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Causal Responsibility and Patent Infringement

*Dmitry Karshedt**

It is not uncommon for multiple parties in the stream of commerce—manufacturers, distributors, end users—to be involved in the infringement of a single patent. Yet courts continue to struggle with such scenarios. Attempts to deal with them—particularly when plaintiffs asserted so-called method patents, which cover specific “steps,” or actions—have produced results that defy commonsense notions of legal responsibility. In method patent cases, the patentee must clear much higher legal hurdles to prevail against a manufacturer who designed and supplied an infringing device than against an end user who simply bought that device and operated it as intended. The manufacturer can lose only upon proof of fault, while the user is subject to strict liability—a result that seems backwards because the manufacturer is clearly the more responsible party. Even greater difficulties arise when the

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manufacturer performs some steps of a method patent and the user performs the others, giving rise to a so-called “divided infringement” problem. One such case, Akamai v. Limelight, has been in litigation for over ten years and generated multiple appellate opinions, including a decision by the Supreme Court. Although the Court of Appeals for the Federal Circuit finally resolved Akamai in a fact-specific fashion, no comprehensive solution to the divided infringement problem is in sight.

I explain that these problems persist because patent law formalistically clings to what I term the “performer/non-performer distinction,” which holds that physical performance of an act is the linchpin of legal accountability. I then contend that they can be solved by reading the Patent Act in view of the principle of causal responsibility, which pervades the law and rests on a firm philosophical foundation. Simply put, this principle holds that one is responsible for the actions of others that one has caused, leading to the legal effect of imputing the act of the “causee” (in patent cases, often the user) to the causer (e.g., the manufacturer). I draw on examples from criminal law and tort law to elucidate this principle and demonstrate its consistency with the Patent Act. I also maintain that applying causal responsibility in patent law would lead to three practical and sensible results. First, doing so would effectively lower the mens rea barriers needed to establish the liability of manufacturers who supply devices configured so that their only intended use by a passive customer results in the performance of steps of some method patent. Second, it would provide a path for resolving the vexing problem of divided infringement exemplified by Akamai. Third, the proposed approach may in some cases help to shift the burden of ensuring compliance with existing patents from end users to manufacturers, which is as it should be.

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INTRODUCTION

Cases in which more than one party is involved in infringing a patent embody one of the most vexing areas of patent law. These multi-party problems become particularly salient when plaintiffs assert so-called method patents, which cover specific “steps,” or actions.¹ In the stream of commerce, manufacturers, distributors, and end users might all participate, to varying degrees, in the infringement of such patents.² The manufacturer might design a product whose operation entails performing the claim’s steps, the distributor might sell it, and the end user might actually operate the product. *Lucent Technologies, Inc. v. Gateway, Inc.*, a case involving a patent covering the functionality of scheduling appointments using a graphical interface, illustrates this kind of a situation.³ The infringing steps took place when a Microsoft Outlook user clicked on a time slot in the calendar window and typed in a title—say, “Breakfast meeting.”⁴ But performance of these steps was

1. See, e.g., Dmitry Karshedt, *Damages for Indirect Patent Infringement*, 91 WASH. U. L. REV. 911, 923–24 n.53 (2014) (discussing method claims). Section I.A, *infra*, explains method claims in detail.

2. See generally Roger D. Blair & Thomas F. Cotter, *An Economic Analysis of Seller and User Liability in Intellectual Property Law*, 68 U. CIN. L. REV. 1 (1999).

3. 580 F.3d 1301 (Fed. Cir. 2009).

4. *Id.* at 1317–20.

made possible by Microsoft, a software manufacturer that designed Outlook and introduced it into the stream of commerce.

One would think that the requirements to hold these various participants liable would reflect their relative contributions to the infringement. But this is not what happens. Instead, courts focus in a highly formalistic way on physical performance of the relevant acts. The law is much tougher on those who execute the steps covered by the method patent—end users—than on those who design the device that enables the infringement—manufacturers. To win a case against Microsoft, Lucent had to prove that someone in the appropriate position at that company knew of the patent covering the Outlook appointment-scheduling functionality and intended to infringe it.⁵ In contrast, to win against individual users of Outlook, Lucent would have to show only that they performed the claimed steps—in other words, the users are strictly liable.⁶ This is so despite the fact that it is Microsoft, and not the users, that operates in the relevant technology space. This is so even though Microsoft would be more readily expected than the users to find the patents at issue and to negotiate a license agreement with the patent owner. This is so, indeed, in spite of the recognition that the manufacturer in such cases is “truly responsible”⁷ for the infringement. In view of these considerations, the mens rea rules in this area seem to be completely backwards.

Patent law struggles even more with the closely related set of cases in which performance of the claimed steps is divided between multiple parties, such as manufacturers and end users. The prolonged *Akamai Technologies, Inc. v. Limelight Networks, Inc.* litigation is an example.⁸ Akamai asserted claims directed to a method of speeding up delivery of website content (for example, videos of game highlights by ESPN.com) by distributing the content to external servers.⁹ While the accused infringer, Limelight, actually distributed the content to the various servers and performed other steps in the process, the website owners designated, or “tagged,” the content so that Limelight would know which videos to send to the external servers.¹⁰ Although the

5. *Id.* at 1320–24.

6. *See, e.g., In re Seagate Tech., LLC*, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc), *abrogated on other grounds by Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016).

7. Mark A. Lemley, *Inducing Patent Infringement*, 39 U.C. DAVIS L. REV. 225, 228 (2005); *see also* Jason A. Rantanen, *An Objective View of Fault in Patent Infringement*, 60 AM. U. L. REV. 1575, 1591 (2011).

8. For the latest opinions, *see Akamai Technologies, Inc. v. Limelight Networks, Inc. (Akamai V)*, 797 F.3d 1020 (Fed. Cir.) (en banc) (per curiam), *remanded to Akamai VI*, 805 F.3d 1368 (Fed. Cir. 2015), *cert. denied*, 136 S. Ct. 1661 (2016).

9. *Akamai V*, 797 F.3d at 1023–24.

10. *Id.*

website owners are Limelight’s customers, and tagged the content according to its instructions, courts initially agreed with Limelight that it could not be liable as a matter of law because it did not perform all of the claim’s steps.¹¹

Courts have issued six appellate opinions in *Akamai*, including one by the Supreme Court¹² and five by the Court of Appeals for the Federal Circuit, the court charged with exclusive appellate jurisdiction over patent cases. But in spite of all this judicial effort, controversy over divided infringement is unlikely to die down. This is because the en banc Federal Circuit’s recent opinion that aimed to lay down the law in this area is problematic. The court relied on the tort law principle of vicarious liability to impute the customers’ content-designating actions to Limelight,¹³ reversing its earlier position that imputation could lie only if the user was the defendant’s agent or was contractually obligated to perform the steps.¹⁴ In the same breath, however, the Federal Circuit admitted that “vicarious liability is not a perfect analog.”¹⁵ That is an understatement: the section of the *Restatement (Third) of Torts* invoked by the court, which deals with vicarious liability, explains that this form of “liability is imputed based on the tortious acts of another.”¹⁶ Because there was no allegation in *Akamai* that the customers engaged in tortious conduct, the relevance of vicarious liability principles to this so-called “divided infringement” problem is uncertain.¹⁷ The Federal Circuit, which reached this result unanimously, clearly believed that it seemed wrong to let Limelight off the hook on the facts of the case—and in finding liability, responded to numerous critiques of the now-

11. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai I)*, 629 F.3d 1311, 1311–14 (Fed. Cir. 2010), *rev’d en banc, Akamai II*, 692 F.3d 1301 (Fed. Cir. 2012) (per curiam).

12. *Limelight Networks, Inc. v. Akamai Techs., Inc. (Akamai III)*, 134 S. Ct. 2111, 2118–20 (2014), *rev’g Akamai II*, 692 F.3d 1301.

13. *Akamai V*, 797 F.3d at 1022.

14. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai IV)*, 786 F.3d 899 (Fed. Cir. 2015), *rev’d en banc, Akamai V*, 797 F.3d 1020. To be sure, the court mentioned vicarious liability in its first significant divided infringement case, but the conception of vicarious liability appears to have changed over time. *See BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1379 (Fed. Cir. 2007) (“[T]he law imposes vicarious liability on a party for the acts of another in circumstances showing that the liable party controlled the conduct of the acting party.”); *cf. Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1330 (Fed. Cir. 2008) (“That [the defendant] controls access to its system and instructs bidders on its use is not sufficient to incur liability for direct infringement.”).

15. *Akamai V*, 797 F.3d at 1022 n.2.

16. RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT LIAB. § 13 (AM. LAW INST. 2000). *But cf. ROBERT STEVENS, TORTS AND RIGHTS* 244, 254, 259–67 (2007) (discussing the action-attribution theory of vicarious liability in the employer-employee context).

17. There are more fundamental reasons why the Federal Circuit’s vicarious liability approach is questionable in these circumstances. See *infra* Section I.D for further discussion.

abandoned agency-or-contract regime.¹⁸ But the court's new test for determining whether "all steps of a claimed method are performed by or attributable to a single entity" is unsatisfying.¹⁹ The vicarious liability fix is problematic as a matter of basic tort doctrine, provides limited guidance for future cases, and might fail to fit a large number of divided infringement scenarios in which liability might be warranted.²⁰

I explain that courts struggle with multi-party infringement because patent law formalistically clings to what I term the "performer/non-performer distinction." Consider again the case involving Microsoft Outlook. The computer user who operates Outlook to schedule appointments, thus performing the steps covered by a patented method, is considered a "direct infringer."²¹ In contrast, Microsoft, which designed the software but did not operate it (i.e., did not perform the method), is charged as an "indirect infringer"²²—a form of liability akin to aiding and abetting. Based on these formal classifications, proving Microsoft's liability presents significant mens rea hurdles, requiring the plaintiff to show that Microsoft knew of the asserted patent, and more.²³ In contrast, regular computer users are—oddly enough—subject to strict liability.²⁴ And where, as in *Akamai*, there are two different performers (or, more precisely, the manufacturer is both a performer and a non-performer because it carries out only some of the claim's steps), it has been difficult for courts to develop a stable rule of any sort. The Federal Circuit first held that Limelight could not be liable at all,²⁵ and then—even though it granted a petition for rehearing en banc on the issue of direct infringement²⁶—the court

18. *Akamai IV*, 786 F.3d at 917–18 (Moore, J., dissenting) (collecting criticisms and further explaining why the decision to adopt the agency-or-contract limitation on imputing users' acts to the manufacturer was misguided).

19. *Akamai V*, 797 F.3d at 1022.

20. The Federal Circuit recently decided a case dealing with divided infringement in the doctor-patient context. See *Eli Lilly & Co. v. Teva Parenteral Meds., Inc.*, 845 F.3d 1357 (Fed. Cir. 2017). For an article explaining why the *Akamai* rule is an uneasy fit for this case, see Rachel E. Sachs, *Divided Infringement and the Doctor-Patient Relationship*, 6 IP THEORY (forthcoming 2017), <http://ssrn.com/abstract=2777639> [<https://perma.cc/AP3B-6J88>]; see also *infra* notes 449–456 and accompanying text.

21. *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1317–20 (Fed. Cir. 2009).

22. *Id.* at 1308–09, 1320–24.

23. See *infra* Section I.C.

24. See *supra* note 6.

25. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai I)*, 629 F.3d 1311 (Fed. Cir. 2011), *rev'd en banc, Akamai II*, 692 F.3d 1301 (Fed. Cir. 2012) (per curiam).

26. *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 419 F. App'x 989, 989 (Fed. Cir. 2011) (order) (per curiam) ("The parties are requested to file new briefs addressing the following issue:

decided to call Limelight an indirect infringer.²⁷ Then, after a Supreme Court reversal²⁸ and a panel opinion finding no liability,²⁹ the Federal Circuit reversed itself once again and found Limelight liable as a direct infringer “on the facts of this case.”³⁰

There is a better approach for dealing with multi-party infringement. I argue that cases like *Lucent* and *Akamai* can be resolved in a sensible and intellectually satisfying way by reading the infringement section of the Patent Act in view of the principle of causal responsibility, which pervades the law³¹ and rests on a firm philosophical foundation.³² Simply put, this principle holds that one is responsible for the actions of others that one has caused, leading to the legal effect of imputing the act of the “causee” (in patent cases, often the end user) to the causer (e.g., the manufacturer). The effect of causal responsibility was captured by Professor Paul Robinson, who explained that “[a]n actor who does not personally satisfy an objective element, such as conduct, but who directly causes the required element by other means should be treated as if he satisfied the element himself.”³³

Crucially for the purposes of this Article, cases sometimes arise when courts will “decline to distinguish human from non-human causal links”³⁴—in other words, when the “means” by which the defendant causes an element of an offense is another human being. For example, § 158 of the *Restatement of Torts* states that “[o]ne is subject to liability to another for trespass . . . if he intentionally . . . enters land in the possession of the other, or causes a thing or a third person to do so,”³⁵ thus equating a “person” with a “thing.” These insights suggest that the line between “direct” and “indirect” violators does not always depend on who physically performs an act, for one can be a direct violator by acting through the instrumentality of another person.³⁶ A paradigmatic

If separate entities each perform separate steps of a method claim, under what circumstances would that claim be directly infringed and to what extent would each of the parties be liable?”).

27. *Akamai II*, 692 F.3d at 1319.

28. *Limelight Networks, Inc. v. Akamai Techs., Inc. (Akamai III)*, 134 S. Ct. 2111, 2120 (2014).

29. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai IV)*, 786 F.3d 899, 915 (Fed. Cir. 2015).

30. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai V)*, 797 F.3d 1020, 1023–24 (Fed. Cir. 2015) (en banc) (per curiam).

31. *See infra* Part IV.

32. *See infra* Part III.

33. Paul H. Robinson, *Imputed Criminal Liability*, 93 YALE L.J. 609, 631 (1984).

34. *Id.* at 632.

35. RESTATEMENT (SECOND) OF TORTS § 158(a) (AM. LAW INST. 1965); RESTATEMENT (FIRST) OF TORTS § 158(a) (AM. LAW INST. 1934).

36. A student author proposed an “instrumentality standard” in an unpublished manuscript, but without theorizing the basis for this approach. *See* David Leach, *Closing the Divided*

example in which another person's actions are imputed to the defendant under the principle of causal responsibility occurs when that person acts under the defendant's compulsion.³⁷ But, as I demonstrate, the application of this principle is not limited to facts involving duress.³⁸ The linchpin of causal responsibility is not so much control of another person, but control over the circumstances in which that person performs some act.³⁹

The formal performer/non-performer distinction, whereby the performer gets placed into the direct violator box and the non-performer, into the indirect violator box, breaks down in situations where causal responsibility applies. And if the premise that a human intermediary in some cases is used like a tool is accepted, then logically, no indirect or vicarious liability theories, nor scienter in addition to the mental state for the underlying offense, should be required.⁴⁰ We do not,

Infringement Gap at 17 (Jan. 1, 2012) (unpublished student paper, Seton Hall University Law School) (on file with Seton Hall University Law School at http://erepository.law.shu.edu/student_scholarship/120 [<https://perma.cc/7UA6-JDHJ>]); *see also id.* at *3 (“This approach would find an actor liable for using another as an instrumentality to complete the elements of a claim regardless of direction of control.”). Among arguments made to a court, the closest that comes to the causation theory proposed in this Article was probably developed by the appellant in *Aristocrat Technologies Australia PTY Ltd. v. International Game Technology*, 709 F.3d 1348 (Fed. Cir. 2013). The Federal Circuit characterized the argument as suggesting that the defendant “causes the [user] to make a wager and activate a user interface” within the meaning of the asserted claim and quoted the appellant’s contention that “the [user’s] actions are the ‘natural, ordinary and reasonable consequences’ of [the defendant’s] conduct.” *Id.* at 1362–63 (quoting Brief of Plaintiff-Appellants Aristocrat Technologies Australia PTY Limited and Aristocrat Technologies, Inc. at 54–55, *Aristocrat Techs. Austl. PTY Ltd. v. Int’l Game Tech.*, 709 F.3d 1348 (Fed. Cir. 2013) (No. 2010-1426), 2010 WL 4600163, at *54–55). Based on the authority mentioned in the brief, however, one gleans that the appellant relied upon a theory of proximate causation rather than on the notion of causing the acts of others. Causation theories have been raised in other divided infringement cases, but without much detail or discussion of what it means to cause act of others. *See, e.g.*, Brief of Amici Curiae Myriad Genetics, Inc. and Genomic Health, Inc. in Support of Respondent at 20, *Limelight Networks, Inc. v. Akamai Techs., Inc. (Akamai III)*, 134 S. Ct. 2111 (2014) (No. 12-786), 2014 WL 1478062, at *20 (“Whenever a first party performing one or more steps of a method claim knowingly causes one or more other parties to perform the rest of the steps of the same method claim . . . equity requires that the first party . . . be found liable for patent infringement.”).

37. *See, e.g.*, *People v. Hernandez*, 96 Cal. Rptr. 71 (Cal. Ct. App. 1971).

38. *See, e.g.*, *Bailey v. Commonwealth*, 329 S.E.2d 37, 40 (Va. 1985). *See generally infra* Part IV.

39. *Bailey*, 329 S.E.2d at 40 (applying the innocent instrumentality doctrine even though the perpetrator did not “control the actors” in the confrontation leading to the victim’s death, but “orchestrated a scenario . . . whose finale was bound to include harmful consequences”); *cf.* Douglas Husak, *Does Criminal Liability Require an Act?*, in *PHILOSOPHY AND THE CRIMINAL LAW: PRINCIPLE AND CRITIQUE* 60 (Antony Duff ed., 1998) (arguing that criminal liability is predicated not on the act requirement, but on the control requirement).

40. *Cf.* STEVENS, *supra* note 16, at 253 (“Where the tort alleged does not require a particular state of knowledge or dishonesty, it is not necessary to allege that the procurer knows that the actions carried out amount to a tort.”); *see also* *Riley v. State*, 60 P.3d 204, 220 (Alaska Ct. App. 2002):

after all, impose extra scienter (or other) hurdles to convict a defendant who uses a hammer as opposed to bare hands to perform some nefarious deed.⁴¹ Indeed, in drawing upon examples in criminal law⁴² and tort law⁴³ to explicate the principle of causal responsibility, I explain that the causal imputation route to liability is distinct from “derivative” liability theories, such as aiding and abetting or vicarious liability.⁴⁴ Moreover, I briefly note its possible instantiations in areas of intellectual property law other than patents.⁴⁵ Throughout, I make clear that the principle logically applies to both intentional and non-intentional offenses,⁴⁶ a detail that is significant because patent infringement is a strict liability offense.⁴⁷

Within the confines of the text of 35 U.S.C. § 271, the section of the Patent Act governing infringement, applying the principle of causal responsibility would lead one to conclude that one can “use[]” a “patented invention” by causing another entity to perform one or more elements of the asserted patent claim.⁴⁸ This interpretation is not inconsistent with dictionary definitions of “to use,” which include “to

The standard interpretation of the phrase “intent to promote or facilitate the commission of the offense” is that it requires proof of the accomplice’s intent to promote or facilitate another person’s conduct that constitutes the *actus reus* of the offense. With regard to the results of that conduct, the government must prove that the accomplice had whatever culpable mental state is required for the underlying crime.

(emphasis omitted).

41. Cf. *Hayes v. Town of Hyde Park*, 27 N.E. 522, 523 (Mass. 1891) (Holmes, J.) (“Human causes stand no differently from any others, merely as such.”). This principle can also be found in the Model Penal Code: “A person is legally accountable for the conduct of another person when: (a) *acting with the kind of culpability that is sufficient for the commission of the offense*, he causes an innocent or irresponsible person to engage in such conduct” MODEL PENAL CODE § 2.06(2)(a) (AM. LAW INST., Proposed Official Draft 1962) (emphasis added). There are, to be sure, criminal cases that have departed from this principle. See Baruch Weiss, *What Were They Thinking?: The Mental States of the Aider and Abettor and the Causer Under Federal Law*, 70 FORDHAM L. REV. 1341, 1436–60 (2002).

42. See *infra* Section III.B.1; see also Sanford H. Kadish, *Complicity, Cause and Blame: A Study in the Interpretation of Doctrine*, 73 CALIF. L. REV. 323, 328 (1985) (explaining the criminal law doctrine of innocent agency, which relies on the causal responsibility principle).

43. See *infra* Sections III.B.2–III.B.3; see also PAUL S. DAVIES, ACCESSORY LIABILITY, 181–82 (2015).

44. See *infra* Section III.C. Under a derivative theory, the aider and abettor is responsible for the offense committed by the “principal.”

45. See *infra* Section IV.D.

46. Cf. Audrey Rogers, *Accomplice Liability for Unintentional Crimes: Remaining Within the Constraints of Intent*, 31 LOY. L.A. L. REV. 1351, 1385 (1998) (“Allowing accomplice liability for unintentional crimes does not . . . involve an extension of accomplice doctrine, but merely merits a refocusing of its intent requirements away from the results produced by the principal and toward the conduct producing the result.”). For a classic example of causal responsibility in a criminal negligence case (styled as accomplice liability, however), see *State v. McVay*, 132 A. 436 (R.I. 1926).

47. See *supra* note 6.

48. 35 U.S.C. § 271(a) (2012).

avail oneself of”⁴⁹ or “derive service from.”⁵⁰ Textually, therefore, “using” does not require physical performance of every step of the claim by the defendant. Based on this interpretation, I contend that causal responsibility can be deployed in patent law without amending § 271, or even reversing any Supreme Court precedent interpreting this section.⁵¹ Although this approach has not been explicitly adopted by courts in patent cases, causal imputation is a widely accepted, flexible, and trans-substantive doctrinal tool that courts have relied on time and again to deal with cases in which more than one party is involved in the invasion of a right, and there is no evidence that Congress sought to repudiate it or to recharacterize it as a form of aiding and abetting.

The ubiquity of causal responsibility suggests that we should interpret the Patent Act with this principle in mind. As Professors William Baude and Stephen Sachs argued in a recent article, the common law can provide “substantive rules”⁵² for interpreting statutes using terms whose linguistic meaning is not self-defining. They contended that courts “take their cues from an existing legal system,” which include established common-law principles.⁵³ With respect to causal responsibility’s place in the common law, it is worth noting that it applies with equal force in criminal law, which is principally concerned with personal accountability, and in tort law, which is more focused on efficiency and compensation.⁵⁴ Because the causal responsibility principle thus reflects “a convergence between . . . efficiency and justice imperatives,”⁵⁵ its footing as an established common-law rule is quite solid. In contrast, patent law’s endorsement of a rigid performer/non-performer distinction represents the sort of

49. *Bailey v. United States*, 516 U.S. 137, 145 (1995).

50. *Astor v. Merritt*, 111 U.S. 202, 213 (1884). For further development of the statutory argument, see *infra* Section IV.B.2.

51. See *infra* Section IV.B.2.

52. William Baude & Stephen E. Sachs, *The Law of Interpretation*, 130 HARV. L. REV. 1079, 1105, 1112 (2017); see also *id.* at 1099, 1104–07 (arguing that “unwritten law” is often the best source of interpretation of statutes that do not themselves give much guidance); cf. *Kirtsang v. John Wiley & Sons, Inc.*, 133 S. Ct. 1351, 1363 (2013) (“When a statute covers an issue previously governed by the common law, we must presume that Congress intended to retain the substance of the common law” (alterations and quotation marks omitted)); *United States v. Texas*, 507 U.S. 529, 534 (1993) (“In order to abrogate a common-law principle, the statute must ‘speak directly’ to the question addressed by the common law.” (quoting *Mobil Oil Corp. v. Higginbotham*, 436 U.S. 618, 625 (1978))).

53. Baude & Sachs, *supra* note 52, at 1129.

54. See *infra* Section III.A.

55. Menachem Mautner, “*The Eternal Triangles of the Law*”: *Toward a Theory of Priorities in Conflicts Involving Remote Parties*, 90 MICH. L. REV. 95, 152 (1991).

“patent-exceptional”⁵⁶ and overly formal⁵⁷ approaches that have been roundly criticized and increasingly rejected.⁵⁸ At bottom, I provide a novel interpretation of § 271 that would lead to a principled theory of multi-party patent infringement liability.

The proposed framework relies heavily on the concept of causing acts of others, and much of the Article is devoted to unpacking it and examining when causal responsibility may be appropriately deployed in patent cases. As I make clear, causation claims would fail when the device provided by the manufacturer has noninfringing uses,⁵⁹ when the user is active rather than passive or innocent, and in many other circumstances where the non-performing (or partially performing) entity accused of infringement is not in control of the relevant acts. But I argue that accused infringers in many significant types of patent cases will not be able to defend themselves on any of these grounds, thus incurring liability in a broader range of circumstances than now.

This result comports with commonsense notions of legal responsibility and with the intuition that, as between the manufacturer and a passive user, the former is in a much better position to deal with the infringement.⁶⁰ In laying down the modern law of products liability, Justice Traynor reasoned that “there is greater reason to impose

56. See, e.g., Peter Lee, *The Supreme Assimilation of Patent Law*, 114 MICH. L. REV. 1413 (2016). An entire symposium entitled *Intellectual Property Exceptionalism in Administrative Law* took place last year. See James Donald Smith, Foreword, *Patent Exceptionalism with Presidential Advice and Consent*, 65 DUKE L.J. 1551 (2016).

57. See, e.g., John R. Thomas, *Formalism at the Federal Circuit*, 52 AM. U. L. REV. 771, 774 (2003).

58. The Supreme Court has signaled a move away from patent exceptionalism in other contexts. See *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016) (punitive damages); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015) (deference to fact findings by trial judges); *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749 (2014) (exceptional case determinations); *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118 (2007) (declaratory judgment standing); *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (injunctions and equity practice). See generally Timothy R. Holbrook, *Explaining the Supreme Court’s Interest in Patent Law*, 3 IP THEORY 62 (2013).

59. Providing an article having substantial noninfringing uses is more like traditional aiding and abetting. Accordingly, the mens rea hurdles that are presently in place in this context are consistent with the requirements needed to establish such liability in other areas of law. See *infra* Sections III.C and IV.B.2; *infra* note 136 and accompanying text; see also STEVENS, *supra* note 16, at 254 (discussing the difference between “procuring” and “facilitating” and the corresponding difference in the levels of mental state required to establish liability for these different types of activities). The distinction between causing and aiding and abetting in patent cases appears to be confused, which perhaps explains the difficulties with the current state of the law. Cf. Charles W. Adams, *Indirect Infringement from a Tort Law Perspective*, 42 U. RICH. L. REV. 635, 639–43 (2008) (distinguishing inducement and aiding and abetting).

60. See *supra* note 7 and accompanying text; see also *infra* Section IV.B.1; cf. Keith N. Hylton, *Information and Causation in Tort Law: Generalizing the Learned Hand Test for Causation Cases*, 7 J. TORT L. 35 (2015) (discussing economic functions of causation in tort law).

liability on the manufacturer” than on a party “who is but a conduit of a product that he is not himself able to test.”⁶¹ I explain that this approach implicitly relies on causal responsibility and reflects many of the same considerations that appear in patent law.⁶² For example, as between the manufacturer and the user and other parties in the stream of commerce, the manufacturer may often be the “cheapest cost avoider” (i.e., the entity that can help prevent the harm at lower cost) in both products liability law and in patent law.⁶³

Applying causal responsibility in patent law would lead to three important practical consequences. First, doing so would lower the mens rea barriers⁶⁴ needed to establish the liability of manufacturers who supply passive end users with devices configured such that the devices’ intended use results in the infringement of some method patent.⁶⁵ Second, it would provide a path for resolving in a readily justifiable way the vexing problem of divided infringement exemplified by *Akamai*,⁶⁶ or at least supply more content for utilizing the uncertain “vicarious liability” test.⁶⁷ Third, the proposed approach may in some cases help

61. *Escola v. Coca Cola Bottling Co. of Fresno*, 150 P.2d 436, 443–44 (Cal. 1944) (Traynor, J., concurring). This language from a products liability case refers to retailers, though it applies equally to innocent users whose acts injure third parties, as discussed *infra* Section III.B.3. In many patent cases, the “conduit” of claim step performance is the passive user. *Cf.* Louis Robertson, *Implied Warranties of Non-Infringement*, 44 MICH. L. REV. 933, 936 (1946) (“Where the manufacturer is commonly selling a particular product, it is reasonable to assume that he has looked into the question of infringement of outstanding patents.”).

62. *See supra* Section III.B.3.

63. *See* GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 135–48 (1970).

64. I am referring here to the knowledge-of-the-patent requirement and the defense of good-faith belief of noninfringement. *See infra* Section I.C; *see also supra* note 23 and accompanying text.

65. *See infra* Section IV.B.1. To be clear, there is a kind of a mens rea inherent in the concept of causation—specific intent that the causee perform the acts in question. *See Kadish, supra* note 42, at 396:

Actions, like results, can be caused, but only by acts intended to cause them. [“]An element of intention (intending the other to act in a specified way) is essential if one person is to be said to ‘cause’ another to act but not when he is said to cause some event to happen. This is not an independent legal requirement of a certain state of mind in the accused person, but part of the meaning of ‘causing’ in the sense of providing a reason for the non-voluntary act of another[”].

(quoting H.L.A. HART & A.M. HONORÉ, *CAUSATION IN THE LAW* 327–28 (1959) (alterations omitted) (internal block formatting omitted)); *see also* STEVENS, *supra* note 16, at 254 (“If actions are to be attributed to the defendant, it is necessary that he intended those acts to occur.”).

66. *Limelight Networks, Inc. v. Akamai Techs., Inc. (Akamai III)*, 134 S. Ct. 2111 (2014); *see infra* Section IV.C.

67. There is some common ground between the Federal Circuit’s test and the approach I develop in that neither requires fault. *See supra* notes 40–46 and accompanying text.

shift the burden of ensuring compliance with existing patents from end users to manufacturers, which is as it should be.⁶⁸

The remainder of the Article proceeds as follows. Part I provides background on the relevant principles of patent law, discusses the history of patent infringement liability of parties who have not themselves performed infringing acts, and critiques the state of the law in this area. Part II sets forth theoretical underpinnings of the trans-substantive concept of causing acts of others and distinguishes it from other causation concepts, such as but-for causation. Using examples from criminal law and tort law, Part III demonstrates how notions of causal responsibility work in practice. Part IV applies this framework to patent law, addressing the problems of both indirect and divided infringement. This Part also notes how courts deal with similar situations in other areas of intellectual property law. Part V considers and answers important objections and reinforces the conclusion that the proposed approach makes good policy sense.

I. MULTI-PARTY PATENT INFRINGEMENT

A. *The Problem of Method Claims*

The Patent Act imposes infringement liability on “whoever without authority makes, uses, offers to sell, or sells any patented invention.”⁶⁹ In order to determine whether an invention is “patented” within the meaning of the Act, courts ask whether it is covered by one or more claims of the patents asserted in litigation.⁷⁰ Patent claims are numbered sentences at the end of a patent, often long and oddly worded, that define the boundaries of the patentee’s rights. Generally, claims can refer to a physical object, such as an object or a system, or an activity, such as a process or a method.⁷¹ While claims directed to an object or a system recite the system’s structural elements—for example, “a table comprising a top and legs”—claims directed to a process or a method recite steps of the activity using gerunds.⁷² An example of the latter is “a method of using a door, comprising inserting a key into a

68. See *infra* Part V; see also *infra* note 383 and accompanying text.

69. 35 U.S.C. § 271(a) (2012).

70. *AbTox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997) (explaining that claims govern the patent infringement inquiry).

71. See 35 U.S.C. § 101 (2012).

72. Dmitry Karshedt, *Limits on Hard-to-Reproduce Inventions: Process Elements and Biotechnology’s Compliance with the Enablement Requirement*, 3 HASTINGS SCI. & TECH. L.J. 109, 118 (2011).

latch, turning the key, twisting the door handle, and applying pressure to the door.”

When plaintiffs assert infringement against a manufacturer, system claims can form the basis for direct liability under § 271(a) based on the manufacturer’s making and selling of the object, such as a table or a door, that the claims cover.⁷³ The situation, however, is more complicated with method claims because infringement does not arise until the claimed activity is performed, i.e., until someone “use[s]” the invention within the meaning of § 271(a). Concretely, the hypothetical claim to the door-opening method is not infringed until someone opens the door.⁷⁴ And unless the manufacturer itself opens the door,⁷⁵ the manufacturer’s liability—if any—can generally only be indirect, i.e., derivative upon the users’ infringements.⁷⁶ This is because courts have, without explicitly saying so, interpreted “use[]” to mean something like “physically perform” in the method claim context—an interpretation that is far from inevitable.⁷⁷

To be sure, indirect infringement of system claims can also be asserted against manufacturers, sometimes leading to difficulties.⁷⁸ Nonetheless, it is method claims that typically give rise to the complex, controversial multi-party problems that one encounters in patent law today, and such claims underlie the many cases in which indirect infringement is asserted against the manufacturer.⁷⁹ The indirect infringement theories can be pursued under § 271(b), which states that “[w]hoever actively induces infringement of a patent shall be liable as an infringer,”⁸⁰ and § 271(c), which states in relevant part that

[w]hoever offers to sell or sells within the United States . . . a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such

73. Karshstedt, *supra* note 1, at 923 n.53 (discussing method and system claims).

74. *Id.* Stated another way, the acts of making the door and selling it to a customer cannot give rise to liability until the door becomes operational.

75. And even if the manufacturer does open the door and is thus itself subject to liability, the patent owner may wish to also hold the manufacturer liable for the acts of its customers so as to increase the damages base. *Cf.* Karshstedt, *supra* note 1, at 939–45 (discussing various approaches to indirect infringement damages).

76. *See* Limelight Networks, Inc. v. Akamai Techs., Inc. (*Akamai III*), 134 S. Ct. 2111 (2014) (holding that the defendant may not be held liable for inducing infringement of a patent when no one has directly infringed the patent).

77. *See supra* notes 48–51 and accompanying text.

78. *Cf. infra* notes 84–86 and accompanying text (discussing the Federal Circuit’s approach to system claim infringement cases involving multiple entities).

79. Karshstedt, *supra* note 1, at 923–24.

80. 35 U.S.C. § 271(b) (2012).

patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.⁸¹

In addition, under the Federal Circuit's approach, method claims present the particularly difficult "divided infringement" problems of the sort encountered in *Akamai*.⁸² Continuing with the door example, let us add a step of "installing the door into a doorway" to the claim and suppose that the manufacturer performs that step while the user performs the rest. In this case, the rule that no infringement can lie unless every step is performed by a "single entity" bars the plaintiff's claim as matter of law unless the plaintiff can show that "an exception to this general rule" applies.⁸³

This approach can be contrasted with the Federal Circuit's treatment of the situation in which multiple entities are involved in the infringement of system claims. As the court put it in one case, the challenge is how to analyze such liability in a situation in which a single party does not "directly interact"⁸⁴ with all of the components of a system. The court concluded that "to 'use' a system for purposes of infringement, a party must put the invention into service, *i.e.*, control the system *as a whole* and obtain benefit from it."⁸⁵ The court maintained that "physical or direct control over each individual element of the system" is not required; "the ability to place the system as a whole into service" is enough for infringement.⁸⁶ This solution appears to solve

81. *Id.* § 271(c) (emphasis added).

82. *Cf. Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai II)*, 692 F.3d 1301, 1305–06 (Fed. Cir. 2012) (en banc) (per curiam), *rev'd on other grounds, Akamai III*, 134 S. Ct. 2111 (2014):

When claims are directed to a product or apparatus, direct infringement is always present, because the entity that installs the final part and thereby completes the claimed invention is a direct infringer. But in the case of method patents, parties that jointly practice a patented invention can often arrange to share performance of the claimed steps between them.

See generally Mark A. Lemley et al., *Divided Infringement Claims*, 33 AIPLA Q.J. 255 (2005).

83. *Aristocrat Techs. Austl. PTY Ltd. v. Int'l Game Tech.*, 709 F.3d 1348, 1363 (Fed. Cir. 2013). While *Akamai Technologies, Inc. v. Limelight Networks, Inc. (Akamai V)*, 797 F.3d 1020 (Fed. Cir. 2015) (en banc) (per curiam), abrogated the specific rule that *Aristocrat* relied on, *Akamai V* still referred to the "single entity" construct. *Id.* at 1022, 1023.

84. *Centillion Data Sys., LLC v. Qwest Commc'ns Int'l, Inc.*, 631 F.3d 1279, 1283 (Fed. Cir. 2011).

85. *Id.* at 1284 (emphasis added) (citing *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005)).

86. *Id.* Arguably, the *Centillion* court's focus on "direct" (as opposed to indirect) interactions suggests a causation-type approach—though, interestingly enough, the user rather than the manufacturer ends up being the causer. *Id.* at 1286–87. But in concluding that the manufacturer cannot "use" the system within the meaning of the statute, the court relied upon a now-rejected rule requiring "an agency relationship or other contractual obligation" between the two parties. *Id.* at 1287–88. Under *Centillion*, the end user is the direct infringer and the manufacturer, indirect—a result that might change under vicarious liability or causal responsibility frameworks. *See id. Centillion* thus illustrates that causal responsibility issues can arise in the system claim

the “divided infringement” problem with respect to system claims because the end user, as the ultimate beneficiary of the system, ends up being the direct infringer.

Professor Timothy Holbrook criticized the inconsistent treatment of the different claim types in divided and indirect infringement contexts, noting that “the distinction between infringing uses of process and system claims finds no textual support in the statute” and arguing that there must be “a consistent test between these two situations.”⁸⁷ He also suggested, consonant with the bottom-line result in this Article, that “a process claim can be infringed by a machine that has no substantial non-infringing use other than to perform the patented process.”⁸⁸ I agree with Professor Holbrook’s critique and maintain that the causation approach deals with both the method-system claim disparity in divided infringement scenarios, and with the problem that only indirect infringement theories are available in cases in which “the apparatus [supplied by the defendant] basically has one purpose—to perform the method.”⁸⁹

B. A Brief History of Patent Infringement Liability of Non-performing Parties

Liability of a party that has not itself performed an objective element of an offense is ubiquitous in civil and criminal law, and patent law is no exception. The origins, history, and purpose of such liability in patent law have been extensively recounted elsewhere,⁹⁰ but some background will help set the stage for further discussion. *Wallace v. Holmes* was a significant early case imposing patent infringement liability on a party that can be characterized as a non-performer.⁹¹ This case dealt with a patent on an “improved lamp” having a chimney and

context, but it seems that method claims give rise to multi-party infringement issues much more often than system claims. *See id.*

87. Timothy R. Holbrook, *Method Patent Exceptionalism*, 102 IOWA L. REV. (forthcoming 2017) (manuscript at 32–33), <http://ssrn.com/abstract=2760490> [<https://perma.cc/3D95-2JLU>] [hereinafter Holbrook, *Method Patent Exceptionalism*]; *see also* Timothy R. Holbrook, *Extraterritoriality in U.S. Patent Law*, 49 WM. & MARY L. REV. 2119, 2152–53 (2008) (arguing that the Federal Circuit’s “differential application of § 271(a)’s provisions to method and system claims runs contrary to the clear language of the statute”).

88. Holbrook, *Method Patent Exceptionalism*, *supra* note 87 (manuscript at 35).

89. *Id.* (manuscript at 36).

90. *See* Charles W. Adams, *A Brief History of Indirect Liability for Patent Infringement*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 369 (2006); *see also* Adams, *supra* note 59; Timothy R. Holbrook, *The Intent Element of Induced Infringement*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 399 (2006); Lemley, *supra* note 7, at 235–36.

91. 29 F. Cas. 74 (C.C.D. Conn. 1871) (No. 17,100); Adams, *supra* note 90, at 371–72 (discussing *Wallace*).

a novel, specially designed burner that helped keep the bottom of the chimney cool.⁹² The defendant made and sold burners “in all material respects like that described in the patent,”⁹³ but not the chimneys.

The circuit court articulated several reasons why, even though the defendant’s product did not meet every element of the asserted patent claim, the defendant was nonetheless liable for infringement. The court explained that the defendant sold the burners “with the certain knowledge that such burners are to be used, as they could only be used, by the addition of a chimney,”⁹⁴ which resulted in “assisting . . . in a gross infringement of the complainant’s patent” by those who bought the burner and combined it with the chimney.⁹⁵ In addition, even though the defendant “did not make an actual prearrangement with any particular person to supply the chimney to be added to the burner,” the court noted that “every sale they make is a proposal for the purchaser to do this.”⁹⁶ As a result, the court made a “certain inference” that the defendant acted “in actual concert” with others—unidentified chimney manufacturers⁹⁷—and was therefore liable as a “joint infringer.”⁹⁸ The court also voiced a practical concern: while a plaintiff could in theory go after the end users, this strategy could render the plaintiff “helpless and remediless” because of “the small value of each separate lamp, and the trouble and expense of prosecution.”⁹⁹

The language in *Wallace* might arguably be read either as setting forth an action for direct infringement where the two manufacturers (of the burner and the chimney) are acting as joint tortfeasors,¹⁰⁰ or of derivative infringement based on the burner manufacturer’s assistance of a user’s infringement. Nonetheless, the case has been cited mainly for the latter proposition.¹⁰¹ There is now

92. *Wallace*, 29 F. Cas. at 79.

93. *Id.* (statement of the facts).

94. *Id.* at 80.

95. *Id.*

96. *Id.*

97. *Id.*:

The defendants have not, perhaps, made an actual pre-arrangement with any particular person to supply the chimney to be added to the burner; but, every sale they make is a proposal to the purchaser to do this, and his purchase is a consent with the defendants that he will do it, or cause it to be done.

98. *Id.*

99. *Id.*

100. The manufacturer of the chimney, though, might be relieved of liability because the chimney is a so-called “staple” article of commerce. See 35 U.S.C. § 271(c) (2012); Adams, *supra* note 90, at 387.

101. Dawson Chem. Co. v. Rohm & Haas Co., 448 U.S. 176, 187–89 (1980); Adams, *supra* note 90, at 372; see also Thomson-Houston Elec. Co. v. Ohio Brass Co., 80 F. 712 (6th Cir. 1897).

wide consensus that *Wallace* ushered in the doctrine of derivative, or “contributory,” infringement.¹⁰²

But neither *Wallace* nor the early cases that relied upon it used the word “contributory.” For example, in *Bowker v. Dows*, a circuit court noted that “the manufacture and sale of the extract of [a certain chemical] would not, without more, be an infringement,”¹⁰³ but, citing *Wallace*, held liable a defendant who “sells an extract containing [that chemical] to persons who intend to use it in the combination claimed in the patent, and it is advertised and sold for that very purpose.”¹⁰⁴ The *Bowker* court made no suggestion that the theory of infringement was derivative, and further opined that it would be unfair in some situations to impose liability only on performing parties while allowing non-performers to go scot-free, underscoring the equitable rationale¹⁰⁵ of non-performer infringement theories:

We do not think that the law requires us to hold those persons who actually use the combination (most of them, and perhaps all, without any purpose or knowledge of infringing), as the only persons liable, to the exoneration of the only person who makes and sells the extract for the express and avowed purpose of its use in the combination.¹⁰⁶

Early Supreme Court cases also made no suggestion that the non-performer’s liability was to be styled as derivative. *American Cotton-Tie Co. v. Simmons*, the first Supreme Court case to recognize patent infringement by a non-performer, cited *Bowker* and stated simply that “[b]ecause the defendants prepare and sell the arrow tie, composed of the buckle or link and the band, intending to have it used to bale cotton and to produce the results set forth in the [asserted] patents, they infringe those patents.”¹⁰⁷ And *Morgan Envelope Co. v. Albany Perforated Wrapping Paper Co.*, another Supreme Court case, summarized the state of the law as follows: “There are doubtless many cases to the effect that the manufacture and sale of a single element of

102. See Adams, *supra* note 90; Giles S. Rich, *Infringement Under Section 271 of the Patent Act of 1952*, 21 GEO. WASH. L. REV. 521 (1953).

103. 3 F. Cas. 1070 (C.C. Mass. 1878) (No. 1,734).

104. *Id.* at 1071.

105. Although these sorts of theories are not formally grounded in equity, indirect infringement has been described as an “equitable doctrine.” See, e.g., *Procter & Gamble Co. v. Nabisco Brands, Inc.*, 604 F. Supp. 1485, 1489 (D. Del. 1985), *overruled on other grounds by* Nat’l Presto Indus., Inc. v. W. Bend Co., 76 F.3d 1185, 1196 (Fed. Cir. 1996); see also *Hiram Walker & Sons v. Corning & Co.*, 255 F. 129, 131 (N.D. Ill. 1918) (discussing “the equitable doctrine of contributory infringement” in the trademark context).

106. *Bowker*, 3 F. Cas. at 1071; see also *Dawson Chem.*, 448 U.S. at 188 (“The court permitted the patentee to enforce his rights against the competitor who *brought about* the infringement, rather than requiring the patentee to undertake the almost insuperable task of finding and suing all the innocent purchasers who technically were responsible for completing the infringement.” (emphasis added)) (discussing *Wallace*).

107. 106 U.S. 89, 95 (1882).

a combination, with intent that it shall be united to the other elements, and so complete the combination, is an infringement.”¹⁰⁸ The Court did not qualify the word “infringement” with any adjective connoting derivative liability.¹⁰⁹

The label “contributory infringement” was attached to non-performer liability for the first time in a reported case in *Snyder v. Bunnell*, a circuit court opinion that issued a few years after *Cotton-Tie* (but before *Morgan Envelope*), and the term eventually caught on.¹¹⁰ Crucially, the courts that used this label made clear that they viewed the relationship between direct and contributory infringers as that between “the principal and the accomplice,”¹¹¹ thereby relying on a criminal-law construct that signifies derivative liability of the non-performer.¹¹² With the advent of the “contributory” label, some courts began to draw a sharp line between performers, who could be liable for direct infringement, and non-performers, who could be liable only for contributory infringement. One court of appeals decision, in attempting to determine whether defendants “are direct or contributory infringers,” concluded that “[t]o be direct infringers, the defendants must have used the plaintiff’s process,”¹¹³ assuming without analysis that actual physical use by the defendants themselves was the only way that direct infringement could lie.¹¹⁴ After determining that “defendants do not use the machine” that performs the process but “merely supply it for use”¹¹⁵ by others, the court concluded that the defendants “are clearly not direct infringers of the plaintiff’s process patent.”¹¹⁶ Nonetheless, the defendants could be liable as contributory infringers because “they manufacture and sell materials for use in an infringing operation with

108. 152 U.S. 425, 433 (1894).

109. Cf. H. Hume Mathews, *Contributory Infringement and the Mercoide Case*, 27 J. PAT. OFF. SOC’Y 260, 264 (1945):

The courts have realized that joint and several liability may be involved in the violation of a patent right as in the violation of other rights; they gave redress against one who contributed to an infringement by concerting with or aiding and abetting a direct infringer even before such a joint wrongdoer was named a “contributory infringer.”

110. 29 F. 47, 48 (C.C.S.D.N.Y. 1886).

111. Thomson-Houston Elec. Co. v. Ohio Brass Co., 80 F. 712, 721 (6th Cir. 1897).

112. Interestingly, the trend in criminal law itself has been to eliminate distinctions between principals and accomplices. See *infra* notes 256–260 and accompanying text.

113. B. B. Chem. Co. v. Ellis, 117 F.2d 829, 833 (1st Cir. 1941), *aff’d*, 314 U.S. 495 (1942).

114. Cf. *supra* notes 49–50 and accompanying text (noting that application of the causal responsibility principle to infringement under the Patent Act is not inconsistent with the dictionary definition of “to use”).

115. B. B. Chem. Co., 117 F.2d at 833.

116. *Id.* at 834.

knowledge that they will be so used” and “induce their customers to use such infringing processes.”¹¹⁷

The increasing popularity of the word “contributory” has, apparently, led to a rigid conceptual separation between the forms of liability for performers and non-performers. But the law has in many circumstances recognized that one can carry out various acts through the instrumentality of another person, blurring the separation. This approach, in contrast to holding the non-performer responsible for the *liability* of the performer as the derivative route does, results instead in the imputation of a performer’s *acts* onto the non-performer. The Federal Circuit, in dealing with the situation in which the defendant’s customers performed only some of the claim’s steps, accomplished this latter result in *Akamai* under the guise of “vicarious liability” when it affirmed the jury verdict that Limelight was directly liable for the infringement.¹¹⁸ Given the uneasy fit of vicarious liability principles in these circumstances,¹¹⁹ however, the roots of the Federal Circuit’s approach might lie not in the vicarious liability doctrine, but in the principle of causal responsibility. And notably, nothing in the act-imputation theory limits the principle to a scenario where the performer carries only some, as opposed to all, acts that constitute the *actus reus* of an offense, making it potentially applicable in both “divided” and “indirect” infringement cases.¹²⁰

Congress, in the Patent Act of 1952, codified patent infringement in § 271 and, in particular, set forth acts (“make,” “use,” “sell”) that constitute infringement under § 271(a). But what about § 271(b) and (c)? The House Judiciary Committee Report characterized these subsections as formalizing the judicially recognized doctrine of contributory infringement, which “has been applied to enjoin those who sought to cause infringement by supplying someone else with the means and directions for infringing a patent.”¹²¹ It explained that part (b) “recites in broad terms that one who aids and abets an infringement is likewise an infringer” and that part (c) concerns the specific circumstance of sale of a component that the Report elsewhere calls “a

117. *Id.*

118. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai V)*, 797 F.3d 1020, 1025 (Fed. Cir. 2015) (en banc) (per curiam).

119. *See infra* Sections I.C–I.D.

120. For example, consider the crime of burglary, for which the *actus reus* consists of breaking and entering. It is difficult to imagine a different result in the case in which the defendant caused both the breaking and the entering by another as opposed to, say, the case in which the defendant performed the breaking and caused the entering.

121. H.R. REP. NO. 82-1923, S. REP. NO. 82-1979, at 2402 (1952), *as reprinted in* 1952 U.S.C.C.A.N. 2394, 2402.

special device constituting the heart of a patented machine.”¹²² Although the Report thus appears to assume that non-performer liability has been considered derivative upon the infringement liability of the user, *Wallace, Bowker*, and the early Supreme Court cases show that this characterization is not inevitable.¹²³

The Report does provide very strong evidence that Congress thought that derivative liability constitutes the primary route for holding those who do not themselves perform patent claim steps responsible for patent infringement, and my goal here is not to write a revisionist history of § 271. Nonetheless, case law does suggest that non-performer or partial-performer infringement was not always subsumed under the “indirect” label, but was instead based on general common-law principles of attribution.¹²⁴ And these principles must continue to remain relevant even without explicit codification. Indeed, while the Patent Act does not mention the respondeat superior doctrine, it would be a tall order to argue that it does not apply in patent cases—and even the staunchest supporters of rigorously enforcing the “single entity” rule in divided infringement cases¹²⁵ do not deny the applicability of actual agency to patent law.¹²⁶ The debate in *Akamai* was not about the validity of relying on agency, vicarious liability, and related principles, but only about how far those principles extend.¹²⁷

122. *Id.*

123. In addition, the Report mentions causing infringement, *id.*, a reference that might endorse causation-based imputation theories. See *infra* note 494 and accompanying text.

124. Indeed, there is suggestion in the legislative history of the 1952 Patent Act that causal responsibility principles were explicitly contemplated by the relevant stakeholders. See, e.g., *Contributory Infringement in Patents, Definition of Invention: Hearings on H.R. 5988, H.R. 4061, and H.R. 5248 Before the Subcomm. on Patents, Trade-Marks, and Copyrights of the H. Comm. on the Judiciary*, 80th Cong. 3 (1948) (“The doctrine of contributory infringement is nothing more than the application to the patent law of the general legal principle that one who causes a wrong is as guilty as one who actually does the wrong with his own hands.” (quoting Memorandum from the New York Patent Law Association on H.R. 5998) (emphasis added)). The Supreme Court relied on this memorandum in interpreting a related issue involving § 271 in *Dawson Chemical Co. v. Rohm & Haas Co.*, 448 U.S. 176, 205 (1980).

125. See *supra* note 19 and accompanying text.

126. See, e.g., Response to Plaintiff-Appellee’s Petition for Panel Rehearing and Rehearing En Banc at 6, *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008) (No. 2007-1485), 2008 WL 3992445, at *6 (relying on the *Restatement (Second) of Agency* to argue that act attribution is proper where the defendant “controls the conduct of the acting party” (citations and alterations omitted)); cf. *Baude & Sachs*, *supra* note 52, at 1088, 1110 (discussing the maxim that statutes in derogation of the common law are narrowly construed).

127. Compare *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1330 (Fed. Cir. 2008) (“That [the defendant] controls access to its system and instructs bidders on its use is not sufficient to incur liability for direct infringement.”), with *Akamai Techs., Inc. v. Limelight Networks, Inc.* (*Akamai V*), 797 F.3d 1020, 1023 (Fed. Cir. 2015) (en banc) (per curiam) (“[L]iability under § 271(a) can also be found when an alleged infringer conditions participation in an activity

Like vicarious liability or actual agency, causal imputation embodies a well-established common-law principle of attribution that, in the absence of a clear congressional statement to the contrary, continues to apply.¹²⁸ Moreover, reading the Patent Act in view of this principle would make eminent sense as a policy matter. In contrast, as the remainder of this Part explains, current approaches can lead to unsatisfying outcomes, such as making manufacturers more difficult to hold liable than their customers and generally creating barriers to enforcement of method claims that have led, in Professor Holbrook's words, to a questionable regime of "method patent exceptionalism."¹²⁹

C. Indirect Infringement and Its Discontents

Courts and commentators generally agree that "[t]he goal of secondary liability is to give patent owners effective protection in circumstances in which the actual infringer either is not the truly responsible party or is impractical to sue."¹³⁰ But the difficulty of establishing this form of liability can prevent patentees from vindicating their rights even in cases in which it seems intuitively clear that the non-performer is truly responsible for the infringement.¹³¹ To be sure, there are good reasons for making non-performer liability difficult to establish.¹³² An expansive conception of such infringement might ensnare legitimate and socially valuable commercial activities, from providing internet search engines¹³³ to supplying general-purpose

or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.").

128. See, e.g., *American Tel. & Tel. Co. v. Winback & Conserve Program, Inc.*, 42 F.3d 1421, 1429–33 (3d Cir. 1994) (discussing this principle in the context of respondeat superior and agency principles generally); cf. *Baude & Sachs*, *supra* note 52, at 1104–07 (arguing that "unwritten law" is often the best source of interpretation for ambiguous statutes).

129. Holbrook, *Method Patent Exceptionalism*, *supra* note 87.

130. Lemley, *supra* note 7, at 228; see also *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 221 (1980):

[T]he policy of stimulating invention that underlies the entire patent system runs . . . deep. And the doctrine of contributory infringement, which has been called "an expression both of law and morals," can be of crucial importance in ensuring that the endeavors and investments of the inventor do not go unrewarded.

(citation omitted).

131. See *supra* note 7 and accompanying text.

132. Lemley, *supra* note 7, at 228 ("[T]he law must take equal care to avoid imposing liability on those who participate in the stream of lawful commerce merely because their products can be misused."); Rantanen, *supra* note 7, at 1591 ("[I]ndirect infringement's ability to deter must be balanced against the possibility of over-imposing liability on those who participate in commerce.").

133. See Mark Bartholomew, *Cops, Robbers, and Search Engines: The Questionable Role of Criminal Law in Contributory Infringement Doctrine*, 2009 BYU L. REV. 783, 784 [hereinafter Bartholomew, *Cops, Robbers, and Search Engines*]; see also Mark Bartholomew, *Contributory Infringers and Good Samaritans*, 3 AKRON INTELL. PROP. J. 1, 19 (2009).

tools like computers to those who end up using them to infringe.¹³⁴ A court more than a hundred years ago remarked: “In a sense, a trespass is aided if the trespasser is fed during the trespass. Yet it can hardly be contended that an infringer’s cook is liable as a contributory infringer.”¹³⁵ The law, reasonably so, makes it difficult to impose liability on a general service provider or a supplier of a device having multiple uses¹³⁶ without any showing that this type of a defendant intends to profit specifically from the activity covered by an intellectual property right.¹³⁷

Patent law takes these commands quite seriously—and perhaps, to forgive an expression, to a fault. Consider the level of proof needed to establish active inducement of patent infringement under § 271(b), a subsection that says simply that “[w]hoever actively induces infringement of a patent shall be liable as an infringer.” The word “induce” has been interpreted to require, at the very least, specific intent to cause acts that happen to result in the infringement.¹³⁸ In addition, though, the plaintiff must show that the defendant knew of the patent covering the accused product, or was willfully blind to its existence, *in every case in which liability is grounded under this subsection*.¹³⁹ This is a very significant hurdle because “numerous potential infringers do not have actual knowledge of the patent at the time of suit.”¹⁴⁰ What is more, even in cases in which the defendant is

134. Holbrook, *Method Patent Exceptionalism*, *supra* note 87.

135. *Tubular Rivet & Stud Co. v. O'Brien*, 93 F. 200, 202–03 (C.C.D. Mass. 1898) (cited in Lemley, *supra* note 7, at 236).

136. For patent law examples, see *C.R. Bard, Inc. v. Advanced Cardiovascular Systems, Inc.*, 911 F.2d 670, 673–75 (Fed. Cir. 1990) (analyzing infringement issues involving a medical device that is capable of performing both a patented method and a method in the public domain); and *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1269–73 (Fed. Cir. 1986) (analyzing infringement issues involving the Rubik’s Cube puzzle).

137. *But cf.* Mark P. McKenna, *Probabilistic Knowledge of Third-Party Trademark Infringement*, 2011 STAN. TECH. L. REV. 10 (discussing expansion of indirect liability in trademark law); Alfred C. Yen, *Torts and the Construction of Inducement and Contributory Liability in Amazon and Visa*, 32 COLUM. J.L. & ARTS 513 (2009) (making similar conclusions for copyright law).

138. See *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1305 (Fed. Cir. 2006) (en banc in relevant part). As noted earlier, this aspect of the “mens rea” requirement is correct based on general causation principles. See *supra* notes 64–65 and accompanying text. In addition, it was clearly contemplated by the drafters of the statute. See Rich, *supra* note 102, at 537.

139. *Glob.-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 760 (2011); *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 488 (1964). For a contrary approach, see Lemley, *supra* note 7.

140. Ted Sichelman, *Patent Law Revisionism at the Supreme Court?*, 45 LOY. U. CHI. L.J. 307, 310 (2013) [hereinafter Sichelman, *Patent Law Revisionism*]; see also Ted Sichelman, *Minding Patent Infringement* (San Diego Leg. Stud. Paper No. 11-051, 2011), <http://papers.ssrn.com/abstract=1734380> [https://perma.cc/GW3D-VAFX]. In these articles, Professor Sichelman maintained that *Aro* and *Global-Tech* were wrongly decided because there is no support of the

aware of the patent that is ultimately found to be directly infringed, courts allow a defense of good-faith belief of noninfringement.¹⁴¹ Although patentees can obtain prospective relief once an infringement case is finally adjudicated in their favor,¹⁴² courts' approach to fault in these cases significantly limits the patentees' ability to collect past damages for method claim infringement.¹⁴³

In practice, these rules appear to elevate the defendant's mental state with respect to the underlying patent beyond mere knowledge, or even "purposeful intent," to a level that is extremely rare in other areas of law.¹⁴⁴ For example, the tort of battery generally does not require proof of intent to violate the law or to cause harm—well-intentioned but unwanted touching is still a battery.¹⁴⁵ And even in criminal law, which pays greater heed to moral culpability than tort law or patent law¹⁴⁶ and thus focuses more sharply on subjective intent,¹⁴⁷ the level of mens

knowledge-of-the-patent requirement in the legislative history of the 1952 Patent Act. Although I share Sichelman's doubts, and particularly question the good-faith belief outgrowth of this rule, *see infra* notes 145–151 and accompanying text, I ultimately take the Supreme Court case law as a given and maintain instead that the mens rea rules simply do not apply in the causation scenarios. *See infra* note 429 and accompanying text. For other criticisms of "scienter" standards for indirect infringement, see Lynda J. Oswald, *The Intent Element of "Inducement to Infringe" Under Patent Law: Reflections on Grokster*, 13 MICH. TELECOMM. & TECH. L. REV. 225 (2006); Michael N. Rader, *Toward a Coherent Law of Inducement to Infringe: Why the Federal Circuit Should Adopt the Hewlett-Packard Standard for Intent Under § 271(b)*, 10 FED. CIR. B.J. 299 (2001). For a defense, see Holbrook, *supra* note 90.

141. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926–28 (2015); *Warsaw Orthopedic, Inc. v. NuVasive, Inc.*, 824 F.3d 1344, 1352 (Fed. Cir. 2016).

142. *Cf.* Holbrook, *supra* note 90, at 405–07 (discussing intent standards in indirect infringement cases).

143. *Cf.* Holbrook, *Method Patent Exceptionalism*, *supra* note 87 (manuscript at 21) (criticizing "courts' exceptional and inconsistent treatment of method claims"). Somewhat anomalously, under a recent Supreme Court decision, *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 136 S. Ct. 1923, 1935 (2016), it may well be easier to obtain punitive damages for egregious or willful patent infringement under 35 U.S.C. § 284 than to prove indirect infringement. *Cf.* Rader, *supra* note 140, at 331–32 (arguing that willfulness should carry with it a higher level of culpability than indirect infringement). *But see* Rantanen, *supra* note 7, at 1632–33 (arguing that indirect infringement and willfulness should be subject to the same standard).

144. *See infra* notes 386–389 and accompanying text; *see also* Weiss, *supra* note 41 at 1393–96; *cf. id.* at 1453–56, 1473–77 (discussing origins and applications of the "bad purpose" approach to intent in criminal law).

145. *See, e.g.,* *Lambertson v. United States*, 528 F.2d 441, 445 (2d Cir. 1976) (finding "horseplay" to constitute battery); *White v. Univ. of Idaho*, 797 P.2d 108, 111 (Idaho 1990) (finding the "touching method" of a piano teacher to constitute battery); *Mohr v. Williams*, 104 N.W. 12, 16 (Minn. 1905) (holding that unlawful intent need not be shown in a civil action for battery); *Vosburg v. Putney*, 50 N.W. 403 (Wis. 1891); *see also* Richard A. Epstein, *Intentional Harms*, 4 J. LEGAL STUD. 391, 396 (1975). *But cf.* Nancy J. Moore, *Intent and Consent in the Tort of Battery: Confusion and Controversy*, 61 AM. U. L. REV. 1585 (2012) (noting confusion in the case law on these points).

146. *See generally* Jacob S. Sherkow, *Patent Infringement as Criminal Conduct*, 19 MICH. TELECOMM. & TECH. L. REV. 1 (2012).

147. *See* Peter Cane, *Mens Rea in Tort Law*, 20 OXFORD J. LEGAL STUD. 533, 533 (2000).

rea one sees for inducement under § 271(b) is rarely, if ever, present.¹⁴⁸ All of these requirements are, moreover, in severe tension with the fundamental principles that mistake or ignorance as to the extent of another person's rights (e.g., in the law of trespass),¹⁴⁹ or mistake or ignorance as to the controlling law (e.g., in criminal law), does not relieve one from liability.¹⁵⁰ And in tort cases in particular, “[I]t is a fallacy—call it the ‘moralistic fallacy’—to suppose that the essence of wrongdoing is a strong form of culpability or blameworthiness.”¹⁵¹ Nevertheless, patent law goes out of its way to protect manufacturers in method patent cases, and all of this stems from the fact that they are non-performers. There is no consideration of the broader context of the infringement.¹⁵²

As suggested by “the infringer’s cook” example,¹⁵³ elevated mental state requirements for establishing non-performer infringement may sometimes be warranted.¹⁵⁴ To give a more realistic set of facts, where the technology accused of facilitating infringement has different kinds of uses, some of which are infringing and others not,¹⁵⁵ it may stand to reason to require knowledge of a specific intellectual property right underlying the infringing branch of the technology’s application, and perhaps even scienter. But as we will see, this is not what is happening in many patent cases. Unlike cooks, providers of internet search engines, or makers of computers, many manufacturers accused of indirect patent infringement are not providers of a general service or

148. Direct analogies between crimes and violations of patent rights are questionable in any event, *see, e.g.*, Rantanen, *supra* note 7; and Sherkow, *supra* note 146, and it seems intuitive that culpability standards for crimes should be higher than for patent infringement. High levels of subjective culpability reflect society’s moral condemnation, and therefore make more sense for criminal law than for patent law. In contrast, objective evaluations of conduct, as opposed to subjective mental states, might fit better with the utilitarian grounding of patent law. *See generally* Dmitry Karshedt, *The Modern Pirate: Toward a New Standard for Enhanced Damages in Patent Law* (manuscript in preparation). I further address the relevance of criminal law to patent law *infra* Section III.A.

149. *See* RESTATEMENT (SECOND) OF TORTS § 158 (AM. LAW INST. 1965). *But cf.* Bailey v. S.J. Groves & Sons Co., 230 S.E. 2d 267, 269–70 (W. Va. 1976) (repudiating the strict liability approach in trespass law). The bottom line, however, is that whatever mental state hurdles the law of trespass imposes, it does not seem to distinguish between actual trespassers and causers of trespass. *See infra* Section III.B.2; *cf. infra* note 302 and accompanying text (noting that liability under the causation provision of 18 U.S.C. § 2(b) is not derivative).

150. *See, e.g.*, People v. Marrero, 507 N.E.2d 1068, 1069 (N.Y. 1987).

151. John C.P. Goldberg, *Inexcusable Wrongs*, 103 CALIF. L. REV. 467, 501 (2015); *see also* Cane, *supra* note 147, at 533.

152. *See infra* notes 168–170 and accompanying text.

153. *See supra* notes 132–137 and accompanying text.

154. *Cf. infra* notes 390–391 (noting that similar rules in criminal law are designed to protect marginal participants in an offense).

155. *See supra* note 136 and accompanying text.

platform. Instead, they supply specific software features, medical devices, or drugs that can be used only to infringe particular method patents—rather than facilitating generalized “piracy” mixed in with noninfringing uses of the service or product.¹⁵⁶ In such cases, the end user has no choice but to perform patented steps when it would like to get any value out of the product that it bought, or out of a particular feature of a product.¹⁵⁷

The law, however, does not distinguish between these two types of scenarios at all. A claim against a manufacturer of a medical device that, when deployed by a customer, executes the steps of a patented method in its only mode of operation is subject to exactly the same scienter requirements as a claim against a cook accused of aiding and abetting a violation of patent rights by making food for the infringer—or against the maker of a device capable of performing patented methods as well as those in the public domain.¹⁵⁸ It is clear why we should try to shield the latter two defendants from liability; the first, not as much.

Anticipating an objection that I further address in Part V, one might argue that the present scienter elements are justified because supplying a medical device (or Outlook software) to customers is also a run-of-the-mill commercial activity that has only been made “illegal” by the happenstance that the steps those products execute are covered by a patent.¹⁵⁹ But this argument proves too much. First, there are numerous activities in life that might not seem wrong based on everyday notions of moral culpability but that are nonetheless illegal or tortious because the law makes them so, often without any requirement of fault.¹⁶⁰ In patent law in particular, we have decided to make infringement strict liability,¹⁶¹ but the current approach undermines this rule by bringing fault through the backdoor and in contravention

156. See *infra* Section IV.D; cf. STEVENS, *supra* note 16, at 254 (discussing the need for stringent mens rea requirements in copyright law, where “machines could be used for both lawful and unlawful purposes”).

157. See *infra* Sections IV.B–IV.C.

158. See, e.g., *C.R. Bard, Inc. v. Advanced Cardiovascular Sys., Inc.*, 911 F.2d 670, 674 (Fed. Cir. 1990).

159. But cf. Timothy R. Holbrook, *The Supreme Court’s Quiet Revolution in Induced Patent Infringement*, 91 NOTRE DAME L. REV. 1007, 1026–30 (2016) (arguing that a rule that allowed for a good-faith belief of invalidity as a defense to indirect infringement encouraged challenges of bad patents).

160. See, e.g., *United States v. Dotterweich*, 320 U.S. 277, 282–84 (1943); *supra* note 145 and accompanying text.

161. For an argument why this rule is sensible, see Robert P. Merges, *A Few Kind Words for Absolute Infringement Liability in Patent Law*, 31 BERKELEY TECH. L.J. 1 (2016).

to common-law principles.¹⁶² Whether or not some manufacturers, particularly those that develop the invention independently as opposed to copying the subject matter of the patent, should be shielded from patent infringement liability is a debate well worth having.¹⁶³ But the performer/non-performer distinction, on its own, provides a highly dubious basis for protecting manufacturers as a doctrinal matter.

The second difficulty, closely related to the first, is that *direct* patent infringement does not require any proof of culpable intent.¹⁶⁴ Utilizing medical devices that one has bought and paid for, exactly as intended by the manufacturer, is also not at odds with anyone's conceptions of morality, but an end user can be held liable for doing so, even without the knowledge of the underlying patent. The related argument that many patents are ultimately held not infringed (or invalid) likewise does not account for the way in which direct infringers are treated.¹⁶⁵ As long as the patent remains valid at the end of the litigation, the directly infringing end user will be liable; good-faith belief in noninfringement is no defense to direct infringement.¹⁶⁶ In sum: under the current approach, the manufacturer of a device that can only be utilized so as to infringe can avail itself of numerous mens rea defenses, but the customer using that device as intended is strictly liable.

How did we get to this backwards result?¹⁶⁷ Again, the formal reason is that the customer performs the method claim steps and therefore falls into the direct infringer category, while the manufacturer does not perform the steps and ends up as an indirect infringer. The difference hinges only on who performs the steps and does not take into account which of the two parties designed the device. This approach reminds one of the much-maligned, and long-rejected, "last human wrongdoer" rule of proximate causation, which used to command that only the entity that directly interacted with the plaintiff

162. See *infra* Part III.

163. See, e.g., Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475, 478–79 (2006). But see *Merges*, *supra* note 161.

164. See *In re Seagate Tech., LLC*, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc), *abrogated on other grounds* by *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016).

165. See, e.g., *Holbrook*, *supra* note 159. The Federal Circuit actually did make a good-faith belief in invalidity a defense in *Commil*, but the Supreme Court reversed this holding. *Commil USA, LLC v. Cisco Sys., Inc.*, 720 F.3d 1361 (Fed. Cir. 2013), *vacated*, 135 S. Ct. 1920 (2015).

166. There are often practical impediments in the way of suing direct infringers. I focus, however, on the legal requirements of liability.

167. Cf. *Holbrook*, *Method Patent Exceptionalism*, *supra* note 87 (arguing that courts should treat method claims the same way as the other claim formats).

could be liable in tort.¹⁶⁸ More remarkably, as noted above, patent law would apparently not distinguish between a manufacturer who supplies the infringing device¹⁶⁹ from “the infringer’s cook.”¹⁷⁰ As non-performers, they are equal in the eyes of the law.

These counterintuitive outcomes occur because courts treat infringement of method claims in a highly formalistic fashion. Because the manufacturer is a non-performer, courts place it into the indirect infringement box, and that categorization in turn triggers the requirement of scienter. While the remainder of this Part completes the discussion of problems with courts’ treatment of infringement in cases in which the defendant performs fewer than all steps of the asserted patent claim, Parts III and IV show that the law is actually not so inflexible.

D. “Divided Infringement” and Its Discontents

So-called “divided infringement” is another problematic area of patent law. As outlined in the Introduction, this label refers to the phenomenon of method claims that cannot be infringed because no single entity performs all of the claim’s steps.¹⁷¹ An example using simple technology, based on *Move, Inc. v. Real Estate Alliance Ltd.*, will help illustrate the problem.¹⁷² The plaintiff owned a patent to a method for locating available real estate property using a zoom-enabled map on a computer. The patent included a claim directed to

[a] method [of] using a computer for locating available real estate properties comprising the steps of:

- (a) creating a database of the available real estate properties;
- (b) displaying a map of a desired geographic area;
- (c) selecting a first area having boundaries within the geographic area;
- (d) zooming in on the first area of the displayed map . . . ;
- (e) displaying the first zoomed area;

168. W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 42, at 277 (5th ed. 1984); cf. Oliver Wendell Holmes, Jr., *Privilege, Malice, and Intent*, 8 HARV. L. REV. 1, 10 (1894) (suggesting that the last human wrongdoer may not be the only cause of injury).

169. The discussion assumes a theory of infringement under 35 U.S.C. § 271(b). Subsection 271(c), which might also be applicable on these facts, presents the same mens rea obstacles as § 271(b), but applies specifically to sellers of so called “nonstaple” articles “especially made or especially adapted for use in an infringement.” See *Glob.-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 764–65 (2011).

170. See *supra* note 135 and accompanying text.

171. As the rest of this Section explains, there are exceptions to this so-called “single entity” rule in the method claim context. See *supra* notes 84–87 and accompanying text.

172. 709 F.3d 1117 (Fed. Cir. 2013).

(f) selecting a second area having boundaries within the first zoomed area;

(g) displaying the second area . . . ; and

(h) identifying available real estate properties within the database which are located within the second area.¹⁷³

The defendant operated an interactive website, using data from a database it created (step (a)), that allowed users to search for available properties.¹⁷⁴ The landing page provided a search box in which a user could type in the state and county of interest. Once this was done—for example, the user typed in “California – Los Angeles County”—the website displayed the county map, thus performing step (b). The website then invited the user to “click on the map or the links below to search for . . . real estate in California”; the links would include parts of Los Angeles County, such as “San Fernando Valley” or “Los Angeles – Westside to Downtown.” After the user performed step (c) by clicking on the map or the links, the website zoomed into and displayed this smaller area—steps (d) and (e)—and the process repeated itself. In other words, the website asked the user to “click on the map or the links below” to pick an area within a previously chosen area, such as “Beverly Hills” or “West Hollywood” within “Los Angeles – Westside to Downtown.” After the user did so, at step (f), the website displayed the smaller area and identified available properties within it (steps (g) and (h)). To sum up, all of the claim’s steps were performed, but by two separate entities—the accused infringer, who operated the website’s host computer, and the website’s user, who performed the “selecting” steps (c) and (f).¹⁷⁵

On these facts, the Federal Circuit held in 2013 that there was no infringement by the website’s operator as a matter of law because it did not “exercise direction or control over users of its websites.”¹⁷⁶ Under this approach, plaintiffs like Move, Inc., could essentially never prove infringement. Many commentators have strongly criticized this rule because it rendered a large number of patents on interactive methods wholly without value, arguing that it created a loophole in patent law

173. *Id.* at 1119–20 (emphasis added) (quoting U.S. Patent No. 5,032,928, claim 1 (filed Apr. 24, 1989)).

174. See Brief for Defendant/Counterclaim-Appellant Real Estate Alliance Ltd. at 16, 20, *Move, Inc. v. Real Estate Alliance Ltd.*, 709 F.3d 1117 (Fed. Cir. 2013) (No. 12-1342), 2010 WL 2968764, at *16, *20.

175. See *Move*, 709 F.3d at 1122.

176. *Id.* at 1122–23. Until August of 2015, the only ways in which the direction or control test could be satisfied were “a principal-agent relationship, a contractual relationship or in circumstances in which parties work together in a joint enterprise functioning as a form of mutual agency.” *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai IV)*, 786 F.3d 899, 905 (Fed. Cir.), *rev’d en banc, Akamai V*, 797 F.3d 1020 (Fed. Cir. 2015) (per curiam); see also *supra* note 14 and accompanying text.

and attacking it on economic, policy, and fairness grounds.¹⁷⁷ The contrary view is that divided infringement problems are often of the patentees' own making and can be fixed with careful claim drafting,¹⁷⁸ and that it would be unfair to impose liability where the defendant did not "instruct[] the other [entity] to perform the infringing steps."¹⁷⁹ But in spite of the importance of the problem and perhaps because of "the competing policy concerns" identified by commentators, "courts have . . . formulated a series of ever-changing, conflicting standards in hopes of equitably resolving these cases under the Patent Act."¹⁸⁰ In 2014, the Supreme Court entered the debate and strongly hinted that the rule exemplified by cases like *Move* was wrong, noting "the possibility that the Federal Circuit erred by too narrowly circumscribing the scope of § 271(a)."¹⁸¹

The Federal Circuit's recent en banc *Akamai* decision, presumably responding to these critiques and taking the Supreme Court's hint, unanimously changed the applicable standard.¹⁸² While the test previously in force allowed attribution of claim step performance from users to manufacturers based only on agency or contractual relationships, the court relaxed it with its new take on vicarious liability.¹⁸³ Now, an accused infringer can also be held liable when it "conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance."¹⁸⁴ In *Akamai* itself, the Federal Circuit held that both prongs of this test were met

177. See, e.g., Damon Gupta, *Virtually Uninfringeable: Valid Patents Lacking Protection Under the Single Entity Rule*, 94 J. PAT. & TRADEMARK OFF. SOC'Y 61, 62 (2012); W. Keith Robinson, *No "Direction" Home: An Alternative Approach to Joint Infringement*, 62 AM. U. L. REV. 59, 59 (2012); Stacie L. Greskowiak, Note, *Joint Infringement after BMC: The Demise of Process Patents*, 41 LOY. U. CHI. L.J. 351, 354 (2010); see also *Akamai IV*, 786 F.3d at 917–18 (Moore, J., dissenting) (collecting criticisms). See generally W. Keith Robinson, *Economic Theory, Divided Infringement and Enforcing Interactive Patents*, 67 FLA. L. REV. 1961 (2015) (providing economic justifications for the robust enforcement of patents in some divided infringement scenarios).

178. See, e.g., Lemley et al., *supra* note 82, at 271–74.

179. *Id.* at 259; see also *id.* at 261.

180. Nathaniel Grow, *Resolving the Divided Patent Infringement Dilemma*, 50 U. MICH. J.L. REFORM 1, 22 (2016).

181. *Limelight Networks, Inc. v. Akamai Techs., Inc. (Akamai III)*, 134 S. Ct. 2111, 2119 (2014).

182. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai V)*, 797 F.3d 1020, 1022 (Fed. Cir. 2015) (en banc) (per curiam). Unanimous en banc decisions have been fairly rare at the Federal Circuit in recent years, and this decision's unanimity perhaps confirms the view that the previous rule was simply untenable because it was too defendant-friendly.

183. *Id.* at 1023.

184. *Id.* (citing *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913, 930 (2005)). The court also adopted an additional theory of attribution based on joint-enterprise principles. *Id.*

because Limelight, the defendant, was actively involved in its customers' execution of claim steps that it did not perform.¹⁸⁵ For example, Limelight required its customers to sign a standard form contract delineating their responsibilities for making sure the service worked and had its engineers "continuously engage with customers' activities."¹⁸⁶ Time will tell whether the more arms-length relationship between the customer and the accused infringer in cases like *Move* would also be sufficient to impose liability.

Whatever one thinks of the bottom-line result of *Akamai's* latest installment, it is difficult to argue that vicarious liability is the right route to attribution on the facts of many divided infringement cases. First, vicarious liability—like the doctrines of indirect and contributory infringement—is a liability-shifting doctrine,¹⁸⁷ but the customer or user did not perform a tortious act in *Akamai* or *Move*.¹⁸⁸ Second, it must be remembered that employer liability for tortious acts of its employees committed in the scope of employment is the paradigmatic application of vicarious liability.¹⁸⁹ But a customer or user is not an employee, and even when vicarious liability is not predicated on an employer-employee relationship, its hallmark is the defendant's "right and ability to supervise" another party.¹⁹⁰ This doctrine, therefore, simply does not fit the manufacturer-customer scenarios discussed here, for one generally has no right or ability to supervise one's customers.

To be fair, *Akamai's* "manner or timing" language harkens back to copyright and trademark cases in which vicarious liability was found when defendant dance halls provided physical space to direct infringers¹⁹¹ and perhaps cases in which direct infringers operated under license from the defendants.¹⁹² But these opinions already pushed the outer limits of vicarious liability, and even then the quasi-

185. *Id.* at 1024.

186. *Id.* at 1025.

187. *See supra* note 16 and accompanying text.

188. *See supra* note 17 and accompanying text.

189. *See* KENNETH S. ABRAHAM, *THE FORMS AND FUNCTIONS OF TORT LAW* 213–14 (4th ed. 2012) (explaining that, under the doctrine of respondeat superior, "employers are vicariously liable even absent their own negligence, for torts committed by their employees 'within the scope of employment'").

190. *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913, 930 n.9 (2005); *Ellison v. Robertson*, 357 F.3d 1072, 1076 (9th Cir. 2004); *Shapiro, Bernstein & Co. v. H. L. Green Co.*, 316 F.2d 304, 306–08 (2d Cir. 1963).

191. *Shapiro*, 316 F.2d at 307–08 (discussing the dance hall cases). For a particularly broad conception of "premises," see *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1023–24 (9th Cir. 2001).

192. *See, e.g., Shapiro*, 316 F.2d at 306.

supervisory relationships they involved were much different from the standard manufacturer-customer relationship.¹⁹³ In discussing *Shapiro Bernstein & Co. v. H. L. Green Co.*, a leading copyright vicarious liability case, one brief recently explained that “the defendant exerted a high level of control over the concessionaire, including ‘unreviewable discretion’ to terminate the concessionaire’s employees.”¹⁹⁴ The brief concluded that “[t]he *Shapiro* fact pattern thus bore a strong resemblance to the paradigmatic respondeat superior relationship—that of employer and employee.”¹⁹⁵ Such a relationship does not appear to be present in *Akamai*.

Thus, leaving aside the problem that there is no liability to be shifted in divided infringement cases, the vicarious liability doctrine does not readily apply to the facts of such cases. Two paths forward are then possible. One is that *Akamai* is a sui generis case involving the rare manufacturer-customer relationship that does give rise to vicarious liability, and cases like *Move* will continue to result in no infringement as a matter of law. This result would perpetuate a questionable noninfringement loophole for patents on interactive technologies, even in cases in which a defendant specifically instructs users to perform particular claim steps in order for the users to get value out of the defendant’s product, as when Real Estate Alliance invited users to “click on the map.”¹⁹⁶ Two, it may be that *Akamai* applies broadly, but the Federal Circuit’s conception of vicarious liability would then be so different from that doctrine’s roots that the label would cease to be meaningful. The second result, too, would be questionable because, while Congress in 1952 likely meant for the doctrine of vicarious liability to apply to patent infringement actions,¹⁹⁷

193. See, e.g., *Napster*, 239 F.3d at 1023–24; cf. *In re Aimster Copyright Litig.*, 334 F.3d 643, 654–55 (7th Cir. 2003) (expressing “doubts” that vicarious liability should be imposed on similar facts and noting that vicarious liability “has been extended in the copyright area to cases in which the only effective relief is obtainable from someone *who bears a relation to the direct infringers that is analogous to the relation of a principal to an agent*” (emphasis added)).

194. Brief for the Electronic Frontier Foundation et al. As Amici Curiae Supporting Appellees at 21, *Perfect 10, Inc. v. Giganews, Inc.*, 847 F.3d 657 (9th Cir. 2017) (No. 15-55500), 2016 WL 859639, at *21 (quoting *Shapiro*, 316 F.2d at 306).

195. *Id.*

196. With respect to the drafting side of the criticism, see *supra* note 178 and accompanying text. *Move, Inc.*’s claims can probably be redrafted from the point of view of a single entity. For example, instead of “selecting” at steps (c) and (f), the claim might recite “receiving a selection.” Still, it is not clear that the claim as drafted provides significantly less notice to the defendant relative to this hypothetical claim, or would be somehow unfair to enforce against the defendant. The defendant, after all, has created a website with a zoom-enabled map designed for users in search of a real estate to click on and invites users to select the areas of interest. See *infra* notes 440–442 and accompanying text.

197. In the sense that Congress “intends” for background common law to continue to apply unless it specifies otherwise. See Baude & Sachs, *supra* note 52.

it could not have plausibly intended for courts to create a doctrine of attribution that deviates so significantly from its common-law roots.¹⁹⁸

*E. The Commonality Between Non-performer
and Partial Performer Scenarios*

Indirect infringement cases like *Lucent* and divided infringement cases like *Akamai* are not very different. It is telling, for example, that the Federal Circuit’s 2012 attempt to pin liability on *Limelight* was based on an inducement theory under § 271(b), and that the court achieved the same result under § 271(a) by 2015—while the facts obviously have not changed.¹⁹⁹ This back-and-forth dynamic reflects a struggle with the rigid line courts have sometimes drawn between performer and non-performer infringement. The facts of *Akamai*, a case that involved partial performance, push on that line, and the supposedly clear distinction between direct and indirect liability based on who performs method claim steps becomes even more blurred.

But courts are overthinking the problem. As I further explain in Part IV, *Akamai* and *Lucent* exemplify very similar issues. In both types of cases, a manufacturer or a service provider supplies a tool that causes customers to perform some (in *Akamai*) or all (in *Lucent*) steps of a particular method patent, and there is no reason for two entirely different rules to deal with them. Here’s an abstracted illustration of the problem. Suppose that a claim that two separate defendants (*D1* and *D2*) are accused of infringing has ten steps. Suppose also that, in both cases these defendants supply a device whose only intended use results in the performance of all ten steps. In the first case, *D1* performs none of the steps, but conditions receipt of a benefit by customer *C1* on performance of all ten and establishes the manner or timing of the performance. In the second case, *D2* performs one of the steps and conditions receipt of a benefit by customer *C2* on performance of the remaining nine and, as in case one, establishes the manner or timing of the performance.²⁰⁰ It would seem odd to limit the available theories of liability to § 271(b) in the first case, but to allow for § 271(a) liability in

198. A third way to treat the Federal Circuit’s use of “vicarious liability” is as a label for another doctrine of attribution accepted at common law—such as the doctrine of causal responsibility. If this is the right path, then the rest of this Article will serve to provide content for deploying this attribution approach.

199. See *supra* notes 25–30 and accompanying text.

200. See *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai V)*, 797 F.3d 1020, 1022 (Fed. Cir. 2015) (en banc) (per curiam).

the second case.²⁰¹ In both cases, by hypothesis, the defendants provided a device whose only intended use results in the performance of one or more steps of the claim, and both *D1* and *D2* have acted in such a way as to have “performed” all of the steps either in actuality or by legal fiction.

Pursuing this reasoning, creative litigants could characterize certain cases in which users have performed all of the claim’s steps as giving rise to vicarious liability under the latest installment of *Akamai*.²⁰² But long-term viability of this strategy is unclear because vicarious liability has historically been a form of indirect, or derivative, infringement in intellectual property cases and elsewhere in the law.²⁰³ One might then reasonably argue that widespread utilization of “vicarious liability” in this manner might impermissibly render § 271(b) and (c), the statutory indirect infringement provisions, superfluous.²⁰⁴ If this argument is accepted, however, we will have the strange result that vicarious liability (as deployed by the Federal Circuit) applies only in cases in which it defies traditional tort doctrine—when the customer has not engaged in tortious conduct.²⁰⁵

The goal of the remainder of the Article is to cut these Gordian knots. Under causal responsibility, certain cases that currently fall into indirect or divided infringement categories because of non-performance or partial performance of claim steps by the defendant might instead be treated the same way, and without dubious requirements of scienter or overextension of principles of vicarious liability.²⁰⁶ Part IV explains how this approach would work in patent law and demonstrates its consistency with the Patent Act. Parts III and IV, which follow, set forth

201. See *supra* note 120 and accompanying text.

202. This is already happening. See, e.g., Corrected Reply Brief for Plaintiff-Appellant Adaptix, Inc. at 9–11, *Adaptix, Inc. v. Apple Inc.*, No. 2015-1441 (Fed. Cir. Nov. 19, 2015), 2015 WL 7693423, at *9–11. This appeal was dismissed as moot after oral argument. See *Adaptix, Inc. v. Apple Inc.*, No. 2015-1441 (Fed. Cir. July 20, 2016), ECF No. 114.

203. See, e.g., *Perfect 10, Inc. v. Visa Int’l Serv. Ass’n*, 494 F.3d 788, 802–06 (9th Cir. 2007) (copyright and trademark example). Unlike inducement and contributory infringement, vicarious liability in patent law is not codified.

204. Similar arguments were made in the now-vacated *Akamai* panel opinion on remand from the Supreme Court. See *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai IV)*, 786 F.3d 899, 906–08 (Fed. Cir.), *rev’d en banc, Akamai V*, 797 F.3d 1020. I contend that the proposed causation approach is less immune to the attack that it renders § 271(b) and (c) superfluous. See *infra* Section IV.B.2.

205. In § 271(b) and (c) cases, by hypothesis, the end user *has* engaged in tortious conduct because proof or underlying direct infringement is required for indirect liability. See *ACCO Brands, Inc. v. ABA Locks Mfr. Co.*, 501 F.3d 1307, 1312–13 (Fed. Cir. 2007) (explaining that proof of indirect infringement necessarily requires proof of instances of direct infringement).

206. Under the Patent Act, liability on this theory could be formally grounded in § 271(a), (b), or (c). I explain how this would work *infra* notes 413–426 and accompanying text.

the causal responsibility principle and show how it works outside of patent law.

II. THE CONCEPTS OF CAUSAL RESPONSIBILITY AND OF CAUSING ACTS OF OTHERS

A. Selected Causation Concepts

Causation concepts in law can be complex, multifarious, and enigmatic. They are also trans-substantive—causation appears in criminal law, tort law, and contract law, among other areas. Causation problems in specific areas of law, as well as across legal disciplines, have drawn significant attention from philosophers, legal scholars, and courts. To advance the claims in this Article, this Part focuses on how causation concepts have been applied to multi-party problems.²⁰⁷ Some general background on causation, nonetheless, is helpful to set the stage for further discussion.

Two familiar causation concepts in tort and criminal law are but-for cause and proximate cause. But-for causation relates to the notion that, if it were not for something that the defendant did, the harmful outcome or event at issue would not have occurred.²⁰⁸ Proximate causation, in contrast, is a mechanism for limiting liability for harms that are, in some way, too remote or unforeseeable given the nature of a defendant's acts.²⁰⁹ Both concepts have particular salience for multi-party problems. For example, if a defendant gave words of encouragement to a person who was in any case determined to commit a particular crime, how should the but-for causation analysis proceed, and what is its relevance to the defendant's liability?²¹⁰ Or, if the defendant negligently provided liquor to a person who killed someone in an alcohol-induced rage, could the defendant's liability be cut off on proximate cause principles even though but-for causation seems clear?²¹¹

207. For another proposal for use of causation concepts to analyze liability for non-performers in intellectual property cases, see Bartholomew, *Cops, Robbers, and Search Engines*, *supra* note 133, at 827–40.

208. KEETON ET AL., *supra* note 168, § 41, at 265–68.

209. *Id.* §§ 42–44, 272–319.

210. *See, e.g.*, State *ex rel.* Martin v. Tally, 15 So. 722, 732–41 (Ala. 1894) (finding that defendant aided and abetted the murderers even though defendant's actions did “not contribute to the criminal result in the sense that but for it the result would not have ensued”); *see also infra* Section III.C.

211. *See, e.g.*, Phan Son Van v. Peña, 990 S.W.2d 751, 752–53, 755 (Tex. 1999). In this case, the defendant's behavior fell below the applicable standard of care and was therefore negligent, but he escaped liability on proximate cause grounds.

But-for and proximate cause do not exhaust the universe of causal principles in law. Another cluster of important issues, particularly pertinent to multi-party problems, relates to the concept that Professor Michael Moore described as “scalar” causation.²¹² This term refers to the idea that when an event or an outcome has multiple human causes, the causal contribution from each individual agent might be small or big—which, in turn, influences the analysis of the agent’s liability.²¹³ In tort law, this concept is reflected in the principle of causal apportionment of liability between multiple tortfeasors.²¹⁴ And, as we will see, the innocent agency doctrine in criminal law might also be viewed through the lens of smaller and bigger causes.²¹⁵ One important application of scalar causation theory is that a defendant can be a major causal contributor without physically performing the act that directly brings about the harm. Professor Moore explained:

[O]ne who picks the victim of the murder, orders a subordinate to do it, pays him well for it, locates the victim for the hit-man, brings the gun and ammunition, and drives the hit-

212. MICHAEL S. MOORE, CAUSATION AND RESPONSIBILITY: AN ESSAY IN LAW, MORALS, AND METAPHYSICS 275 (2009).

213. *Id.* at 299–314. The very idea that causes can have various degrees or “potencies” has been questioned. *See, e.g.*, Richard W. Wright, *Allocating Liability Among Multiple Responsible Causes: A Principled Defense of Joint and Several Liability for Actual Harm and Risk Exposure*, 21 U.C. DAVIS L. REV. 1141, 1146 (1988):

Some condition either was or was not a cause (in the proper scientific sense) of a particular injury. There is no way, based purely on causation, to identify one cause of an injury as more important or significant than any other cause of the same injury. . . . True “causal apportionment” is conceptually meaningless.

For a judicial expression of doubt of comparative causation, see *Sandford v. Chevrolet Division of General Motors*, 642 P.2d 624, 629–31 (Or. 1982). For a recent critical analysis, see James Goudkamp & Lewis Klar, *Apportionment of Damages for Contributory Negligence: The Causal Potency Criterion*, 53 ALBERTA L. REV. 849 (2016); see also Robert N. Strassfeld, *Causal Comparisons*, 60 FORDHAM L. REV. 913 (1992). In any event, the concept of causing the acts of others is directed to a closely related yet distinct concern. *See infra* Section II.B.

214. Critiques listed in the previous footnote aside, “comparative causation” has a firm foothold in tort law, and particularly in products liability cases. *See, e.g.*, *Murray v. Fairbanks Morse*, 610 F.2d 149, 159–61 (3d Cir. 1979) (Rosenn, J.). *See generally* MARC A. FRANKLIN ET AL., TORT LAW AND ALTERNATIVES: CASES AND MATERIALS 370–72 (9th ed. 2011). For a theoretical treatment, see Mario J. Rizzo & Frank S. Arnold, *Causal Apportionment in the Law of Torts: An Economic Theory*, 80 COLUM. L. REV. 1399 (1980). Although I do not propose causal apportionment of damages for patent infringement among multiple defendants, at least one article does suggest this possibility. *See* Bernard Chao, *The Case for Contribution in Patent Law*, 80 U. CIN. L. REV. 97 (2011). *But see* John W. Osborne, *Justice Breyer’s Bicycle and the Ignored Elephant of Patent Exhaustion: An Avoidable Collision in Quanta v. LGE*, 7 J. MARSHALL REV. INTELL. PROP. L. 245, 278, 279 (2008) (arguing that the Patent Act “does not mandate, or even allow, proration of royalties among contributory and direct infringers” and further concluding that “[t]he idea of proration of royalties is . . . antithetical to the statute”). Finally, Judge Newman proposed an apportionment approach to divided infringement in her dissent in one of the *Akamai* opinions. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai II)*, 692 F.3d 1301, 1331–32 (Fed. Cir. 2012) (en banc) (Newman, J., dissenting), *rev’d*, *Akamai III*, 134 S. Ct. 2111 (2014).

215. *See infra* Section III.B.

man to the location of the killing, substantially causes the death of the victim. We should thus say plainly that one way to be an accomplice is by causing the harm through the action of another. Substantially aiding another to cause some harm is to substantially cause the harm oneself, whatever the pretensions of the intervening causation fiction.²¹⁶

Two takeaways become apparent from this analysis. The first is the converse of the conclusion that the mastermind in Professor Moore's scenario is "the substantial causer."²¹⁷ The hit-man, though he or she engages in the acts that physically bring about the victim's death, could conversely be viewed as a minor cause of the crime relative to the mastermind. This notion might on the surface seem shocking—how can a killer be anything but the leading cause of the victim's death? Upon further reflection, however, this conclusion might not seem so strange. If the mastermind is committed to having a target killed, he or she could find some other hit-man even if the first few candidates refuse. The causal driver of the killing is the person who makes up his or her mind to have a victim killed, not the fungible contract executioner.

The second takeaway is that, even though a human being—the hit-man—is interposed between the mastermind and the victim, the chain of causation between the mastermind's acts and the victim's death is not cut off. In the language of torts, the hit-man's volitional act of shooting the victim is not a "superseding cause" that relieves the mastermind of responsibility.²¹⁸ The mastermind's actions are both but-for and proximate causes of the victim's death, and, significantly, the mastermind's causal contribution is substantial. The bottom line is that physically performing an act constituting an element of an offense is not always the determinative factor when it comes to causal responsibility.

B. Causing Acts of Others

Professor Moore's analysis also raises an important question that is closely related to, but different from, the ideas underlying scalar causation and of substantially causing harm through the instrumentality of another. The question is whether one can intelligibly speak of causing acts of other individuals. Specifically, can we say that the mastermind in Professor Moore's hypothetical caused the hit-man to kill the victim? This phrasing is problematic because the hit-man is, after all, a human being, and it seems awkward to contend that a defendant causes another person to do something—say, to shoot the

216. MOORE, *supra* note 212, at 301 (emphasis omitted).

217. *Id.* (arguing that in these circumstances it would make sense to treat the mastermind as "a principal in his own right," just as in cases in which "there is no guilty principal").

218. *See, e.g., Doe v. Manheimer*, 563 A.2d 699 (Conn. 1989).

victim—in the same way that one might cause a door to open by pushing. This discomfort has led to a great deal of philosophical inquiry into what, if anything, it would take to conclude that a person’s act has been caused—particularly, if the act is voluntary. The overwhelming consensus is that a voluntary act can be caused. The law reflects and builds on this intuition by using this form of causation as a route to imputing acts of causee-performers to causer-non-performers, thus holding the latter legally accountable for those acts as if they were the non-performers’ own.²¹⁹

I begin with the classic account of causation in the law by Professors H.L.A. Hart and Tony Honoré.²²⁰ These authors set forth the seemingly blanket proposition that “a free and deliberate human action is never regarded as itself caused.”²²¹ They maintained that “[a] deliberate human act is . . . often something *through* which we do not trace the cause of a later event” and argue that the language of “cause” is more appropriate for effects of human action on inanimate objects rather than on other human beings.²²² Professors Hart and Honoré contended that, for interpersonal transactions, “the concept of reasons for action” is more suitable than the concept of “causes of events.”²²³ And yet even these authors, who appear to be less comfortable than most with the concept of cause in human interactions, conceded that “[m]any important causal idioms are appropriate for the description both of . . . relationships between human actions and ordinary causal sequences.”²²⁴ They identified four inquiries that are relevant for answering the question whether another person did something as a result of (i.e., caused by), the first person’s words or actions:

- (i) in all of them the second actor knows of and understands the significance of what the first actor has said or done; (ii) the first actor’s words or deeds are at least a part of the second actor’s reasons for acting; (iii) the second actor forms the intention to do the act in question only after the first actor’s intervention; (iv) [the first actor] intends the second actor to do the act in question.²²⁵

Although Professors Hart and Honoré did not say outright that these criteria, if met, would justify the conclusion that a person has caused an act of another—perhaps because of their general aversion to

219. See *infra* Part III.

220. H.L.A. HART & TONY HONORÉ, *CAUSATION IN THE LAW* (2d ed. 1985).

221. See JOEL FEINBERG, *Causing Voluntary Actions*, in *DOING AND DESERVING* 152, 152 (1970) (alterations omitted) (quoting H.L.A. Hart & Tony Honoré, *Causation in the Law*, 72 L.Q. REV. 80 (1956)).

222. HART & HONORÉ, *supra* note 220, at 44.

223. *Id.* at 51 (emphasis omitted).

224. *Id.* at 52.

225. *Id.* at 53.

using causal language to describe interpersonal interactions—they come close. They concluded that the chain of causation can at least be “traced through” from the non-performer to the effects of the performer’s act in cases in which the level of the non-performer’s involvement in the performer’s act is high, i.e., when it meets all of these four criteria.²²⁶ Building on the work of Hart and Honoré, Professor Joel Feinberg contended that it was indeed coherent to speak of causing another’s acts and, significantly, noted that there is “compatibility of voluntariness with causal determination.”²²⁷ He argued that “the more expectable human behavior is [in response to an action we call a cause], whether voluntary or not, the less likely it is to ‘negative causal connection.’”²²⁸

Other scholars are even more sanguine to the notion that a person can cause acts of another, resulting in the legal consequence of imputation of the causee’s acts to the causer.²²⁹ Although Professor Sanford Kadish made clear that he was uncomfortable with the legal fiction that the acts of the causee are *actually* the acts of the causer, unless the former is truly an automaton or a puppet of some sort, he nonetheless concluded that voluntary acts can be caused. He argued that “[i]t is quite natural to conceive of the secondary actor as causing the actions of the primary actor” in circumstances where the causee’s “conduct may be thought of as the product of the secondary actor’s manipulation.”²³⁰ Combining the framework developed by Professors Hart and Honoré with Professor Kadish’s intuitions, one concludes there can be a strong causal link between the doings of two actors when the second action is intended and orchestrated by the original actor and follows the first regularly and predictably.²³¹

Professor David Lanham’s approach is similar—he contended that “there is a point at which an instigator becomes a principal offender and may be held liable for causing the *actus reus* of the offence even though the immediate actor is another person.”²³² In agreement is Professor Robinson, who argued:

226. *Id.* at 63; *see also id.* at 57–58.

227. FEINBERG, *supra* note 221, at 186.

228. *Id.* at 166

229. *See* Francis Bowes Sayre, *Criminal Responsibility for the Acts of Another*, 43 HARV. L. REV. 689 (1930) (discussing the ways in which a principal may be held liable for the acts of an agent).

230. Kadish, *supra* note 42, at 370, 371.

231. HART & HONORÉ, *supra* note 220, at 19–20, 111–18.

232. David Lanham, *Accomplices, Principals and Causation*, 12 MELB. U. L. REV. 490, 491 (1980).

[I]n cases where the causal link is strong, it is natural to think that the actor actually did satisfy the element [of a crime] himself. . . . [The] spectrum of cases along which the strength of the causal relation varies with the actor's degree of control over the other person or, in other words, with the other person's degree of independent action.²³³

Finally, Professor Keith Smith concluded that “[t]he stronger the accessory’s causal role and the weaker the perpetrator’s, the greater should be the inclination to label the actions as ‘principal’ through innocent agency.”²³⁴ Somewhere along the continuum of causality, the indirect violator becomes a direct violator, and another person’s acts become the causer’s acts by operation of law.²³⁵

Crucially for the purposes of this Article, intent to violate the law (or to invade someone’s right, or to cause harm) is analytically not required for a court to conclude that a defendant caused an act of another.²³⁶ Of course, the state or the plaintiff must prove that the defendant possessed the underlying mens rea required by the substantive offense, whatever it might be.²³⁷ Moreover, as the work of Professor Kadish, of Professors Hart and Honoré, and of others shows, inherent in the very idea of causing acts of others is the causer’s intent that the causee carry out those specific acts.²³⁸ Finally, as the discussion of the case examples will demonstrate, there will be other facts required to show that the defendant is sufficiently in control of the situation to be labeled a causer—perhaps, provision of a tool that enables the causee to perform the act, some information asymmetry between the two parties, passivity of the causee, and so on.²³⁹ The barrier to prove that

233. Robinson, *supra* note 33, at 631, 632.

234. K.J.M. SMITH, A MODERN TREATISE ON THE LAW OF CRIMINAL COMPLICITY 118 (1991).

235. This is to be contrasted with imputation of *liability* (as opposed to *acts*) under derivative theories.

236. This becomes particularly evident when the underlying offense lacks the requirement of intent. *Cf.* PETER CANE, THE ANATOMY OF TORT LAW 32 n.6 (1997) (explaining that secondary liability requires knowledge of facts which make the conduct tortious, but not appreciation of the fact that the conduct was tortious); STEVENS, *supra* note 16, at 253 (“Where the tort alleged does not require a particular state of knowledge or dishonesty, it is not necessary to allege that the procurer knows that the actions carried out amount to a tort.”); Kadish, *supra* note 42, at 347 & n.48, 349, 399 (noting that a defendant may be liable for intending to help a primary actor engage in an act that turns out to be reckless or negligent, and explaining in particular that “the intention requirement [for accomplice liability] is independent of the mens rea requirement for the underlying crime”); Lanham, *supra* note 232, at 509–12 (similar); *see also Lenzi v Miller* [1965] SASR 1, 3 (Austl.) (“[T]he usual statutory direction to do or not to do certain things at peril is aimed more directly at the ‘accessory’ in control of the activity than at the ‘principal’ whose hand does the forbidden act.”). Note that intent to violate the law is generally not required to establish liability for intentional torts such as battery, either. *See supra* note 145 and accompanying text.

237. *See supra* notes 36–40 and accompanying text.

238. *See supra* note 65 and accompanying text. For a particularly sophisticated treatment of causal explanations for human actions, see generally DONALD DAVIDSON, ESSAYS ON ACTIONS AND EVENTS (2d ed. 2001).

239. *See infra* Part III.

a defendant has caused an act of another is high. But if the underlying offense is strict liability, no showing of a causer's intent to violate the law or to invade someone's right is necessary, for such a requirement would contravene the defining characteristic of strict liability.²⁴⁰ According to Professor Lanham, this result is "a perfectly tenable application of the strict liability principle."²⁴¹ He reasoned that there is "no reason why strict liability should not be imposed on the real causer of the harm."²⁴² The causer cannot complain of an unfair burden beyond that which the strict liability nature of the offense already imposes because there is substantial certainty that the acts he or she seeks to have the causee carry out will occur just as intended.²⁴³

III. CAUSAL IMPUTATION IN CRIMINAL LAW AND TORT LAW

A. General Considerations

In this Part, I discuss the application of the principle of causal responsibility in three distinct areas of law—criminal law, the law of trespass, and products liability. These fields have distinct justifications, purposes, and conceptual foundations. Broadly speaking, criminal law is concerned mainly with moral responsibility,²⁴⁴ while "the dominant function" of tort law (to which products liability and trespass belong) is "the prevention of rights-violations and the repairing of harm by the award of remedies."²⁴⁵ Moreover, as between trespass and products liability, there are significant conceptual differences. Trespass is a model of conduct responsibility,²⁴⁶ while products liability involves outcome responsibility;²⁴⁷ to establish the former, the violation of a right

240. See *supra* note 236 and accompanying text. To be sure, courts in criminal cases have made rulings that depart from this framework. For an explanation why this departure is not coherent, see Weiss, *supra* note 41, at 1479–81 (contending that the preferred approach, which is rooted in causation, "generally avoids anomalous, unfair distinctions between the principal and the accomplice," including in strict liability cases); see also *id.* at 1388–89 (discussing the applications of the arguably anomalous "purposeful intent" approach to accomplice liability in strict liability offenses).

241. Lanham, *supra* note 232, at 512.

242. *Id.* at 515.

243. Cf. Mark Kelman, *Strict Liability: An Unorthodox View*, in 4 ENCYCLOPEDIA OF CRIME AND JUSTICE 1512, 1516–18 (Sanford H. Kadish ed., 1983) (discussing a "timeframe" approach to strict liability that shows that even in a strict liability case, the defendant might in some way be "at fault").

244. See Cane, *supra* note 147, at 552, 555.

245. *Id.* at 555.

246. See CANE, *supra* note 236, at 51–52 (noting that trespass is based on responsibility for conduct).

247. TONY HONORÉ, RESPONSIBILITY AND FAULT, 12–15, 23–32, 76–81 (1999).

is sufficient and actual harm need not be proved,²⁴⁸ while the latter requires the existence of an actual injury.²⁴⁹ But all three make use of causal responsibility in some form, explicitly or implicitly. These observations should give us a sense of the pervasiveness of this principle in the common law and thus its significance and value as a substantive tool of interpretation.

Although it does appear in tort law, causal responsibility has found the clearest application in the criminal law doctrine of innocent instrumentality, also referred to as “innocent agency.”²⁵⁰ As discussed in the Introduction, this doctrine applies when a defendant causes a person to perform an act—or, more formally, when a defendant performs an act through the instrumentality of another.²⁵¹ For example, if *D* asks *T*, a third party, to give a drink to victim *V* that, unknown to *T* (but known to *D*) is poisoned, *D* is liable for murder if *V* dies from the poison under this doctrine.²⁵²

It is important to distinguish this route to liability from the “indirect” (or “derivative,” or “secondary”) approach. *D*’s liability cannot be derived from *T*’s because *T* is innocent, and is therefore not convictable of murder.²⁵³ Moreover, as a matter of common sense, this situation could not be fairly described as an instance of aiding and abetting. Even though *T* delivers the drink, it is *D* who is in control of the situation, and *D* has caused *T* to perform the actus reus of murder. *D*, in other words, is not “assisting” *T*, but using *T* as an instrument.²⁵⁴ Reliance on such examples, however, leads to the antecedent question whether criminal cases are even relevant for understanding patent law.²⁵⁵ I believe that they are.

First, like criminal law, patent law today draws heavily on the distinction between direct and indirect liability, which suggests that criminal law is a useful template for analyzing concepts that might also inhere in patent law—and, indeed, to understand situations where the direct-indirect framework breaks down. In this vein, it is worth noting that even in criminal cases many courts have stopped fixating on the

248. *Id.* at 105 n.31.

249. *See, e.g.*, *West v. Caterpillar Tractor Co.*, 336 So. 2d 80, 87 (Fla. 1976).

250. *See supra* note 42 and accompanying text.

251. *See supra* notes 33–38 and accompanying text.

252. Kadish, *supra* note 42, at 370.

253. *Id.* at 327–28.

254. *Id.* at 370–71; *see also supra* note 59 and accompanying text; *cf.* STEVENS, *supra* note 16, at 254 (discussing the difference between “procuring” and “facilitating”).

255. *Cf.* Sherkow, *supra* note 146 (criticizing the importation of various criminal law concepts into patent law).

old common-law labels “accomplice” and “principal,”²⁵⁶ a trend that has been playing itself out in ways that might be contrasted with analogous scenarios in patent law. The Washington Supreme Court, for example, ruled that “a verdict may be sustained upon evidence that the defendant participated . . . as an aider and abettor, even though he was not expressly accused of aiding and abetting and even though he was the only person charged in the information.”²⁵⁷ In so doing, the court underscored the “emptiness of any distinction between principal and accomplice liability.”²⁵⁸ Nonetheless, the terms “accomplice” and “principal” are still routinely mentioned in criminal cases, and the distinction remains significant.²⁵⁹ And these terms have historically been used in patent cases.²⁶⁰

In contrast, the very notion of “indirect” liability in tort law is quite underdeveloped, and, with occasional exceptions, multi-party problems are treated under joint tortfeasance principles.²⁶¹ As discussed above, many pre-1952 patent cases followed the tort approach, eschewing a rigid distinction between direct (performer) and contributory (non-performer) infringement.²⁶² But for some reason—and even though § 271(b) in the Patent Act, in particular, does not use any adjectives to modify the word “infringer”²⁶³—modern patent law continues to cling to the direct-derivative distinction. All this suggests that criminal law, though concerned with social goals that are very different from those of patent law or tort law, is a good analytical model for illuminating issues of multi-party liability that arise in patent cases.

To be sure, the Supreme Court in *Akamai* appeared to decline the plaintiff’s invitation to consider the relevance of criminal law to the problem of divided infringement. In particular, it rejected an analogy

256. See generally Weiss, *supra* note 41, at 1355–62.

257. *State v. McDonald*, 981 P.2d 443, 448 (Wash. 1999) (citations omitted). The same is true in federal cases. See, e.g., *United States v. Lester*, 363 F.2d 68, 72 (6th Cir. 1966) (“[I]t has long been held that an indictment need not specifically charge ‘aiding and abetting’ or ‘causing’ the commission of an offense against the United States, in order to support a jury verdict based upon a finding of either.”). In contrast, courts in patent cases are very particular about whether a direct or indirect theory of infringement is being pursued. See *Limelight Networks, Inc. v. Akamai Techs., Inc. (Akamai III)*, 134 S. Ct. 2111, 2117–20 (2014) (rejecting liability under a theory of indirect infringement but suggesting that the infringement could be re-pled as direct).

258. *McDonald*, 981 P.2d at 448.

259. See, e.g., *Rosemond v. United States*, 134 S. Ct. 1240, 1246, 1249–50 (2014).

260. See *supra* notes 111–112 and accompanying text.

261. See Mark Bartholomew & Patrick F. McArdle, *Causing Infringement*, 64 VAND. L. REV. 675, 694–98 (2011); cf. Robert L. Rabin, *Enabling Torts*, 49 DEPAUL L. REV. 435 (1999) (discussing torts that involve the facilitation of the conduct of others, which do not receive a “secondary” or indirect label).

262. See *supra* Section I.A.

263. See *Cartoon Network LP v. CSC Holdings, Inc.*, 536 F.3d 121, 133 (2d Cir. 2008).

between and § 271(b) and 18 U.S.C. § 2(b), the federal criminal statute that codifies causal imputation. It did so because, to the Court's mind, this statute reflected the common-law doctrine that "two parties who divide all the necessary elements of a crime between them are both guilty."²⁶⁴ The Court stated that "we think it unlikely that Congress had this doctrine in mind when it enacted the Patent Act of 1952, given the doctrine's inconsistency with the Act's cornerstone principle that patentees have a right only to the set of elements claimed in their patents and nothing further."²⁶⁵

This remark, however, does not diminish the relevance of criminal law examples in this Article because I do not rely on the "both guilty" rule reminiscent of the joint tortfeasor scenario in tort. Instead, under causal imputation, the causer is liable but the causee often is not.²⁶⁶ Moreover, the Court made this statement in the context of the narrow § 271(b) issue it was considering, but I contend that § 271(b) does not necessarily govern the causer-causee fact pattern.²⁶⁷ Finally, the statement reflects a serious misunderstanding of the Federal Circuit opinion that the Court was reviewing.²⁶⁸ As confirmed on remand, the patentee was not seeking anything broader than the scope of its claims, and it won the case when the Federal Circuit simply invoked § 271(a), along with the principle of vicarious liability, instead of § 271(b) as it did before.²⁶⁹

Second, and perhaps more important, causation concepts underlying the innocent agency doctrine are trans-substantive. Thus, the aim of the Article is not necessarily to get patent law to borrow from criminal law. Instead, the idea is to use criminal cases to elucidate how

264. *Limelight Networks, Inc., v. Akamai Techs., Inc. (Akamai III)*, 134 S. Ct. 2111, 2119 (2014).

265. *Id.*

266. When the offense is strict liability, the causee is generally also liable unless duress was involved. *See infra* Section III.B.2. This is also true in patent cases in which the causer might be liable for indirect infringement. But in divided infringement cases, the causee-user is *not* liable because not all steps of the claim could be attributed to it—the causal arrow (or vicarious liability) can only lead one to attribution of users' acts to the manufacturer, not the other way. Nonetheless, litigants in cases like *Akamai* have appeared to focus on joint tortfeasance principles (under which the causal arrow runs both ways and both parties' acts are attributable to one another) to the exclusion of causal responsibility. While joint tortfeasance (and joint enterprise) concepts may be appropriately deployed when two manufacturers are involved in the infringement, the "one-way" causal responsibility applies more readily to the customer-end user scenario.

267. *See infra* Section IV.B.2.

268. *See, e.g.*, Jason Rantanen, *Judicial Error and Justice Alito's Hypothetical in Limelight, PATENTLY-O* (June 3, 2014), <http://patentlyo.com/patent/2014/06/judicial-hypothetical-limelight.html> [<https://perma.cc/S2KW-HDHJ>].

269. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai V)*, 797 F.3d 1020, 1022–32 (Fed. Cir. 2015) (en banc) (per curiam).

causal responsibility works in general, and, after this principle is clarified, to argue how the Patent Act should be properly interpreted. Consistent with this point, theorists like Professors Hart and Honoré (and others) view their work on causation as applicable to criminal law, tort law, and even contract law, and it is unclear why the notion of causing acts of others would always be dependent on the area of substantive law one is dealing with.²⁷⁰ Causal responsibility appears to serve different purposes depending on the area of law in which it is deployed, but it functions in roughly the same way throughout the law. Whether the concern is justice, efficiency, or another social goal, acting through another is not a route to shielding oneself from legal responsibility that the law generally approves of.²⁷¹

These intuitions help confirm why causation-based liability does not analytically hinge upon any showing of intent to cause harm, to invade the right of another, or to violate the law in addition to that which is required by the underlying offense.²⁷² At bottom, causal responsibility holds that, once a person engaged in activity qualifying him or her as a causer and demonstrated intent that the causee perform certain acts, those acts become the causer's acts by operation of law.²⁷³ This feature captures the difference between liability based on causal imputation and derivative forms of liability, which typically require scienter in both criminal law and tort law. In sum, while criminal cases provide excellent examples of its operation, the causal responsibility principle itself is not logically rooted in the underlying law.

B. Causal Responsibility in Action

1. Criminal Law

Even though criminal law, like patent law,²⁷⁴ sometimes rigidly fixates on the principal/accomplice and performer/non-performer

270. See generally HART & HONORÉ, *supra* note 220; see also MOORE, *supra* note 212.

271. The independent contractor doctrine can often shield those who hire contractors from the liability of the contractors' torts. But this is because "[a]n independent contractor is one who, in rendering services, *exercises an independent employment or occupation, and represents his employer only as to the results of his work, and not as to the means whereby it is to be accomplished.*" Green v. Soule, 78 P. 337, 339 (Cal. 1904) (emphasis added).

272. See *supra* notes 46, 145 & 236 and accompanying text. There are criminal cases to the contrary, but they demonstrate the fact that not all courts have fully appreciated the idea of causal responsibility. See *supra* note 240 and accompanying text.

273. On this point, see LON FULLER, LEGAL FICTIONS 17 (1967) (discussing the legal fiction of "*qui facit per alium, facit per se*," which is Latin for "he who does the acts through another does the act himself").

274. Cf. *supra* Section I.B (discussing the history of the development of non-performer liability in patent law).

dichotomies, the cases illustrate that these distinctions are not so clear in practice. The doctrine of innocent agency, in particular, exemplifies this blurring. According to Professor Kadish, “[T]he doctrine of causation through an innocent agent has been widely applied in a great variety of situations.”²⁷⁵ For example, in two pre-1952 decisions,²⁷⁶ the Supreme Court rejected lower courts’ formalistic attempts to shield from liability those who seemed clearly responsible for a crime and possessed the requisite mens rea but did not physically perform the actus reus of the offense.

In substance, the situations the Court dealt with presented a kind of a “divided offense” problem in that the entities that had the requisite mental state and performed the actus reus were different. In patent law, the recent *Akamai* decision addressed the question whether a single entity must perform all the elements of a method patent in order for liability to attach.²⁷⁷ In criminal law, the cases that follow make clear that the state can prove up an element of an offense—the actus reus element—by showing that the defendant caused it to be performed by another.²⁷⁸ As long as the defendant has also met the mens rea element, he or she is liable—and the “divided offense” problem is therefore resolved.

In *United States v. Kenofskey*, an insurance agent submitted a false claim to the home office of his employer, and his supervisor signed the documents “without knowledge of their fraudulent character” and put them in the mail in due course.²⁷⁹ The trial court dismissed an indictment charging the agent with fraud by means of interstate mail.²⁸⁰ It reasoned that “[t]he defendant did not mail the letter” and that “the theory that, as he knew the claim would be mailed to the home office, in the usual course of the business, for approval before payment, he knowingly caused it to be deposited” was “too far-fetched to be tenable.”²⁸¹ The Supreme Court unanimously reversed, reasoning that the word “cause” in the applicable statute²⁸² “is used . . . in its well-

275. See Kadish, *supra* note 42, at 372 (citing MODEL PENAL CODE cmt. at 15 n.5 (AM. LAW INST., Tentative Draft No. 1, 1953)); *id.* at 354–75.

276. As discussed earlier, I am assuming that in passing the 1952 Patent Act, Congress was legislating against the background of general legal principles. See *supra* note 124 and accompanying text. Accordingly, pre-1952 cases are particularly relevant.

277. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai V)*, 797 F.3d 1020, 1024–25 (Fed. Cir. 2015) (en banc) (per curiam); see *supra* notes 171–177 and accompanying text.

278. See *supra* notes 33–36 and accompanying text.

279. 243 U.S. 440, 441 (1917).

280. *United States v. Kenofskey*, 235 F. 1019 (E.D. La. 1916). The mail fraud statute the court applied is now codified at 18 U.S.C. § 1341 (2008).

281. *United States v. Kenofskey*, 243 U.S. 440, 442 (1917) (quoting *Kenofskey*, 235 F. at 1020).

282. *Id.*:

known sense of bringing about, and in such sense it is applicable to the conduct of Kenofsky.”²⁸³ Notably, the Court was comfortable with cause-and-effect language even though an actual person mailed the document. It stated that Kenofsky “deliberately calculated the effect of giving the false proofs to his superior officer; and the effect followed.”²⁸⁴ That officer was “the means by which [Kenofsky] offended against the provisions of the statute.”²⁸⁵ The regularity and predictability recognized by Hart and Honoré as necessary for a close causal relation was present in this case.²⁸⁶

A subsequent case, *United States v. Giles*, reinforced these points, and more.²⁸⁷ Notably, the statute at issue made liable anyone “who makes any false entry in any book, report, or statement of the association, with intent . . . to injure or defraud”²⁸⁸ and did not include the act of causing false entries to appear as an *actus reus* of the crime. Although he was only a bank teller and not a bookkeeper, Giles was nonetheless charged with “mak[ing] and caus[ing] to be made” a false entry under the statute.²⁸⁹ The prosecution argued that he did so by “withholding selected deposit slips for three or four days before permitting them to reach the bookkeeping department,” so that the ledger “show[ed] false balances” after processing by the bookkeepers.²⁹⁰ But after a jury convicted Giles of making false entries, the Court of Appeals for the Fifth Circuit vacated the verdict, observing that “the record conclusively shows that defendant neither made the false entries nor did anything that could be considered as a direction to the bookkeeper to make them.”²⁹¹

Acknowledging the majority’s exhortation that criminal statutes are to be read narrowly,²⁹² Judge Sibley nonetheless reasoned in his

“Whoever, having devised . . . any scheme or artifice to defraud . . . shall, for the purpose of executing such scheme or artifice or attempting so to do, place, *or cause to be placed*, any letter, . . . package, writing, . . . in any postoffice, . . . to be sent or delivered by the postoffice establishment of the United States, . . .” shall be punished, etc.

(alterations in original) (emphasis added) (quoting the 1913 version of the federal criminal fraud statute).

283. *Id.* at 443.

284. *Id.*

285. *Id.*

286. HART & HONORÉ, *supra* note 220, at 13–22, 111–14.

287. 300 U.S. 41 (1937).

288. REV. STAT. § 5209 (1918).

289. 300 U.S. at 46 (quoting *Giles v. United States*, 84 F.2d 943, 944 (5th Cir. 1936)); *see also id.* at 45 n.2.

290. *Id.* at 44.

291. *Giles*, 84 F.2d at 946, *rev’d*, 300 U.S. 41.

292. *Giles*, 84 F.2d at 945 (“It is settled law that criminal statutes are to be strictly construed and may not be extended by implication, unless that is clearly demanded by their terms.”).

dissent that “strict construction of a criminal law ought not to be pressed so far” as to excuse Giles from liability.²⁹³ He reasoned that the “caused to be made” language under which Giles was charged “is broader than the statute if allowed to include cases of accident, neglect, or other unintended causations, but if limited to intentional causation it does not exceed the statute”—making clear that, in his view, causal imputation was implicit in the federal criminal laws.²⁹⁴ Judge Sibley argued that “[o]ne may do a criminal deed directly with his own hands,” “contrive indirect mechanical means, as a trap or a spring gun,” make use of “[t]he acts of an animal or an irresponsible human such as a child or a lunatic,” and, finally, of “an innocent human who does not know a crime is going forward”;²⁹⁵ no “direction” was needed for liability. He concluded that the conviction should stand because “false entries are deliberately produced, although through an ignorantly innocent agent” by “the bank employee who concocts the plan and achieves the result.”²⁹⁶

The Supreme Court unanimously reversed the Fifth Circuit, adopting the position of the dissent. The Court reasoned that “[t]o hold that [the statute] applies only when the accused personally writes the false entry or affirmatively directs another so to do would emasculate the statute.”²⁹⁷ The Court again couched its ultimate holding in the language of cause-and-effect, reasoning that “false entries on the ledger were the intended and necessary result of respondent’s deliberate action in withholding the deposit tickets.”²⁹⁸ Significantly, *Giles* also demonstrates that one can be liable for acting through the instrumentality of another even without a specific statutory prohibition of this route to a crime, the rule of lenity notwithstanding.²⁹⁹

Discussing the aftermath of *Giles*, Professor Lanham explained that the causation provision added in 1948 to 18 U.S.C. § 2, the federal “aiding and abetting” statute, “removes all doubt that one who causes the commission of an indispensable element of the offence by an innocent agent or instrumentality is guilty as a principal.”³⁰⁰ The

293. *Id.* at 947 (Sibley, J., dissenting).

294. *Id.* at 946.

295. *Id.* at 946–47.

296. *Id.* at 947.

297. *United States v. Giles*, 300 U.S. 41, 49 (1937).

298. *Id.*

299. *See, e.g., United States v. Dauray*, 215 F.3d 257, 264–65 (2d Cir. 2000).

300. Lanham, *supra* note 232, at 502–03; *see also* Andrew White, Case Note, *The Scope of Accomplice Liability Under 18 U.S.C. § 2(b)*, 31 CASE W. RES. L. REV. 386, 393 n.63 (1980) (quoting H.R. REP. NO. 80-304, at A5). This provision was further amended in 1951 to yield the version of 18 U.S.C. § 2(b) that is in force today. There is similar state legislation. *See, e.g., WASH. REV. CODE* § 9A.08.020 (2011).

present version of the causation subsection states that “[w]hoever willfully causes an act to be done which if directly performed by him or another would be an offense against the United States, is punishable as a principal.”³⁰¹ This form of liability is not derivative,³⁰² and it applies to all federal crimes, be they murder or strict liability offenses.³⁰³

Numerous other federal and state decisions are to the same effect. For example, the Court of Appeals for the Eighth Circuit in *Nigro v. United States* affirmed a conviction of a physician for illegally selling narcotics to an addict despite the fact that all the physician did was write prescriptions, and pharmacists made the sales.³⁰⁴ The defendant argued that there was “no proof that at the time the sales alleged in the indictment were made the druggists had guilty knowledge of the fictitious character of the prescriptions”³⁰⁵ and therefore there was “no crime . . . to aid and abet.”³⁰⁶ The Eighth Circuit disagreed, concluding that “a registered physician who issues a prescription [to an addict] . . . participates in the illegal sale and is guilty of ‘selling’ within the meaning of the statute.”³⁰⁷ According to Professor Lanham, this result can be best justified on the causation principle elucidated in *Giles*,³⁰⁸ whereby the prescribing doctor “is regarded as the true principal by virtue of having caused the actus reus.”³⁰⁹ This case confirms the

301. 18 U.S.C. § 2(b) (2012). For an explanation why the word “willfully” was not intended to create an additional mens rea hurdle apart from the requisite mental state for the underlying crime, see Weiss, *supra* note 41, at 1447–51.

302. See *supra* notes 38–46, 236–240 and accompanying text; see also KIP SCHLEGEL, JUST DESSERTS FOR CORPORATE CRIMINALS 7–8 (discussing the interaction of substantive strict liability statutes and 18 U.S.C. § 2(b)).

303. For a leading example predating codification of 18 U.S.C. § 2(b) (and using the language of aiding and abetting) but illustrating the fundamental principles at issue, see *United States v. Dotterweich*, 320 U.S. 277, 284 (1943) (“[U]nder [a strict liability statute] a corporation may commit an offense and all persons who aid and abet its commission are equally guilty.”); *cf. id.* at 286:

There is no proof or claim that [the defendant] ever knew of the introduction into commerce of the adulterated drugs in question, much less that he actively participated in their introduction. Guilt is imputed to the respondent solely on the basis of his authority and responsibility as president and general manager of the corporation.

(Murphy, J., dissenting); *United States v. Graves*, 143 F.3d 1185, 1188 n.3 (9th Cir. 1998) (“[T]he knowledge of an aider and abettor need be no greater than the knowledge of the principal.”); and Kadish, *supra* note 42, at 347 (“The requirement of intention for complicity liability is satisfied by the intention of the secondary party to help or influence the primary party to commit the act that resulted in the harm.”). It must be added that examples of aiding and abetting of strict liability crimes or causing such crimes through an intermediary are rare.

304. 117 F.2d 624, 630–32 (8th Cir. 1941).

305. *Id.* at 630.

306. *Id.*

307. *Id.* at 631 (emphasis added).

308. Lanham, *supra* note 232, at 502.

309. *Id.* at 501.

intuition that proof of the actus reus element via causal responsibility does not require duress or other forms of control over another person.

This principle, of course, is not limited to federal cases. For example, the Supreme Court of Appeals of West Virginia explained the principles behind “non-derivative” non-performer liability as follows:

If the party who actually did the act was innocent of intentional wrong, and the act on his part was by procurement of another, it imputes the criminal intent to that other and makes him the guilty party, although he was not in any sense an accomplice, co-conspirator, or aider and abettor of the actor.³¹⁰

The court also quoted from a treatise noting that the law holds liable one “from whose sole . . . will comes a criminal transaction . . . whatever physical agencies he employs, and whether he is present or absent when the thing is done.”³¹¹ Even if the physical agency is “an animate object like a human being,” the law punishes “him whose will set the force in motion.”³¹² As in the federal cases, the idea here is that the perpetrator used a human being to perform an actus reus of the offense just as one would use a “non-human causal link,” like a hammer.³¹³

An additional observation is that all these outcomes do not logically depend on actual innocence of the “innocent agent.” Indeed, numerous cases exist in which both the agent and the causer are convictable of some crime.³¹⁴ Perhaps the most evocative stylization of this situation, discussed by some courts, is that of Iago and Othello. According to Professor Kadish, Iago should be convicted of murdering Desdemona, while Othello, the “semi-innocent” agent acting out of passion, should possibly be convicted of a lesser crime, perhaps manslaughter.³¹⁵ Professor Glanville Williams agreed: “If a person can act through a completely innocent agent, there is no reason why he should not act through a semi-innocent agent. It is wholly unreasonable that the partial guilt of the agent should operate as a defence to the instigator.”³¹⁶ As the next Subsection shows, in trespass cases the causer can be liable under what might better be called a “human

310. *State v. Bailey*, 60 S.E. 785, 787 (W. Va. 1908).

311. *Id.* (quoting JOEL PRENTISS BISHOP, COMMENTARIES ON THE CRIMINAL LAW § 649, at 392 (Boston, Little, Brown & Co., 7th ed. 1882)).

312. *Id.*

313. *See supra* notes 33–41 and accompanying text.

314. SANFORD H. KADISH ET AL., CRIMINAL LAW AND ITS PROCESSES: CASES AND MATERIALS 630–32 (8th ed. 2007).

315. Kadish, *supra* note 42, at 387.

316. GLANVILLE WILLIAMS, TEXTBOOK ON CRIMINAL LAW 374 (2d ed. 1983).

instrumentality” theory,³¹⁷ even when the causee is liable for exactly the same (as opposed to a lesser) offense.

2. Trespass

The law of trespass also follows the principle of causal responsibility. Consider § 158 of the *Restatement of Torts*, which appears in both the *First* and *Second Restatement*.³¹⁸ This section states that “one is subject to liability to another for trespass, irrespective of whether he thereby causes harm to any legally protected interest of the other, if he intentionally . . . enters land in the possession of the other, or causes a thing or a third person to do so.”³¹⁹ It treats the performer of the intrusion—“a third person”—as equivalent to an inanimate object—“a thing”—reminding one of Professor Robinson’s description of the equivalency between human and non-human causal links implied in 18 U.S.C. § 2(b).³²⁰

In either the “third person” or the “thing” scenario, the effect of § 158 is to make the causer of the intrusion liable as though the causer himself or herself had intruded, and the performer/non-performer distinction is without great significance. Importantly, comment *j* to this section makes clear that duress or even a legal obligation is not required to conclude that the defendant caused a third party to enter the land:

If, by any act of his, the actor intentionally causes a third person to enter land, he is as fully liable as though he himself enters. Thus, if the actor has commanded or requested a third person to enter land in the possession of another, the actor is responsible for the third person’s entry if it be a trespass. *This is an application of the general principle that one who intentionally causes another to do an act is under the same liability as though he himself does the act in question.* So too, one who by physical duress causes a third person to go upon the land of another or who carries the third person there against his will is liable as a trespasser, although the third person may not be liable.³²¹

317. This label may be more accurate because the doctrine does not hinge on the innocence of the human instrumentality.

318. An argument based on this *Restatement* section was made in an amicus brief, but it did not theorize causal responsibility. See Brief of Amicus Curiae William Mitchell College of Law Intellectual Property Institute in Support of Respondent at *20–21, *Glob.-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754 (2011) (No. 10-6).

319. RESTATEMENT (SECOND) OF TORTS § 158 (AM. LAW INST. 1965). The word “intentional” here is used not in the sense “not accidental,” but as product of a deliberate act. No awareness of any illegality is required, however. See *id.* § 166; see also CANE, *supra* note 236, at 32 n.6; KEETON ET AL., *supra* note 168, § 13, at 73–75. For case examples, see *Murrell v. Goodwill*, 106 So. 564, 565–66 (La. 1925); and *Castleberry v. Mack*, 167 S.W.2d 489, 490 (Ark. 1943).

320. See *supra* note 33 and accompanying text.

321. RESTATEMENT (SECOND) OF TORTS § 158 cmt. j (AM. LAW INST. 1965) (emphasis added).

This comment thus makes clear the causer and the causee are treated equally and can be both liable for the same trespass.³²² The causee, of course, might be exonerated if duress is involved, but the causer is liable in any event. Given this *Restatement* section, the Supreme Court's observation in *Akamai* that the parties could "point . . . to no tort case in which liability was imposed because a defendant caused an innocent third party to undertake action that did not violate the plaintiff's legal rights"³²³ is surprising. Though rare, such cases surely exist,³²⁴ and the discussion of the effect of duress in comment *j* to § 158 reflects this state of affairs.

Also worthy of note is the implication that the liability of the causer is not "derivative" or "indirect" and the fact that no culpable intent (e.g., intent to violate the law) need be shown to establish the liability of either the causer or the causee.³²⁵ The intent to have another person enter the land that happens to belong to a third party, even when the conclusion as to ownership is formed by mistake, is all that must be proven for liability of the causer.³²⁶

While there are of course significant differences between patent infringement and trespass, the two torts have often been compared, and the parallel is instructive.³²⁷ Both, after all, are strict liability offenses premised on conduct responsibility.³²⁸ But because it fails to distinguish causers from aiders and abettors, patent law generally requires scienter on the part of the causer—while trespass does not. The difference in the requisite mental states to prove liability of the causer relative to the

322. Case law bears this out. *See, e.g.*, *Kropka v. Bell Tel. Co. of Pa.*, 91 A.2d 232 (Pa. 1952). The liability of the causees may lie in spite of their relative "innocence" under the circumstances because of tort law's aversion to excuses. *See generally* Goldberg, *supra* note 151.

323. *Limelight Networks, Inc. v. Akamai Techs., Inc. (Akamai III)*, 134 S. Ct. 2111, 2119 (2014).

324. *See, e.g.*, *Cunningham v. Pitzer*, 2 W. Va. 264, 273 (1867) ("If the defendant is not liable [for trespass], those who forced him to commit the act are, whether he is or not."); *see also* *Waller v. Parker*, 45 Tenn. 476 (1867). The courts in these cases found that the causees did not violate the plaintiffs' legal rights because of absence of voluntary action (i.e., due to duress). *But cf.* Goldberg, *supra* note 151 (arguing that tort law is generally not very receptive to duress defenses and other excuses).

325. Even in criminal trespass cases, mistake of fact might not be a defense. *See, e.g.*, *State v. Gould*, 40 Iowa 372, 374 (1875).

326. While some courts have begun to require negligence for proof of trespass, *see, e.g.*, *Bailey v. S.J. Groves & Sons Co.*, 230 S.E. 2d 267, 269–71 (W. Va. 1976), they still do not create heightened mens rea hurdles for the liability of the causer versus the causee.

327. *See, e.g.*, *Consolidated Fruit-Jar Co. v. Wright*, 94 U.S. 92, 96 (1876) ("A patent for an invention is as much property as a patent for land. The right rests on the same foundation, and is surrounded and protected by the same sanctions."). *But cf.* ROBIN FELDMAN, *RETHINKING PATENT LAW* 211–12 (2012) (distinguishing between patent infringement and trespass).

328. *But cf. supra* note 326 and accompanying text (noting that some courts have abandoned strict liability for trespass generally).

causee in patent infringement law versus the law of trespass is difficult to explain, particularly given that § 158 reflects “*the general principle that one who intentionally causes another to do an act is under the same liability as though he himself does the act in question.*”³²⁹

3. Products Liability

Manufacturers of defective products are routinely held responsible, without a hint of a “divided” or “indirect” tort problem, even though they themselves do not perform an act that directly causes a compensable injury and thus results in the completed tort.³³⁰ In a well-known case, *Codling v. Paglia*, Chrysler was held strictly liable (i.e., liable without fault) for injuries to persons harmed by someone driving one of its vehicles when the car’s steering wheel got stuck, leading to a head-on collision.³³¹ The New York Court of Appeals emphasized the passivity of the driver and the fact that the manufacturer was completely in control with respect to the defect. Because “the product in the hands of the consumer is often a most sophisticated and even mysterious article,” the court thought it unrealistic to expect the consumer to discover a latent defect so as to prevent the accident.³³² That is on the maker of the defective car: the driver is merely an unwitting instrument who actuates the harm by doing what he or she would normally do with the car—driving it. Thus, when the “intended use”³³³ of a product injures a third party, the driver’s damage-causing act is effectively imputed to the manufacturer. As long as the product has not been modified or misused,³³⁴ the presence of intermediaries

329. RESTATEMENT (SECOND) OF TORTS § 158 cmt. j (AM. LAW INST. 1965) (emphasis added).

330. See, e.g., *West v. Caterpillar Tractor Co.*, 336 So. 2d 80, 86–87 (Fla. 1976). While courts have moved away from a pure strict liability approach in design defect cases, see Aaron D. Twerski & James A. Henderson, Jr., *Manufacturers’ Liability for Defective Product Designs: The Triumph of Risk-Utility*, 74 BROOK. L. REV. 1061, 1062–63 (2009), strict liability still holds in cases involving manufacturing defects, *id.* at 1063.

331. 298 N.E.2d 622 (N.Y. 1973).

332. *Id.* at 627.

333. *Greenman v. Yuba Power Prods., Inc.*, 377 P.2d 897, 901 (Cal. 1963). Somewhat controversially, perhaps, many states have extended the manufacturer’s liability from intended uses to uses that are “reasonably foreseeable.” See, e.g., *Barker v. Lull Eng’g Co.*, 573 P.2d 443, 454 (Cal. 1978); see also Richard A. Epstein, *Plaintiff’s Conduct in Products Liability Actions: Comparative Negligence, Automatic Division and Multiple Parties*, 45 J. AIR L. & COMM. 87, 91 n.10 (1979). The “intended use” formulation, however, appears uncontroversial.

334. See generally David G. Owen, *Products Liability: User Misconduct Defenses*, 52 S.C. L. REV. 1 (2000).

(retailer, user, etc.) is immaterial to the level of scienter required.³³⁵ It is strict liability either way.

While strict products liability for manufacturing defects is a doctrine of relatively recent vintage, the rule that the automaker is not relieved from direct liability because another entity is interposed between it and the injured party has long been a part of the law. In the nineteenth century, the much-maligned privity doctrine could, for example, exonerate a manufacturer from liability for injuries even to the driver when he or she bought a product from a dealer rather than the manufacturer.³³⁶ The doctrine did make exceptions for products that are “imminently dangerous”³³⁷ and also ensnared manufacturers who actually knew of the defect³³⁸—in effect requiring scienter—but, in general, privity functioned to shield manufacturers from liability if an intermediary was involved. Though based on contractual relationships as sources of tort duty, this doctrine also relied on the concepts of “remoteness” and “directness,” which are reminiscent of patent law’s handling of liability of those who do not themselves perform patented steps.³³⁹

Privity, of course, has been mostly gone from tort law for many years—since Judge Benjamin Cardozo recognized in the iconic *MacPherson v. Buick Motor Co.* case that it is the manufacturer, and not the retailer or the user, who is truly responsible for the injuries.³⁴⁰ The court found that the manufacturer has a duty to guard against negligent conduct with respect to the driver in part because “[t]he maker of this car supplied it for the use of purchasers from the dealer”³⁴¹ and remarked that “[t]here is here no break in the chain of cause and effect” that would bar liability.³⁴² To get around the vestiges of privity, some courts continued to speak of a manufacturer’s “constructive control” of an article after it left the manufacturer’s hands to justify the

335. To be sure, the items of recovery in products liability cases relate to physical injury, *see, e.g., Greenman*, 377 P.2d at 700, which is obviously not the form of injury one sees in patent law. The purpose of this comparison, however, is that primary liability can be imposed on a defendant even though there may be human intermediaries between it and the victim.

336. For an early twentieth century example of privity in action, *see Olds Motor Works v. Shaffer*, 140 S.W. 1047 (Ky. 1911), *overruled by C. D. Herme, Inc. v. R. C. Tway Co.*, 294 S.W.2d 534 (Ky. 1956); *see also Shepard v. Kensington Steel Co.*, 262 Ill. App. 117 (1931). Of course, privity also barred claims of injured third parties against the manufacturer.

337. *Thomas v. Winchester*, 6 N.Y. 397, 408 (1852).

338. *Lewis v. Terry*, 43 P. 398, 399 (Cal. 1896).

339. *See William Prosser, The Assault Upon the Citadel (Strict Liability to the Consumer)*, 69 YALE L.J. 1099, 1105, 1130 (1960); *see also id.* at 1124 (discussing “a blanket rule which makes any supplier in the chain liable directly to the ultimate user”).

340. *MacPherson v. Buick Motor Co.*, 111 N.E. 1050, 1053 (N.Y. 1916).

341. *Id.*

342. *Id.*

imposition of liability.³⁴³ In general, though, courts in modern tort cases have not been troubled in the least about imposing direct liability on the manufacturer, even though the retailer sold the article and the user performed the act that was the immediate cause of damage.³⁴⁴

Indeed, even though parties like a retailer (and, in third-party injury cases, also a user) are interposed between the manufacturer and the plaintiff, it is often easy to conclude that the manufacturer itself “directly” caused the accident by supplying a product that was dangerous in its normal, intended mode of operation.³⁴⁵ It is immaterial, of course, that the manufacturer was not there when the accident occurred.³⁴⁶ The policy rationales for this outcome are compelling—as Justice Traynor reasoned, “[T]here is greater reason to impose liability on the manufacturer” than on a party “who is but a conduit of a product that he is not himself able to test.”³⁴⁷ In the work of Professor (and now Judge) Guido Calabresi, these intuitions were formalized in the strict liability context under the principle of “cheapest cost avoider,”³⁴⁸ a term that refers to an entity that can help prevent the harm at lower cost than someone else.³⁴⁹

343. *Ybarra v. Spangard*, 154 P.2d 687, 691 (Cal. 1944).

344. The collapse of privity is generally traced to the expanding notion of duty. See John C.P. Goldberg & Benjamin C. Zipursky, *The Moral of MacPherson*, 146 U. PA. L. REV. 1733, 1812 (1998). But privity can also be viewed as a rule of no causation as a matter of law. See, e.g., *Minton v. Krish*, 642 A.2d 18, 19–21 (Conn. App. 1994) (discussing the causal underpinnings of privity in the case of *Howard v. Redden*, 107 A. 509 (Conn. 1919), which addressed the issues of “causal connection,” “conscious agent,” “and intervening cause”). Once the duty limit was lifted, the causation question became, according to Prosser, practically determinative, even in actions where proof of fault was required. See Prosser, *supra* note 339, at 1115 (“[I]n cases against manufacturers, once the cause of the harm is laid at their doorstep, a jury verdict for the defendant on the negligence issue is virtually unknown.”).

345. See *Greenman v. Yuba Power Prods., Inc.*, 377 P.2d 897, 901 (Cal. 1963):

To establish the manufacturer’s liability it was sufficient that plaintiff proved that he was injured while using the [accused device] in a way it was intended to be used as a result of a defect in design and manufacture of which plaintiff was not aware that made the [accused device] unsafe for its intended use.

346. Cf. *supra* note 312 and accompanying text (stating that “the law punishes ‘him whose will set the force in motion’”) (citation omitted).

347. *Escola v. Coca Cola Bottling Co. of Fresno*, 150 P.2d 436, 443–44 (Cal. 1944) (Traynor, J., concurring).

348. CALABRESI, *supra* note 63, at 135–48; see also Guido Calabresi & Jon T. Hirschoff, *Toward a Test for Strict Liability in Torts*, 81 YALE L.J. 1055, 1060–67 (1972) (arguing the cheapest cost avoider should be liable regardless of fault); Megan L. Richardson, *Revisiting Strict Product Liability: Taking Law and Economics Further*, 35 OSGOODE HALL L.J. 195, 197 (1997) (defending the effectiveness of the cheapest cost avoider approach).

349. Although the Article focuses on who is the cheaper cost avoider as between the end user and the manufacturer, the cheapest cost avoider can, of course, often be the plaintiff. Moreover, this specific rationale does not translate to the divided infringement context in patent law because the end user cannot generally be held liable in those cases. But the broader notion that acts of certain intermediaries could be causally imputed to the party with greater access to the relevant

Justice Traynor's reference to a "conduit" calls to mind the causal principles underlying innocent agency, including the notion of the "human causal link,"³⁵⁰ and even stronger language along these lines has been used. Dean William Prosser, for example, stated that one reason why courts rejected privity was that "[t]he middle man is no more than conduit, *a mere mechanical device*, through whom the thing sold is to reach the ultimate user."³⁵¹ Simply putting into the stream of commerce a product that fails when used as intended is enough to trigger a duty, and no resort to notions of indirect or vicarious liability is needed. In contrast, courts in patent cases have not taken account of the sensible principles underlying the collapse of privity, and in fact maintained its vestiges by creating significant barriers for holding manufacturers liable for patent infringement in analytically parallel situations.

Leaving the analytical structure of liability in products cases aside, one may note that even policy debates in the law of products liability have resembled in some ways the debates in patent law. For example, it has been argued that expansive approaches to liability might damage the innovation infrastructure, and the economy in general might suffer.³⁵² And it has been said that companies would be deterred from placing novel but unproven products on the market for fear of liability for as-yet unknown defects.³⁵³ Patent law has similar tradeoffs: although infringement is an "unlawful activity,"³⁵⁴ expansive liability that would squash downstream inventive activity is not desirable.

Of course, compensatory aspects of the two areas of law are different—patent infringement actions are meant to make up for patentees' forgone royalties (or lost sales, if provable)³⁵⁵ and encourage innovation by future inventors,³⁵⁶ while products liability actions typically provide monetary recourse for physical injuries. But although

information, even though that party might not physically perform one or more relevant acts, applies equally to indirect and divided infringement.

350. See *supra* note 34 and accompanying text.

351. Prosser, *supra* note 339, at 1123 (emphasis added).

352. For a critique of modern developments in tort along these lines, see PETER W. HUBER, LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES 14–15, 155–56, 170–71, 224–25 (1988).

353. See, e.g., *id.*; see also Richard J. Mahoney & Stephen E. Littlejohn, *Innovation on Trial: Punitive Damages Versus New Products*, 246 SCI. 1395 (1989).

354. Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923, 1937 (2016) (Breyer, J., concurring).

355. And, in proper circumstances, backed up by an injunction. 35 U.S.C. § 284 (2012); see eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388 (2006).

356. See generally Ted Sichelman, *Purging Patent Law of "Private Law" Remedies*, 92 TEX. L. REV. 517 (2014).

the latter function sounds far more important, it must be remembered that we live in a world of extensive first-party insurance, with tort actions sometimes characterized as avenues of last resort.³⁵⁷ Moreover, as noted, the *deterrent* function of damages in products liability has the same overall features as in patent law—we want to discourage particular unlawful behaviors without putting companies out of business or making them so risk-averse as to discourage innovative behavior.³⁵⁸ But, to my knowledge, no one has proposed dealing with these issues in products liability law by recharacterizing the liability of manufacturers as indirect or vicarious. As we will see, that form of liability is generally reserved for offenders who have a much smaller causal role than that which manufacturers typically do in products liability cases.

C. Smaller Causal Role of Aiders and Abettors as a Justification for a Higher Level of Mens Rea

1. Criminal Law

Significant causal contributions made by defendants in innocent agency-type cases are distinguishable from the minimal causal requirements for holding defendants liable for aiding and abetting, a feature that underscores the difference in the two routes to liability.³⁵⁹ Consider the case of *State ex rel. Martin v. Tally*, in which the Supreme Court of Alabama allowed a murder case to proceed to trial on an

357. See John G. Fleming, *The Collateral Source Rule and Loss Allocation in Tort Law*, 54 CALIF. L. REV. 1478, 1546–49 (1966).

358. In addition, the differences in the effect on the behavior of potential *plaintiffs* between products liability law and patent law must be considered. Professor Keith Hylton argued that, while “few potential victims in the torts context make investments conditional on the guarantee of compensation from the tort system,” the situation is different in patent law: “If potential patentees discover that their patents can be infringed without full compensation, they will have a diminished incentive to innovate.” Keith N. Hylton, *Enhanced Damages for Patent Infringement: A Normative Approach*, 36 REV. LITIG. (forthcoming 2017) (manuscript at 9, 10), https://static1.squarespace.com/static/54c31bf9e4b02f4c0b4203e6/t/585b378af7e0abfdd0b0d213/1482373004839/Hylton_Draft.pdf [<https://perma.cc/DHU4-X2AE>].

359. Some criminal law theorists have characterized accomplice liability as “noncausal” for this reason. See, e.g., Joshua Dressler, *Reassessing the Theoretical Underpinnings of Accomplice Liability: New Solutions to an Old Problem*, 37 HASTINGS L.J. 91, 120, 124–26 (1985); see also Bartholomew, *Cops, Robbers, and Search Engines*, *supra* note 133, at 840–42; Douglas Husak, *Abetting a Crime*, 33 L. & PHIL. 41, 60–61 (arguing that holding causally minor accomplices and principals equally liable violates the principle of fair labeling). The “noncausal” characterization has been contested. See Michael S. Moore, *Causing, Aiding, and the Superfluity of Accomplice Liability*, 156 U. PA. L. REV. 395, 402–20 (2007) (contending that there are problems with characterizing accomplice liability as noncausal or structurally distinct from direct liability).

aiding-and-abetting theory.³⁶⁰ Tally learned that a telegram had been sent to the victim, one Ross, warning him that the Skelton brothers were intending to kill Ross. Tally then sent his own message to the telegraph operator of the town where Ross ended up as he fled from the Skeltons. Tally's telegram said: "Do not let the party warned get away. Say nothing."³⁶¹ This message apparently caused a delay in the delivery of the warning telegram to Ross, who was killed by the Skeltons in due course.

Tally's argument for innocence was that Ross would have been murdered whether or not he received the first telegram in time. In other words, as the court framed it, the question was whether it is "essential to [Tally's] guilt that his act [of interfering with the warning telegram] should have contributed to the effectuation of [the Skeltons'] design—to the death of Ross?"³⁶² In answering the question, the court noted that the state would not even have to prove but-for causation³⁶³—a mere possibility that Tally's letter could have made a difference would suffice:

The assistance given . . . need not contribute to the criminal result in the sense that but for it the result would not have ensued. It is quite sufficient if it facilitated a result that would have transpired without it. It is quite enough if the aid merely rendered it easier for the principal actor to accomplish the end intended by him and the aider and abettor, though in all human probability the end would have been attained without it. If the aid in homicide can be shown to have put the deceased at a disadvantage, to have deprived him of a single chance of life which but for it he would have had, he who furnishes such aid is guilty, though it cannot be known or shown that the dead man, in the absence thereof, would have availed himself of that chance . . .³⁶⁴

Scholars have been troubled by the minimal actus reus—and a correspondingly small (if not nonexistent) causal contribution to the offense—that is sufficient for an aiding-and-abetting conviction.³⁶⁵ Even

360. 15 So. 722, 722 (Ala. 1894).

361. *Id.* at 734.

362. *Id.* at 732.

363. Interestingly, in a recent indirect infringement case, the Federal Circuit arguably adopted the higher but-for causation standard for proving indirect infringement—a standard that is more characteristic of civil as opposed to criminal cases. *See Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 843 F.3d 1315, 1330–31 (Fed. Cir. 2016). Thus, courts in patent cases have set rigorous criminal law-like mental state requirements and combined them with the demanding tort law-like standards of proof of causation—rather than with the more permissive approach that one sees in *Tally*.

364. *Id.* at 738–39. The modern approach is the same. *See, e.g., State v. Carothers*, 525 P.2d 731, 736 (Wash. 1974):

The legislature has said that anyone who participates in the commission of a crime is guilty of the crime and should be charged as a principal, regardless of the degree or nature of his participation. Whether he holds the gun, holds the victim, keeps a lookout, stands by ready to help the assailant, or aids in some other way, he is a participant.

365. Bartholomew, *Cops, Robbers, and Search Engines*, *supra* note 133, at 841. To be sure, courts require at least a possibility that the accomplice's act matter to the final outcome—this is

though aiders and abettors are usually, and for good reasons,³⁶⁶ shielded by rigorous mens rea barriers, some have further advocated for lesser penalties for minor causal contributors like Tally.³⁶⁷ These commentators ask whether it makes sense for someone who sent a telegram that might not have even mattered to the outcome be treated the same way as the person who ended the victim's life.

In contrast, there is much less sympathy for the major causal contributors of the kind that one sees in the innocent agency cases, or for masterminds like that discussed by Professor Moore.³⁶⁸ While troubled by the very idea that a person could be responsible for the crime of a different individual, Professor Douglas Husak “concede[d] that the act of one individual can be attributed to another” in the innocent agency-type case.³⁶⁹ For his part, Professor Joshua Dressler argued that, while we may want to treat minor accomplices somewhat more generously than we do now, “[l]eniency toward accomplices causally tied to the wrongdoing, or actually in control of the events that transpire, seems counter-intuitive.”³⁷⁰ Tort scholars have reached similar conclusions: “[T]he law is rightly concerned to ensure that causally important parties, rather than less (causally) important ‘peripheral parties,’ compensate the victims of torts”³⁷¹ Unlike those who use innocent agents to commit offenses, mere aiders and abettors are, almost by hypothesis, generally not very causally important. While, as a result, we typically hold aiders and abettors liable only upon proof of bad intent, the rationale for the elevated mens rea breaks down when the defendant is a major causer.

what the *Tally* court means when it refers to “a single chance of life.” 15 So. at 739; cf. Moore, *supra* note 359, at 432–40 (discussing the notion of “chance-raising” accomplices).

366. See *infra* notes 388–390 and accompanying text.

367. See, e.g., Dressler, *supra* note 359. This approach is reminiscent of comparative causation in tort. See *supra* notes 214–215 and accompanying text (describing how tortfeasors’ different levels of causal contribution affect the extent of their liability).

368. See *supra* notes 216–218 and accompanying text (showing that one can be a major causal contributor to actionable harm without physically performing acts constituting elements of an offense).

369. Husak, *supra* note 359, at 57. Professor Husak contended that “when the parties are related through *agency*, when the alleged principal is an *innocent instrumentality* of the aider, or when the parties are *co-perpetrators*,” attribution is proper because all these cases involve “more than mere assistance.” *Id.* As have many other commentators, Professor Husak also argued against the concept of derivative liability: “[T]he basic mistake in positive law is its treatment of complicity as a form of derivative liability.” *Id.* at 58.

370. Dressler, *supra* note 359, at 118–19.

371. Paul S. Davies, *Accessory Liability for Assisting Torts*, 70 CAMBRIDGE L.J. 353, 364 (2011) (citing Jane Stapleton, *Duty of Care: Peripheral Parties and Alternative Opportunities for Deterrence*, 111 L.Q. REV. 301, 301–02 (1995)).

2. Tort Law

Aiding-and-abetting liability also appears in tort law. For example, in *Halberstam v. Welch*, a woman was held liable for wrongful death because she supported her murderous boyfriend and knew that she was enjoying a lifestyle of wealth thanks to his crimes.³⁷² Recently, there have been numerous claims of aiding and abetting of civil fraud.³⁷³ All of these cases required an elevated mental state, and rightly so because, relative to the actual murderer or fraudster, the level of participation the accused party in the commission of a tort in these cases is typically that of only a minor causer. Indeed, the law should be quite careful before holding a significant other or an accountant liable for what appear to be everyday life activities without imposing a requirement of proof of culpable intent. No such concern typically exists in trespass “causer” cases or products liability claims because the defendants are major causal contributors fully in control of the relevant events, while the causees or users are merely passive instrumentalities. Without always clearly saying so, tort law recognizes the causal responsibility principle and makes distinctions between causers and aiders and abettors that are very similar to those one encounters in criminal law. A non-performer (and, a fortiori, a partial performer)³⁷⁴ can be held directly liable in appropriate circumstances, and the foregoing cases confirm that the causal responsibility principle that justifies this result is pervasive.

IV. IMPLICATIONS FOR PATENT LAW

A. *The Value of Causal Responsibility*

What does all this mean for patent law? Are there cases in which end users who perform elements of method claims are mere “human causal links” rather than active participants in the offense who only derive some measure of support from the defendant? Undoubtedly, there are. Many manufacturer-user cases fall into this pattern, and we should not hesitate to apply the causal responsibility principle against

372. 705 F.2d 472, 483 (D.C. Cir. 1983).

373. See Eugene J. Schiltz, *Civil Liability for Aiding and Abetting: Should Lawyers Be “Privileged” to Assist Their Clients’ Wrongdoing?*, 29 PACE L. REV. 75, 76–85 (2008) (noting that courts have experienced a flood of litigation seeking civil liability for aiding and abetting and how “in almost every one of those cases, they have recognized the viability of this theory of liability”).

374. Cf. *supra* note 120 and accompanying text (exploring the similarity between performers and partial performers in cases in which causal responsibility is implicated).

the manufacturers in such situations.³⁷⁵ In many cases in which certain defendants now fall into the indirect infringer box, imposition of liability without resort to scienter would not only be consistent with the common law causal imputation principles explicated in the previous Part, but it would make economic and logical sense as well.

Manufacturers in many scenarios I have been discussing in this Article operate in the field of technology that the patent covers, which places them in a much better position than users to prevent the performance of steps covered by patent claims.³⁷⁶ It is not difficult to conclude that the manufacturers are responsible for users' acts³⁷⁷ and are cheaper cost avoiders than the users, even though the users actually execute the steps of the claimed methods.³⁷⁸ Moreover, when a device or feature provided can be good for only one thing in its normal mode of operation³⁷⁹—and that one thing ends up being covered by steps of some method claim—the patent search burdens on the manufacturer are no

375. Even if a few individual users might become aware that they are infringing (as through a demand letter), in many cases of the sort I address in this Article a large majority of users would not normally be aware of the patent, suggesting that the user base is passive in the aggregate. In other words, the goal is to examine how the average user would be expected to behave in a given scenario—and we see this approach in products liability cases. *See supra* Section III.B.3. Perhaps, if a defendant can prove that particular users to whom they provided infringing instrumentalities knew of the patent and were, therefore, not passive, the defendant could show that causation is cut off with respect to those users, and damages should be reduced accordingly (assuming that the defendant-manufacturer's conduct and mental state do not otherwise meet the current elements for liability under § 271(b) or (c)). The use of the reasonable royalty approach to damages might complicate this analysis somewhat, *see* Karshtedt, *supra* note 1, at 955–76; *see also id.* at 921 n.42, but it should still be sufficiently flexible to allow a reduction of damages. Potentially, this approach could reduce incentives for certain plaintiffs to approach end users with patent demand letters. *See infra* notes 382–383 and accompanying text.

376. Indeed, while end users would need to develop new technical expertise to search for and understand the patents in the field, those designing the products do not need to invest in technical knowledge solely to avoid the infringement. *See* Mark D. Janis & Timothy R. Holbrook, *Patent Law's Audience*, 97 MINN. L. REV. 72, 117 (2012):

[A] consumer who carries out a routine task on a smartphone may well be using inventions claimed in dozens of patents. If the smartphone manufacturer has incorporated those inventions without a license, the consumer's use, even if innocent, may well constitute an act of infringement. . . . [T]his scenario is important because it presents a potential proximity concern: the patent infringement rule binds a diffuse audience of patent law outsiders.

377. *See supra* notes 242–243 and accompanying text (explaining that it can be sensible to hold the real causer of the harm strictly liable).

378. *See supra* notes 347–348 and accompanying text (reasoning that manufactures may be in the best position to prevent the harm even without physically performing harm-causing acts).

379. *Cf.* Holbrook, *Method Patent Exceptionalism*, *supra* note 87 (manuscript at 38) (describing situations in which some machines' sole use is to perform a patented process); *see also* Timothy R. Holbrook & Lucas S. Osborn, *Digital Patent Infringement in an Era of 3D Printing*, 48 U.C. DAVIS L. REV. 1319, 1319 (2015) (proposing a theory of direct patent infringement based on the creation of CAD files that enable the creation of products via 3D printing).

higher than would be expected under the general strict liability regime of patent infringement. There is no guessing as to what users would do.

As in the trespass context, users who perform every step of the claim may also be exposed to lawsuits given the strict liability nature of direct infringement.³⁸⁰ Nonetheless, removing barriers that shield non-performers from liability under what looks like patent law's version of privity (and, perhaps, of "the last human wrongdoer" rule)³⁸¹ in the method claim infringement cases would, on the margins, likely help shift the focus of many patent owners from the passive user to the truly responsible manufacturer.³⁸² That would be a welcome development, particularly given the recent outcry over what appear to be abusive lawsuits against technology users, many of which involve method claims.³⁸³

The concerns are somewhat different in the divided infringement context—end users are generally not subject to suit—but causal responsibility can help here as well. As noted, the Federal

380. There may be ways to immunize end users from patent infringement suits under current law. For an interesting proposal, see Saurabh Vishnubhakat, *An Intentional Tort Theory of Patents*, 68 FLA. L. REV. 571 (2016) (contending that, in some circumstances, end users are not performing intentional or volitional acts required for liability to attach).

381. See *supra* note 168 and accompanying text (explaining that "the last human wrongdoer" is not the only wrongdoer). It must be noted that, even with the mens rea obstacles in place, the patentees can still obtain prospective relief even in the worst-case scenario (e.g., when the defendant successfully shows a good-faith belief of noninfringement up until judgment). See *supra* notes 142–143 and accompanying text.

382. Of course, when patentees are determined to pursue end users solely because they are "easy targets" in the sense they are more likely to settle the case than the manufacturer, this rationale breaks down. But one imagines that, in what are now indirect infringement cases, elevated mens rea elements must play some role in the decision whether to pursue manufacturers as opposed to end users for at least some potential plaintiffs. In addition, it appears that as part of the attitude of "method patent exceptionalism" that I criticize in this Article and Professor Holbrook criticized in his, see Holbrook, *Method Patent Exceptionalism*, *supra* note 87 (manuscript at 38), the current law makes it difficult to stay cases against end users when a manufacturer actually wants to be in the suit and attempts to bring a declaratory judgment action in order to protect end users of its products. See Brian J. Love & James C. Yoon, *Expanding Patent Law's Customer Suit Exception*, 93 B.U. L. REV. 1605, 1618 (2013).

383. *Immunize End Users from Patent Trolls*, RACKSPACE (Mar. 19, 2013), <http://www.rackspace.com/blog/immunize-end-users-from-patent-trolls> [https://perma.cc/6ULX-WBW9] ("End users' are you and me: small businesses, developers, students, professionals, and other ordinary Americans who use technology in our daily lives. We didn't steal somebody's idea."); Julie Samuels, *Hey, Patent Trolls. Pick on Someone Your Own Size*, ELECTRONIC FRONTIER FOUND. (May 23, 2013), <https://www.eff.org/deeplinks/2013/05/hey-patent-trolls-pick-someone-your-own-size> [https://perma.cc/TP9T-HD7U]; see also Love & Yoon, *supra* note 382, at 1618–20 (recounting the reasons why the manufacturers are in a much better position to defend certain patent infringement lawsuits than the end users and noting that many such lawsuits involve method claims). Consistent with this Article, these authors advocated for removing the rigid line between method and system claims in their proposal to make it easier to stay lawsuits against end users, *id.* at 1638–39, but they did not challenge the present mens rea requirements in suits against manufacturers. *Id.* at 1638 n.118.

Circuit’s current approach overextends the doctrine of vicarious liability and leaves many unanswered questions.³⁸⁴ In addition, it obscures the factual similarity between the non-performer and partial-performer defendants that provide products or features whose only purpose is to perform steps some or all of which happen to correspond to elements of an asserted method claim. Thus, patent law in both indirect and divided infringement contexts can benefit from causal responsibility to impute acts of users to manufacturers-defendants. If the Patent Act were read with this principle in mind, some thorny problems and unintuitive results would become more tractable. This Part develops these intuitions with the help of the philosophical and doctrinal ammunition provided in the preceding parts of this Article.

B. Indirect Infringement

1. Applying the Framework

As discussed earlier, proof of patent infringement by inducement presents high mens rea hurdles.³⁸⁵ Besides having to show that the defendant specifically intended for the performer to carry out acts that happen to be infringing, the plaintiff must also prove that the defendant knew of the patent covering the invention—and the defendant can counter with a good-faith belief of noninfringement. This heightened form of the “bad purpose” approach appears to correspond to what Baruch Weiss considered to be “the most rigorous mental state imposed by the criminal law.”³⁸⁶ In the context of the criminal cases that he discussed, Weiss concluded that this rule is aberrant³⁸⁷—in part, no doubt, because it flouts the maxim that ignorance of the law is no excuse.³⁸⁸

384. See *supra* Section I.D.

385. See *supra* Section I.C.

386. Weiss, *supra* note 41, at 1454–55 (discussing a case in which a court, relying on the word “willfully” in 18 U.S.C. § 2(b), concluded that it was not “adequate to simply charge the jury that to find intent it could consider whether defendant knew that he was doing ‘something unlawful’ or that he was doing ‘something wrong’ in some general way”; instead, “the defendant also had to be aware of the precise reporting requirements at issue, and must have specifically sought to frustrate them” (citing *United States v. Curran*, 20 F.3d 560, 567–70 (3d Cir. 1994))); see also Jonathan S. Masur, *Patent Liability Rules as Search Rules*, 78 U. CHI. L. REV. 187, 189 (2011) (“[T]he putative contributory infringer must be aware of the full legal status of the patent and the relationship between the direct infringer and the patent holder. This is an extraordinary requirement, one that is present few other places in the law.”).

387. Weiss, *supra* note 41, at 1454–55.

388. See *supra* note 319 and accompanying text. To be clear, in patent cases (and trespass cases), the issue is not ignorance of the law but of others’ rights.

As the discussion of aiding and abetting suggests, the requirement of an elevated mental state is justifiable when the defendant provides some general product or service, or assists the performer in some relatively minor way.³⁸⁹ And Weiss made clear that mens rea hurdles even of the “bad purpose” variety can sometimes be useful for protecting a marginal participant in a wrongdoing.³⁹⁰ But the patent law’s bad-purpose-style requirement applies to *all* non-performer cases, without regard to the extent of the defendant’s role in the infringement. The causation framework, in contrast, provides a significantly more flexible approach that takes into account the defendant’s level of participation.

Although the heightened form of the “mens rea of illegality” rule is now firmly entrenched in patent law, causation principles might relieve the plaintiff from having to meet it in certain scenarios. Some non-performer cases, in which defendants can now be charged only with indirect infringement, can be recharacterized as direct infringement claims based on the notion that the manufacturer has caused the customers’ acts. What would be their features? Recall that causing acts of another might include provision of a critical tool that enables that person’s performance of specific acts, and only those acts, intent that those acts be carried out (or substantial certainty that those acts would occur),³⁹¹ and perhaps also instructions describing how to carry out the acts or some other facts giving rise to information asymmetry between the non-performer and the performer.³⁹² In general, to borrow from Professors Hart and Honoré, the non-performer might in some way provide the performer with reasons for acting.³⁹³ And finally, reinforcing the above, the performer’s role is in some way passive in that the performer, predictably, carries out acts as expected by the non-performer—all of which makes the latter more causally important relative to the former.³⁹⁴

389. See *supra* Section III.C.

390. See Weiss, *supra* note 41, at 1481–83.

391. On the substantial certainty requirement as a route to proving the intent element of an intentional tort and its role in secondary liability in copyright law, see Yen, *supra* note 137. For a leading tort case dealing with this issue, see *Garratt v. Dailey*, 279 P.2d 1091 (Wash. 1955).

392. See *supra* Section III.B.

393. HART & HONORÉ, *supra* note 220, at 153.

394. See *supra* notes 239–240 and accompanying text; see also Bartholomew & McArdle, *supra* note 261, at 713 (discussing a copyright case in which “the court relied on ‘an additional step in the causal chain’ to find no liability on the part of the defendant credit card company, explaining that there was no causation because, even though the credit card company made infringing websites profitable, there still had to be a decision by the websites and their users to engage in the infringing conduct in the first place” (citations omitted)).

Consider, under this framework, the case of *Lucent Technologies v. Gateway*.³⁹⁵ Lucent sued Microsoft on indirect infringement theories for providing Outlook software, which (when utilized by end users) led to the infringement of a patented method of scheduling appointments with the aid of a graphical interface.³⁹⁶ Microsoft produced the underlying technology, supplied the tool adapted to perform steps covered by certain method claims, and provided instructions that helped ensure that the tool would be used to do exactly that.³⁹⁷ Given these facts, the verdict of infringement in that case was independently upheld on both § 271(b) (inducement) and § 271(c) (contributory infringement, which requires an article that is “especially adapted for use in an infringement of [the patent], and not a staple article or commodity of commerce suitable for substantial noninfringing use”³⁹⁸) theories.³⁹⁹ As a result, the *actus reus* here was a “double” *actus reus*—Microsoft provided an article adapted to infringe *and* took affirmative steps through marketing and instructions that helped ensure that the steps in the process were performed.⁴⁰⁰ Under these conditions,⁴⁰¹

395. See *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301 (Fed. Cir. 2009).

396. *Gateway and Dell* were also sued in that case. *Id.* They were accused of indirect infringement based on their sales of Microsoft software capable of practicing the patented methods. *Id.* at 1308. The case against *Gateway and Dell* based on causation principles is more difficult to make out than the case against Microsoft. These entities did not design the accused software, but rather passed it along in the stream of commerce. Under products liability principles in some states, they would be liable along with Microsoft, though they might have a case for indemnification against it. See *Vandermark v. Ford Motor Co.*, 391 P.2d 168 (Cal. 1964); RESTATEMENT (THIRD) OF TORTS: APPOINTMENT LIAB. § 22(a)(2)(ii) (AM. LAW INST. 2000). But many states have recognized the unfairness of exposing innocent retailers to liability and have shielded them by statute in various ways. For a review, see Jim Sinunu & Amy Kott, *Protection for Retailers: Developments in Strict Product Liability and Indemnification*, WESTLAW J. PROD. LIAB. (Thomson Reuters), June 11, 2012, at 14. Under the rationale of the causation approach, *Gateway and Dell* should probably not be directly liable because, as hardware rather than software makers, they are not in control of the relevant technology—though that is, of course, open to debate. Certainly, such distinctions are well within the institutional competence of courts. See *infra* notes 421–423 and accompanying text.

397. See *Lucent Techs.*, 580 F.3d at 1320–24.

398. 35 U.S.C. § 271(c) (2012).

399. *Lucent Techs.*, 580 F.3d at 1320–24.

400. *Id.* at 1320–25. The fact that only a feature of the product was infringing does not change the analysis. See, e.g., *Ricoh Co. v. Quanta Comput., Inc.*, 550 F.3d 1325, 1337 (Fed. Cir. 2008) (stating that one cannot “escape liability as a contributory infringer merely by embedding [the infringing feature] in a larger product with some additional, separable feature”). Nonetheless, the double *actus reus* is particularly important in cases like this: when the patented feature is a part of a larger product sold by the infringer, the instructions can help guarantee that the feature does not, so to speak, “sit on the shelf.” As *Lucent* makes clear, though, the relative insignificance of the infringing feature in the larger product affects the magnitude of damages. 580 F.3d at 1323–36.

401. Under current law, Lucent also had to prove both Microsoft’s intent that users perform certain acts and that it intended to infringe specific patents, which Lucent was able to do. *Lucent*

performance of the claims' steps by end users was fully expected and did in fact occur.⁴⁰² In terms of Microsoft's causal contribution, the circumstances here were far removed from an aiding-and-abetting-type scenario.

What else in the case leads to the conclusion that causal responsibility applies? Most customers, often individual users, likely knew nothing about the underlying technology—accentuating the information asymmetry apparent on these facts—and Microsoft undoubtedly gave them a reason for acting by providing the software.⁴⁰³ The customers also did not get to modify the program in any way and did not seek to incorporate it into some larger products like commercial developers might⁴⁰⁴—they were generally just regular computer users. And finally, the customers could not get any value out of the date-picker feature by using it in a way other than infringing.

On these facts, it is not difficult to conclude that Microsoft caused the users' acts and should have been liable directly and not merely derivatively, thereby allowing Lucent to bypass the knowledge-of-the-patent element mandated by the Supreme Court's interpretation of § 271(b) and (c). In other words, direct infringement under § 271(a) can be pled on facts like these, while § 271(b) (or (c)) would be unnecessary. Besides software,⁴⁰⁵ cases in which a manufacturer provides articles that end up performing the steps of a certain method patent when used in their own intended mode of operation might include technologies like medical devices,⁴⁰⁶ pharmaceuticals,⁴⁰⁷ and diagnostic kits.⁴⁰⁸ The causation principle and its effect of lowering the *mens rea*, then, would apply to some of these cases as well.⁴⁰⁹

Techs., 580 F.3d at 1320–24. Under the proposed approach, only the former would be required in these circumstances because of the heightened *actus reus*.

402. Without the performance of the asserted claim's steps, there could be no liability—either under the current approaches or under my proposal.

403. This is so even if, at some point, the direct infringers might have learned that a patent covers the devices they are using. *See supra* note 375 and accompanying text.

404. *See Love & Yoon, supra* note 382, at 1618 (discussing the importance of this fact in the context of the authors' proposal for reviving the customer suit exception); *supra* notes 333–334 (describing user passivity in products liability cases).

405. For another example, see *i4i Ltd. Partnership v. Microsoft Corp.*, 598 F.3d 831, 850–52 (Fed. Cir. 2010), *aff'd*, 564 U.S. 91 (2011).

406. *See, e.g., Smith & Nephew, Inc. v. Arthrex, Inc.*, 502 F. App'x 945 (Fed. Cir. 2013); *Tyco Healthcare Grp. LP v. Biolitec, Inc.*, No. C-08-3129 MMC, 2010 WL 3324893 (N.D. Cal. Aug. 23, 2010).

407. *See, e.g., AstraZeneca LP v. Apotex, Inc.*, 633 F.3d 1042 (Fed. Cir. 2010).

408. *Cf. infra* notes 445–446 (discussing divided infringement scenarios involving diagnostic patents).

409. While some causal imputation claims would undoubtedly produce difficult, borderline cases, *see supra* note 396, my goal in this Article is not to resolve numerous potential fact situations, but to provide the proper legal framework in which decisions by fact finders would be

2. Implementation Under the Patent Act

The statutory grounding of the proposal in the previous Section is the word “uses” in § 271(a). As discussed earlier, it would not be contrary to the language of the Patent Act to hold that an accused infringer “uses” a claimed method by performing one or more claim steps through the instrumentality of another.⁴¹⁰ Nonetheless, those who would prefer to retain the formal performer-direct/non-performer-indirect dichotomies based on statutory classifications might find the direct liability label (i.e., rooting the liability in these scenarios in § 271(a)) objectionable. There is, in fact, significant support for this objection in the legislative history of the 1952 Patent Act, which at times implies that all non-performer liability falls under the indirect infringement provisions of § 271.⁴¹¹ To address this objection, one could label the conduct I am concerned with in this Article as a form of § 271(b) inducement that requires a lower mens rea than other types of inducement. In particular, the conduct could be distinguished from the form of inducement in which a device or a feature provided to a consumer has both infringing and noninfringing uses. The latter form of inducement is more akin to aiding and abetting, which makes it consistent with the present requirement of elevated intent.

There is no rule mandating that every case that arises under § 271(b) (or (c)) require the same mens rea hurdles to establish liability. Indeed, the phenomenon in which a particular statutory provision engenders different interpretations depending on the circumstances, described by Professor Jonathan Siegel as a statutory “polymorphism,” is not unusual.⁴¹² Professor Mark Lemley made a proposal along these lines in 2005, suggesting a “sliding scale inquiry in which a more specific intent to infringe is required to find liability if the defendant’s conduct is otherwise less egregious.”⁴¹³ Professor Lemley argued that the knowledge-of-the-patent requirement should be omitted in cases in which the non-performer is a causer, but he would essentially limit the

made. Certainly, there will be sufficiently “egregious” scenarios. Cf. Lemley, *supra* note 7, at 226 (arguing for the use of a sliding scale inquiry that is partially based on the egregiousness of a defendant’s conduct). One example, discussed throughout this Article, is the Microsoft Outlook case, in which Microsoft’s causal responsibility for the end users’ acts could have been fairly straightforward to make out for a fact finder.

410. See *supra* notes 48–50 and accompanying text.

411. See *supra* notes 121–127 and accompanying text.

412. For a discussion of the concept of polymorphism in statutes, see Jonathan R. Siegel, *The Polymorphic Principle and the Judicial Role in Statutory Interpretation*, 84 TEX. L. REV. 339 (2005). For an example in patent law in particular, see *id.* at 363 n.131.

413. Lemley, *supra* note 7, at 226; see also *id.* at 244 tbl.1 (detailing one possible approach to a sliding scale between a defendant’s conduct and the requisite level of intent for liability).

sweep of causation theories to cases in which corporate officers caused the corporation to act.⁴¹⁴ As I have demonstrated in this Article, the concept of causation is not so narrow. And applying causal responsibility would lead to the same result (i.e., lowered intent requirement) whether its home is under § 271(a) or § 271(b).

However the proposed solution might be implemented, causation theories would not swallow all non-performer liability in patent law.⁴¹⁵ As an initial matter, if causal imputation is adopted under § 271(b) in the “polymorphic” manner proposed by Professor Lemley, then the problem is moot. And if the framework is adopted under § 271(a), § 271(b) will still continue to govern cases in which the accused device has noninfringing uses,⁴¹⁶ barring the possibility of a § 271(a) claim under a causation-type theory. In such cases, the causal connection between manufacturers’ and users’ acts would be attenuated because, even when the manufacturer provides instructions or otherwise encourages customers to use the device in an infringing way (as required for § 271(b) liability),⁴¹⁷ the customers could still get value out of the device by utilizing it in a noninfringing way. The degree of predictability necessary for the regularity implied in a close causal relation would be missing.⁴¹⁸

Subsection 271(c) presents a further challenge. As I have argued, a significant determinant of causal responsibility in patent law is the provision of an article or feature that infringes a patent claim in its only operating mode. But isn’t that exactly the situation that § 271(c) is supposed to address? That subsection holds a defendant liable for offering to sell, selling, or importing “a material or apparatus for use in practicing a patented process, . . . knowing the same to be *especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.*”⁴¹⁹ Would the nonstaple nature of the

414. *Id.* at 244–45.

415. *See also infra* Part V (addressing objections to the use of causal responsibility theories to determine patent infringement). *But cf.* Lemley et al., *supra* note 82, at 260–62 (describing the reluctance of courts to find liability in “truly divided claims” so as to avoid collapsing direct and indirect infringement).

416. *See, e.g.*, C.R. Bard, Inc. v. Advanced Cardiovascular Sys., Inc., 911 F.2d 670 (Fed. Cir. 1990) (analyzing infringement issues involving a medical device that is capable of performing both a patented method and a method in the public domain); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261 (Fed. Cir. 1986) (analyzing an inducement claim where there are alternative solutions to the Rubik’s Cube puzzle); *see also supra* notes 59–60 and accompanying text.

417. *See, e.g.*, Water Techs. Corp. v. Calco, Ltd., 850 F.2d 660, 668–69 (Fed. Cir. 1988).

418. HART & HONORÉ, *supra* note 220, at 13–22, 111–14.

419. 35 U.S.C. § 271(c) (2012) (emphasis added).

article ensure causal regularity and therefore render § 271(c) superfluous if such cases are pled under § 271(a) on causation theories?

This objection can be addressed by reiterating that causation analysis involves not only the acts of the causer but the character of the putative causee, resulting in the identification of two general classes of users of “nonstaple articles” under § 271(c). When a user is a participant in the area of technology that the patent at issue is directed to, the expectation is that the user might conduct a patent search so as to prevent the infringement. When the user is a passive customer, as in *Lucent*, the story is different because the customer cannot plausibly be expected to perform such a search.⁴²⁰ Judge Cardozo recognized an analogous distinction in *MacPherson*, noting that “[i]f to the element of danger there is added knowledge that the thing will be used by persons other than the purchaser, *and used without new tests*, then . . . the manufacturer of this thing of danger is under a duty to make it carefully.”⁴²¹

Of course, the nature of the danger in patent cases is not a car accident but patent infringement, but the problem is analytically similar. The robustness of the causal link between the manufacturer’s design and the harm-causing act depends on our expectations on how the end user is expected to behave, and in tort law, courts make these sorts of distinctions between participants in the stream of commerce all the time. The passivity of end users (such as car drivers, with respect to their ability to discover latent manufacturing defects) figures prominently in products liability cases, and for good reasons.⁴²² In contrast, in some § 271(c) cases, the accused infringer sells a nonstaple article to another manufacturer⁴²³ who would be expected to perform a patent clearance search and at least try to deal with potential infringement issues.

The further objection is that Congress could not have possibly had the distinction between different kinds of end users in mind when it enacted § 271(c). Again, the objector will point to evidence in the legislative history that § 271(c) (and (b)) were enacted with the purpose of making sure that the patentee still has an effective remedy when faced with a large number of end users, no matter their character.⁴²⁴

420. Cf. Janis & Holbrook, *supra* note 376, at 117 (comparing smartphone users and manufacturers with respect to their expected knowledge of patents covering the smartphone device).

421. *MacPherson v. Buick Motor Co.*, 111 N.E. 1050, 1053 (N.Y. 1916) (emphasis added).

422. See *supra* Section III.B.3.

423. See, e.g., *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 187–89 (1980).

424. See *Contributory Infringement: Hearings on H.R. 3866 Before Subcomm. No. 4 of the H. Comm. on the Judiciary*, 81st Cong. 1 (1949) [hereinafter *Hearings Before Subcomm. No. 4*]

Maybe so. But Congress also did not repudiate the principle of causal responsibility,⁴²⁵ which would distinguish between active and passive end users. Accordingly, if § 271(c) must apply to the causation cases, it too can be a polymorphic provision,⁴²⁶ requiring a higher mens rea (i.e., knowledge of the patent requirement) in active-user cases and lower mens rea in passive-user cases.⁴²⁷ Although, in its recent indirect infringement opinions, the Supreme Court pointed to stare decisis and concluded that its hands are tied with respect to mental state barriers for establishing liability under § 271(b) and (c),⁴²⁸ it has not dealt with the question of statutory polymorphism, or with the notion that non-performer infringement can be pled as direct on a causation theory.

Indeed, the case for dropping the elevated mens rea is particularly strong in the “double” actus reus cases, in which defendants exhibit both § 271(b) (providing instructions) and § 271(c) (providing nonstaples) behaviors to customers who passively perform claimed steps to get the value out of a product.⁴²⁹ While courts have treated sales of nonstaples as conclusive evidence of intent that the claimed steps be performed,⁴³⁰ there is significance to the accused

(subtitle of the bill: “A Bill to Provide for the Protection of Patent Rights Where Enforcement Against Direct Infringers Is Impracticable . . .”).

425. Cf. Baude & Sachs, *supra* note 52 (distinguishing between linguistic questions and legal questions in developing a framework for the interpretation of statutes); see also Mathews, *supra* note 109, at 273:

As a remedy for the invasion of a statutory right the action of contributory infringement should be as valid today as it was in 1886. Naturally the evidential factors required to establish concert or concurrence between the parties have varied somewhat as the personnel and views of the courts have changed, but this is a matter of pure case law and . . . the decided cases should stand unless there is a compelling reason to overturn them. No such reason is present today, except possibly to repudiate a few individual cases that may have improperly held joint and several liability to exist where the facts were insufficient to show concert *There is no more reason now to change the basic patent law of joint tort liability than there is to change the basic general law of joint tort liability.*

(emphasis added).

426. See *supra* note 412 and accompanying text (discussing “polymorphism” in statutory interpretation).

427. It might be, though, that liability in some active user cases is best analyzed under joint tortfeasance principles. See *supra* Section I.B (discussing the history of patent infringement liability for non-performing parties).

428. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926–28 (2015); *Glob.-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 765 (2011).

429. See *supra* note 400 and accompanying text (detailing “double actus reus” cases with both a § 271(b) and a § 271(c) claim). For a recent article suggesting that courts have focused too much on intent and not enough on conduct in induced infringement cases, see W. Keith Robinson, *Only a Pawn in the Game: Rethinking Induced Patent Infringement*, 32 SANTA CLARA HIGH TECH. L.J. 1 (2015).

430. See A. Samuel Oddi, *Contributory Infringement/Patent Misuse: Metaphysics and Metamorphosis*, 44 U. PITT. L. REV. 73, 91–92 (1982) (collecting cases).

infringers' advertising and other actions taken to encourage the performance of the claimed steps. The acts of spelling out the function of the nonstaple product generate demand, ensure that the infringing feature does stay idle when it is a part of a larger product,⁴³¹ and underscore the information asymmetry between the manufacturer and the user.

One could make a strong argument that a mere sale of a nonstaple product "especially adapted to infringe" within the meaning of § 271(c) *to anyone* is sufficient to attribute acts of a user to a manufacturer on a causation theory. If so, then this argument would further undermine the already controversial (and badly fractured)⁴³² *Aro* decision, a § 271(c) case that spawned various mens rea requirements in the way of holding indirect infringers liable.⁴³³ Nonetheless, I believe that the causation approach fits more naturally with fact patterns involving passive users than with those involving firms working in the areas of technology implicated by the asserted patents, and who may use the nonstaple device to build another product. As noted,⁴³⁴ the latter are in a much better position than the former to search for relevant patents, and cannot really be viewed as "conduits."⁴³⁵

Moreover, the distinction between active and passive intermediaries is central to causal responsibility cases. In particular, the capabilities of the *performing* party could make a difference to whether the *non-performing* party could be charged with causing as opposed to aiding and abetting an offense,⁴³⁶ with the attendant effect on proof of mental state to hold the non-performing party liable. Indeed, a performer's relative passivity can be an important predicate to treating the non-performer as a principal as opposed to accomplice in

431. See *supra* note 400 (detailing a case in which an infringing product's feature had no noninfringing uses).

432. *Glob.-Tech*, 563 U.S. at 764.

433. *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 488 (1964); see *supra* note 139 and accompanying text (criticizing the rule stemming from *Aro*). As noted earlier, the elevated mens rea is probably appropriate for § 271(b) cases in which the accused instrumentality has both infringing and noninfringing uses, but likely less so in many § 271(c) cases.

434. *Supra* notes 420–423 and accompanying text.

435. See *supra* notes 345–347 and accompanying text (discussing knowledge asymmetries between manufacturers, retailers, and users in products liability cases); see also Robertson, *supra* note 61, at 934–35 (discussing knowledge asymmetries between buyers and sellers with respect to patents covering the product being sold).

436. See SMITH, *supra* note 234, at 118 ("The stronger the accessory's causal role and the weaker the perpetrator's, the greater should be the inclination to label the actions as principal through innocent agency." (internal quotation marks omitted)).

those jurisdictions that maintain the distinction.⁴³⁷ Accordingly, the common law of causal responsibility as applied to patent cases requires a user that is “passive” with respect to—generally untutored in—the underlying patented technology.

C. Divided Infringement

The causation framework also provides an alternative route for addressing the problem that the Federal Circuit dealt with in *Akamai*, or at least supplies further elaboration and content to the current test.⁴³⁸ The solution parallels that proposed for cases in Section B, except here the user performs all, rather than just some, elements of the patent claim that has been asserted. As before, the test for attribution is whether one party has caused the act of another. Accordingly, we can ask whether the device is capable only of performing the infringing steps when used as intended, or whether the user can get value out of the device in ways other than by performing the remaining steps (or perhaps the one remaining step) of the asserted claim. And we can also ask whether the manufacturer intends for a passive user to perform the steps that happened to be covered by patent claim and encourages the user to do so.

Under this approach, one would probably conclude that the defendant website operator in *Move, Inc. v. Real Estate Alliance Ltd.*, the real estate search case discussed in Section I.D, caused users to select geographic areas within a map.⁴³⁹ This is what the website was designed to do, and the “click on the map” instruction encouraged users to perform the claimed selecting steps while the website server performed the rest.⁴⁴⁰ To be sure, the users were interested in finding real estate, and they voluntarily chose to use defendant’s website rather than some other route to getting the information. But once that choice was made, users’ role with respect to the claimed steps was passive and

437. *Cf. supra* notes 229–234 and accompanying text (discussing the circumstances in which the imputation of the causee’s acts onto the causer might be warranted).

438. *See supra* Section I.D (discussing issues related to divided infringement and the current test employed by courts).

439. 709 F.3d 1117 (Fed. Cir. 2013).

440. *See supra* notes 172–176 and accompanying text. The Federal Circuit in *Akamai Technologies, Inc. v. Limelight Networks, Inc. (Akamai V)* did note the significance of instructions in its imputation analysis under the “vicarious liability” framework. 797 F.3d 1020, 1024–25 (Fed. Cir. 2015) (en banc) (per curiam). For an article focusing on this aspect of the case, see Olajumoke Obayanju, *What Next? Exploring the Federal Circuit’s Expansion of Direct Infringement Liability Post-Akamai v. Limelight and the Process It Took to Get There*, 25 FED. CIR. B.J. 319 (2016) (focusing on the “instructions” aspect of the *Akamai* litigation).

the execution of the steps more or less inevitable.⁴⁴¹ The defendant provided a tool and gave end users reasons for engaging in actions corresponding to the claim's elements, as well as instructions that helped push the end users further toward carrying them out.⁴⁴² These actions, executed by users who were likely unfamiliar with the underlying technology, were fully expected and predictable when finally made. These features of the case suggest causal regularity,⁴⁴³ which confirms that users' acts are attributable to the defendant under the principle of causal responsibility. Because it thus performed all the steps either by itself or via causal imputation, the defendant should be liable as a direct infringer. Given Limelight's active participation in creating the conditions for the performance of the "tagging" step in *Akamai*—after all, Limelight developed the method requiring tagging—the same result should obtain in that case, but without the need to rely on vicarious liability.⁴⁴⁴

Facts in divided infringement cases vary widely, and, in some, questions might arise about the sufficiency of the causal link needed to attribute the conduct of the user to the manufacturer or service provider. Interesting scenarios are presented by method of treatment patents involving diagnostic tests. As explained by Professor Christopher Holman, a typical set of facts in suits for infringement of such patents might include the following: "[A] physician might order a diagnostic test, but an independent laboratory performs that test and provides the physician with the results, and he or she uses the information to inform treatment decisions."⁴⁴⁵ In an article written before the Federal Circuit's most recent en banc decision in *Akamai*, Professor Holman contended that "[i]n the absence of an agency relationship between the physician and laboratory, which often will not exist in practice, it will be difficult to hold any party liable for infringement under the current interpretation of divided infringement

441. Of course, a user could simply abandon the search for real estate properties after doing the initial zooming, but to complete its search, the user would have to go through all these steps.

442. See *supra* notes 223–225 and accompanying text (discussing causation as it relates to interpersonal interactions).

443. See *supra* note 418 and accompanying text (discussing causal regularity).

444. See *supra* notes 177–184 and accompanying text (analyzing critiques of the Federal Circuit's rule requiring a website operator to exercise "direction or control" over users of its website for the operator to be liable).

445. Christopher M. Holman, *Caught Between a Rock and a Hard Place: How Limelight Compounds the Challenges Facing Biotechnology Innovators After Mayo and Myriad*, 33 BIOTECHNOLOGY L. REP. 135, 137 (2014); see also Erik P. Harmon, Note, *Promoting the Progress of Personalized Medicine: Redefining Infringement Liability for Divided Performance of Patented Methods*, 42 HOFSTRA L. REV. 967 (2014).

law.”⁴⁴⁶ While *Akamai* may have changed this result, it might be argued that causation theory provides another ground, with deep roots in the common law, for justifying the physician’s (or medical researcher’s) liability. Thus, the laboratory test step might be imputed to the person ordering the test, who would then be deemed to perform all of the steps of the patent claim. In some cases, however, the defendant’s causal role might be insufficient for imputation because he or she did not design the test. In other words, the chain of causation might be cut off by an intermediary (e.g., the laboratory) that is in the business of doing research into new testing methods, and can therefore be considered active rather than passive.

Eli Lilly & Co. v. Teva Parenteral Medicines, Inc., an appeal recently decided by the Federal Circuit,⁴⁴⁷ provides an interesting test of both the *Akamai* approach and of the causal imputation route to liability in the medical context. In this case, the representative asserted claim was drawn to:

An improved method for administering pemetrexed disodium to a patient in need of chemotherapeutic treatment, wherein the improvement comprises:

- a) administration of . . . folic acid prior to the first administration of pemetrexed disodium;
- . . . and
- c) administration of pemetrexed disodium.⁴⁴⁸

Pemetrexed disodium is a chemotherapeutic agent whose toxic side effects are reduced by prior administration of folic acid. The “divided infringement” issue in this case arose because patients are supposed to self-administer folic acid (step (a)) before step (c), which is performed by a medical professional. The district court concluded that the *Akamai* test was met because “taking folic acid in the manner specified is a condition of the patient’s participation in the pemetrexed treatment as prescribed by the patent, and is necessary in order to receive the benefit of such treatment.”⁴⁴⁹ The court, therefore concluded that steps (a) and (c) were attributable to a single entity (the physician) and found the defendant liable for infringement. The Federal Circuit affirmed, concluding that the district court’s finding that physicians “‘condition’ pemetrexed treatment on the administration of folic acid” was not clearly erroneous.⁴⁵⁰ In addition, the Federal Circuit reasoned

446. Holman, *supra* note 445, at 137.

447. 845 F.3d 1357 (Fed. Cir. 2017).

448. U.S. Pat. No. 7,772,209, claim 12 (filed July 11, 2007).

449. *Eli Lilly & Co. v. Teva Parenteral Meds., Inc.*, 126 F. Supp. 3d 1037, 1042 (S.D. Ind. 2015), *aff’d*, 2017 U.S. App. LEXIS 555 (Fed. Cir. Jan. 12, 2017).

450. *Eli Lilly*, 845 F.3d at 1366.

that by following the dosage and administration information in the drug's label, the physicians established the manner and timing of the patients' taking of folic acid within the meaning of *Akamai*.⁴⁵¹

Professor Rachel Sachs argued that the district court's conclusion was problematic because "the doctor-patient relationship simply does not qualify as one involving direction or control, at least under the current doctrine," noting that "the autonomy of the patient has taken center stage in the physician-patient relationship."⁴⁵² She contrasted *Eli Lilly* with *Akamai* by emphasizing the significance of the fact that, in order to receive the benefit of Limelight's services, its customers were contractually obligated to perform certain steps—while the patients in *Eli Lilly* were under no contract.⁴⁵³ This is a powerful critique because the very idea that a doctor is "vicariously liable" for the patient's acts has an oddly incoherent ring to it. To be clear, doctors in some jurisdictions can be liable for harm to third parties occasioned by their patients as a result of negligent treatment, as when driving under the influence of improperly prescribed drugs.⁴⁵⁴ But these are actually best understood as causal responsibility cases, with impaired patients actuating the harm stemming from their doctors' negligence.⁴⁵⁵

Professor Sachs is correct that doctors are not controlling the patients in cases like *Eli Lilly*. But the doctors do give the patients strong reasons for acting in such a way as to self-administer folic acid within the meaning of the claim⁴⁵⁶ by developing a course of treatment, providing a tool (i.e., prescribing the folic acid), and instructing the patient to take this treatment supplement. In addition, although patient autonomy may be the hallmark of the modern doctor-patient

451. *Id.* at 1367–68.

452. Sachs, *supra* note 20 (manuscript at 8–9).

453. *Id.* (manuscript at 7–10). In its opinion affirming the district court, the Federal Circuit confirmed that a contract was not required for attribution under *Akamai*, but was careful to note that "[o]ur holding today does not assume that patient action is attributable to a prescribing physician solely because they have a physician-patient relationship." *Eli Lilly*, 845 F.3d at 1368. In contrast, the Federal Circuit found no infringement as a matter of law where the plaintiff "has not pointed to any evidence that would permit attribution of patent- and doctor-performed steps" to a defendant accused of infringing a diagnostic patent. *Medgraph, Inc v. Medtronic, Inc.*, 843 F.3d 942, 948 (Fed. Cir. 2016).

454. *Watkins v. United States*, 589 F.2d 214, 217 (5th Cir. 1979); *Welke v. Kuzilla*, 375 N.W.2d 403, 404 (Mich. App. 1985). *But see Lester ex rel. Mavrogenis v. Hall*, 970 P.2d 590, 598 (N.M. 1998) (holding that a doctor does not have a duty to third party non-patients where the risk of injury to that third party is low).

455. *See, e.g., Wharton Transp. Corp. v. Bridges*, 606 S.W.2d 521, 528 (Tenn. 1980) ("[I]f an examination fell below that standard and resulted in certifying an unfit person as physically qualified to drive a commercial vehicle, the *probable consequences* would be a highway accident causing loss or injury to a third party or parties." (emphasis added)).

456. *See supra* notes 391–393 and accompanying text (discussing causation of other parties' actions, especially in situations with information asymmetries between parties).

relationship, there is an information asymmetry between doctors and patients with respect to patents that cover treatment methods. All this means that it would probably be reasonable for a fact-finder to conclude that doctors are causing their patients to perform the folic acid administration step. And the causation approach, which is not rooted in control over another person, is not as vulnerable to Professor Sachs's critique of the district court's vision of the doctor-patient relationship implied in the reliance on the vicarious liability doctrine. But if by adopting "vicarious liability," the Federal Circuit actually meant to install the doctrine of causal responsibility as governing divided infringement cases, then *Eli Lilly* can be understood in terms of causal attribution of patients' actions to the doctors. It is telling, indeed, that the phrase "vicarious liability," so prominent in *Akamai*, is not to be found in the Federal Circuit's *Eli Lilly* opinion.

Eli Lilly illustrates still another aspect of causal responsibility. The accused infringers in that case were not doctors or researchers, but generic drug manufacturers proposing to market the chemotherapeutic agent with an indication of use in a folic acid combination therapy, and they were successfully sued on an inducement theory.⁴⁵⁷ Can *their* behavior trigger causal responsibility with respect to the downstream actions of medical professionals, so that the causal chain runs from making and marketing the drug, through the medical professionals, and ultimately to the patients' self-administration of the folic acid? The answer must be no because there are, for example, research uses of pemetrexed that do not require the concomitant utilization of folic acid.⁴⁵⁸ Moreover, the medical researchers and doctors should be familiar enough with the relevant technology such that the ability to discover and understand the relevant patents would be realistic and perhaps even expected.⁴⁵⁹ Therefore, while the researchers or doctors infringe the patents directly (i.e., once the patients' acts are attributed to them under the analysis described above), the drug manufacturers can probably be held liable only as aider and abettors, not as causers. The chain of causation is attenuated by active intermediaries who can

457. *Eli Lilly*, 845 F.3d at 1368–69.

458. See, e.g., T.M. Marti et al., *Prolonged Pemetrexed Pretreatment Increases Efficiency of Ionizing Radiation Combination Therapy and Correlates with the Persistence of Treatment-Induced DNA Damage in Lung Cancer Cells*, 11 J. THORACIC ONCOLOGY S65 (2016); Marie Morfouace et al., *Pemetrexed and Gemcitabine as Combination Therapy for the Treatment of Group 3 Medulloblastoma*, 25 CANCER CELL 516, 517 (2014).

459. In this kind of a case, patents are particularly easy to find because the Food and Drug Administration requires patents covering specific drugs to be listed in the so-called "Orange Book." FOOD & DRUG ADMIN., APPROVED DRUG PRODUCTS WITH THERAPEUTIC EQUIVALENCE EVALUATIONS (36th ed. 2016), <http://www.fda.gov/downloads/Drugs/DevelopmentApprovalProcess/UCM071436.pdf> [https://perma.cc/P5J6-62VK].

use pemetrexed in multiple ways and who can more readily find the relevant patents (and thereby at least theoretically prevent the infringement) than the average passive consumer in cases like *Lucent* or *Move*.⁴⁶⁰

D. Causal Responsibility in Other Areas of IP

At this stage, my critiques of patent law's approach to non-performer infringement and suggestions for change might be usefully compared to what actually happens with non-performer infringement theories in areas of intellectual property law other than patent. First, as Professor Felix Wu astutely observed, accused instrumentalities in copyright law have substantial noninfringing uses basically by hypothesis.⁴⁶¹ Copyright law exists to protect content, not technology, and devices that might enable copyright infringement are agnostic with respect to whether the content they help find, copy, display, or download is copyrighted or not. Same with trademark law—it makes no difference to the eBay platform, for example, whether the item it helps sell is counterfeit or not. Thus, many cases of non-performer infringement in copyright and trademark law resemble traditional aiding and abetting, and the mens rea obstacles to prevail against those engaged in activities that are neutral with respect to the underlying intellectual property right at issue are reasonable and necessary.⁴⁶² Not so in many patent cases. Patent law protects the underlying technology, and the manufacturer typically has the ability to design (or redesign) its product in a way that is infringing or noninfringing—or negotiate with the

460. A complication with brand-generic cases is that the patentee does not have to wait for the infringement—just proposing to market a drug for a particular use covered by a patent is enough to support the inducement claim. See *Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1352 (Fed. Cir. 2003) (providing an example in which a generic drug manufacturer encourages a particular use not covered by a patent).

461. Felix Wu, *Secondary Copyright Remedies*, Presentation at the 14th Annual Intellectual Property Scholars Conference (Aug 8., 2014); see also Brief for the Electronic Frontier Foundation, *supra* note 194, at *10–11 (arguing that “content-neutral providers of Internet services should not be saddled with potentially staggering strict copyright liability due to acts of infringement by some of their users”); cf. *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913, 960 (2005) (Breyer, J., concurring) (noting in the copyright context that “the producer of a technology which *permits* unlawful copying does not himself *engage* in unlawful copying—a fact that makes the attachment of copyright liability to the creation, production, or distribution of the technology an exceptional thing”); Bartholomew & McArdle, *supra* note 261, at 713 (discussing the remoteness of the relationship between indirect infringement defendants and the wrongful activity in some copyright infringement cases).

462. Cf. *supra* Section III.B (discussing causal responsibility in criminal law and tort law).

patentee for a license.⁴⁶³ In contrast to defendants in indirect copyright and trademark infringement cases, manufacturers that provide articles lacking substantial noninfringing uses are not, therefore, dependent on users' whim with respect to the infringement. In the cases I have been considering, the users have no choice but to perform the steps covered by the claims if they would like to get value out of the device.⁴⁶⁴

Second, copyright (and trademark) cases show that the line between direct and indirect infringement is not always clear-cut, and that both the provider and the user can both be direct infringers⁴⁶⁵—an issue that has not been fully appreciated in patent law. In *Religious Technology Center v. Netcom On-Line Communication Services, Inc.*,⁴⁶⁶ for example, it was contested whether the accused bulletin board servers operated by the defendant merely enabled the making of copies of copyrighted materials by users or whether the servers were so involved in the copying that it could be said that the defendant operator infringed directly. The issue in *Netcom* was not framed in causal imputation terms—rather, the district court grappled with whether the servers were *actually* making copies themselves.⁴⁶⁷ Nonetheless, *Netcom* specifically alluded to the idea that some threshold causal contribution, which the court also characterized as “volition,” must be made before a defendant could be held directly liable.⁴⁶⁸

Related issues arose in a number of cases⁴⁶⁹—including, most recently, in *American Broadcasting Companies, Inc. v. Aereo, Inc.*,

463. Of course, the control might be more limited if the manufacturer is “ambushed” by a patent, but it is still the case that the manufacturer, not the user, is the right entity to deal with the infringement.

464. For an extended argument that the substantial noninfringing use doctrine that copyright law borrowed from patent’s contributory infringement provision never caught on in practice, see Peter S. Menell & David Nimmer, *Legal Realism in Action: Indirect Copyright Liability’s Continuing Tort Framework and Sony’s De Facto Demise*, 55 UCLA L. REV. 143 (2007); see also Peter S. Menell & David Nimmer, *Unwinding Sony*, 95 CALIF. L. REV. 941 (2007).

465. See *Grokster*, 545 U.S. at 930 n.9 (2005) (“[T]he lines between direct infringement, contributory infringement and vicarious liability are not clearly drawn.” (quoting *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 435 n.17 (1984))). For a trademark law example in which the plaintiff made colorable claims of direct and indirect trademark infringement against the same defendant, see *Tiffany (NJ) Inc. v. eBay Inc.*, 600 F.3d 93, 101–10 (2d Cir. 2010).

466. 907 F. Supp. 1361, 1368–73 (N.D. Cal. 1995). I thank Shyam Balganeshe and Patrick Gould for drawing the relevance of the issues in *Netcom* and *Aereo* to this Article to my attention.

467. *Id.* at 1367–73.

468. *Id.* at 1370 (“Although copyright is a strict liability statute, there should still be some element of volition or causation which is lacking where a defendant’s system is merely used to create a copy by a third party.”). Interestingly, in this copyright case the service provider was passive (and therefore a minor causal contributor), *but the user was active*. *Id.* at 1372–73. The result that the provider could only be liable indirectly, if at all, under these circumstances, is consistent with the approach in this Article.

469. See, e.g., *Perfect 10, Inc. v. Giganews, Inc.*, 847 F.3d 657, 666 (9th Cir. 2017) (explaining that the “requirement of causation remains an element of a direct [copyright] infringement claim”

which reached the Supreme Court.⁴⁷⁰ *Aereo* involved a technology that enabled the streaming of specific content, often copyrighted, directly to the service's subscribers upon the subscribers' request.⁴⁷¹ And even though the users-subscribers in *Aereo* selected the content and pressed "play" (or, more accurately, clicked on the link), the service provider was held to be *directly* liable for infringing the public performance right of the owners of the copyrighted content.⁴⁷²

Espousing a view that seems to underlie the assumptions behind some of the patent cases considered in this Article, Justice Scalia in dissent maintained that the defendant, *Aereo*, could not be directly liable because it did not perform a volitional act that was the immediate cause of the infringement.⁴⁷³ But the six justices in the majority were not persuaded. The majority, to be sure, never mentioned volition and justified *Aereo's* direct liability based on a particular statutory provision of the Copyright Act designed to deal with cable providers, and noted *Aereo's* similarity to a cable provider.⁴⁷⁴ But the Court was also moved by the active involvement of the service provider in the infringement. For example, the Court found it important that "*Aereo* sells a service that allows subscribers to watch television programs, many of which are copyrighted, almost as they are being broadcast," and that "[i]n providing this service, *Aereo* uses its own equipment, housed in a centralized warehouse, outside of its users' homes."⁴⁷⁵ In short, *Aereo* was in control.

Professors Rebecca Giblin and Jane Ginsburg maintained that courts should build on *Aereo* by explicitly focusing on the level of

and distinguishing the case at issue from *Aereo*); *Cartoon Network LP v. CSC Holdings, Inc.*, 536 F.3d 121, 132 (2d Cir. 2008) ("[T]he purpose of any causation-based liability doctrine is to identify the actor (or actors) whose 'conduct has been so significant and important a cause that [he or she] should be legally responsible.'" (alteration in original) (quoting *KEETON ET AL.*, *supra* note 168, § 42, at 273)); *CoStar Grp., Inc. v. LoopNet, Inc.*, 373 F.3d 544, 549 (4th Cir. 2004) ("While the Copyright Act does not require that the infringer know that he is infringing or that his conduct amount to a willful violation of the copyright owner's rights, it nonetheless requires *conduct* by a person who causes in some meaningful way an infringement."); *cf.* *Fox Broad. Co. v. Dish Network L.L.C.*, 747 F.3d 1060, 1067–68 (9th Cir. 2014) (noting that "operating a system used to make copies at the user's command does not mean that the system operator, rather than the user, caused copies to be made"); *further proceedings*, 160 F. Supp. 3d 1139 (C.D. Cal. 2015); *Fox Television Stations, Inc. v. FilmOn X LLC*, 150 F. Supp. 3d 1, 31 (D.D.C. 2015) (rejecting the characterization of an internet-based DVR service as passive and noting that "just because the subscriber has to click a button to initiate the streaming does not mean that FilmOn X does not perform"), *appeal docketed*, No. 16-7013 (D.C. Cir. Feb. 10, 2016).

470. 134 S. Ct. 2498 (2014).

471. *Id.* at 2507.

472. *Id.* at 2507–11.

473. *Id.* at 2513 (Scalia, J., dissenting).

474. *Id.* at 2508–10 (majority opinion).

475. *Id.* at 2506.

participation of the accused entity in the infringement.⁴⁷⁶ These scholars, in effect, agreed that we should abandon the formalistic performer/non-performer and direct/indirect dichotomies in cases in which they are counter to commonsense notions of legal responsibility.⁴⁷⁷ What Professors Giblin and Ginsburg described is causal responsibility in action, and their reading of *Aereo* and their proposal for extending it are consistent with the approach adopted in this Article. Another commentator, Professor Lee Burgunder, reached a similar conclusion, even adopting the language of agency. He noted:

Aereo gave the copyrighted content to individuals and had them do what the company would not have been allowed to do itself. Hence, in reality, the customers acted more like agents of Aereo who collectively participated in a scheme that resulted in public performances of the copyrighted materials under the umbrella of the company. The volitional conduct . . . occurred when Aereo chose to give subscribers access to content that it had no right to offer.⁴⁷⁸

These insights call to mind considerations behind the adoption of the doctrine of innocent agency.⁴⁷⁹ They are also consonant with Professor Husak's argument that legal liability can sometimes be predicated not on a defendant's act that is the immediate cause of harm,

476. Rebecca Giblin & Jane C. Ginsburg, *We (Still) Need to Talk About Aereo: New Controversies and Unresolved Questions after the Supreme Court's Decision*, 38 COLUM. J.L. & ARTS 109, 153–54 (2015). Professor John Golden also noted the connection between issues in patent law, particularly in *Akamai*, and in *Aereo*. See John M. Golden, *Common Law in the Interpretation of Statutes: Akamai v. Limelight at the Federal Circuit*, NEW PRIV. L. BLOG, (June 16, 2015), <https://blogs.harvard.edu/nplblog/2015/06/16/common-law-in-the-interpretation-of-statutes-akamai-v-limelight-at-the-federal-circuit-john-golden> [<https://perma.cc/DQ2A-369W>] (discussing the concept of “avoidance” in patent and copyright law).

477. Giblin & Ginsburg, *supra* note 476, at 130 (arguing that services like Aereo “have a significant degree of active participation in the [infringing] activity, particularly if the services select among the broadcast channels whose programs the services record and retransmit”); see also Brief for the Electronic Frontier Foundation, *supra* note 194, at *16 (arguing that *Aereo* “recognized that the distinction between active and passive participation remains a central part of the analysis of direct infringement”).

478. Lee B. Burgunder, *The Supreme Court Performs the Right Notes for Dish in Aereo*, 17 VAND. J. ENT. & TECH. L. 845, 869 (2015); see also Dallas T. Bullard, *The Revolution Was Not Televised: Examining Copyright Doctrine After Aereo*, 30 BERKELEY TECH. L.J. 899, 923 (2015) (“The purpose of [the causation] analysis is not to determine who pushed the button or turned the dial, but rather who is to be held liable for encroachment into the copyright holder’s exclusive domain. . . . [The question is] who is close enough to the event to be considered the most important cause.”); Robert C. Denicola, *Volition and Copyright Infringement*, 37 CARDOZO L. REV. 1259 (2016) (similar).

479. See *supra* Section III.A. Another Supreme Court intellectual property case that arguably adopts the causal responsibility approach is *Bowman v. Monsanto Co.*, 133 S. Ct. 1761 (2013). In that case, Bowman essentially attempted to escape responsibility for infringement of patents on genetically modified soybean seeds by arguing that the seeds do the growing by themselves. The Court was not persuaded, reasoning that “it was Bowman, and not the bean, who controlled the reproduction . . . of Monsanto’s patented invention.” *Id.* at 1769.

but on his or her control of the situation.⁴⁸⁰ And if nothing else, the argument for causation-based direct liability is stronger in the patent context than in the *Aereo* context because, as the *Aereo* dissent noted, it is *the subscriber*, not the equipment provider, who selected the content.⁴⁸¹

V. OBJECTIONS

Several closely related objections, to which I already alluded throughout the Article, might be raised against this approach. I mention and address each one in turn.

First, one might contend that it is very difficult to find relevant patents and figure out whether they cover a product.⁴⁸² Thus, the argument continues, some level of scienter must be retained in patent law, at least for indirect infringement cases.⁴⁸³ This critique, however, cannot be squared with the notion that patent infringement is, as a baseline matter, a strict liability offense⁴⁸⁴—and the linchpin of strict liability is causation, not fault.⁴⁸⁵ While fault can be appropriately

480. See Husak, *supra* note 39, at 77–82 (describing “the control requirement” for liability). Husak’s article is about criminal liability, but nothing in the reasoning limits his theory to criminal law. See also Douglas Husak, *Rethinking the Act Requirement*, 28 CARDOZO L. REV. 2437, 2438 (2007).

481. *Am. Broad. Cos. v. Aereo, Inc.*, 134 S. Ct. 2498, 2513, 2517 (2014) (Scalia, J., dissenting). The “duty to police” issues that come up in other areas of IP also provide interesting comparisons with patent law. For example, in *Tiffany (NJ) Inc. v. eBay Inc.*, 600 F.3d 93, 98–100 (2d Cir. 2010), the evidence showed that eBay took great pains to attempt to prevent trademark infringement arising from sales of counterfeit products by users of its platform, sometimes without prompting from trademark owners like Tiffany. See also 17 U.S.C. § 512 (2012) (setting forth the responsibilities and safe harbors for internet service providers with respect to infringing content uploaded by users); Denicola, *supra* note 478, at 1276–83 (discussing the role of the duty to police in determining whether a defendant should be directly liable in copyright infringement cases). But what would it mean for a manufacturer of a device without any noninfringing use to police infringement by the end users of its products? Sell the device and then ask the customer not to use it? The fact that these very questions sound incoherent further points out the oddity with patent law’s indirect infringement doctrine. It is, of course, generally more difficult to obtain the information needed to discover patent versus copyright or trademark infringement. But, as the next Part further explains, the non-performer in many patent cases is still in a better position than the performer to get this information. In contrast, in copyright and trademark infringement cases raising duty-to-police issues, the performers (i.e., end users) often seem to be in a better position to avoid the infringement.

482. Incidentally, concerns about patent notice have sometimes been voiced without distinguishing direct or indirect infringement. See, e.g., Christina Mulligan & Timothy B. Lee, *Scaling the Patent System*, 68 N.Y.U. ANN. SURV. AM. L. 289 (2012).

483. See *supra* notes 162–163 and accompanying text.

484. For a discussion of similar issues in trespass, another strict liability tort, see *supra* notes 319–327 and accompanying text.

485. Cf. Bartholomew, *Cops, Robbers, and Search Engines*, *supra* note 133, at 830–40 (discussing responsibility for intellectual property infringements based on causation).

deployed to protect marginal participants in the infringement,⁴⁸⁶ that reasoning does not apply to the activities of defendants discussed in this Article because of their extensive causal roles in ensuring performance of method claim steps. It is counterintuitive to protect such defendants with mens rea shields, while at the same time exposing their customers, who can in no way be expected to find patents covering the infringing products, to strict liability. Moreover, when the manufacturer knows that the device it provides is only good for performing particular steps, the search burdens it must face are in no way unfair.⁴⁸⁷

A second objection is that the proposed approach in effect extends the coverage of method claims, which by design cover steps rather than apparatuses or devices.⁴⁸⁸ This objection maintains that the patent owner should live with the consequences of the choice to claim the invention in method form.⁴⁸⁹ Moreover, it is thought in divided infringement cases in particular that the problems with enforcement could have been avoided with better claim drafting.⁴⁹⁰

However, what I propose is not an extension of the scope of method claims. This is because liability based on causing actions of others is recognized as an inherent route to legal responsibility throughout the law. As noted, when a another human being is used as an instrumentality, the “extension” of liability is no more an extension than in the circumstances in which an inanimate object is utilized in carrying out some act.⁴⁹¹ Causal responsibility is even recognized in criminal cases in spite of the rule of lenity⁴⁹² and the principle that courts cannot create new crimes.⁴⁹³ There is no evidence that Congress in 1952 repudiated causal responsibility in patent law. Instead, it sought to codify common-law theories of non-performer liability in an

486. Cf. *supra* Section III.C (discussing the minor causal role of some aiders and abettors in criminal law and tort law).

487. See *supra* notes 377–379 and accompanying text.

488. For an extended argument to this effect in the divided infringement context, see Brendyn M. Reinecke, Note, *Akamai: Patent Claims Are Now Broader than the Invention*, 2013 WIS. L. REV. 1231.

489. Cf. Lemley et al., *supra* note 82, at 256–63 (discussing difficulties in enforcing method claims where steps are performed by multiple actors). Had the claims been drafted in apparatus form, a manufacturer could be successfully sued, in many cases probably without controversy, for direct infringement based on “making” or “selling” the article. See Karshtedt, *supra* note 1, at 923 n.53 (discussing method and apparatus claims); see also *supra* notes 82–89 and accompanying text.

490. See Lemley et al., *supra* note 82, at 276 (“In general, patent applicants will be well served by seeking claim coverage designed to trigger infringement liability . . .”).

491. See *supra* notes 40–41 and accompanying text.

492. See *supra* notes 292–303 and accompanying text.

493. KADISH ET AL., *supra* note 314, at 137 (“[N]early all American jurisdictions . . . have now abolished the common law doctrine that courts can create new crimes.”).

infringement statute that, as the accompanying House Judiciary Committee Report confirms,⁴⁹⁴ incorporates the concept of causation.

Moreover, as many have argued, it would be odd to have a law of infringement under which many method claims are left with an ineffective or very limited remedy.⁴⁹⁵ This state of affairs might be particularly problematic when method claims might be the only choice for protecting inventions in a certain field of technology.⁴⁹⁶ But under the current approach, cases have arisen in which such claims cannot be effectively enforced because end users are practically unreachable and manufacturers are protected by elevated mens rea requirements. In other cases, method claims might be completely unenforceable based on cramped versions of the “single entity” rule.⁴⁹⁷ These results are puzzling because a part of the purpose of codifying infringement in the Patent Act was to ensure that someone would be held liable when suits against end users would have been impractical,⁴⁹⁸ and to overrule the *Mercoïd* cases,⁴⁹⁹ which held that assertions of “contributory infringement” were improper attempts to extend the patent right.⁵⁰⁰ More generally, many pre-1952 cases involved method claims that courts were loath to enforce, and a part of the impetus behind the 1952

494. H.R. REP. NO. 82-1923, S. REP. NO. 82-1979, *supra* note 121, at 2402.

495. *See, e.g.,* Holbrook, *Method Patent Exceptionalism*, *supra* note 87 (manuscript at 21–38) (arguing that courts’ treatment of method claims has resulted in doctrinal inconsistencies); Sichelman, *Patent Law Revisionism*, *supra* note 140, at 342–43 (arguing that infringement of many patents on important technologies will not be compensated during the time before the accused indirect infringer is faced with a demand letter or an infringement complaint); Greskowiak, *supra* note 177, at 398–404 (criticizing the law’s countenancing of easy circumvention of certain method patent claims.).

496. *See* Holbrook, *Method Patent Exceptionalism*, *supra* note 87 (manuscript at 36–38) (discussing patent eligibility of method claims); *cf.* Christopher T. Abernethy, Comment, Cruel Hand of *Bilski*: Culminating the Shortsighted Crusade for Marginalization of the ‘Process’ Patent (May 2009) (unpublished comment), <http://papers.ssrn.com/abstract=1420205> [<https://perma.cc/5JH3-CMWS>] (describing challenges to the patent eligibility of method claims directed to certain subject matter).

497. *See supra* note 277 and accompanying text.

498. *See Hearings Before Subcomm. No. 4, supra* note 424, at I (subtitle of the bill: “A Bill To Provide for the Protection of Patent Rights Where Enforcement Against Direct Infringers Is Impracticable . . .”). The cases preceding the 1952 Patent Act and the legislative history of the Act reflect this very concern. *See supra* Section I.A.

499. H.R. REP. NO. 82-1923, S. REP. NO. 82-1979, *supra* note 121, at 2402; *see also* Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476, 492 (1964) (“Congress enacted § 271 for the express purpose of reinstating the doctrine of contributory infringement as it had been developed by decisions prior to *Mercoïd*, and of overruling any blanket invalidation of the doctrine that could be found in the *Mercoïd* opinions.”). *See generally* Rich, *supra* note 102.

500. *Mercoïd Corp. v. Minneapolis-Honeywell Regulator Co.*, 320 U.S. 680, 684 (1944); *Mercoïd Corp. v. Mid-Continent Inv. Co.*, 320 U.S. 661, 670 (1944).

Patent Act was to address that very problem.⁵⁰¹ The whole point was to make method claims easier to enforce, not more difficult. Finally, as Professor Holbrook explained,⁵⁰² it seems odd that the distinction between method and apparatus claims has been more or less been ignored or eliminated for the purpose of patent eligibility⁵⁰³ and exhaustion of patent rights via authorized sales of products “substantially embodying” method patents,⁵⁰⁴ but in infringement cases courts insist on placing formalistic limits on method claim enforcement.

The objector would argue, finally, that many patents having method claims are “bad” patents in terms of overall quality and, moreover, might be misused in the hands of unscrupulous non-practicing entities.⁵⁰⁵ These may well be meritorious critiques, but the performer/non-performer distinction, on its own,⁵⁰⁶ is a legally infirm ground for dealing with them. In addition, though there is certainly room for debate,⁵⁰⁷ it would seem that if the desired policy outcome is to invalidate as many bad patents as possible, we should encourage defendants to actually challenge patent validity as opposed to allowing

501. One example is *B. B. Chemical Co. v. Ellis*, 314 U.S. 495 (1942), which is discussed in Rich, *supra* note 102, at 533–34; see also *Patent Law Codification and Revision: Hearings on H.R. 3760 Before Subcomm. No. 3 of the H. Comm. on the Judiciary*, 82nd Cong. 151–57 (1951) (statement of Giles Rich criticizing courts’ non-enforcement of method patents and arguing for adoption of § 271(b) and (c) to fix the problem); and *Hearings Before Subcomm. No. 4, supra* note 424, at 26–27 (statement of Stephen Cerstvik, similar).

502. Holbrook, *Method Patent Exceptionalism, supra* note 87 (manuscript at 36–37); *cf.* Love & Yoon, *supra* note 382, at 1638, n.117 (noting “interchangeability in many instances of apparatus and method claims” (quoting Joel Voelzke, *Patent Marking Under 35 U.S.C. § 287(a): Products, Processes, and the Deception of the Public*, 5 FED. CIR. B.J. 317, 319 (1995))).

503. *See* *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2360 (2014); *see also* *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 566 U.S. 66, 72 (2012) (criticizing excessive reliance on “draftsman’s art” in patent eligibility analysis (citation omitted)). *But cf.* Oddi, *supra* note 430, at 109 (“There appears to be an unarticulated assumption on the part of the majority in [*Dawson Chemical Co. v. Rohm & Haas Co.*, 448 U.S. 176 (1980)] that in many, if not all, instances of contributory infringement the patent owner is being deprived of patent protection due to some technicality of patent law.”).

504. *Quanta Comput., Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 634 (2008). *But cf.* *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 807 F.3d 1283, 1306–07 (Fed. Cir. 2015) (taking a step toward achieving some logical consistency between how method claims are treated for the purpose of determining exhaustion versus measuring damages).

505. *See* Love & Yoon, *supra* note 382, at 1620 (“[T]he overwhelming majority of [non-practicing entity] suits involve method claims . . .”).

506. *See supra* notes 162–163 and accompanying text.

507. *See, e.g.*, Holbrook, *supra* note 159, at 1033–38 (criticizing the elimination of the defense of good-faith belief of invalidity to indirect infringement based on the argument that the absence of this defense chills patent validity challenges); *cf.* Love & Yoon, *supra* note 382, at 1638 n.118 (suggesting that accused indirect infringers may focus on proving noninfringement or invalidity rather than lack of requisite intent).

them to prevail based on the lack of requisite intent.⁵⁰⁸ In addition, it goes without saying that litigating intent and other subjective mental states is fact-intensive and expensive⁵⁰⁹—a fact that further reinforces the conclusion that the complicated “bad purpose” approach to intent should be adopted only in cases in which it is really necessary to protect providers of general platforms (as, for example, in many copyright cases),⁵¹⁰ and when its utilization is justifiable by general common-law principles.

CONCLUSION

Imputation of acts of performers to non-performers based on causal principles is a long-standing route of assigning legal responsibility. This approach provides a path to liability in circumstances where strict adherence to notions of liability styled as “derivative,” “secondary,” or “indirect” leads to unsatisfying results in various areas of law. More generally, causal imputation deals with scenarios in which elements of an offense are divided between multiple parties, which is exactly what we see in some patent cases.

Problems with the direct/indirect dichotomy may be one of the reasons that criminal law has moved away from a formalistic distinction between principals and accomplices. And tort law has often eschewed direct and derivative labels altogether. Yet patent law continues to rely on performer/non-performer and direct/derivative distinctions to a fault, erecting high hurdles to hold non-performers liable and ignoring the notions of causing acts of others. But as long as we have a law of patent infringement that explicitly recognizes non-performer theories of liability, we must accept imputation theories based on causation. These theories are consistent with intuitive notions of legal responsibility and, indeed, with the specific observation that, in many patent infringement cases, the non-performer is more responsible for the acts that are covered by steps of asserted patent claims than the performer.

508. This argument, of course, does not apply to patents rendered unenforceable in the divided infringement context.

509. Cf. Paul M. Janicke, *Do We Really Need So Many Mental and Emotional States in United States Patent Law?*, 8 TEX. INTELL. PROP. L.J. 279, 297 (2000) (“The patent system must decide whether the mental states currently present in the patent laws are helpful for a system intended to foster today’s technology, or whether in truth these mental states just make patent litigation more complicated and expensive.”).

510. See *supra* Section IV.B.