

12-2010

The Distortionary Effect of Evidence on Primary Behavior

Alex Stein

Brooklyn Law School

Gideon Parchomovsky

Follow this and additional works at: <https://brooklynworks.brooklaw.edu/faculty>



Part of the [Evidence Commons](#), and the [Law and Economics Commons](#)

Recommended Citation

124 Harv. L. Rev 518 (2010-11)

This Article is brought to you for free and open access by BrooklynWorks. It has been accepted for inclusion in Faculty Scholarship by an authorized administrator of BrooklynWorks.

ESSAY

THE DISTORTIONARY EFFECT OF EVIDENCE ON PRIMARY BEHAVIOR*

Gideon Parchomovsky** and Alex Stein***

In this Essay, we analyze how evidentiary concerns dominate actors' behavior. Our findings offer an important refinement to the conventional wisdom in law and economics literature, which assumes that legal rules can always be fashioned to achieve socially optimal outcomes. We show that evidentiary motivations will often lead actors to engage in socially suboptimal behavior when doing so is likely to increase their chances of prevailing in court. Because adjudicators must base decisions on observable and verifiable information — or, in short, evidence — rational actors will always strive to generate evidence that can later be presented in court and will increase their chances of winning the case regardless of the cost they impose on third parties and society at large. Accordingly, doctors and medical institutions will often refer patients to undertake unnecessary and even harmful examinations just to create a record demonstrating that the doctors or medical institutions went beyond the call of duty in treating them. Owners of land and intellectual property may let harmful activities continue much longer than necessary just to gather stronger evidence concerning the harms they suffer. And even the police will often choose to allow offenders to carry out crimes in order to improve the chance of a conviction. The effect we identify is pervasive. It can be found in virtually all areas of the law. Furthermore, there is no easy way to eliminate or correct it. However, the evidentiary phenomenon we discuss also has positive side effects: it reduces adjudication costs for judges and juries and improves the accuracy of court processes. In some cases, these improvements will exceed the social cost of suboptimal behavior. In other contexts, however, the social cost will far outweigh the benefit.

* This Essay is dedicated to Guido Calabresi in recognition of his guidance and inspiration.

** Professor, University of Pennsylvania Law School; Bar-Ilan University Faculty of Law, Israel.

*** Professor of Law, Cardozo Law School. We thank David Abrams, Matt Adler, Ron Allen, Jennifer Arlen, Amitai Aviram, Miriam Baer, Douglas Baird, Avi Bell, Omri Ben-Shahar, Miriam Bitton, Darryl Brown, Guido Calabresi, Anthony Casey, Ben Depoorter, Frank Easterbrook, Jim Gibson, Myriam Gilles, David Gilo, Hillary Greene, Sharon Hannes, Alon Harel, Todd Henderson, David Hyman, Louis Kaplow, Margaret Lemos, Saul Levmore, Greg Mitchell, Tom Morawetz, Jacob Nussim, Randy Picker, Ariel Porat, Richard Posner, J.J. Prescott, Alex Reinert, Tony Sebok, Dudi Schwartz, Steven Shavell, Paul Shupack, Peter Siegelman, Stewart Sterk, Lior Strahilevitz, Julie Suk, Larry Ribstein, Henry Smith, Doron Teichman, George Triantis, William Twining, Tom Ulen, Mark Weiner, Phil Weiser, Verity Winship, Ekow Yankah, and participants in workshops and presentations at the American Law & Economics Association Twentieth Annual Meeting, Cardozo Law School, Chicago Law School, Ghent University, Harvard Law School, Tel-Aviv University Faculty of Law, University of Connecticut School of Law, and University of Illinois College of Law for their excellent comments on earlier drafts.

INTRODUCTION

Andy is driving on a narrow and winding road without shoulders. All of a sudden, a car driven by Bob approaches from the opposite direction. Bob, preoccupied with his cell phone, inadvertently crosses the dividing yellow line and enters Andy's lane at a slow speed. Andy notices Bob, but it is too late for him to draw Bob's attention. At this point, Andy faces two options: he can either swerve sharply into a ditch on his right or let Bob's car crash into his at a speed of twenty miles per hour. Andy estimates the expected cost of each of the options he faces. Driving his car into the ditch will result in damage of \$1000 to his car. Staying where he is and letting Bob's car crash into his will cause Andy's car damage of \$3000 and Bob's car damage of \$4000. Due to Bob's car's low speed, no danger is posed to either driver's bodily integrity.

Which option should Andy choose? According to standard law and economics, the answer is obvious: Andy must swerve to the right and avert collision. Under this option, at a cost of \$1000 to himself, Andy can save both parties the much greater expense of \$7000 (\$3000 to himself and \$4000 to Bob). Swerving is the least-cost solution in this case. It is clearly the socially desirable behavior as well. Yet, if Andy is a rational actor,¹ he will choose to let Bob's car collide with his.

How come? The reason is simple. If Andy swerves to the right, it will be almost impossible for him to prove that Bob caused the resulting damage to his car. Proving Bob's negligence in court is going to be a nearly impossible task as well. In fact, chances are that Andy may not even be able to identify Bob's car or find its whereabouts after their chance encounter. Even if Bob stops, moreover, he may deny his responsibility for the accident — in good or bad faith — and challenge Andy's version of the events. Choosing the collision option improves Andy's fortunes quite dramatically. True, he will incur a greater harm (as will Bob), but he will have a very easy time proving Bob's liability in court. Allowing the collision negates the chance that Bob will be able to drive away. Moreover, it produces incontrovertible evidence regarding Bob's liability. The police officer who will arrive at the accident scene will immediately see that Bob entered the opposite side of the road and crashed into Andy's car. The collision option, therefore, guarantees Andy full recovery for his harm.² Alas, it does so at a sig-

¹ We assume that Andy is rational in a rudimentary sense, that is, that he is disposed "to choose, consciously or unconsciously, an apt means to whatever ends [he] happens to have." RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 17 (6th ed. 2003).

² Arguably, Andy's primal instinct will prompt him to avoid the collision. Assume that Andy follows this instinct: he drives his car into the ditch and suffers an uncompensated damage of \$1000. Will Andy follow this instinct if he finds himself in a similar situation once again? Most

nificant and socially unnecessary cost to both Bob and Andy. The collision option is socially inferior to the alternative, but Andy, as a self-interest maximizer, will still choose it since it clearly offers *him* the highest expected payoff.³

This case is by no means a peculiar example. Consider Clara, the owner of a summer home in the Pacific Northwest. A new chemical plant starts operating in the vicinity of Clara's property. The plant emits fumes and gases that damage Clara's property but pose no danger to her health. In principle, Clara can bring a nuisance action against the plant and seek injunctive relief — temporary or permanent. However, if she is rational, she will not do so right away. Instead, she will bide her time and let the harmful effects accumulate. Specifically, she would do well to wait until the paint on the exterior of her house begins to fade or even peel off and the plants in her front lawn wither. Although these harms could be avoided and the socially optimal outcome achieved if Clara took swift legal action, allowing the harms to transpire is the right decision from Clara's point of view as it will make her day in court a lot easier. Without actual proof of harm, Clara may not secure her desired remedy. With it, Clara is much more likely to prevail.⁴

The same effect is present in our criminal law. Imagine that detectives from the New York Police Department receive information about a burglary of a jewelry store in midtown Manhattan. Detectives rush to the scene. They assume positions around the store and watch the suspect arrive. They can arrest him before he attempts to break the lock. But they will not. Instead, in all likelihood, they will let the suspect enter the property and perhaps even ransack the showcases or break the safe lock before they actually arrest him. Acting prematurely will jeopardize their case in court.⁵ Catching the burglar red-

likely not: Andy's primal instinct will be superseded by his experience-based rationality. See generally DREW FUDENBERG & JEAN TIROLE, *GAME THEORY* § 1.2.5, at 23–29 (1991) (explaining the evolutionary basis of rational choice).

³ Andy's choice does not constitute comparative negligence, nor will it allow Bob to successfully invoke the "avoidable consequence" defense. See *infra* notes 63–66 and accompanying text.

⁴ Here and in many other contexts, the distortion engendered by evidence-seeking behavior may be partly offset by the saving of the party's expenditures on alternative evidence. We thank Steven Shavell for drawing our attention to this mitigating factor.

⁵ This example is modeled on a landmark criminal case, *People v. Rizzo*, 158 N.E. 888 (N.Y. 1927), featuring an armed robbery suspect arrested by the police while he and his accomplices were searching for the man they conspired to rob. The suspect was initially found guilty of attempted robbery, but the New York Court of Appeals reversed his conviction because the prosecution failed to establish that "in all reasonable probability the crime itself would have been committed, but for timely interference." *Id.* at 889. At the outset of this decision the court stated:

The police of the city of New York did excellent work in this case by preventing the commission of a serious crime. It is a great satisfaction to realize that we have such wide-awake guardians of our peace. Whether or not the steps which the defendant had

handed will get them satisfaction and good publicity, albeit at a considerable cost to the store owner.

Similar examples pervade our legal system. As we will show, they exist in a diverse range of legal fields, such as property law, patent law, tort law, criminal law, and quite likely in all others. The diverse legal fields all share one basic commonality: evidentiary concerns cause a misalignment between the socially desirable behavior and a rational actor's self-interested behavior. This misalignment, or distortion, is fundamental and systematic. Furthermore, its implications for understanding the functioning of the law are significant. It suggests that the rules of primary behavior that exist in different areas of substantive law cannot *on their own* provide precise incentives to rational actors. Rather, rational actors will always interpret the dictates of our substantive law through an evidentiary gloss, which in many cases will prompt actors to deviate from the outcome envisioned by efficiency-minded legislatures and courts.

The effect we identify in this Essay cannot be easily eliminated. Nor can it be corrected. If factfinders were omniscient, this distortion would disappear, but as long as they are not and decisions about liability must be based on observable and verifiable facts, the effect will persist. There is no ready way to align a person's quest to obtain favorable evidence with society's interest that each person act efficiently, rather than wastefully or in a downright harmful way. In fact, the two interests are fundamentally incompatible.

The source of the problem may be traced back to the different theories that animate behavior-guiding and evidentiary rules. Behavior-guiding rules aim at protecting and improving society's well-being, and regulate individuals' activities in accordance with these goals. Evidentiary rules perform an altogether different function: their role is to determine what constitutes proof of the facts upon which courts should recognize individuals' liabilities and rights. Those rules consequently create an evidence-seeking incentive that affects persons' choices among different courses of action. A person interested in prevailing in court will tend to act in a way that maximizes the probability of achieving that result.⁶ This conduct will often come at the

taken up to the time of his arrest amounted to the commission of a crime, as defined by our law, is, however, another matter.

Id. at 888.

⁶ By the same token, a wrongdoer seeking to avoid detection and liability will try to destroy or suppress inculpatory evidence and fabricate exculpatory evidence. For analyses of complex enforcement problems engendered by detection avoidance, see Jennifer Arlen, *The Potentially Perverse Effects of Corporate Criminal Liability*, 23 J. LEGAL STUD. 833, 842-43 (1994) (arguing that firms' strict liability for employees' crimes may suppress the firms' willingness to self-police and uncover inculpatory evidence); Arun S. Malik, *Avoidance, Screening and Optimum Enforcement*, 21 RAND J. ECON. 341 (1990); Jacob Nussim & Avraham D. Tabbach, *Controlling Avoid-*

expense of a socially beneficial action that the evidence-seeker will abandon.

Let us return to the example of the accident between Andy and Bob. Andy's motivation in allowing the collision is profoundly inefficient and, perhaps, morally objectionable as well, but there is no way to avoid it. *Ex ante*, both drivers would be happy to make an agreement obligating Andy to swerve into the ditch and Bob to pay for the damage to Andy's car. Unfortunately, the two drivers cannot negotiate *ex ante*. They can only start negotiating after the accident, but at that *ex post* stage, Andy has already taken action to produce the evidence most favorable to his case and thereby foreclosed the possibility of reaching the outcome both drivers would have chosen *ex ante*.

Although behavior-guiding rules and evidentiary rules advance different instrumental goals, they operate simultaneously on real-world actors. And if the actor is rational, the evidentiary motivation will dominate. Except in cases in which the best evidence an actor can produce does not suffice for a legal victory, a rational actor should not care about the size of the damage (unless it happens to be a physical injury that she wants to avoid at all costs).⁷ She will take the course of action that generates the most favorable evidence for her case — that is, the evidence that maximizes her chances to recover compensation for her harm from the other person.

Our main insight has far-reaching implications for economic analysis of law and legal theory in general. Whether a person will have evidence identifying the wrongdoer who caused her damage depends on empirical facts. Those empirical facts do not correlate with incentives for socially responsible behavior. Such incentives do not promise favorable evidence to a person who acts responsibly, nor do they deny such evidence to a person who acts in a socially irresponsible way.

ance: *Ex Ante Regulation Versus Ex Post Punishment*, 4 REV. L. & ECON. 45 (2008); Chris William Sanchirico, *Detection Avoidance*, 81 N.Y.U. L. REV. 1331 (2006); and Chris William Sanchirico, *Evidence Tampering*, 53 DUKE L.J. 1215 (2004). For analysis of evidence fabrication, see Chris William Sanchirico & George Triantis, *Evidentiary Arbitrage: The Fabrication of Evidence and the Verifiability of Contract Performance*, 24 J.L. ECON. & ORG. 72 (2008); George G. Triantis, *The Efficiency of Vague Contract Terms: A Response to the Schwartz-Scott Theory of U.C.C. Article 2*, 62 LA. L. REV. 1065, 1076–78 (2002) (arguing that rigid contractual terms may incentivize a contracting party to manufacture evidence that will fend off allegations of breach and that vague contractual terms can mitigate this inefficiency). Fraudulent detection avoidance and evidence fabrication fundamentally differ from the evidence-generating behavior focused upon by this Essay. First and most importantly, we focus upon behavior that generates *true* evidence rather than upon frauds aiming to distort factfinders' decisions. Unlike evidentiary frauds, such behavior does not constitute a crime or a civil wrong. Moreover, there is no general way to set up incentives against evidence-generating behavior. See *infra* pp. 527–29.

⁷ The socially beneficial motivation to minimize the damage will also dominate when the actor estimates that she is unlikely to recover compensation due to the wrongdoer's insolvency.

The epistemology of causation is agnostic as to who did the right thing and who acted wrongly from an economic or moral perspective.

Evidence specialists and law and economics experts have paid virtually no attention to this problem.⁸ Extant scholarship has focused exclusively upon the cost of evidentiary processes and the challenges such cost presents to law enforcement.⁹ Accordingly, the principal policy recommendations one finds in the literature include cutting the costs of discovery and proof;¹⁰ eliminating suits that require costly fact-finding;¹¹ replacing expensive factual inquiries by decisional shortcuts;¹² proxies,¹³ and credible signals;¹⁴ and introducing penalty multipliers that intensify deterrence in areas where law is insufficiently enforced due to the high cost of evidence.¹⁵ The existing scholarship is

⁸ For a related point made in connection with whistleblowing, see William E. Kovacic, *Whistleblower Bounty Lawsuits as Monitoring Devices in Government Contracting*, 29 LOY. L.A. L. REV. 1799, 1829 (1996) ("Rather than promptly bringing problems to management's attention, employees may allow them to persist — thus increasing the size of the injury and the relator's potential recovery — and to gather evidence for pursuing a *qui tam* suit. The incentive to delay will be greatest where few people know of the misconduct, and thus the number of potential competing relators is small.").

⁹ For a summary and critical discussion of this scholarship, see ALEX STEIN, FOUNDATIONS OF EVIDENCE LAW 141–71 (2005).

¹⁰ See, e.g., Richard A. Posner, *An Economic Approach to the Law of Evidence*, 51 STAN. L. REV. 1477, 1484–87 (1999).

¹¹ See STEIN, *supra* note 9, at 3–8; see also James A. Henderson, Jr., *Process Constraints in Tort*, 67 CORNELL L. REV. 901 (1982) (developing a general process-cost theory of torts); Douglas Lichtman, *Copyright as a Rule of Evidence*, 52 DUKE L.J. 683 (2003) (rationalizing "fixation" and "creativity" requirements for copyright protection as savers of factfinding costs); Fred C. Zacharias, *The Politics of Torts*, 95 YALE L.J. 698, 711–14 (1986) (rationalizing tort liability limitations by focusing on the societal need to contain the costs of litigation).

¹² See generally Ronald J. Allen, *Presumptions in Civil Actions Reconsidered*, 66 IOWA L. REV. 843 (1981) (discussing various evidentiary presumptions and their underlying rationales); Antonio E. Bernardo et al., *A Theory of Legal Presumptions*, 16 J.L. ECON. & ORG. 1 (2000) (developing an economic model of evidentiary presumptions that mediate between litigation costs and incentives for primary behavior).

¹³ For a seminal account of how to use evidence-production costs as a proxy for the adequacy of the producer's primary behavior, see Chris William Sanchirico, *Relying on the Information of Interested — and Potentially Dishonest — Parties*, 3 AM. L. & ECON. REV. 320 (2001). See also Louis Kaplow, *The Value of Accuracy in Adjudication: An Economic Analysis*, 23 J. LEGAL STUD. 307, 312–21 (1994); Chris William Sanchirico, *Games, Information, and Evidence Production: With Application to English Legal History*, 2 AM. L. & ECON. REV. 342 (2000) (analyzing the tradeoff between factfinding that relies on disinterested witnesses to determine actors' behavior and factfinding that determines actors' behavior by their costly signals); JEREMY BENTHAM, 2 RATIONALE OF JUDICIAL EVIDENCE, SPECIALLY APPLIED TO ENGLISH PRACTICE 435–44 (1827) (pioneering the idea of "preappointed evidence" — a cost-saving rule under which specified evidence conclusively settles conflicts over disputed facts).

¹⁴ See STEIN, *supra* note 9, at 157–67; see also Daniel J. Seidmann & Alex Stein, *The Right to Silence Helps the Innocent: A Game-Theoretic Analysis of the Fifth Amendment Privilege*, 114 HARV. L. REV. 430 (2000) (justifying the right to silence as a mechanism that elicits credible signaling from criminal defendants by reducing criminals' incentive to pool with innocents).

¹⁵ See Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 184, 188, 192 (1968); see also A. Mitchell Polinsky & Steven Shavell, *Punitive Damages: An*

unquestionably important and insightful. Yet, it fails to notice that the cost of evidence is not the only evidence-related hurdle that our legal system faces. Inefficiencies might occur not only when the cost of evidence is high, but also when it is low. In this Essay, we hope to rectify this omission.

The Essay proceeds as follows. In Part I, we provide a detailed account of standard economic models of optimal behavior and then show how attention to evidence changes the main results. In Part II, we demonstrate how evidentiary motivations distort actors' primary behavior in various legal areas, including tort, property, contract, criminal, and intellectual property law. In Part III, we consider the possibility that evidence-generating behavior may be socially desirable despite its distortionary effect on primary behavior because it facilitates liability determinations and improves courts' accuracy. A short conclusion follows.

I. EVIDENTIARY DISTORTIONS

The principle of harm minimization is a central tenet of law and economics. According to this principle, legal rules ought to minimize aggregate social harm, defined as the grand total of the cost of the harm for those who suffer it and the cost of its avoidance or abatement for those who are best situated to prevent or reduce it. As Ronald Coase showed, when transaction costs are sufficiently low, private parties can achieve this goal by private ordering that leads to coordinated minimization of the harm.¹⁶ In the majority of cases, however, when transaction costs are high and private coordination is impracticable, the legal system should step in and interpose rules that regulate potentially harmful activities by allocating the burden of preventing the harm to the appropriate actor.

In performing this task, efficiency-minded lawmakers should be guided by the "cheapest cost avoider" criterion.¹⁷ According to this criterion, devised by Guido Calabresi, the burden of preventing (or abating) a harm should be placed on the person best situated to perform this task cheaply.¹⁸ In the simplest two-party scenario, the choice will be between the wrongdoer and the victim. Consider the case of an accident between a car and a bicycle rider that caused the latter a harm of \$3000. Assume that the car driver could have avoided the

Economic Analysis, 111 HARV. L. REV. 869, 873-74 (1998) (arguing that courts should take defendants' probability of escaping liability into account when calculating punitive damages).

¹⁶ See generally R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

¹⁷ See GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 95-129, 174-97, 266-73 (1970) (developing the "cheapest cost avoider" method for minimizing the cost of accidents).

¹⁸ *Id.* at 135.

harm by expending \$1000 and that the victim could have prevented it only at a cost of \$2000. In this example, the car driver is the cheapest cost avoider and should therefore be held liable for the harm he inflicted on the bicycle rider.¹⁹

In more complicated cases involving multiple parties, the task of identifying the cheapest cost avoider becomes more complex.²⁰ Furthermore, determining the cheapest cost avoider may be even more challenging in cases in which the prevention efforts of the parties are interdependent. In such cases, the cheapest way to prevent the harm requires a certain contribution by each party.²¹ Although these complications can — and do — increase the cost of identifying the cheapest cost avoider, they do not undermine the general validity of the principle.

Indeed, the cheapest cost avoider principle has won over many diverse advocates.²² Even though it was originally developed in the context of tort liability, scholars have applied the principle in many other areas of the law, effectively turning it into a general principle of assigning liability for harm.²³

It bears emphasis that the main function of the cheapest cost avoider principle is not distributional. Rather, it embodies the more general idea of harm minimization. The imposition of liability on the party best positioned to minimize harm cheaply is intended to induce that party to behave in a socially optimal way. Specifically, this principle is designed to guide the primary behavior of individual actors in a way that aligns those actors' private interests with societal goals.

¹⁹ We assume for simplicity's sake that in this case the relative costs of prevention for the parties are independent of each other.

²⁰ See generally IZHAK ENGLAND, *THE PHILOSOPHY OF TORT LAW* 31–35 (1993) (underscoring informational difficulties in the identification of the cheapest cost avoider).

²¹ For example, these contributions may amount to \$500 for the driver and \$400 for the bicycle rider. The total cost of preventing the harm (\$900) would thus fall below \$1000.

²² See, e.g., Giuseppe Dari-Mattiacci & Nuno Garoupa, *Least-Cost Avoidance: The Tragedy of Common Safety*, 25 J.L. ECON. & ORG. 235, 235–36 (2009) (attesting that the cheapest cost avoider principle “is unanimously recognized as desirable”).

²³ See, e.g., Adam B. Badawi, *Harm, Ambiguity, and the Regulation of Illegal Contracts*, 17 GEO. MASON L. REV. 483, 530 (2010) (discussing reliance on the cheapest cost avoider criterion in allocating losses from illegal contracts); Tun-Jen Chiang, *Fixing Patent Boundaries*, 108 MICH. L. REV. 523, 554–57 (2010) (using the cheapest cost avoider principle to allocate responsibility for avoidable errors in patent claims); James J. Park, *Shareholder Compensation as Dividend*, 108 MICH. L. REV. 323, 346–47 (2009) (using the cheapest cost avoider standard in ascribing liability for securities fraud); Christopher Serkin, *Existing Uses and the Limits of Land Use Regulations*, 84 N.Y.U. L. REV. 1222, 1272 (2009) (recognizing the cheapest cost avoider principle as one approach to land use regulation); Henry E. Smith, *The Harm in Blackmail*, 92 NW. U. L. REV. 861, 883 (1998) (applying the cheapest cost avoider criterion to criminal blackmail); Stewart E. Sterk, *Property Rules, Liability Rules, and Uncertainty About Property Rights*, 106 MICH. L. REV. 1285, 1314–16 (2008) (using the cheapest cost avoider criterion in allocating the responsibility for uncertainty about property rights).

The accepted lore among law and economics scholars is that appropriately designed rules of torts, property, intellectual property, criminal law, and the like will secure this critical alignment between private and social interests.²⁴ That is, the conceptualization of substantive legal rules that allocate entitlements and remedies in accordance with the cheapest cost avoider principle will induce the relevant actors to reduce the aggregate cost of harm and avoidance measures to the bare minimum. Indeed, the real challenge from the standpoint of efficiency is not to identify the party who is best situated to reduce the grand total cost of harm and preventive measures per se, but rather to induce that party to reduce that grand total to the lowest possible amount.

The following example is illustrative. Assume that a cement plant is producing loud noise that causes a harm of \$100,000 to Alice, who lives nearby. The noise level can be reduced in one of two ways: First, the plant can implement a new production technique at a cost of \$1,000,000 and thereby eliminate the problem. Second, Alice can install a set of double-pane windows that will block out all the noise at a cost of \$20,000. Under these facts, it is clear that the socially desirable way to solve the noise problem is to install the double-pane windows. An efficiency-minded judge should therefore order Alice to install the windows. Of course, there is also the question of which party should pay for the installation. This, however, is a purely distributional question.²⁵ If the judge thinks on fairness grounds that the plant, rather than Alice, should bear the cost of installing the windows, the judge can supplement the order by requiring the plant to reimburse Alice for her expenses. Hence, the cheapest cost avoider (here, Alice) is not necessarily the party who should incur the cost of implementing the preventive measure.

The decision of who should bear the cost of abatement is of great significance to the parties. Yet from the standpoint of societal welfare, it is completely secondary. The main goal is to ensure that the noise problem is eliminated at the lowest possible cost — in this case, \$20,000. Any expenditure beyond this amount is socially wasteful and, hence, should be discouraged. For instance, if Alice had another option of eliminating the noise, say by erecting an acoustic barrier at a cost of \$50,000, efficiency would militate against the adoption of this

²⁴ See sources cited *supra* note 23.

²⁵ Indeed, there is a debate in the law and economics literature over whether distributional goals should be carried out by substantive legal rules or only through the tax system. For the former view, see Matthew D. Adler & Chris William Sanchirico, *Inequality and Uncertainty: Theory and Legal Applications*, 155 U. PA. L. REV. 279 (2006); and Chris William Sanchirico, *Taxes Versus Legal Rules as Instruments for Equity: A More Equitable View*, 29 J. LEGAL STUD. 797 (2000). For the latter view, see Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667 (1994).

measure, as it represents a waste of \$30,000 — the difference between the cost of this measure (\$50,000) and the cost of the double-pane windows (\$20,000).

Furthermore, standard law and economics analysis assumes that parties will invariably comply with the principle of harm minimization.²⁶ Actors who are best positioned to minimize the relevant harm at the lowest possible cost will indeed try to do so.²⁷ For instance, in our previous example, Alice is expected to install the double-pane windows on her own and then sue the plant for reimbursement.

A key assumption of the law and economics movement is that actors respond to incentives.²⁸ Accordingly, the role of substantive legal rules is to incentivize actors to comply with the prescriptions of utility maximization and avoid unnecessary waste of resources.²⁹ In Alice's case, the law's task is to ensure that Alice adopts the socially desirable prevention measure — the double-pane windows. If Alice were to implement a wasteful measure, such as an acoustic barrier, she would not be entitled to recover the additional cost of that measure from the plant.

This canonical account is flawed, however, as it ignores the centrality of the adjudicative mechanism through which primary-behavior rules are implemented.³⁰ In particular, it pays no heed to the key role of evidence in establishing legal entitlements and liabilities. If judges and juries were omniscient, this omission would be of no consequence. In a world with perfect information, judges and juries would never err in implementing substantive legal rules. In that world, entitlements and liabilities would always be assigned properly. Importantly, in such a world, there would be no need for adjudicative processes to begin with.³¹ Since all individuals in that world would be perfectly informed, there would be no need to expend resources on evidence production and factfinding.

Of course, this world is unreal. In the real world, adjudicators must decide cases based on observable and verifiable information — or, in legal parlance, evidence. Rational actors will always be mindful of the centrality of evidence and information production to their suc-

²⁶ See, e.g., CALABRESI, *supra* note 17, at 135–38.

²⁷ *Id.*

²⁸ See POSNER, *supra* note 1, at 4.

²⁹ *Id.* at 24–25, 167–70, 215–19; see also STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 1–4 (2004); ROBERT COOTER & THOMAS ULEN, LAW & ECONOMICS 293 (5th ed. 2008) (noting contract doctrine's contribution to efficiency, which “requires uniting knowledge and control over resources at least cost” (emphasis omitted)).

³⁰ Law and economics scholars acknowledge, however, that adjudication costs may distort the allocation of substantive liabilities and entitlements. See POSNER, *supra* note 1, at 563–64, 577.

³¹ See STEIN, *supra* note 9, at 33 (arguing that evidentiary rules and processes are not needed when adjudicators are epistemically infallible).

cess in future litigation. Although the rules and standards of conduct are specified by substantive law, *actual* liability determinations, as well as remedies, depend on the evidence parties can produce. For example, under a negligence regime, the question of whether Andy can recover compensation from Bob, who caused damage to his car, depends on Andy's ability to prove by a preponderance of the evidence that Bob was negligent. If Andy fails to produce the requisite evidence, he will lose his case even though Bob was in fact negligent. The same holds true for all rights and remedies. Rights and remedies do not operate in a vacuum. Indeed, they are meaningless for real world actors unless those actors can produce the evidence necessary to substantiate them.

An important implication of this insight is that in the real world evidentiary motivations will often affect actors' primary behavior in ways that are inconsistent with the demands of economic theory. The desire to possess convincing evidence will cause rational parties to expend resources to produce such evidence even when doing so is socially wasteful. Each actor has a strong incentive to behave in a way that generates evidence favorable to her case in court. This evidentiary motivation will often undermine substantive law's efforts to minimize harm at the lowest possible cost. The incentive to minimize harm set by substantive legal rules will be effective only when following the rules yields the most favorable evidence the actor can generate. Obviously, this will not happen in many cases. The evidence that an actor can generate depends on the factual circumstances of her case, and those circumstances depend on empirical contingencies. They do not track the desirability of the actor's behavior from the cheapest cost avoider's point of view or from any other normative standpoint.

To illustrate, return to the example of the accident between Andy and Bob. Recall that Andy can avoid the collision but only by incurring a nonnegligible harm to his car. Letting the accident occur will cause a considerably greater harm to Andy's car but will also produce irrefutable evidence of Bob's negligence. Will Andy avoid the collision? If Andy is a self-interest maximizer, he will avoid the accident only if he is guaranteed to recover compensation for the harm he will incur in the process. Otherwise, he will choose the collision option even though it will result in a much greater combined harm to both automobiles. From Andy's vantage point, the decisive determinant is not social welfare. Rather, it is the payoff Andy will receive after suing Bob or Bob's insurance company. Allowing the collision to happen guarantees Andy a payoff of zero, whereas avoiding the collision produces a high probability of a negative payoff since Andy will be unlikely to prove Bob's negligence.

This result is robust and ubiquitous. The evidentiary overlay is always present and must be taken into account by rational actors. Evidence is the filter through which rights and entitlements are per-

ceived. The distortion caused by evidentiary motivations cannot be easily fixed and in many cases cannot be fixed at all. Furthermore, it is not confined to potential plaintiffs. A similar motivation often animates the decisions of potential defendants, as exemplified by the pervasive practice of defensive medicine.³² Defensive medicine is a socially wasteful activity. Yet, it cannot be eradicated because it produces valuable evidence for doctors and medical institutions that may make the difference between winning and losing a medical malpractice case. In this area and others, no legal intervention can eliminate the evidentiary distortion we identified.

In other contexts, the distortionary effect is caused by the law itself. This effect occurs when the law conditions the availability of certain remedies on the occurrence of repeated violations or the accumulation of harm.³³ In such cases, the inefficient evidence-generating incentive can be cured by changing the content of substantive legal rules. Yet, even in this scenario, the fix is not simple. As we will show, changing the design of substantive law — or of the evidentiary requirements necessary to prove one's case — will lead to other inefficiencies. For example, if lawmakers were to waive the harm requirement and make all remedies available to successful plaintiffs regardless of the level of harm they suffered, this reform would put all wrongdoers on a par and prevent courts from differentiating among wrongdoers based on the harm criterion. In the area of criminal law, elimination of the harm criterion would create arbitrariness in the imposition of punishments and social stigma.³⁴ All other bases for convicting and punishing people are morally questionable, conceptually unstable, and operationally malleable.³⁵ As such, they would make it too easy for the government to manipulate criminal processes and deny individuals their basic liberties.³⁶

³² See *infra* notes 101–05 and accompanying text.

³³ For a striking example, see *Jordan v. Alternative Resources Corp.*, 458 F.3d 332 (4th Cir. 2006), *cert. denied*, 127 S. Ct. 2036 (2007), which held that a wild, but single, racist exclamation referring to black people generally does not make an African American worker's environment hostile for purposes of antiretaliation and other remedies under Title VII of the Civil Rights Act of 1964. *Id.* at 340–43. This decision is both unfair and inefficient in that it incentivizes victims of racism to pile up evidence of a hostile environment by enduring multiple slurs. For a detailed discussion of cumulative harm requirements, see *infra* sections II.B–C, pp. 535–42.

³⁴ See, e.g., Paul H. Robinson, *A Theory of Justification: Societal Harm as a Prerequisite for Criminal Liability*, 23 UCLA L. REV. 266, 266 (1975).

³⁵ See 1 JOEL FEINBERG, *THE MORAL LIMITS OF THE CRIMINAL LAW: HARM TO OTHERS* 31–36 (1984) (explaining why criminal law should penalize people only for causing harm conceptualized as a morally wrongful invasion of another's interest); George P. Fletcher, *Ambivalence About Treason*, 82 N.C. L. REV. 1611, 1612 (2004) (underscoring that the harm requirement is central to the "nature and purpose" of criminal law).

³⁶ See Robinson, *supra* note 34, at 266–67.

These constraints make the extant evidentiary requirements difficult, if not impossible, to dispense with. The distortionary effect of evidence-seeking on primary behavior consequently becomes entrenched. In Part II, we demonstrate the prevalence of this effect by cataloguing various legal doctrines in which it is present. In each case, we also assess whether the distortionary effect can be fixed and, if so, at what cost.

II. DOCTRINE

In this Part, we show that actors' quests for evidence distort primary behavior in multiple legal areas.³⁷ We demonstrate that the distortion of primary behavior by evidence-seeking conduct is a pervasive and largely ineradicable phenomenon. That said, it should be emphasized that we do not claim that distortion will occur in *all* cases. Distortion is likely to occur only in those cases where production of evidence by a party will allow her to prove her case by a preponderance of the evidence in civil cases, or beyond a reasonable doubt in criminal cases.³⁸ In other cases, when the outcome of the case — favorable or unfavorable — is certain irrespective of the evidence a party can produce, no distortionary effect is expected. With this caveat in mind, we can now embark on our doctrinal odyssey. We begin with criminal law and then proceed to the fields of torts, property, and intellectual property.

A. Criminal Law

Evidence plays a crucial role in every decision concerning criminal liability. The police can arrest a suspect only if they demonstrate "probable cause" — evidence indicating that the suspect committed, or was about to commit, a criminal offense.³⁹ As the criminal process progresses toward indictment and conviction, the evidentiary requirements become more demanding. For example, in order to prove con-

³⁷ It is quite possible that this effect can be found in all legal areas, but since proving this hypothesis is beyond the scope of this Essay, we leave this ambitious claim for future projects.

³⁸ From a potential defendant's side, distortion will occur when production of evidence is likely to exonerate the defendant.

³⁹ See WAYNE R. LAFAYE ET AL., *CRIMINAL PROCEDURE* § 3.3, at 163–68 (5th ed. 2009) (explicating the "probable cause" requirement for arrest); see also *Brigham City, Utah v. Stuart*, 547 U.S. 398, 406 (2006) (holding that evidence of ongoing violence constitutes "probable cause" because the Fourth Amendment does not require the police "to wait until another blow render[s] someone 'unconscious' or 'semi-conscious' or worse"); *Terry v. Ohio*, 392 U.S. 1, 35 n.1 (1968) (Douglas, J., dissenting) (reasoning that "probable cause" does not require that police officers wait until a suspect "commit[s] a crime before they are able to 'seize' that person"). Note that, upon reasonable suspicion that a suspect is carrying a weapon and might use it against the police officer or another person, the officer can stop the suspect to search for weapons without arresting him. *Id.* at 27 (majority opinion).

spiracy, the prosecution must produce evidence of an "overt act" by which the alleged conspirators have begun implementing their criminal goal.⁴⁰ Absent such evidence, the conspirators' mere talk will fall short of showing the requisite endangerment of society.⁴¹ By the same token, in order to establish that a defendant accused of a criminal attempt crossed the line of "preparation" and moved on to commit the crime itself, the prosecution needs to adduce evidence demonstrating that the defendant made a "substantial step" toward the consummation of the contemplated crime.⁴² Finally, in all criminal trials, the prosecution is required to prove "beyond a reasonable doubt" each and every element of the crime the defendant is accused of committing.⁴³ This proof requirement extends to the defendant's conduct, to the conduct's consequences, and to whether the defendant acted willfully and intended to bring about those prohibited consequences.⁴⁴

Each of these evidentiary requirements makes perfect sense. The criminal law system tries to apprehend, censure, deter, and incapacitate people whose actions pose a serious danger to society.⁴⁵ To attain these goals, the system authorizes police, prosecutors, and courts to impose severe limitations on persons' liberties. Under appropriate circumstances, a person can be arrested, searched, deprived of her belongings, prosecuted, convicted, and punished. These measures inflict substantial harm upon criminal defendants and suspects. The system consequently needs safeguards against arbitrary and erroneous inflictions of that harm. Those safeguards integrate two sets of rules. The first set contains the evidentiary requirements for proper application of law enforcement measures against individuals. These requirements specify the nature and the quantum of evidence that justify a person's

⁴⁰ See, e.g., WAYNE R. LAFAVE, CRIMINAL LAW § 12.2(b), at 626 & n.52 (4th ed. 2003) (reviewing the "overt act" requirement for conspiracy).

⁴¹ See, e.g., *Yates v. United States*, 354 U.S. 298, 334 (1957) ("The function of the overt act in a conspiracy prosecution is . . . to manifest 'that the conspiracy is at work'" (quoting *Carlson v. United States*, 187 F.2d 366, 370 (10th Cir. 1951))).

⁴² See MODEL PENAL CODE § 5.01(1) (1962) ("A person is guilty of an attempt to commit a crime if, acting with the kind of culpability otherwise required for commission of the crime, he . . . purposely does or omits to do anything that, under the circumstances as he believes them to be, is an act or omission constituting a substantial step in a course of conduct planned to culminate in his commission of the crime."); LAFAVE, *supra* note 40, § 11.4(e), at 594 ("The Model Penal Code's 'substantial step' language is to be found in the great majority of the attempt statutes in the modern recodifications."); see also *United States v. Prichard*, 781 F.2d 179, 182 (10th Cir. 1986) ("The police need not wait until the defendant is on the verge of committing the specific act that constitutes the crime. If this were the rule, much of the preventative purpose of inchoate liability would be vitiated.").

⁴³ See STEIN, *supra* note 9, at 172–83 (outlining the scope of the "proof beyond a reasonable doubt" requirement and analyzing the requirement's rationale).

⁴⁴ See *Apprendi v. New Jersey*, 530 U.S. 466, 476 (2000).

⁴⁵ See SHAVELL, *supra* note 29, at 543–44.

arrest, search, seizure, prosecution, conviction, and punishment. The second set constitutes an assembly of remedial rules that respond to violations of the evidentiary requirements. These rules void arrests, suppress evidence, quash convictions, mandate acquittals, set aside punishments, and order retrials. As a supplementary remedy, they also allow wronged suspects and defendants to recover compensation from the government and its law enforcement officers.⁴⁶

The remedial rules thus undo the results of a defective enforcement of criminal law. The *ex ante* effect of those rules is to incentivize compliance with the evidentiary requirements by police, prosecutors, and trial judges. Under those rules, police and prosecutors have a strong incentive to secure the trial and appellate courts' affirmation of the evidence underlying a person's arrest, search, seizure, prosecution, conviction, and punishment. Whether courts will accept the police's and the prosecutor's case depends on the strength of the evidence incriminating the defendant. The stronger the evidence, the better are the police's and the prosecutor's chances to secure the defendant's arrest, conviction, and punishment.

Unfortunately, however, the strength of inculpatory evidence positively correlates with the defendant's advancement of his criminal endeavor. The closer the defendant moves toward the accomplishment of the offense, the stronger the evidence. The police's role as a law enforcer consequently involves an irremediable tension between two societal goals. On the one hand, the police are required to prevent crime and minimize the harm that criminals inflict upon individual victims and communities. On the other hand, in order to deter crime and keep criminals off the street, the police often have no choice but to allow criminals to endanger and even harm individuals and communities since such delayed action is the only way to obtain inculpatory evidence. This tension is vividly illustrated by the classic case of *People v. Rizzo*.⁴⁷ In that case, the police had only one way of generating evidence that could secure the defendant's conviction: allowing armed criminals to approach and start robbing their victim, despite the

⁴⁶ This remedy is available against state governments under 42 U.S.C. § 1983 (2006) and is available against federal agents under *Bivens v. Six Unknown Named Agents of Federal Bureau of Narcotics*, 403 U.S. 388 (1971). See *Hudson v. Michigan*, 547 U.S. 586, 598 (2006) (underscoring growing effectiveness of compensatory redress as a remedy for violations of suspects' and defendants' rights by government agents); see also Alexander A. Reinert, *Measuring the Success of Bivens Litigation and Its Consequences for the Individual Liability Model*, 62 STAN. L. REV. 809, 827–45 (2010) (carrying out empirical investigation of *Bivens* suits and reporting their relative success).

⁴⁷ 158 N.E. 888 (N.Y. 1927).

unnecessary emotional and sometimes physical harm suffered by the victim.⁴⁸

This method of gathering evidence is relatively common.⁴⁹ Moreover, police often switch from a passive strategy that merely allows a criminal to commit the contemplated offense to an active encouragement of the crime, known as “entrapment,”⁵⁰ or to undercover activities that involve police agents’ participation in the criminal enterprise.⁵¹ These evidence-generating practices have encompassed the commission of many serious crimes, including drug dealing,⁵² sexual

⁴⁸ See *id.* at 888–89; see also *State v. Duke*, 709 So. 2d 580, 581–82 (Fla. Dist. Ct. App. 1998) (holding that an alleged child molester was arrested too early to qualify as an attempter); *Commonwealth v. Ortiz*, 560 N.E.2d 698, 703 (Mass. 1990) (holding that riding in a car with a loaded gun in an unsuccessful search for the intended victim was insufficient to support a conviction for attempted assault and battery); *People v. Coleman*, 86 N.W.2d 281, 285 (Mich. 1957) (noting that “the purchase of a hunting rifle, secretly intended for the murder of the neighbor” is “merely an act of [noncriminal] preparation”). See generally Richard A. Bierschbach & Alex Stein, *Mediating Rules in Criminal Law*, 93 VA. L. REV. 1197, 1234–41 (2007) (explaining how the tension between retribution and deterrence complicates the standards for identifying and punishing inchoate crimes).

⁴⁹ For example, before making a drug-related arrest or stop-and-frisk, the police must wait for the suspected drug deal to be carried out, despite the risk of violence that such deals involve. See, e.g., *People v. McRay*, 416 N.E.2d 1015, 1019–21 (N.Y. 1980) (holding that an exchange of a glassine envelope, the “telltale sign” of heroin, will constitute the lowest level of proof required for “probable cause” if money is passed in exchange for the envelope, if participants behave furtively or evasively, or if the exchange occurs in an area rampant with narcotics activity); *Commonwealth v. E.M.*, 735 A.2d 654, 659–61 (Pa. 1999) (holding that an exchange of a plastic baggie typically used to transport drugs constitutes evidence that allows the police to stop and frisk the suspects under the “reasonable suspicion” standard of *Terry v. Ohio*, 392 U.S. 1, 30 (1968)).

⁵⁰ Entrapment is generally permitted, provided that the government does not overstep the “line . . . between the trap for the unwary innocent and the trap for the unwary criminal.” *Sherman v. United States*, 356 U.S. 369, 372 (1958). That is, “[w]here the Government has induced an individual to break the law and the defense of entrapment is at issue . . . the prosecution must prove beyond reasonable doubt that the defendant was disposed to commit the criminal act prior to first being approached by Government agents.” *Jacobson v. United States*, 503 U.S. 540, 548–49 (1992) (citing *United States v. Whioie*, 925 F.2d 1481, 1483–84 (D.C. Cir. 1991)); see also *United States v. Kaminski*, 703 F.2d 1004, 1010 (7th Cir. 1983) (Posner, J., concurring) (“If the police entice someone to commit a crime who would not have done so without their blandishments, and then arrest him and he is prosecuted, convicted, and punished, law enforcement resources are squandered in the following sense: resources that could and should have been used in an effort to reduce the nation’s unacceptably high crime rate are used instead in the entirely sterile activity of first inciting and then punishing a crime. However, if the police are just inducing someone to commit sooner a crime he would have committed eventually, but to do so in controlled circumstances where the costs to the criminal justice system of apprehension and conviction are minimized, the police are economizing on resources.”).

⁵¹ See *Jacobson*, 503 U.S. at 548 (“[T]here can be no dispute that the Government may use undercover agents to enforce the law. ‘It is well settled that the fact that officers or employees of the Government merely afford opportunities or facilities for the commission of the offense does not defeat the prosecution. Artifice and stratagem may be employed to catch those engaged in criminal enterprises.’” (quoting *Sorrells v. United States*, 287 U.S. 435, 441 (1932))). For a superb study of this phenomenon, see generally Elizabeth E. Joh, *Breaking the Law to Enforce It: Undercover Police Participation in Crime*, 62 STAN. L. REV. 155 (2009).

⁵² See Joh, *supra* note 51, at 156.

offenses,⁵³ fraud,⁵⁴ theft,⁵⁵ and perjury.⁵⁶ These practices are unquestionably harmful. They are, however, also unquestionably necessary.⁵⁷ Banning these practices might expose society to a greater harm.⁵⁸

This tradeoff between the deterrence and incapacitation of criminals, on the one hand, and the prevention of individual crimes, on the other hand, is ubiquitous. Whether there is a way to resolve this tradeoff satisfactorily is a difficult question that we address below in Part III. At this stage, we only identify the social cost of evidence-seeking in criminal law or, more precisely, how the quest for inculpatory evidence distorts the primary behavior of police and prosecutors. The extent to which this distortion is inevitable and needs to be tolerated is a separate issue.

⁵³ See, e.g., *State v. Yegan*, 221 P.3d 1027 (Ariz. Ct. App. 2009) (police detective used the internet to pose as a fourteen-year-old girl, to conduct a sexually charged online conversation, and to arrange a date with a child molester in order to get him arrested); *Duke*, 709 So. 2d at 581 (police detective used the internet to present himself as a twelve-year-old girl and arrange a sex date with the defendant, who was arrested too early to qualify as an attempter); *State v. Morris*, 272 N.W.2d 35, 35–36 (Minn. 1978) (to obtain evidence of defendant's engagement in prostitution, undercover police officer partially undressed himself and negotiated sex for hire with defendant). Detectives have at times employed even more extreme methods. See, e.g., *State v. Burkland*, 775 N.W.2d 372, 373–74 (Minn. Ct. App. 2009) (to obtain evidence of defendant's engagement in prostitution, undercover police officer posed as a paying customer and initiated sexual contact with defendant — a behavior that the court found “offensive to due process,” *id.* at 376); see also *Okin v. Vill. of Cornwall-on-Hudson Police Dep't*, 577 F.3d 415, 427–28 (2d Cir. 2009) (observing that a police officer may violate due process when he affirmatively creates or enhances violence against a private person).

⁵⁴ See Joh, *supra* note 51, at 156–57 & 156 n.6.

⁵⁵ See *id.*

⁵⁶ See *id.*

⁵⁷ The Supreme Court recognized the necessity of these practices long ago. See *Sorrells v. United States*, 287 U.S. 435, 441–42 (1932) (holding that “[a]rtifice and stratagem . . . employed to catch those engaged in criminal enterprises” are permissible, and clarifying that “[t]he appropriate object of this permitted activity, frequently essential to the enforcement of the law, is to reveal the criminal design; to expose the illicit traffic, the prohibited publication, the fraudulent use of the mails, the illegal conspiracy, or other offenses, and thus to disclose the would-be violators of the law”).

⁵⁸ See, e.g., *FBI Undercover Guidelines: Oversight Hearings Before the Subcomm. on Civil & Constitutional Rights of the H. Comm. on the Judiciary*, 97th Cong. 130 (1981) (statement of Philip B. Heymann, Assistant Att’y Gen., Criminal Division, Department of Justice) (“[U]ndercover operations are extremely effective in aiding us to identify, prosecute and convict the guilty and to reduce the chances that innocent parties will be caught up in the criminal process. . . . [T]hrough undercover techniques, we can muster the testimony of credible law enforcement agents, often augmented by unimpeachable video and oral tapes which graphically reveal the defendant’s image and voice engaged in the commission of crime. These techniques aid the truth-finding process by generally avoiding issues of mistaken identity or perjurious efforts by a witness to implicate an innocent person.”). See generally Bruce Hay, *Sting Operations, Undercover Agents, and Entrapment*, 70 MO. L. REV. 387 (2005) (pioneering economic analysis of entrapment and sting operations that identifies these operations’ utility).

B. Torts and Property

In these areas of the law, proof of causation and damage is a prerequisite for an entitlement-holder's success in a suit against the alleged infringer. The plaintiff must prove by a preponderance of the evidence that the defendant acted in a way prohibited by her entitlement and caused, or will likely cause, the harm that the entitlement guards against.⁵⁹ In other words, the plaintiff must prove that she was wronged by the defendant. To this end, she must provide evidence showing that she suffered, or is about to suffer, a deprivation as a result of the defendant's wrongdoing. Failure to do so will result in a court decision that denies the plaintiff the legal remedy that she seeks.

These basic evidentiary rules are aligned with common sense. Yet, they systematically distort the primary behavior of an entitlement-holder who faces an ongoing or imminent infringement of her entitlement. These rules motivate the entitlement-holder to prefer causally proven damage, however extensive it may be, to damage unsupported by evidence of causation. This evidence-driven preference is perfectly rational. As a practical matter, causally proven damage will likely win the entitlement-holder's suit against the infringer, while causally un-evidenced damage will certainly lose it. This pivotal factor makes the entitlement-holder anomalously indifferent to the sizes of the alternative damages. From a social welfare perspective, she should always prefer a smaller damage to a bigger one and act accordingly. The entitlement-holder, however, will opt for a bigger damage whenever it is actionable and the smaller damage is not. Evidentiary rules that apply in tort and property cases thus create a serious misalignment between the entitlement-holder's and society's interests.

This misalignment explains a prospective plaintiff's quest for impact evidence that unequivocally points to the wrongdoer. In our first introductory example, the collision of Bob's car with Andy's car gave Andy the impact evidence that would secure Andy's victory in a suit against Bob. The same misalignment of interest also explains a property owner's motivation to expose her property to continuous and ever-growing harm resulting from a defendant's activity. Cumulative harm stemming from a single causal factor — the defendant's activity — identifies the defendant as responsible for every incident of the harm. In our second introductory example, this evidentiary benefit explains a property owner's decision to expose her house to continuous pollution caused by the toxins emitted by a neighboring plant.

More often than not, evidence of impact and cumulative harm makes a difference between winning a suit and losing it. For that rea-

⁵⁹ See STEIN, *supra* note 9, at 219–25 (outlining and rationalizing the “preponderance of the evidence” requirement for civil trials).

son, a prospective plaintiff will try to obtain such evidence even when she can minimize her damage by taking a different action. As we already explained, this preference is inelastic: the size of the damage that a prospective plaintiff stands to incur will not affect this preference (save for cases in which the wrongdoer might be insolvent and where money does not substitute for the plaintiff's harm).

The aforementioned preference will be exercised not only by property owners who face an environmental hazard or other nuisance, but also by owners encountering an imminent or ongoing trespass. Those owners have a strong incentive to allow the trespasser to enter their property and even cause some damage to that property and its fixtures. Allowing the trespasser to commit those wrongs would generate evidence that will virtually guarantee the owner's success in a suit for an injunction and damages. This strategy is particularly attractive in jurisdictions that allow aggrieved property owners to recover multiple damages from trespassers.⁶⁰ By contrast, acting prematurely might result in a court decision that denies the owner the desired relief, thereby wasting her litigation effort and expenses.

The legal system cannot undo the distortion caused by evidentiary motivations. Abolishing the proof-of-harm requirements is not an option. Doing so would undercut the accuracy of adjudicative decisions and clog courts' dockets with frivolous suits and defenses.⁶¹ The consequent inefficacy of the adjudication system would erode individuals' incentives to comply with the law.⁶²

Expanding the doctrines of comparative fault⁶³ and avoidable consequences⁶⁴ is not a viable alternative either. Presently, these doctrines preclude a tort victim from recovering compensation for self-inflicted damage — damage originating from the victim's own fault that merged with the wrongdoer's negligence.⁶⁵ The doctrines thus entitle the wrongdoer to pay only for the damage that she caused the victim,

⁶⁰ See Gideon Parchomovsky & Alex Stein, *Reconceptualizing Trespass*, 103 NW. U. L. REV. 1823, 1834–36 (2009) (outlining and explaining multiple-damage provisions as a remedy for trespass).

⁶¹ See STEIN, *supra* note 9, at 144–48.

⁶² See *id.*

⁶³ See DAN B. DOBBS, *THE LAW OF TORTS* § 202, at 509–10 (2000) (describing the prevalent understanding of the comparative fault doctrine as based on a “comparison of the unjustified risks taken by each [party]” where “[t]he only negligence to be compared is negligence that is a cause in fact and also a proximate cause in the sense that the harm caused was the kind of harm put at risk,” *id.* at 509).

⁶⁴ See W. PAGE KEETON ET AL., *PROSSER AND KEETON ON THE LAW OF TORTS* § 65, at 458 (5th ed. 1984) (“The rule of avoidable consequences comes into play after a legal wrong has occurred, but while some damages may still be averted, and bars recovery only for such damages.”).

⁶⁵ For a comparison of these two doctrines, see DOBBS, *supra* note 63, §§ 203–05, at 510–17.

as opposed to the damage that the victim brought upon himself.⁶⁶ Neither of the two doctrines requires an innocent victim, who did nothing to damage himself, to fend off the consequences of the wrongdoer's action by inflicting upon himself a less substantial — and practically noncompensable — damage. Expansion of those doctrines into a general principle that requires victims to opt for a lesser evil would produce deleterious effects. As a threshold matter, allowing a wrongdoer to enlist the victim as her risk-management partner is patently anomalous. Wrongdoers should not be allowed to dictate to their victims what to do. Furthermore, the victim's universal duty to mitigate the effect of the wrongdoer's tort would dilute the deterrence of wrongdoers.⁶⁷ Implementing this duty would also be costly. In adjudicating alleged breaches of the duty, courts would have to resolve complex issues pertaining to the victim's ability to react to the wrongdoing better than he did. In the case of Andy and Bob, for instance, these issues would include the risk calculations that Andy was supposed to make and the time frame within which he reasonably could have made those calculations.

Prospective plaintiffs are not the only actors whose primary behavior is distorted by a quest for favorable evidence. Evidence-seeking also motivates prospective defendants to behave in a socially inefficient, but privately advantageous, fashion. Defensive medicine is probably the best example of such behavior. We mentioned this phenomenon in Part I and will now illustrate it in a way that highlights the functioning of custom evidence rules in medical malpractice litigation.

Consider a doctor who diagnoses a patient and determines that the patient must undergo urgent surgery. The doctor is confident about her diagnosis and estimates that no additional tests are necessary. Medical custom, however, advises doctors to run a series of expensive and time-consuming tests to confirm such diagnoses. This custom is not compulsory: failure to follow it does not in itself constitute medical malpractice.⁶⁸ Yet, following the custom practically insulates doctors

⁶⁶ See *id.* § 204, at 511–14.

⁶⁷ Throughout this Essay, we follow the traditional common law approach to causation rather than the “reciprocal causation” concept of Ronald Coase. See, e.g., Thomas W. Merrill & Henry E. Smith, Making Coasean Property More Coasean 26–27 (Mar. 9, 2010) (unpublished manuscript), available at http://extranet.isnie.org/uploads/isnie2010/merrill_smith.pdf (noting that the positive law did not adopt the Coasean idea of reciprocal causation).

⁶⁸ As a general rule, doctors must comply with certain medical customs and protocols. See Gideon Parchomovsky & Alex Stein, *Torts and Innovation*, 107 MICH. L. REV. 285, 300–03 (2008) (outlining and explaining the custom rules applicable in medical malpractice disputes). Failure to comply with those customs and protocols amounts to malpractice. But there are nonmandatory customs as well, and a doctor may deviate from any of them if she believes that the patient requires a different treatment or diagnostic procedure. These nonmandatory customs include protocols regarding “the timing and frequency of physical and radiographic . . . examinations” that

from suits for malpractice.⁶⁹ By running the customary tests, the doctor will generate evidence that will defeat any malpractice suit that the patient might file if the surgery does not produce the desired result.⁷⁰ The doctor therefore prefers to run the tests and delay the surgery. Her self-serving evidence-generating endeavor blocks primary activity that could benefit the patient and society at large.

Note that even if adjudicators were to stop using custom as the benchmark for assigning liability, it would not eliminate doctors' motivation to engage in defensive medicine in order to produce evidence that would help them defeat medical malpractice suits. Independently of the chosen liability standard, doctors will continue to generate evidence demonstrating that they went beyond the call of duty and took extra measures to protect the health of their patients. Hence, changing the legal standard is unlikely to remedy the problem.

C. Intellectual Property

For owners of intellectual property, the ability to obtain an injunction that fends off unauthorized users is economically vital.⁷¹ An injunction enforces the owner's right to exclude others from any use of her patent, copyright, or trademark to which she does not agree.⁷² The availability of this remedy also forces potential users to negotiate the terms of use with the owner and pay her the price she wishes to charge.⁷³ In addition, the possibility of obtaining injunctive relief confers upon the owner the power to veto undesired transactions.⁷⁴ Final-

diagnose breast cancer. Bradley C. Nahrstadt & Christina D. Ketcham, *A Primer on Defending Breast Cancer Litigation*, 25 AM. J. TRIAL ADVOC. 451, 464 (2002).

⁶⁹ See Parchomovsky & Stein, *supra* note 68, at 301 & nn.87–88, and sources cited therein.

⁷⁰ The doctor may act in the same way when her primary motivation is risk aversion. See *infra* notes 101–05 and accompanying text.

⁷¹ See Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 YALE L.J. 1742, 1781–82, 1784–86 (2007) (showing how an injunction-backed right to exclude frequently facilitates efficient governance of intellectual property by its owner); see also Eric E. Williams, *Patent Reform: The Pharmaceutical Industry Prescription for Post-Grant Opposition and Remedies*, 90 J. PAT. & TRADEMARK OFF. SOC'Y 354, 365 (2008) (attesting that "injunctions are vital to innovative drug companies" because "[w]ithout the power of injunctions, they would not be able to prevent a generic drug company from placing inexpensive copies of medicine in the marketplace").

⁷² See ROBERT P. MERGES ET AL., *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 13 (rev. 4th ed. 2007).

⁷³ See, e.g., Marc Morgan, *Stop Looking Under the Bridge for Imaginary Creatures: A Comment Examining Who Really Deserves the Title Patent Troll*, 17 FED. CIR. B.J. 165, 175 (2007) ("The threat of an injunction is an important tool to motivate would-be patent squatters to negotiate a license or settle patent infringement litigation.").

⁷⁴ See *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 215 (1980) (explaining that "the essence of a patent grant is the right to exclude others from profiting by the patented invention" and that "[c]ompulsory licensing is a rarity in our patent system").

ly, a timely injunction saves the owner the trouble of proving her injury in court.⁷⁵

However, an aggrieved owner of intellectual property is not entitled to a permanent injunction as a matter of course.⁷⁶ To obtain this remedy, an owner must prove that she faces irreparable harm that cannot be adequately remedied by monetary compensation and that the hardship she would suffer, if not granted the injunction, outweighs the inconvenience that the injunction would cause the defendant.⁷⁷ Moreover, courts are also instructed not to issue injunctions that disserve the public interest.⁷⁸

This discretionary formula is not as abstract as it appears to be. Federal courts have developed case law that instructs adjudicators on how to apply it.⁷⁹ Specifically, the Federal Circuit has established a presumptive rule that entitles a patent holder to an injunction upon showing the defendant's continual infringement of her patent.⁸⁰ Other courts have adopted similar rules in the areas of copyright⁸¹ and

⁷⁵ See John M. Golden, Commentary, "*Patent Trolls*" and *Patent Remedies*, 85 TEX. L. REV. 2111, 2152 (2007) (attesting that "[t]he difficulty of assessing a reasonable royalty [for the use of a patent] has in fact been one of the principal rationales for granting permanent injunctions").

⁷⁶ See *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392–93 (2006) (refusing to establish categorical rules with respect to injunctions in patent and copyright infringement cases and "reject[ing] invitations to replace traditional equitable considerations with a rule that an injunction automatically follows a determination that a copyright [or a patent] has been infringed").

⁷⁷ *Id.* at 391.

⁷⁸ *Id.*

⁷⁹ As Chief Justice Roberts explained in his concurrence in *eBay*, the discretionary formula is not a "clean slate": the "long tradition of equity practice" that allowed patent holders to obtain injunctions that fend off infringers ought to be read into this formula. *Id.* at 395 (Roberts, C.J., concurring). Justices Stevens, Scalia, Kennedy, Souter, Ginsburg, and Breyer have agreed with this point. See *id.* at 394 (noting that Justices Scalia and Ginsburg joined the Chief Justice's concurrence); *id.* at 395–96 (Kennedy, J., concurring) (agreeing with the Chief Justice on the relevant point, in an opinion joined by Justices Stevens, Souter, and Breyer).

⁸⁰ See *Broadcom Corp. v. Qualcomm Inc.*, 543 F.3d 683, 704 (Fed. Cir. 2008) ("[O]ne who elects to build a business on a product found to infringe cannot be heard to complain if an injunction against continuing infringement destroys the business so elected." (quoting *Windsurfing Int'l, Inc. v. AMF, Inc.*, 782 F.2d 995, 1003 n.12 (Fed. Cir. 1986)) (internal quotation marks omitted)); *Corning Glass Works v. U.S. Int'l Trade Comm'n*, 799 F.2d 1559, 1567 (Fed. Cir. 1986) (noting that immediate irreparable damage is presumed in connection with a request for injunctive relief from continued infringement); *Smith Int'l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1581 (Fed. Cir. 1983) ("[W]here validity and continuing infringement have been clearly established, as in this case, immediate irreparable harm is presumed." (footnote omitted)); cf. *Acumed LLC v. Stryker Corp.*, 551 F.3d 1323, 1330 (Fed. Cir. 2008) (attesting that, under the "balance of hardships" standard, it is proper for a court to ignore a patent infringer's expenditures on designing and marketing the infringing product).

⁸¹ See, e.g., *Bridgeport Music, Inc. v. Justin Combs Publ'g*, 507 F.3d 470, 492 (6th Cir. 2007) ("Not only is the issuance of a permanent injunction justified '[w]hen a copyright plaintiff has established a threat of continuing infringement, he is entitled to an injunction.'" (alteration in original) (quoting *Walt Disney Co. v. Powell*, 897 F.2d 565, 567 (D.C. Cir. 1990))); *CBS Broad., Inc. v. EchoStar Commc'ns Corp.*, 450 F.3d 505, 518 n.25 (11th Cir. 2006) ("Under the Copyright Act, however, a plaintiff need not show irreparable harm in order to obtain a permanent injunc-

trademark.⁸² Taken together, these rules form what might be called the “continual infringement” doctrine. This doctrine effectively entitles an aggrieved owner of intellectual property to enjoin the continual infringer of her right. Courts will refuse to enjoin the infringer only when an established public policy favors a different result⁸³ or when the owner’s inequitable conduct makes her ineligible for injunctive relief.⁸⁴ Under such special circumstances, the owner must suffice herself with monetary relief.⁸⁵

The “continual infringement” doctrine makes perfect sense. The legal system cannot lightly grant property rule protection to a patent, a copyright, or a trademark. Such protection imposes substantial restrictions on third parties and allows the holder of an intellectual property right to engage in socially inefficient rent-seeking and holdouts.⁸⁶ As many scholars have pointed out, too much intellectual property protection may work to society’s detriment.⁸⁷ For these reasons, not every

tion, so long as there is *past infringement and a likelihood of future infringement*.” (emphasis added) (citing *Pac. & S. Co. v. Duncan*, 744 F.2d 1490, 1499 (11th Cir. 1984)); see also *Apple Inc. v. Psystar Corp.*, 673 F. Supp. 2d 926, 929 (N.D. Cal. 2009) (holding, pursuant to *eBay*, that “[o]ther than for trademark infringement claims, there is no presumption of irreparable harm with respect to a permanent injunction,” but observing that although “[i]rreparable harm may not be presumed . . . in run-of-the-mill copyright litigation, such proof should not be difficult to establish,” *id.* (quoting *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 518 F. Supp. 2d 1197, 1215 (C.D. Cal. 2007)) (internal quotation mark omitted)).

⁸² See, e.g., *Century 21 Real Estate Corp. v. Sandlin*, 846 F.2d 1175, 1180 (9th Cir. 1988) (“Injunctive relief is the remedy of choice for trademark and unfair competition cases, since there is no adequate remedy at law for the injury caused by a defendant’s continuing infringement.”); see also David H. Bernstein & Andrew Gilden, *No Trolls Barred: Trademark Injunctions After eBay*, 99 TRADEMARK REP. 1037, 1053–73 (2009) (discussing implications of *eBay* for trademark law and arguing that the practice of remedying trademark violations with injunctions should continue).

⁸³ See *eBay*, 547 U.S. at 391.

⁸⁴ See Robert P. Merges & Jeffrey M. Kuhn, *An Estoppel Doctrine for Patented Standards*, 97 CALIF. L. REV. 1, 32–33 (2009) (explaining the types of patentee behavior that should tip the scales in favor of standards estoppel).

⁸⁵ See *id.* at 32–34.

⁸⁶ See MICHAEL HELLER, *THE GRIDLOCK ECONOMY: HOW TOO MUCH OWNERSHIP WRECKS MARKETS, STOPS INNOVATION, AND COSTS LIVES* 1–22 (2008); Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 700 (1998); see also Oren Bar-Gill & Gideon Parchomovsky, *Essay, A Marketplace for Ideas?*, 84 TEX. L. REV. 395, 412–17 (2005) (discussing liability rule treatment for intellectual property rights); Daniel A. Crane, *Intellectual Liability*, 88 TEX. L. REV. 253, 258–69 (2009) (analyzing the ongoing depropertization of intellectual property rights, which reduces inefficient rent-seeking and holdouts).

⁸⁷ For criticism of the excessive protection of patents, see Alfred B. Engelberg, *Special Patent Provisions for Pharmaceuticals: Have They Outlived Their Usefulness?*, 39 IDEA 389, 419–25 (1999); Michael A. Heller, *The Dynamic Analytics of Property Law*, 2 THEORETICAL INQUIRIES L. 79, 87–89 (2001); Heller & Eisenberg, *supra* note 86; Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63, 71–83 (2004); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 863–66 (1990); and Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and*

violation of an intellectual property right should be met with a permanent injunction. Rather, the remedy should be reserved for those cases where an infringement constitutes a serious violation of the owner's entitlement and has no redeeming social value. The "continual infringement" requirement serves as a useful proxy for the first element of the discretionary formula: continual or ongoing infringements usually constitute serious incursions into the owner's domain of protected rights.

The insistence on continual infringement comes at a price, however. It has the obvious side effect of incentivizing intellectual property owners to generate evidence of continual infringement. As a consequence, owners of patents, copyrights, and trademarks may often decide to sit idly by and allow multiple infringements of their rights to occur. Such behavior would be socially inefficient when the owner can protect her intellectual property rights at a lower cost. For example, resources could be saved if rights holders were to sue infringers right away upon discovering the first instance of infringement. Yet, when an owner perceives a private benefit from obtaining an injunction, she is likely to choose to delay her suit until she can prove repeated infringement by a preponderance of the evidence. Accordingly, in cases in which the owner can choose between taking legal action against an infringer upon detecting the first infringement and delaying the lawsuit until multiple infringements occur, she may often choose to do the latter.⁸⁸ Hence, under extant law, the owner has a perverse incentive to underprotect her intellectual property and even set traps for unwary infringers.

To illustrate, consider the following example. Assume that MegaPharma holds a patent on a drug for treatment of cholesterol problems. MegaPharma gets wind of the fact that its much smaller rival, NanoPharma, is about to launch its own medication for treating cholesterol problems. MegaPharma knows from limited samples distributed by NanoPharma that the new medication infringes upon MegaPharma's vaunted patent. MegaPharma can bring an infringement suit right away or it can wait to sue until its rival sinks significant resources into building a new plant and establishing a distribution chan-

the Patent Law, 5 J. ECON. PERSP. 29, 30–32 (1991). For criticism of the socially unnecessary protection of trademarks, see Mark A. Lemley & Mark McKenna, *Irrelevant Confusion*, 62 STAN. L. REV. 413, 414 (2010); and Mark P. McKenna, *Testing Modern Trademark Law's Theory of Harm*, 95 IOWA L. REV. 63, 66 (2009). For criticism of copyright's overbreadth, see Gideon Parchomovsky & Alex Stein, *Originality*, 95 VA. L. REV. 1505, 1509–16 (2009), and sources cited therein.

⁸⁸ Naturally, other considerations may affect the choice in this case. Chief among them is solvency, or lack thereof. Specifically, if a rights holder estimates that the infringer does not have sufficient financial resources to pay for the harm he caused, the rights holder may decide to pursue legal action immediately, even if doing so jeopardizes the injunction.

nel. Preferring the former option over the latter achieves dramatic cost savings. MegaPharma, however, would likely choose the latter option because that option gives it a much better chance of obtaining an injunction.⁸⁹

III. IMPLICATIONS FOR SOCIAL WELFARE

Our discussion, thus far, has demonstrated how evidence-generating conduct distorts primary behavior. We have also demonstrated that this distortionary effect is robust and pervasive. Finally, we have shown that the legal system cannot eliminate this effect by modifying existing evidentiary and substantive rules since changing the design of the rules would undercut the system's ability to advance the important goals of deterrence and fairness. The legal system cannot replace those rules with a lawless vacuum; it can only substitute one evidentiary or substantive rule for a different rule. The necessity of having *some* evidentiary and substantive rules makes it impossible for the legal system to get rid of the evidence-seeking incentives that motivate individuals to act against societal interest. No matter what the system's rules are, a private actor's quest for favorable evidence will often be misaligned with socially optimal behavior.

Yet, the effect of evidence seeking is not as bad as it appears at first glance. A person's self-interested quest for favorable evidence has an upside that cannot be ignored. Evidence generated by self-interested parties does not merely help them prove their case in court, but also helps judges and juries resolve conflicts more accurately and expeditiously. As we will show, in some cases — such as accidents — the beneficial effect of evidence-generating endeavors on court proceedings may outweigh their distortionary effect on primary behavior. In other instances — such as defensive medicine — the distortion of primary behavior is so costly that the improvement in judicial accuracy will fall short of offsetting that cost.

To fully understand the welfare effects of evidence-generating activities, one needs to return to the classic work of Judge Calabresi in the area of tort law. In his seminal book, *The Costs of Accidents*, Cal-

⁸⁹ NanoPharma might argue that MegaPharma behaved inequitably, but it will probably not be able to procure evidence sufficient to prove this accusation. Moreover, this accusation would fail on the merits because MegaPharma did nothing inequitable. See *Pharmacia Corp. v. Par Pharm., Inc.*, 417 F.3d 1369, 1373 (Fed. Cir. 2005) (“[I]nequitable conduct includes affirmative misrepresentation of a material fact, failure to disclose material information, or submission of false material information, coupled with an intent to deceive.” (alteration in original) (quoting *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1178 (Fed. Cir. 1995)) (internal quotation marks omitted)); cf. Henry E. Smith, *Institutions and Indirectness in Intellectual Property*, 157 U. PA. L. REV. 2083, 2125–32 (2009) (advising courts to use the information-cost theory in applying *eBay* and to treat an infringer's detrimental reliance on the owner's failure to assert her ownership as a reason for not issuing an intellectual property injunction).

abresi famously distinguished among three types of social cost: “primary costs” that aggregate the cost of accidents and accident-avoidance expenses,⁹⁰ “secondary costs” that represent the distributional effects of the primary costs upon those who bear those costs under applicable legal rules,⁹¹ and “tertiary costs” that encompass the costs of adjudicating disputes over the allocation of primary and secondary costs.⁹² In his framework, an economically minded lawmaker must set up rules that minimize the total sum of costs — not only the primary costs of accidents, but also the secondary and tertiary costs.⁹³ Calabresi openly admitted that this goal is easier to formulate than to accomplish, but the lawmaker has no better option.⁹⁴

Although Calabresi focused on accidents,⁹⁵ his framework applies to all potentially harmful activities.⁹⁶ The primary costs consist of the costs of harm and the harm-prevention expenses; the secondary costs comprise the welfare effects of the rules that allocate the costs of already-inflicted harm; and the tertiary costs are the expenditures associated with the legal proceedings necessary to identify the bearers of the primary and the secondary costs.

Subsequent theorists have extensively analyzed Calabresi’s primary and secondary costs.⁹⁷ Much less attention has been given to tertiary costs, perhaps because of their place in Calabresi’s hierarchy. However, Calabresi himself underscored the significance of tertiary costs, explaining that he called them “tertiary” for a purely technical reason: they pay for the measures aimed at reducing primary and secondary costs.⁹⁸ Making those measures cost-effective is of paramount importance to the legal system. This overarching efficiency goal, explained Calabresi, “in a very real sense . . . comes first” because “[i]t tells us to question constantly whether an attempt to reduce accident costs, either

⁹⁰ CALABRESI, *supra* note 17, at 26–27.

⁹¹ *Id.* at 27–28.

⁹² *Id.* at 28.

⁹³ *Id.* at 26–31.

⁹⁴ As Calabresi observed:

[A]s soon as we abandon the hope of having a perfect world in which accident costs could be so particularized that general deterrence could infallibly price the acts or activities causing accidents out of the market, or specific deterrence could prohibit them with complete success, we necessarily move into a world where mixed approaches will prevail. The all-important question that remains, however, is which mixture accomplishes our mixed aims, not perfectly — as that is impossible — but best.

Id. at 234–35.

⁹⁵ *Id.* at 3–16.

⁹⁶ For one example of how Calabresi’s theory has been applied beyond the realm of accident costs, see Jonathan T. Molot, *A Market in Litigation Risk*, 76 U. CHI. L. REV. 367, 373–75 (2009).

⁹⁷ See, e.g., Symposium, *Calabresi’s The Costs of Accidents: A Generation of Impact on Law and Scholarship*, 64 MD. L. REV. 1, 1–754 (2005).

⁹⁸ CALABRESI, *supra* note 17, at 28.

by reducing accidents themselves or by reducing their secondary effects, costs more than it saves."⁹⁹

The addition of tertiary costs to our analysis suggests that evidence-generating activities may not be as socially harmful as they appear at first sight. To see why, return to our introductory example that involves an encounter between Andy's and Bob's cars. Assume that Andy swerves into the ditch to avoid collision and subsequently sues Bob for the \$1000 damage to his car. Bob will deny any responsibility for Andy's damage and claim that he did not enter Andy's lane or jeopardize him in any other way. Bob's denial makes the court's fact-finding task complicated, uncertain, and above all, expensive. In fact, if Andy cannot produce reliable witnesses to support his case, it is likely that the court will rule in Bob's favor, notwithstanding his responsibility for Andy's damage.

By contrast, in our original scenario in which Andy allows Bob's car to collide with his, the court will have no difficulty finding Bob responsible for the accident. Indeed, the collision setup makes the court's job so straightforward that Bob would hardly want to expend time and money on litigating the case. Instead, his optimal response would be to admit responsibility and offer Andy a suitable settlement. Consequently, the legal system (and society at large) will be spared the cost of resolving the dispute between Andy and Bob. Even if Bob decides to litigate for some reason, a judge or a jury will have no problem establishing Bob's liability and will do so at a very low cost.

Admittedly, the savings in adjudicative expenses come at a price: the occurrence of an avoidable collision. Andy's decision to allow the collision produced an unnecessary loss of \$7000 (consisting of the \$3000 damage to Andy's car and the \$4000 damage to Bob's car). If Andy were to swerve to the ditch, he could save society \$6000 in car-related damages, but given the beneficial effect of the collision on fact-finding, would swerving be the socially optimal response in this case?

Probably not. The difference in litigation costs in the two scenarios — swerving to the ditch on the one hand and allowing the collision on the other hand — will likely be well above \$6000. If so, Andy's ill-motivated choice to allow the collision would be welfare-enhancing after all. Counterintuitively, perhaps, if society could somehow force Andy to swerve into the ditch, Andy's subsequent inability to sue Bob successfully would lead to an unfair and inefficient result. Devising a legal rule that would force Andy to minimize the harm from the accident would sacrifice not only Andy's right to receive legal redress, but also society's interest in deterring Bob and other negligent drivers. As a society, we would not want to let drivers like Bob go scot-free. In-

⁹⁹ *Id.*

deed, we have strong efficiency and justice¹⁰⁰ reasons to allow Andy — and perhaps even to encourage him — to secure the strongest possible evidence against Bob.

Economic evaluation of evidence-generating activities must thus consider not only the distortion of the actor's primary behavior, but also the savings in court proceedings. It should be emphasized, however, that the savings from improved adjudicative proceedings will not always suffice to offset the waste on the primary behavior level. Indeed, in some instances, the distortionary effect of evidence-generating conduct is so pervasive that it dwarfs the conduct's benefit for judges and juries.

Consider the case of defensive medicine. Measures adopted by hospitals and individual doctors in order to fend off potential lawsuits from patients are wide-ranging and extremely costly. They include unnecessary diagnostic procedures, hospitalizations and referrals to specialty doctors, needless gathering of laboratory information, and even prescriptions for unneeded medications.¹⁰¹ Some physicians adopt these measures because of extreme risk aversion.¹⁰² This attitude prompts them to address every possible risk for the patient, no matter how small it is.¹⁰³ Many other doctors, however, overtreat their patients for a different reason: they wish to generate evidence that will help them fend off liability should a malpractice suit be filed against them.¹⁰⁴ The social cost of defensive medicine is very high, with some studies estimating it in the tens of billions of dollars.¹⁰⁵

¹⁰⁰ See, e.g., Ernest J. Weinrib, *Toward a Moral Theory of Negligence Law*, 2 L. & PHIL. 37, 38 (1983) (explaining corrective justice as a system that “considers the position of the parties anterior to the transaction as equal, and . . . restores this antecedent equality by transferring resources from [the wrongdoer] to [the victim] so that the gain realized by the former is used to make up the loss suffered by the latter”).

¹⁰¹ David M. Studdert et al., *Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment*, 293 JAMA 2609, 2609 (2005). This article perceptively identifies those procedures as “assurance behavior” — a concept capturing the procedures’ primary goal: to generate evidence that will defeat future suits for medical malpractice. *Id.* at 2610.

¹⁰² See, e.g., James Gibson, *Doctrinal Feedback and (Un)Reasonable Care*, 94 VA. L. REV. 1641, 1644–45 (2008).

¹⁰³ *Id.*

¹⁰⁴ Professor James Gibson identifies the “doctrinal feedback” dynamic: overcautious doctors take excessive precautions against risk of suit and cyclically transform those precautions into legally binding customs. *Id.* at 1653–61.

¹⁰⁵ Empirical studies estimate the overall cost of defensive medicine to be somewhere between \$100 billion and \$124 billion per annum across the United States. MASS. MED. SOC’Y, INVESTIGATION OF DEFENSIVE MEDICINE IN MASSACHUSETTS 1 (Nov. 2008), http://www.massmed.org/AM/Template.cfm?Section=Research_Reports_and_Studies2&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=27797 (noting that defensive medicine imposes over \$1.5 billion in unnecessary medical expenses upon Massachusetts alone); see also Daniel Kessler & Mark McClellan, *Do Doctors Practice Defensive Medicine?*, 111 Q.J. ECON. 353, 372–85 (1996) (providing empirical evidence of defensive medicine and its high cost: reduced expenditures on heart-disease prevention in states capping malpractice damages); Daniel Kessler & Mark McClellan,

The beneficial effect of those procedures on courts' decisions may be rather insignificant. Courts adjudicating medical malpractice suits can rely on expert witnesses and independent evidence. The additional evidence generated by hospitals and doctors through defensive practices may therefore have only a marginal effect on the accuracy of court decisions. Worse yet, there is reason to suspect that in many instances such evidence may lead courts astray since it is systematically slanted in favor of defendants.

In other areas, the overall effect of evidence-generating activities on social welfare is difficult to assess in the abstract. Take the case of intellectual property. The requirement of "continual infringement" certainly helps courts distinguish between different types of infringers and enables them to treat each infringer type differently. But does this mean that the overall effect of evidence-generating conduct in this context is positive? Not necessarily. The answer depends on how long intellectual property owners allow infringing activities to continue before they take legal action. Or, to put it more accurately, it depends on the amount of resources the infringer wasted until the infringement suit was finally brought. As we explained, intellectual property owners have an incentive to delay suit to pile up evidence of continual infringement that secures injunctive relief. To obtain such evidence, owners will let the infringers incur unnecessarily high costs.¹⁰⁶ This behavior is obviously a concern. In principle, courts can deter intellectual property owners from delaying suit for too long by using the doctrines of laches and estoppel to bar recovery. In practice, however, courts rarely resort to laches,¹⁰⁷ while the estoppel doctrine does not penalize rights holders for delaying suit.¹⁰⁸

Malpractice Law and Health Care Reform: Optimal Liability Policy in an Era of Managed Care, 84 J. PUB. ECON. 175, 178-79, 194-96 (2002) (providing updated empirical data confirming the 1996 Kessler & McClellan study).

¹⁰⁶ See *supra* notes 88-89 and accompanying text.

¹⁰⁷ See, e.g., *Reno Air Racing Ass'n, Inc. v. McCord*, 452 F.3d 1126, 1138 (9th Cir. 2006) ("Laches bars trademark infringement claims 'only where the trademark holder knowingly allowed the infringing mark to be used without objection for a lengthy period of time.'" (quoting *Brookfield Commc'ns, Inc. v. W. Coast Entm't Corp.*, 174 F.3d 1036, 1061 (9th Cir. 1999))); see also *id.* at 1139 (attesting that courts proceed on a strong presumption that laches is inapplicable and that "[i]t is extremely rare for laches to be effectively invoked when a plaintiff has filed his action before limitations in an analogous action at law has run" (quoting *Shouse v. Pierce Cnty.*, 559 F.2d 1142, 1147 (9th Cir. 1977)) (internal quotation marks omitted)).

¹⁰⁸ See *Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n*, 366 F.3d 1311, 1324 (Fed. Cir. 2004) (reaffirming the well-settled rule that a patent infringer relying on the equitable estoppel defense must establish by a preponderance of the evidence that: "(1) The [patentee], who usually must have knowledge of the true facts, communicate[d] something in a misleading way, either by words, conduct or silence. (2) The [accused infringer] relied upon that communication. (3) And the [accused infringer] would be harmed materially if the [patentee] is later permitted to assert any claim inconsistent with his earlier conduct." (first, third, fifth, and sixth alterations in

Our analysis of the welfare effect of evidence-generating strategies employed by law enforcement agents closely tracks our discussion of intellectual property law. Here too, the social cost of evidence-generating behavior depends on how far the police let a criminal perpetrator progress until they ultimately stop him. Yet, there are two important differences between the two areas. Unlike intellectual property owners, police have no inherent reason to delay their action in order to accumulate harm or let the wrongdoing repeat itself. They are therefore likely to act upon "probable cause," especially when they believe that they will gather enough evidence to support conviction. On the other hand, as agents acting to prevent harm to other persons rather than to themselves, police also have no inherent reason to rush. There may be cases in which they will let the criminal perpetrator continue in order to obtain ironclad evidence that will streamline their investigation and secure the perpetrator's conviction in court. This strategy engenders serious harm to society and the victim. Hence, it is difficult to say in the abstract whether the improvement in accuracy is greater than the harm.

At the end of the day, a full and accurate assessment of the welfare effect of evidence-generating endeavors would require one to compile a comprehensive list of the legal settings in which evidentiary motivations distort primary behavior, estimate the cost of those distortions, and then compare this cost with the positive effect of the additional evidence on judicial processes in terms of both accuracy and expedience. Naturally, such an examination lies beyond the ken of this Essay. Carrying it out would necessitate massive empirical research. To date, there are no empirical data on the question, which is not surprising given the fact that the question has not been discussed in the theoretical literature. As theorists, we do not presume to offer a decisive answer to the social welfare question. Given the dearth — or, more precisely, complete absence — of empirical data, we can only point to what we believe the effect of evidence-generating behavior will be in the context of the examples we discuss. We hope that future research will bring empirical evidence to bear on the welfare question and evaluate the effects of evidence-generating behavior in other settings.

CONCLUSION

When evaluated separately, substantive and evidentiary rules make perfect economic sense. Substantive rules are the instruments by which the legal system tries to minimize the cost of harm and the harm-avoidance expenses as a total sum. Evidentiary rules are the

original) (quoting *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1041 (Fed. Cir. 1992) (en banc) (internal quotation marks omitted))).

system's tools for achieving accurate and expedient implementation of the substantive rules.¹⁰⁹ The two tools work in harmony when the system uses them in adjudicating allegations that a substantive rule was violated.

This *ex post* vision of evidentiary rules represents conventional wisdom, which fails to account for the rules' *ex ante* effects. To comply with the evidentiary requirements for winning a case, an actor needs evidence that satisfies the requisite substantive *and* evidentiary conditions. The actor consequently has a strong incentive to generate evidence that can help her win her case in court. As we have shown, this evidentiary motivation will often shape the actor's primary behavior. Instead of trying to avoid or minimize harm in the most cost-efficient way, actors will behave in a socially wasteful manner when doing so generates favorable evidence for them. Minimization of harm and evidence gathering are not overlapping endeavors. Often, these endeavors will conflict with one another. When they do, an actor's desire to obtain favorable evidence will produce two conflicting effects on social welfare. On the one hand, it will distort primary behavior and lead to waste of resources. On the other hand, it will shorten the duration of trial and might improve the accuracy of adjudicative decisions. We have shown that in some contexts, such as defensive medicine, the first effect will likely dominate, while in others, such as accidents, the second effect will likely be stronger. In still other contexts, such as nuisance, intellectual property, and criminal law, the net effect cannot be determined in the abstract and would require a case-by-case analysis.

We would like to conclude by emphasizing one general point: any analysis of primary behavior that aspires to have policy implications must take full account of evidentiary considerations — both at the actors' and the courts' levels. From this perspective, law and science share a commonality: the concept and the ever-present contingency of "proof" is a critical element in both areas. A complete understanding of legal mechanisms and their function cannot be achieved without integrating this element. Normative analyses of the law that overlook evidentiary requirements and incentives will invariably be incomplete and slanted.

¹⁰⁹ See STEIN, *supra* note 9, at 1-4, 12, 141-43.

H A R V A R D L A W R E V I E W

RONALD KENNETH ANGUAS
MICHAEL ARTHUS
ISAAC C. BELFER
JUSTIN BEN-ASHER
ANNA LAURA BENNETT
WELTON E. BLOUNT, JR.
DAVID H. CALDWELL
OREN CASS
DUSTIN CHO
ASHLEY A. CHUNG
BRITTANY CRAMER
CAROLINE DECELL
DAVID W. DENTON
GREGORY DILHMANN-MALZER
ANN M. DONALDSON
ELIZABETH A. DORSI
ALEXANDER DRYER
JAIME A. EAGAN
ERIN EARL
REBECCA C. ELLIS
MICHAEL FELDSTEIN
ERIC FLETCHER
RACHEL FRANKENY
JACOB PARKER FREEMAN
KATHRYN L. FREUND
BRADLEY N. GARCIA
MORGAN GOODSPEED
HAROLD M. GREENBERG
MATTHEW R. GREENFIELD

NOAH GRYNBERG
JEFFREY A. HALL
JOSEPH HALL
ADAM HALLOWELL
NATHAN P. HAMILTON
BRETT HARTMAN
LORENZ FELIX HASELBERGER
TAYLOR HATHAWAY-ZEPEDA
ALISON HEYDEN
CHRISTINA HOFFMAN
MARIANNA JACKSON
BRANDON HAYWOOD JOHNSON
COLLEEN KELLY
MICHAEL E. KENNEALLY
CHRISTOPHER KEYS
BRIAN KOZLOWSKI
CHRISTOPHER E. KULAWIK
KONSTANTIN LANTSMAN
BRYANT LEE
KENNETH LEUNG
ANDREW MACURDY
MITHUN MANSINGHANI
MATTHEW J. MARTIN
JOSHUA MATZ
LUKE MCCLOUD
CHRISTOPHER MILLS
ERIN MONJU
ANDREW MOSHIRNIA
JEREMY NEWMAN

BETH NEWTON
ASHLEY NYQUIST
REI ONISHI
PETKO PEEV
KATHERINE PRESTON
PETER RATNER
PAUL J. RAY
MITCHELL REICH
AMANDA K. RICE
KRYSTEN ROSEN
FRANK PAUL SABATINI
MARK SAVIGNAC
ZACHARY C. SCHAUF
JACOB SCHUMAN
JAY SCHWEIKERT
LINDSAY S. SEE
RUTH SHNIDER
JAMES SIGEL
STEPHANIE SIMON
BENJAMIN SNYDER
BRENTON SPEED
TIM TAYLOR
SANDRA ULLMAN
KATHLEEN WALRO
PREVIN WARREN
BENJAMIN WATSON
NOAH M. WEISS
DANIEL WHITNEY
PETER ZUCKERMAN

DENIS O'BRIEN
Circulation & Financial Director

JENNIFER HEATH
Editorial & IT Coordinator

CATHERINE KLIER
Staff Assistant

Published eight times during the academic year by Harvard law students.

Citations conform to *The Bluebook: A Uniform System of Citation* (19th ed. 2010), published by The Harvard Law Review Association for the *Columbia Law Review*, the *Harvard Law Review*, the *University of Pennsylvania Law Review*, and *The Yale Law Journal*.