusive distribution right with respect to “copies or phonorecords of the copyrighted work.”

On the other hand, prohibition of noninfringing activities such as shipping might have independent roots in a district court’s desire to prevent

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216. Id. § 271(a).
217. E.g., Silverlit Toys Manufactory Ltd. v. JP Commerce, LLC, No. 2:09-CV-08959-CAS (JCx), slip op. at 4 (C.D. Cal. Apr. 29, 2010) (enjoining, inter alia, “marketing, reproducing, distributing, receiving, forwarding, shipping, displaying (on their websites or otherwise), or in any way commercially exploiting . . . any toy helicopters that infringe one or more claims” of two specified patents); Innovation U.S.A., Inc. v. IDO Furniture (U.S.A.) Inc., No. 1:09-cv-01727-JBW-RLM, slip op. at 3 (E.D.N.Y. Mar. 31, 2010) (enjoining “referencing or depicting on their website or in any future catalog, brochure, and any other form of marketing literature,” a sofa or a reclining sofa bed that infringes either of two specified design patents).
future infringement. Such an activity, although potentially noninfringing by itself, can be highly correlated with infringing activities such as use or sale and might in fact enable those directly infringing activities to occur. Thus, prohibition of a correlated activity like shipping might provide a patentee with more effective and easily enforceable protection without chilling too much legitimate activity by an adjudged infringer.

Type-C injunctions directed at correlated activity need not be negative injunctions like the prohibitions discussed above. For example, in *O2 Micro International Ltd. v. Beyond Innovation Technology Co.*, the district court facilitated protection of patent rights by requiring that an adjudged infringer label specified products as “Not for Sale in, Use in, or Importation into the United States.” Although such labeling does not necessarily prevent the indicated activities, it might very well help discourage them and thus have a negative causal correlation with their occurrence.

2. *Destruction, Disablement, or Delivery Injunctions.*—Another subtype of specially tailored injunction is the Type-D injunction requiring destruction, disablement, or delivery of specified material. There are seven Type-D orders in the dataset. As with certain Type-C orders, repeated appearance of Type-D orders might reflect the influence of legal regimes such as copyright and trademark. Unlike the U.S. Patent Act, federal copyright and trademark acts expressly provide remedies of impoundment, destruction, or other court-ordered disposition of preexisting goods.

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219. *Cf.* ANDREW BURROWS, REMEDIES FOR TORTS AND BREACH OF CONTRACT 511–12 (3d ed. 2004) (describing the difference between “prohibitory” and “mandatory” injunctions); 11A WRIGHT, MILLER & KANE, *supra* note 92, § 2942, at 57 (“[I]njunctions compelling the doing of some act, as opposed to forbidding the continuation of a course of conduct, are an ancient and familiar tool of equity courts and will be used whenever the circumstances warrant.”).


221. *Id.* at 2. In *Polytree (H.K.) Co. v. Forests Mfg., Ltd.*, No. 1:09-cv-03377-WSD, slip op. (N.D. Ga. Dec. 20, 2010), the court commanded the U.S. Customs and Border Patrol to prevent importation into the United States of “any Christmas tree stand imported by Defendant marked with” a number from either of two patents owned by the plaintiff. *Id.* at 39. This order could be understood to facilitate prevention of infringement by releasing the patentee and customs officers from any need to prove or confirm that tree stands so marked in fact incorporated the indicated inventions. But the order could also be understood as primarily directed toward preventing further violations of the U.S. Patent Act’s false marking statute, which, among other things, prohibits the deceptive marking of a product “without the consent of the patentee.” 35 U.S.C. § 292(a) (2006).


223. 15 U.S.C. § 1118 (2006) (empowering courts in federal trademark actions to “order that all labels, signs, prints, packages, wrappers, receptacles, and advertisements in the possession of the defendant, bearing the registered mark . . . or any reproduction, counterfeit, copy, or colorable
Again, however, a bleed-over hypothesis is not the only available explanation. Although the Federal Circuit has indicated that “ordering the repatriation and destruction of [already] exported” matter can be too remote from any aim of preventing infringement to be authorized by the U.S. Patent Act,\(^{224}\) court-ordered destruction of goods located in the United States might well be understood to be a permissible sort of specially tailored order that helps prevent further infringement.

3. Reformulated-Bounds Injunctions.—In another seven orders in the dataset, courts issued what I term reformulated-bounds or Type-B injunctions. Such an injunction is distinctive in that it defines the scope of technologies that it encompasses without fundamentally relying on reference to or reproduction of a preexisting formulation or instantiation—i.e., without reference to the adjudged infringing products or processes, a patent or patent claim, or a description appearing elsewhere, such as an Abbreviated New Drug Application (ANDA).\(^{225}\) A Type-B injunction provides its own linguistic formulation of the subject matter that it encompasses.

Some consented-to orders illustrate Type-B injunctions in short form. In *Tristar Metals, Inc. v. Edemco Dryers, Inc.*,\(^{226}\) the district court issued a consented-to order that tersely forbade the defendant from engaging in commercial activities related to “any pet tub having a swing ramp.”\(^{227}\) The injunction covered any such tub even though the relevant patent’s claims were more specific: the claims apparently reached only pet tubs having “a plurality of leg elements.”\(^{228}\)

Likewise, in *ExitExchange Corp. v. Casale Media Inc.*,\(^{229}\) the district court issued a consented-to order that broadly prohibited “making, using, importing, selling, or offering to sell pop-under advertisements”—Internet advertisements that “appear underneath the active window” on a computer


\(^{225}\) So-called ANDA litigation that tends to result in injunctions making such a reference is enabled by § 271(e) of the U.S. Patent Act, 35 U.S.C. § 271(e) (Supp. IV 2010), which, roughly speaking, provides patentees with “the ability to sue [generic drug manufacturers] for merely filing an application (known as an Abbreviated New Drug Application, or ANDA) with the [Food and Drug Administration].”TIMOTHY R. HOLBROOK, POSSESSION IN PATENT LAW, 59 SMU L. REV. 123, 141 (2006).

\(^{226}\) No. 4:10-cv-00044-A, slip op. (N.D. Tex. May 20, 2010).

\(^{227}\) Id. at 2.

\(^{228}\) U.S. Patent No. 6,516,752 col. 4 l. 46 (filed July 2, 2001); id. at col. 5 l. 22.

\(^{229}\) No. 2:10-cv-297-TJW, slip op. (E.D. Tex. Nov. 2, 2010).

\(^{230}\) Id. at 2.
screen and thus tend “not to be seen until some or all other browser windows are closed or minimized.”


232. U.S. Patent No. 7,386,555 col. 15 II. 28–30 (filed Feb. 23, 2004); see also id. at col. 14 I. 64 to col. 15 I. 16 (claiming a “system for Internet advertising” comprising “a media that interacts with a display device to display to a user at least one browser,” “a script handler that invokes a post-session procedure” that “open[s] a second browser in a . . . background window,” and “an event handler that . . . loads [an] advertisement into said second browser”).

Consequently, in both Tristar and ExitExchange, the issued injunction’s scope appears to depart from that of the more detailed patent claims. At least facially, the claims appear directed to more particular forms of pet tubs or pop-under advertisements than the corresponding injunction forbids. Apparently, therefore, each of these injunctions prohibits a spectrum of noninfringing activity.

The case of Vertical Doors, Inc. v. Howitt offers an example of a somewhat longer-form Type-B injunction. But of greatest immediate interest is a linguistically much more dramatic example of a Type-B injunction that appeared in Stone Strong, LLC v. Del Zotto Products of Florida, Inc. In this case, the court issued an unconsented-to order that defined the scope of its prohibition through extensive description of the physical characteristics of forbidden concrete blocks. Specifically, the court enjoined the defendant from the following:

[M]aking, using, offering to sell, selling within the United States or importing into the United States a precast concrete block with a front surface, first and second side surfaces, a top surface, a bottom surface and a back surface that contains a lifting device protruding from the top surface and a recess or notch in the bottom surface:

i. where at least one recess or notch can be positioned to receive within it at least one lifting device from another block; and

ii. where the width ("w") of the recess or notch . . . is less than or equal to either:


234. Compare id. at 2 (forbidding activities involving “any vertical door conversion kits or vertical door hinges intended to allow opening of a vehicle door outward (i.e., in a horizontal motion like typical car doors), and then upward (i.e., in a vertical motion), and that are designed to be bolted on to the vehicle frame and door, as opposed to welded”), with U.S. Patent No. 6,845,547 col. 12 II. 46–64 (filed Nov. 26, 2002) (claiming a “vehicle door hinge for a vehicle door and frame, the hinge comprising: a chassis mounting plate securely fastened to such vehicle frame; a swingarm securely fastened to such vehicle door[,]” and other elements).


236. Id. at 1–2 (forbidding various activities involving “a precast concrete block” having various specified features).
1. the distance from the front of the block to the back end of the
lifting device (“a”) . . . ; or
2. the distance from the back of the block to the front end of the
lifting device (“b”) . . . .

This injunction’s descriptive language does not track precisely the
language of any relevant patent claim. For example, claim 1 of plaintiff
Stone Strong’s U.S. Patent No. 6,796,098 covers:

1. A block comprising:
a front surface;
first and second side surfaces coupled to the front surface;
a top surface coupled to the front surface and to the first and
second side surfaces, wherein the top surface includes at least one
alignment device, each alignment device comprising a device for
lifting the block when the block is being placed;
a bottom surface coupled to the front surface and to the first and
second side surfaces, the bottom surface including at least one recess
positioned to receive at least one alignment device of a previously-
placed block to align the block with respect to the previously-placed
block; and
a back surface coupled to the first and second side surfaces, to the
top surface, and to the bottom surface.

Comparison of the Stone Strong injunction with claim 1 reveals a
number of differences. For example, claim 1 includes limiting language,
such as the requirement of an “alignment device,” that the injunction facially
lacks. On the other hand, the injunction’s requirement of a specific relation-
ship between the width of a block’s “recess or notch” and other dimensions is
missing from claim 1’s explicit language.

Such differences might reflect a deliberate trade-off. The dimensional
constraints of the injunction might be viewed as a way of capturing, in
comparatively unambiguous terms, at least a subset of situations in which the
“lifting device” in combination with the “recess or notch” will tend to
operate as an “alignment device.”

Stone Strong’s dimensional language thus demonstrates how a Type-B,
reformulated-bounds injunction can effectively replace claim language with
substitute language that at least arguably increases the clarity of an
injunction’s scope. Such increased clarity might be advantageous for both
parties as well as the courts. Gains from increased clarity can compensate a
party for the broader or narrower scope of the injunction relative to that of a

237. Id. (emphasis omitted).
238. Compare id., with U.S. Patent No. 7,073,304 col. 17 I. 35 to col. 20 I. 65 (filed Sept. 23,
2004) (listing claims); U.S. Patent No. 6,796,098 col. 13 I. 41 to col. 16 I. 43 (filed Feb. 27, 2003)
same).
conventional Type-1, colorable-differences order. Indeed, the fact that ExitExchange and Vertical Doors, Inc. v. Howitt, in contrast with Stone Strong, both involve consent decrees appears to confirm that parties on opposing sides of an injunction can agree to prefer the apparently clearer boundaries of a Type-B injunction to a Type-1 injunction’s “no more than colorable differences” haziness.240

4. Moderated Injunctions.—A fourth type of specially tailored injunction is what this Article terms a “moderated injunction”—an injunction that includes an explicit carve out for infringing (or likely infringing) behavior. At least five orders in the 2010 dataset exhibit such moderated terms. An order restricting the use of tarpless fumigation includes a carve out for “anyone . . . walk[ing] by a tarpless fumigation wearing a detection device solely for the purpose of personal safety.”241 Another order directed to the recording of medical data specifically limits the order’s prohibition to use “in any clinical applications in the United States,” thereby providing a carve out for nonclinical uses.242 A temporary restraining order forbidding infringing activities such as use, offers to sell, and importation specifically provides that “this restraint does not apply to manufacture.”243 Somewhat similarly, two injunctions involving pharmaceuticals specifically limit their prohibitions of making the patented invention to prohibitions of “commercial manufacture.”244 With respect to these last two injunctions, Congress itself might be credited as the cause of moderation: the courts issued these injunctions in accordance with special statutory language that provides a limited authorization for injunctions to “prevent the commercial manufacture, use,

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offer to sell, or sale within the United States or importation into the United States of an approved drug or veterinary biological product."\(^2\)\(^4\)

V. Crafting the Optimal Injunction

We now come to a basic normative question: How, from a policy standpoint, does one determine the optimal scope and form of a patent-infringement injunction? Response to this question is complicated by the fact that a diligent policy maker must balance a host of concerns, including concerns relating to likely effects of injunctions on adverse parties’ behaviors or to courts’ limitations in issuing and enforcing injunctive relief. Most fundamentally, questions of patent-infringement injunction scope raise concerns of overdeterrence and underdeterrence that are pervasive in law. Part II has indicated how a narrow injunction can leave a rational infringer with substantial reason to pursue a course of action that, though unlikely to constitute contempt, will likely be determined to constitute infringement. On the other hand, a broad injunction can combine with the potential severity of contempt sanctions to deter future activity that is unlikely to result in a finding of either infringement or contempt. The latter possibility can be of special concern if, as assumed for purposes of simplicity here,\(^2\)\(^6\) society rationally wishes to allow or encourage design-arounds even where a design-around only barely avoids infringement.\(^2\)\(^7\)

One could argue, however, that with respect to an adjudged infringer, concerns with overdeterrence are generally ill founded. A judgment of infringement means that a patent claim has been held not invalid and not unenforceable despite whatever challenges an adjudged infringer chose to make. The claim’s scope has been clarified at least to the extent necessary to support a holding of infringement. Moreover, the adjudged infringer cannot justifiably claim that it remains unaware of the patent or its potential relevance to the infringer’s activities.\(^2\)\(^8\) Thus, various concerns of notice, clarity, and uncertainty\(^2\)\(^9\) have been addressed. Especially if an infringer’s


\(^2\)\(^6\). See supra text accompanying notes 30–36.

\(^2\)\(^7\). Likewise, for purposes of simplicity, this Article assumes, at least as a general matter, that society rationally wishes to discourage actually infringing activity. Of course, if one believes that patent rights are systematically overbroad, one might question this assumption and seek narrower or otherwise weaker injunctions without vexing about any felt need to balance lost protection for patentees against the gains from reduced chilling and “taxation” of infringing or, at least, potentially infringing activity.

\(^2\)\(^8\). Cf. Omri Ben-Shahar, Damages for Unlicensed Use 23 (Univ. of Chi. John M. Olin Law & Econ., Working Paper No. 534, 2010), available at http://ssrn.com/abstract=1677667 (indicating an argument that “already-licensed parties” should “face harsher remedies for unlicensed use than the ones strangers face” because already-licensed parties can be expected, generally speaking, to have lower transaction costs for additional licensing).

\(^2\)\(^9\). Herbert Hovenkamp, Response, Notice and Patent Remedies, 88 TEXAS L. REV. SEE ALSO 221, 224 (2011) (emphasizing the importance of notice concerns in relation to remedies for patent
past conduct suggests a substantial probability of future violations, why not follow foreign common law jurisdictions and favor issuance of a patent-limited Type-2, obey-the-law order—i.e., an injunction against further infringement of the specific patents or patent claims already adjudged to have been infringed?

One reason why not is that under current law and practice, notice of the existence and potential relevance of a specific patent or patent claim does not equate to clear notice of the scope of associated patent rights. Consequently, a patent-limited Type-2, obey-the-law order tends to be less instructive than an order not to trespass further on Blackacre. An individual patent claim can encompass a great variety of dissimilar-looking embodiments of the claimed invention. Moreover, claim limitations are frequently less than crystal clear. Even seemingly simple questions of patent scope can be surprisingly difficult to answer. In an actual suit alleging infringement of a Gillette patent by the four-blade Schick Quattro, much initial argument centered on an apparently simple question—whether Gillette’s patent could cover a razor having more than three blades as well as a razor having three and only three blades. The distribution of judicial “votes” on the issue indicates that the question was far from easy, at least at the preliminary-injunction stage: the district court judge and one Federal Circuit judge believed that Gillette’s patent could not cover a four-blade razor, but two Federal Circuit judges thought otherwise.

Even if prior litigation has clarified—and perhaps even nailed down—the scope of patent claims along a number of dimensions, not all dimensions of a claim will necessarily have been addressed. The selection of claim terms subjected to judicial interpretation will reflect particular characteristics of accused matter or the specific nature of challenges to validity or enforceability. Unaddressed questions of claim validity and scope can generate uncertainty comparable to that which existed before prior litigation. Hence, for example, if Energizer Holdings, the defendant in the Gillette suit, had previously produced a razor with exactly three blades, prior infringement litigation relating to that three-blade razor might have done nothing to clarify whether the Gillette patent could cover a razor with more than three blades as

infringement); see also BESSEN & MEURER, supra note 189, at 46 (“A successful property system establishes clear, easily determined rights.”).

250. See Dan L. Burk & Mark A. Lemley, Fence Posts or Sign Posts? Rethinking Patent Claim Construction, 157 U. PA. L. REV. 1743, 1748 (2009) (“Those who are intimate with the patent system have long understood that it is simply impossible to define boundaries of invention with the physical or descriptive precision of defining the boundaries of real property.”).

251. Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1368 (Fed. Cir. 2005) (“The district court denied Gillette’s motion for a preliminary injunction because it found that the claims . . . covered only a three-bladed razor . . . .”).

252. See id. (holding that “the district court erred in construing the claims”); id. at 1382 (Archer, J., dissenting) (“[T]he specification makes abundantly clear that the invention . . . was a razor having three blades, no more . . . .”).
such a question would most likely have been irrelevant to whether the razor at hand infringed.

Thus, to the extent patent law policy makers wish to ensure that market actors, including adjudged infringers, feel free to develop and disseminate innovations whose infringement or noninfringement of another’s patent rights is uncertain, those policy makers should worry about the possibility of overdeterrent injunctions. The potential severity of contempt sanctions and uncertainty about the scope of an injunction that, in effect as well as by its terms, forbids future infringement of a patent or patent claim could deter good-faith, socially productive activity in which an infringer would have otherwise engaged. To limit the likelihood or severity of overdeterrence, courts might wisely seek to ensure that, generally speaking, patent-infringement injunctions do not stray too far from the immediate environs of matter already adjudged to infringe—matter for which relevant questions of patent-claim scope have been addressed. In most cases, the haziness of a resulting Type-1 order might not be much of a concern because the onward march of technology or market interest, agreement between the parties, or other circumstances make activity that both tests the boundaries of an injunction and substantially upsets the patentee relatively unlikely. Thus, Type-1, colorable-differences injunctions arguably represent an appropriate default, one that protects core social interests while saving on the costs of providing an exact, ex ante specification of what society means to protect.

An advocate for Type-2, obey-the-law injunctions might counter that an adjudged infringer is not without recourse to limit uncertainty. If the infringer is in doubt about whether later contemplated activity is at risk, the infringer can petition for clarification or modification of the original order. Alternatively, the infringer can contract with the patentee for a blanket license for activities that might otherwise violate the patentee’s previously infringed patents.

But such solutions are neither always feasible nor always socially desirable. Whether because of information costs, developed distrust between parties, strategic behavior, or conditions that provide a basis for “holdup” or


254. Cf. Louis Kaplow, Rules Versus Standards: An Economic Analysis, 42 Duke L.J. 557, 569 (1992) (observing that where “there is a given cost of determining the appropriate content of the law ex ante,” “rules are more expensive to promulgate than standards”).

255. See Fed. R. Civ. P. 60(b)(5) (“On motion and just terms, the court may relieve a party or its legal representative from a final judgment, order, or proceeding for the . . . [reason that] . . . applying it prospectively is no longer equitable . . . .”); see also Smith Corona Corp. v. Pelikan, Inc., 784 F. Supp. 452, 486 (M.D. Tenn. 1992) (“Pelikan’s motion to clarify injunction is granted . . . .”); Rendleman, supra note 79, at 491 (“The Supreme Court’s decision that a Chancery court has inherent power to modify or dissolve an injunction came in 1932 . . . . Rule 60(b)(5) became effective . . . six years later.”).
“holdout,”256 reasonable licenses do not always occur. Uncertainty about an injunction’s scope can exacerbate difficulties in coming to a satisfactory agreement, and the cost of clarifying that scope through new judicial process might be unjustifiably great for resource-strapped courts and private parties alike. In short, possibilities for private contracting or judicial clarification dilute but do not eliminate bases for believing that Type-1, colorable-differences injunctions provide a sensible default.

Moreover, there is good reason for demanding that the Type-1 effective scope of a Type-2, obey-the-law injunction be indicated on the face of the order itself, rather than be imposed through later, narrowing interpretation or application. The general language of prohibition characteristic of Type-2 orders might encourage unsophisticated parties to believe that the effective scope of an injunction is broader than it is. Even if a relatively sophisticated party were informed that it is a “legal slam dunk” that obey-the-law language’s effective scope will be narrower than its plain meaning suggests, that party might justifiably hesitate to rely on such information. Slam dunks are sometimes missed, and private parties might be used to having to discount the certainty of legal representations.

Further, broad obey-the-law language might invite error by a court itself. Such language might encourage a district court to believe that valid grounds for finding contempt extend substantially beyond activities explicitly prohibited by a Type-1, colorable-differences order. Even assuming that a district court later recognizes that there are Type-1 limitations on grounds for finding contempt, Type-2, obey-the-law language might subtly distort how a district court understands those limitations. In the shadow of Type-2 language, limitation of an order’s effective scope might seem more a response to concerns with limiting false positives—improper holdings of contempt—than a response to Rule 65(d) concerns with notice. A court that has persuaded itself that an enjoined party’s new course of action is infringing might be quicker to discount worries about false positives than concerns about adequate notice. The latter concerns more firmly require a court to consider how things looked to the infringer when the injunction issued, not merely how things look to the court later.

So the case for a default rule in favor of Type-1, colorable-differences injunctions seems fairly strong. Nonetheless, Type-1 injunctions fall far short of providing a complete answer to problems of injunction scope. Most obviously, they fall short because their “no more than merely colorable differences” language explicitly incorporates a continuing reason for uncertainty: the question of whether a difference is merely colorable. Even if

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256. Cf. Lemley & Shapiro, supra note 2, at 1993 (“Injunction threats often involve a strong element of holdup in the common circumstance in which the defendant has already invested heavily to design, manufacture, market, and sell the product with the allegedly infringing feature.”). See generally Calabresi & Melamed, supra note 4, at 1107 (describing "moving from a property rule to a liability rule" as a potential solution to a “holdout problem”).
this phrase could be precisely defined in the abstract, its meaning in actual practice would often be unclear. This follows from the fact that determination of what is merely colorable commonly requires reference to associated patent claims. But as discussed above, patent claims themselves often contain latent ambiguity. 257 Would addition of a fourth blade to a previously infringing three-blade razor constitute a colorable change? The answer presumably depends on whether one believes that the fourth blade is somehow relevant to the patent claims at issue. Resulting uncertainty about what constitutes a “merely colorable difference” can leave an uncomfortable degree of uncertainty about a Type-1 injunction’s scope.

What alternatives might enable a court to avoid such uncertainty? A court might decline to issue any injunction at all. Although this might seem so flawed a response that it is scarcely worth mentioning, the district court in MercExchange, L.L.C. v. eBay, Inc.258 seems originally to have followed this course. 259 A substantial cause for the district court’s initial denial of an injunction was its fear that such an order would simply be no more than a prelude to “contempt hearing after contempt hearing.” 260

A problem with the no-injunction solution to fears of later contempt proceedings is that this solution seems disproportionately likely to lead to denials of injunctions in precisely those situations where an injunction is most needed: situations where an adjudged infringer will foreseeably engage in activity likely to raise related concerns of infringement. Even if circumstances exist where an injunction will lead to more, rather than less, socially wasteful litigation, there is an externality concern with respect to correct judicial identification of those circumstances. Denial of an injunction will likely shift the burden of further foreseeable litigation to another judge, whereas a grant of an injunction will likely require the granting judge to shoulder at least a portion of that burden in a later contempt proceeding. Thus, to the extent a judge wishes to limit his or her involvement in vexatious proceedings, a judge trying to decide whether foreseeable future litigation justifies denying rather than granting an injunction might have self-interested reasons to favor denial over a grant.

257. See supra text accompanying notes 250–52.
259. Id. at 714.
260. Id. More fully, the district judge stated,

If the court did enjoin the defendants here, the court would essentially be opening a Pandora’s box of new problems. This case has been one of the more, if not the most, contentious cases that this court has ever presided over. . . . The court predicts that if it granted the plaintiff’s request for a permanent injunction, the battle would continue to be as contentious as ever. . . . The court envisions contempt hearing after contempt hearing . . . . This will result in extraordinary costs to the parties, as well as considerable judicial resources.

Id.
Compared to denying an injunction altogether, a less extreme alternative is to consider how an order might be narrowed or otherwise crafted to avoid the problems that injunctive relief might present. Courts sometimes will delay the full effectiveness of injunctions to avoid some of the special disruption or other hardship that an immediately effective order might cause.261 But in deciding whether to issue an injunction and when to make it effective, courts should perhaps more often consider how the specific scope of an injunction can affect the balance of concerns that favor or disfavor injunctive relief. Taking scope into consideration in deciding on grant or denial might require district courts to alter existing practices—or at least to more consistently follow best practices. District courts have perhaps too often decided whether to issue an injunction without substantially considering the details of the potential injunction’s scope, indeed even combining the decision to issue an injunction with a call for a subsequent proposal for the injunction’s form.262 Once one recognizes that patent-infringement injunctions can come in different shapes and sizes, it seems logical to quite uniformly demand the provision of a draft order in advance of deciding whether an injunction should issue and, in making the latter

261. See Broadcom Corp. v. Qualcomm Inc., 543 F.3d 683, 704 (Fed. Cir. 2008) (upholding a district court’s order granting an injunction in part because a “sunset provision” permitting infringement to continue for twenty months after the jury verdict alleviated hardship to the adjudged infringer); Metso Minerals, Inc. v. Powerscreen Int’l Distribution Ltd., 788 F. Supp. 2d 71, 77 (E.D.N.Y. 2011) (holding that, in light of the defendants’ representation “that they will have completed the redesign of their screener line by the end of June 2011,” the balance of hardships and considerations of public interest made “appropriate . . . delay[ing] the implementation of injunctive relief until July 11, 2011”); B. Braun Melsungen AG v. Terumo Med. Corp., 778 F. Supp. 2d 506, 524 (D. Del. 2011) (ruling in favor of the adjudged infringer’s proposal of “a ‘sunset’ period of fifteen months, allowing [the infringer] to continue to sell the [infringing device] in [a] market segment where it is presently sold”).

262. See, e.g., Q BAS Co. v. C Walters Intercoastal Corp., No. 8:10-cv-00406-AG-MLG, slip op. at 23 (C.D. Cal. Dec. 16, 2010) (deciding to grant a preliminary injunction but deciding to “determine an appropriate bond amount [only] after Plaintiffs file a proposed preliminary injunction order”); Stone Strong, LLC v. Del Zotto Prods. of Fla., Inc., No. 5:08-cv-503-oe-10DAB, slip op. at 8 (M.D. Fla. Oct. 25, 2010) (holding that “the Plaintiff is entitled to injunctive relief” and giving the plaintiff “[ten] days within which to file and submit a proposed, final injunctive decree”); Mytee Prods., Inc. v. Harris Research, Inc., No. 3:06-cv-01854-CAB, slip op. at 7 (S.D. Cal. Jan. 20, 2010) (granting a motion for permanent injunction and calling for subsequent submission of “[a] proposed permanent injunction”); Flexiteek Ams., Inc. v. Plasteak, Inc., No. 0:08-cv-60996-JIC, slip op. at 18–19 (S.D. Fla. Sept. 15, 2009) (concluding that an injunction should issue and ordering plaintiffs to file a proposed injunction). But see Metso Minerals, 788 F. Supp. 2d at 77 (“In addition to their arguments opposing injunctive relief in whole, the defendants also oppose a number of specific aspects of the plaintiff’s proposed injunction.”); B. Braun Melsungen, 778 F. Supp. 2d at 525–26 (reviewing the parties’ proposals for the scope of injunctive relief and granting a permanent injunction “only to the extent of entering an injunction on the terms proposed by [the defendant]”). After deciding to grant an injunction, a district court might call for a specific proposal for the form of the on an injunction even though a proposed order has previously been submitted. Compare Mytee Prods., slip op. at 7 (deciding to issue an injunction and calling for subsequent submission of “[a] proposed permanent injunction”), with Mytee Prods., Inc. v. Harris Research, Inc., No. 3:06-cv-01854-CAB (S.D. Cal. Nov. 20, 2009) (proposed permanent injunction) (presenting a draft order prohibiting infringement of various patent claims).
decision, to consider more carefully the proposed scope of a specific draft order as well as, possibly, different specific scopes that this draft order might be amended to have.\textsuperscript{263} Attempting to evaluate the balance of hardships and public interest concerns associated with an injunction without substantial reference to a specific proposal for the form of an injunction might be ill considered in cases where tailoring an injunction might make a difference.

How might an injunction be tailored? An obvious first possibility would be to limit its scope to that of a “true” Type-0, measure-zero order. Such an order would specify that it is not to be enforced against anything but the exact products or processes already held to infringe.

As already discussed, however, the true Type-0 alternative is often likely to be not much of an alternative at all.\textsuperscript{264} Outside relatively idiosyncratic fields such as pharmaceuticals, there frequently is a virtually limitless pool of minor variations that can distinguish new products or processes without significant change in functionality. Under such circumstances, a true Type-0 order is likely to be essentially worthless. Permitting the possibility of contempt to be averted by, for example, offering three-blade razors that are gray rather than black could make the whole process of awarding injunctive relief a fundamentally empty gesture.

Specially tailored injunctions provide courts with a potential way to escape the Type-0 versus Type-1 dilemma. By crafting injunction-specific language, a court can avoid the haziness of a Type-1 injunction’s “no more than colorable differences” language while also providing relief that forbids more than a measure-zero range of conduct. As seen with the dimensional limitations in the \textit{Stone Strong} injunction,\textsuperscript{265} a successfully drafted specially tailored injunction can possess comparatively clear limits that provide safe havens for a broad range of potential future activities. These havens can reduce the possibility that a combination of uncertainty and infringer risk aversion will cause an injunction’s deterrent effect to overshoot its mark.

For those worried that specially tailored orders will tend to favor patentee interests at excessive expense to society, it bears emphasizing that a specially tailored injunction can be broader, narrower, or simultaneously broader and narrower than alternatives such as a Type-1, colorable-differences injunction. An order to destroy certain existing articles or to label certain future articles as “Not to Be Sold in the United States” can both require more and provide less than patent rights abstractly demand. By generating a special set of metes and bounds for purposes of injunctive relief, a Type-B, reformulated-bounds injunction can provide an independent

\begin{itemize}
\item \textsuperscript{263.} \textit{Cf} ION, Inc. v. Sercel, Inc., No. 5:06-CV-236-DF, slip op. at 14 (E.D. Tex. Sept. 16, 2010) (agreeing with objections to the scope of “ION’s proposed injunction” and observing that “exempting customers that have already purchased infringing sensors from the scope of the injunction mitigates the adverse practical and economic effects”).
\item \textsuperscript{264.} \textit{See supra} text accompanying notes 85–86.
\item \textsuperscript{265.} \textit{See supra} text accompanying notes 235–40.
\end{itemize}
description of forbidden products or processes that is simultaneously extraprotective and subprotective relative to a Type-1 injunction.\textsuperscript{266} If these gains or losses in breadth are appropriately supplemented by increased clarity, the resulting order can be easier for a court to enforce and perhaps even preferable for all parties. One way in which a court in the position of the eBay district court can try to forestall contentious contempt proceedings is to devise a specially tailored injunction that protects vital patentee interests while also placing relatively clear limits on what the adjudged infringer must or must not do.

Indeed, there are at least two types of circumstances in which, despite generally higher drafting costs, specially tailored injunctions seem particularly likely to be preferable to Type-1 do-not-infringe orders. Roughly speaking, these circumstances involve situations in which the uncertain bounds of Type-1 orders can yield substantial overdeterrence or underdeterrence.\textsuperscript{267}

The first type of situation, like that in eBay, is one in which an adjudged infringer wishes to pursue one or more design-arounds that are apparently both (a) questionable enough legally and (b) significant enough for the patentee that their pursuit will likely trigger contempt proceedings. To the extent society wishes to protect against relitigation of an almost unaltered course of infringement but also to provide relative safe harbors for design-around activity that do not require a petition for prior approval, a specially tailored injunction might be desirable.

More particularly, if we assume that compared to a Type-1, colorable-differences order, a specially tailored order will provide clearer instruction that helps reduce later attorney advice or litigation costs and that also helps generate increased compliance with issued injunctions, we might model the costs and benefits of a specially tailored order as follows. Let $D$ represent the extra drafting cost for a specially tailored order relative to a Type-1 order; $S$ represent the savings in later attorney advice or litigation costs that the specially tailored order is expected to generate; $G$ represent the expected value, outside of any litigation or attorney advice savings, of any increase in legal compliance—whether by the adjudged infringer or by other parties\textsuperscript{268}—

\textsuperscript{266}. See supra text accompanying notes 225–40.

\textsuperscript{267}. Cf. Kaplow, supra note 254, at 576 n.42 (“If, for example, there is uncertainty concerning what an adjudicator would deem to be due care, there may be a tendency . . . to take care that is excessive relative to the expected due care requirement, although it is also possible that individuals would take less care than the expected due care requirement.”).

\textsuperscript{268}. A specially tailored order might help promote increased legal compliance by third parties if, for example, violation or arguable violation of Type-1 orders encourages disrespect of patent rights or court orders more generally. Cf. Edward K. Cheng, Structural Laws and the Puzzle of Regulating Behavior, 100 NW. U. L. REV. 655, 656–57 (2006) (suggesting that a symptom of “excessive use of criminalization” is “casual lawbreaking by ordinary citizens [that] promotes an unhealthy disrespect for the law”); Joseph P. Liu, Owning Digital Copies: Copyright Law and the Incidents of Copy Ownership, 42 WM. & MARY L. REV. 1245, 1307 (2001) (“[A] significant divergence between norms of usage and legal requirements may lead to a disrespect for the law.”).
that is associated with the specially tailored order; and \( A \) represent the expected value (positive or negative) of the decrease or increase in design-around activity predicted to result from replacement of a Type-1 injunction with the specially tailored order. Then, assuming these terms together reflect all relevant social effects of replacement of a Type-1 order with a specially tailored order, we find that the difference in social value between the specially tailored and Type-1 orders, \( \Delta_{ST-T1} \), has the following formula:

\[
\Delta_{ST-T1} = (S - D) + G + A.
\]

In accordance with this formula, the eBay-type situation might be understood as one where the magnitude of the legal savings, \( S \), is likely to be substantial if the specially tailored order will head off any need for contempt proceedings and even more substantial if the specially tailored order, perhaps because its relevant scope is clear, limits even the need for attorney advice in anticipation of contempt proceedings. Meanwhile, if the patent system is assumed to be far from totally dysfunctional and if, as implicitly posited, the value of reducing the chilling of likely design-around activity is positive, a specially tailored order that increases the probability of compliance and reduces chilling might reasonably be expected to correspond to a non-negative value for the sum \( G + A \). Under such circumstances, nontrivial drafting costs could be incurred without sacrificing a necessary condition for the social desirability of special tailoring, \( \Delta_{ST-T1} > 0 \).

A second type of situation where a specially tailored injunction might be thought desirable is one where there is real concern that a Type-1, colorable-differences order will be inadequate to protect patentee rights. In other words, the second type of situation is one where the principal concern is not the potential for undue chilling of socially desirable design-around activity but instead the potential for socially undesirable erosion of the value of patent rights.

Situations in which a previously enjoined party has been found in contempt might be viewed as falling in this class both because violation of a prior Type-1 order has proven that order to have insufficient deterrent effect and because the district court has had a chance to assess whether circumstances, exceptional or otherwise, justify or excuse the enjoined party’s continuing unlawful activity. Moreover, where violation of patent rights and a prior injunction appears recalcitrant, the expected gain from increased compliance might in part be a systemic gain from a more general signal to third parties of courts’ willingness and capacity to ensure that patent

The value of increased legal compliance might generally be thought likely to be positive although, under a dysfunctional or even merely imperfect legal regime, this is not necessarily always so. Cf. RONALD DWORKIN, A MATTER OF PRINCIPLE 106 (1985) (“Almost everyone will agree that if a particular decision is very wicked, people should disobey it.” (emphasis omitted)); Hovenkamp, supra note 249, at 223 (“As a result of overly aggressive substantive rules, many antitrust violations are also economically efficient.”); Eric A. Posner & Alan O. Sykes, Efficient Breach of International Law: Optimal Remedies, “Legalized Noncompliance,” and Related Issues, 110 MICH. L. REV. 243, 287 (2011) (positing “examples of ‘efficient breach’ in international law”).
rights are ultimately respected. In other words, the value of $G$ in such situations might be unusually large—larger than the stakes of individual parties directly affected might alone suggest. Thus, even a sizable negative value for $A$ might not prevent a broad, specially tailored injunction from being desirable. Further, willingness to sweep broadly might well keep drafting costs, $D$, relatively low even while keeping the clarity of the specially tailored order and thus attorney advice or litigation savings, $S$, relatively high. The result might be a well-justified expectation that $A_{ST-T1}$ for a broad, prophylactic order will be positive. Such a conclusion accords with the Federal Circuit’s recognition of the validity of broad, reformulated-bounds injunctions issued in response to violation of a prior injunctive order.\footnote{269}

To the extent a court worries that a specially tailored injunction will nonetheless prove overreaching, the court can take corrective steps. First, the court can include a sunset provision—a specific time limit on the injunction’s effectiveness absent further court action.\footnote{270} The court can also signal a special willingness to reconsider the injunction’s scope in light of changed circumstances or new information.\footnote{271} Finally, to the extent injunction overreach is a concern, a district court can opt for a narrower, rather than broader, specially tailored injunction, perhaps in combination with a Type-1, colorable-differences injunction that the court plans to construe narrowly. Such a hybrid approach might accord well with equity’s traditional use of anti-opportunism safety valves—here in the shape of a somewhat fuzzy Type-I order—to complement at least aspirationally clearer, \textit{ex ante} rules that might, by themselves, be too easy for an ill-intentioned actor to circumvent.\footnote{272}

Appellate judges can also take steps to ensure that district courts use specially tailored orders properly. If there is legitimate cause for concern that district courts might issue such orders too readily or rashly, appellate courts might seek to limit the practice by demanding that both the use of a specially tailored injunction and its scope be provided with special degrees of

\footnote{269. \textit{See supra} text accompanying notes 151–54.}

\footnote{270. \textit{See} LAYCOCK, \textit{supra} note 78, at 287 (discussing a six-month limit on an injunction against a former employee joining a competitor).}

\footnote{271. \textit{Cf.} \textit{FED. R. CIV. P. 60(b)(5)} (“\textit{On motion and just terms, the court may relieve a party or its legal representative from a final judgment, order, or proceeding for the . . . [reason that] . . . applying it prospectively is no longer equitable . . . .}”); \textit{SHARPE, supra} note 203, ¶ 1.450, at 1-18 to 1-19 (“\textit{If necessary, the court can make an order by which it implicitly undertakes to review the circumstances and the obligation imposed as matters proceed.}”). \textit{See generally} DAVID I. LEVINE ET AL., REMEDIES: PUBLIC AND PRIVATE 244 (5th ed. 2009) (discussing “[t]he uncertainty of when to apply [a] rigid standard . . . to modifications of injunctions and consent decrees and when a more flexible standard is appropriate”).}

\footnote{272. \textit{See} Henry E. Smith, An Economic Analysis of Law Versus Equity 39 (Mar. 10, 2010) (unpublished manuscript), \textit{available at} http://extranet.isnie.org/uploads/isnie2010/smith.pdf (“\textit{Equity applies in a smaller domain [than law] with an eye to deterring opportunism, but where it applies it is vague and \textit{ex post}.}”; \textit{cf.} Kaplow, \textit{supra} note 254, at 618 (observing that fraud “may be easier to commit if there are known rigid rules that a fraudulent actor can carefully circumvent”).}
explicit justification. In accordance with such a requirement, district courts issuing specially tailored relief and parties seeking such relief would need to expend an unusual degree of effort. The need for this unusual level of effort should itself act as a brake on excessive use of specially tailored injunctions, which, compared to a Type-1 default injunction, are already independently likely to entail higher “promulgation costs” for parties and district courts. Moreover, the resulting generation of a more complete trial record should better enable the Federal Circuit to use abuse-of-discretion review to keep the practice within reasonable bounds.

Indeed, judicious combination of specially tailored injunctions with Type-1, colorable-differences injunctions might have the added benefit of fostering a more principled and predictable jurisprudence on the scope of the latter, while also protecting against a subsequently discovered, opportunistic means of avoiding a specially tailored injunction’s force. Inclusion of a specially tailored order such as a destruction order could provide greater assurance that the patentee has gotten some prospective advantage from prior successful litigation, even if the court later denies a motion for contempt and thus requires the patentee to launch a wholly new suit against a previously adjudged infringer. Judges might thus be better insulated from fears that without a relatively broad understanding of “no more than colorable differences,” their orders are too easily circumvented.

Still, can we really expect courts to craft specially tailored injunctions that are “no more burdensome . . . than necessary to provide complete relief”? As with any practically applicable rule or standard, there is undoubtedly risk that a specially tailored injunction will either overreach or underreach relative to what is necessary to achieve optimal enforcement of a patentee’s rights. But as illustrated by the specially tailored patent-

273. See infra text accompanying notes 291–94.
275. Cf. Steven Shavell, Optimal Discretion in the Application of Rules, 9 AM. L. & ECON. REV. 175, 178 (2007) (describing how an appeals process can “induce[ ] decisions to conform to the socially desirable, at least within the range governed by the cost of an appeal”).
276. Cf. Mark Gergen, John M. Golden & Henry E. Smith, The Supreme Court’s Accidental Revolution? The Test for Permanent Injunctions, 112 COLUM. L. REV. 203, 237 (2012) (“A major theme in equity has been the need to correct for party opportunism, and injunctions partake of this overarching purpose.” (footnote omitted)).
277. Califano v. Yamasaki, 442 U.S. 682, 702 (1979) (rejecting an argument that “nationwide class relief [was] inconsistent with the rule that injunctive relief should be no more burdensome to the defendant than necessary to provide complete relief to the plaintiffs”); see also Madsen v. Women’s Health Ctr., Inc., 512 U.S. 753, 765 (1994) (describing Califano as stating a “general rule”); cf. Dayton Bd. of Educ. v. Brinkman, 433 U.S. 406, 418 (1977) (“In effect, the Court of Appeals imposed a remedy which we think is entirely out of proportion to the constitutional violations found by the District Court . . . .”).
278. See Kaplow, supra note 254, at 594 (indicating the likelihood of imperfect tailoring, as a practical matter, under any form of legal doctrine by characterizing “imagin[ing] countless factors (arguments) that a decisionmaker might take into account” under a sufficiently inclusive standard as “a romantic perspective, hardly a valid depiction of actual decisionmaking”).
infringement injunctions issued by district courts in 2010, the forms of specially tailored injunctions generally contemplated here seem likely to remain reasonably tightly tied to both the actual offense and the underlying rights at issue: these are not the sort of broadly ambitious institutional-reform or structural injunctions whose issuance or nonissuance has a greater tendency to spark heated contentions of judicial usurpation or abdication. Indeed, the risks of overprotection or underprotection through the forms of specially tailored injunctions contemplated here seem to be relatively comparable to those present with respect to conventional Type-1 injunctions. The latter’s hazy “no more than colorable differences” language leads not only to immediate uncertainty but also to the possibility of an undesirably broad or narrow reading in later contempt proceedings.

Problems in choosing injunction form thus bear substantial analogy to problems in deciding the extent to which patent scope should be determined through central claims, peripheral claims, or some combination of the two. Like Type-1, colorable-differences injunctions, central claims describe embodiments to which infringing matter needs to be substantially related. Like some specially tailored injunctions, peripheral claims seek to use language to mark the perimeter of matter that legal entitlements encompass.

The analogy is imperfect, however, because the circumstances in which the relevant delimiting language is developed and applied differ substantially. The case for specially tailored injunctions might be thought generally stronger than that for peripheral claiming because of an arguably greater need for precisely delimited scope to avoid overdeterrence from a threat of contempt and also because judicial gatekeepers for specially tailored injunctions have substantial advantages over patent examiners responsible for allowing peripheral claims. Specially tailored injunctions are directed at particular parties who have already engaged in specific forms of behavior that the court, after claim construction and resolution of any challenges to validity and enforceability, has adjudged to be infringing. Except in default situations, both the patentee and the adjudged infringer are before the court and able to provide information relating to their proximate future interests. Thus, the court, in contrast to a patent examiner, might relatively cheaply be able to determine the nature of potentially infringing conduct that is likely to be of future concern. In contrast, initial examination of patent

279. See supra notes 213–44 and accompanying text.
280. See Golden, supra note 20, at 348–49 (“In central claiming, claims describe or point to representative embodiments of the inventive idea.”).
281. See id. at 349 (“In peripheral claiming, claims indicate the literal boundaries of patent rights.”).
282. Cf. Rendleman, supra note 79, at 424 (observing that relative to “a statute, a rule, a regulation, a will, and a contract . . . , an injunction can be more specific because it is drafted to control the behavior of a known defendant engaged in an actual lawsuit”).
rights generally occurs without involvement of any potential infringer. Indeed, such an infringer’s relevant products or processes might not yet even be contemplated. Relative to an examiner, a court is thus likely to have a significant cost advantage in seeking to provide a relatively clear, \textit{ex ante} description of prohibited behavior.\footnote{See John M. Golden, \textit{Patentable Subject Matter and Institutional Choice}, 89 \textit{Texas L. Rev.} 1041, 1098 (2011) ("The ex parte nature of the dominant forms of USPTO proceedings—examination proceedings and ex parte reexamination proceedings—means that USPTO examiners primarily interact with parties seeking to obtain patent rights."); Hovenkamp, \textit{supra} note 249, at 223 ("[A]pplications are evaluated in largely ex parte proceedings by overworked government officials . . . .").}

Further, with the threat of infringement by a particular adjudged infringer already an established fact, the benefits of such \textit{ex ante} specification might be expected to be greater and to have less need for time discounting.\footnote{See Kaplow, \textit{supra} note 254, at 585 ("Whether a law should be given content \textit{ex ante} or \textit{ex post} involves determining whether information should be gathered and processed before or after individuals act.").} Given a commonly observed oligopolistic structure for established technology markets\footnote{See ALFRED D. CHANDLER, JR., \textit{INVENTING THE ELECTRONIC CENTURY: THE EPIC STORY OF THE CONSUMER ELECTRONICS AND COMPUTER INDUSTRIES} 4–5 (2005) ("Once . . . core companies establish a viable national industry, entrepreneurial start-ups are rarely able to enter,” with a result “that only a small number of enterprises defines the evolving paths of learning in which the products of new technical knowledge are commercialized.").} and a potential patentee proclivity for pursuing industry players having significant market share,\footnote{See Michael Bednarek, \textit{Responding to Recent Trends in the IP Realm: New Considerations for IP Lawyers and Clients}, in \textit{Intellectual Property Law 2011: Top Lawyers on Trends and Key Strategies for the Upcoming Year} 41, 51 (2011) (stating that patentees who do not practice their inventions “typical[ly] target high-profile companies with deep pockets”).} the adjudged infringer might well represent a significant share of a valuable commercial market, with the result that an injunction against the infringer might have significant implications for the operation of the market as a whole. In sum, the cost–benefit analysis for \textit{ex ante} specification of prohibited conduct might be relatively favorable in the injunction context, even though the injunction, unlike the underlying patent, targets only the infringing party.\footnote{See Rendleman, \textit{supra} note 5, at 74 (noting that judges have “considerable discretion in administering an injunction; a judge enforcing an injunction against a recusant defendant may choose between modifying the injunction, granting a second injunction, holding the defendant in contempt, imposing a civil contempt or a criminal contempt sanction, and deciding whether to displace the defendant with a receiver").}

Moreover, a judicial gatekeeper for injunctions has a further comparative advantage. The judicial gatekeeper, unlike the examiner, will likely oversee enforcement or modification of the legal claims that an injunction creates and thus can act in the future to ensure that specially tailored language achieves its intended purpose.\footnote{See Rendleman, \textit{supra} note 5, at 74 (noting that judges have “considerable discretion in administering an injunction; a judge enforcing an injunction against a recusant defendant may choose between modifying the injunction, granting a second injunction, holding the defendant in contempt, imposing a civil contempt or a criminal contempt sanction, and deciding whether to displace the defendant with a receiver").}
These advantages might not be decisive. The common roots and consequences of problems in defining claim and injunction scope run deep. They appear to be grounded in familiar difficulties associated with choosing between relatively rigid rules and comparatively flexible standards. The fundamental nature of these difficulties suggests that, with respect to efforts to optimize claim and injunction scope, common problems might dominate over differential advantages. Hence, we might justifiably suspect that decades-long debates over the merits of central claiming and peripheral claiming—as well as the merits of Type-1-like doctrines of equivalents—suggest that concerns of injunction scope will lack easy universal answers.

We can console ourselves, however, by noting that questions of what type of injunction a court should issue are really just a subset of questions that courts encounter all the time in trying to provide well-tailored yet effective remedies in individual cases. As compared with a Type-1, colorable-differences injunction, a specially tailored injunction, or at least a specially tailored injunction of the reformulated-bounds stripe, tends to front-load questions about an injunction’s effective scope. Thus, particularly when specially tailored language is not a product of consent, a court should probably take special care to ensure that the injunction is properly tailored. Model language for certain types of specially tailored injunctions, such as those prohibiting activities frequently correlated with infringement, might help both parties and courts achieve results whose proportions are reasonably tailored, well understood, and relatively cheaply attained. More generally, when a court adopts an innovative or sui generis form of relief, such as that

289. See, e.g., Daniel A. Crane, Rules Versus Standards in Antitrust Adjudication, 64 WASH. & LEE L. REV. 49, 51 (2007) (suggesting that an existing tendency to shift toward standards-based adjudication in antitrust law will likely be followed by a “swing back toward rules”); Kaplow, supra note 254, at 560 (assuming, for purposes of analysis, that “the only distinction between rules and standards is the extent to which efforts to give content to the law are undertaken before or after individuals act” (emphasis omitted)).

290. See, e.g., Burk & Lemley, supra note 250, at 1746 (suggesting that U.S. patent law might improve through a return to central claiming, under which “the patentee discloses the central features of the invention . . . and the courts determine how much protection the patent is entitled to”); Fromer, supra note 240, at 772 (arguing that patent law should “incorporate further aspects of central claiming”). See generally Golden, supra note 20, at 349 (describing a protracted historical shift from central to peripheral claiming).


292. See Kaplow, supra note 254, at 580 (observing that spending “relatively little” on the design of a rule “unlikely to apply to many or any acts” “softens the disadvantage of rules . . . by reducing the promulgation cost differential” but might also “reduce[e] the benefit of rules with regard to inducing individuals to behave in a socially optimal manner”).
almost necessarily embodied by a reformulated-bounds injunction, the court should be required to articulate a justification for the injunction’s scope that enables the court’s reasoning to be scrutinized on appeal.293 The court’s justification might be expected to explain why a specially tailored injunction’s specific language is likely to advance interests such as notice, compliance, enforceability, and administrability, and why these advantages outweigh risks of overreaching or underreaching relative to a conventional Type-1 order.294 In addition to facilitating appellate review, articulation of such reasoning should remind the trial court of the need for circumspection in the crafting of injunctive relief, thereby helping prevent abuse of specially tailored injunctions’ multifariously malleable form.

In any event, the key point is that the remedial quiver of district courts appears to contain an additional arrow that the Federal Circuit and commentators have often neglected to discuss—the capacity to craft a specially tailored injunction. An individual court in an individual case will have to do the best it can to determine whether a Type-1, colorable-differences or specially tailored injunction will better place the parties and society in an appropriate “rightful position.”295 Concerns of overdeterrence and underdeterrence can justify viewing a Type-1 injunction as the default. But particular circumstances, perhaps including a party’s willingness to draft a sensible specially tailored order, can mean that a specially tailored injunction will better balance concerns of rights protection, rights limitation, notice, enforceability, and administrability.

VI. Conclusion

The scope of patent-infringement injunctions is a crucial aspect of the United States’ system of patent remedies. Concerns of notice, effective rights enforcement, efficient legal administration, and avoidance of patent

293. See Rendleman, supra note 5, at 94 (“In selecting and measuring a remedy, the judge should articulate reasons and apply standards.”). But cf. R. Shep Melnick, Taking Remedies Seriously: Can Courts Control Public Schools?, in FROM SCHOOLHOUSE TO COURTHOUSE: THE JUDICIARY’S ROLE IN AMERICAN EDUCATION 17, 26 (Joshua M. Dunn & Martin R. West eds., 2009) (“Given the potential sweep and coerciveness of structural injunctions, [U.S.] Supreme Court guidance on the use of injunctions has remained remarkably vague.”).

294. See Thomas, supra note 145, at 365–69 (discussing how, in deciding on an appropriate remedy, a “court uses traditional decisionmaking tools such as cost-benefit analysis or balancing of the equities . . . to select from among the possible alternatives”); cf. id. at 332 (arguing that prophylactic remedies should be “narrowly targeted at redressing the proven harm” and have “a sufficient causal nexus to the established harm”).

295. David S. Schoenbrod, The Measure of an Injunction: A Principle to Replace Balancing the Equities and Tailoring the Remedy, 72 MINN. L. REV. 627, 678 (1988) (“The injunction’s aim must be the plaintiff’s rightful position, but to achieve that aim, its terms may impose conditions . . . that require actions going beyond the plaintiff’s rightful position.”); see also Tracy A. Thomas, Understanding Prophylactic Remedies Through the Looking Glass of Bush v. Gore, 11 WM. & MARY BILL RTS. J. 343, 389 (2002) (“The right level of protection commonly accepted for injunctive remedies is the return of the plaintiff to her rightful position . . . .”).
overreach combine to generate difficult legal and policy questions about proper injunction scope.

Nonetheless, questions of patent-infringement injunctions’ scope have not previously attracted significant attention. Too often in legal contexts not restricted to patent law, injunctions are characterized as simple on/off switches that generally foreclose the likelihood of any further rights violation and that do essentially nothing more than prevent such a future rights violation. As a result, commentators often invoke a substantially misleading dichotomy between injunctions and monetary relief, a dichotomy that tends to ignore the reality that an injunction can be expected to be only as powerful as the sanctions, often monetary, that back the injunctions up. In many situations, an injunction operates essentially as a mere gateway to higher-than-normal monetary sanctions delivered with higher-than-normal speed. Failure to recognize this fact can contribute to failure to recognize that injunctions can leave their targets with multiple plausible options that might involve a risk of further infringement.

In the patent-infringement context, where the precise scopes of both underlying legal rights and of the injunction itself are commonly uncertain, violation of an injunction typically only risks sanction for civil contempt. Criminal contempt can fail to loom as a realistic possibility. Where any holding of civil contempt is likely to be enforced through monetary sanctions that an enjoined party expects to find bearable, facile distinctions between property rules enforced by injunctions and liability rules enforced by monetary relief can melt away. As the model in subpart II(B) illustrates, an enjoined party’s post-injunction decision making can substantially parallel that of a party subject only to the law’s underlying legal commands. Consequently, many questions about proper injunction scope can parallel legal and policy questions about proper patent scope. Similar conclusions might follow in other legal regimes where the scope of underlying rights or their proper application is likely to remain unclear or legitimately contested even after an initial judgment of rights violation.

In the meantime, Part III’s description of different injunction types and Part IV’s study of recent district court practice suggest that there is much room for improvement in how patent-infringement injunctions are crafted. With high frequency, U.S. district courts have issued obey-the-law injunctions that appear to defy Federal Circuit precedent. In a dataset including 143 patent-infringement injunctions issued by district courts in 2010, over 57% feature such apparent error. Once one excludes injunctions focused on either biomedical-substance technology (for which obey-the-law injunctions are rare) or ornamental designs only (for which the rate of apparent error is near 100%), the rate of apparent error rises above 60%. On the other hand, differences between the apparent error rates for preliminary and permanent injunctions or between injunctions that are actively opposed and those that are embedded in consent decrees are not statistically significant after such exclusions.
The high rate at which courts issue obey-the-law injunctions seems surprising because courts already have a decent and readily deployed alternative. The Federal Circuit has approved general use of colorable-differences injunctions that forbid infringement in ways already adjudged to infringe or “no more than colorably different” from them.

Of course, colorable-differences injunctions are rarely ideal. Indeed, specially tailored injunctions that deviate from this form can allow courts to better balance interests in notice, administrability, rights enforcement, and rights limitation. Specially tailored injunctions can replace or supplement colorable-differences orders by (1) making affirmative or negative commands regarding activities correlated with rights violations; (2) requiring destruction, disablement, or delivery of specified materials; (3) providing an injunction-specific linguistic formulation of injunction scope; or (4) providing explicit carve outs to protect legitimate infringer or societal interests. Courts should recognize that, under appropriate circumstances, such specially tailored injunctions are both legally permissible and potentially desirable. The result can be a relative win for all concerned—one that helps square some of the circles that patent law creates.

296. See Thomas, supra note 145, at 372 (arguing that compliance, notice, and enforcement advantages “make [prophylactic remedies] particularly effective . . . to enforce intangible rights”).