November 1, 2018

Dear colleagues,

Thank you for the opportunity to present at Michigan’s law and economics workshop. This is the first draft and first presentation of the paper, and my coauthor and I are keen for feedback.

The draft is longer than I would like, especially since we have more material to add. Readers short on time might benefit from this guidance: the core ideas are developed between pages 9 and 28; pages 28 to 37 distinguish our idea from others and can safely be skipped; and pages 5 to 9 provide a short literature review that readers who know the basic economics of enforcement can safely skip.

I look forward to the presentation.

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Proving a violation of law is costly. Because of those costs, enforcement against small or minor violations of law is inefficient, resulting in slippage and chronic underdeterrence. This paper explores how insincere rules—rules that misstate policymakers’ true preferences—can reduce enforcement costs and improve deterrence. To demonstrate the argument, suppose lawmakers want drivers to travel 55 mph. A sincere speed limit of 55 mph may cause drivers to go 65 mph, while an insincere speed limit of 45 mph may cause drivers to go, say, 60 mph—closer to lawmakers’ ideal. Insincere rules work by creating insincere evidence. In the driving example, the insincere rule is akin to adding 10 mph to the reading on every radar. We explore the positive properties of insincere rules and consider normative implications.
INTRODUCTION

Factories pollute, accountants embezzle, drivers speed, and states discriminate. Laws aim to deter bad behaviors like these, but the mere enactment of a statute or regulation is usually insufficient. Laws must be enforced to have effect. Alas, enforcement is expensive. Sometimes enforcement is so expensive that society would be better off without it. A modern controversy illustrates. Some states want transgender people to use the bathroom that matches their biological sex. But the cost of enforcing such a law—inspectors in every stall?—would likely exceed any benefit (or purported benefit) that the law would produce. Leading scholars capture the general point: “optimal enforcement [of laws] tends to be characterized by some degree of underdeterrence . . ., because allowing underdeterrence conserves enforcement resources.”

The bathroom laws are controversial, but many other laws on corruption, pollution, theft, discrimination, and other matters are not. In a perfect world, these laws would fully deter, not underdeter, the targeted behavior. Enforcement costs frustrate that ideal. Can we lower enforcement costs? Scholars and policymakers have spent decades on this question. Their solutions focus on things like technology (think ankle bracelets and red light cameras) and, famously, fines. In a germinal paper, Gary Becker argued for the imposition of draconian fines—even for minor infractions like shoplifting—on the theory that imposing high enough fines would deter wrongdoing at less cost than hiring police or engaging in other monitoring and detection efforts.

This paper analyzes a different method for lowering enforcement costs, one that has received little attention but that we believe is widespread in practice: insincere rules. To explain what we mean, a sincere rule mandates the rule-maker’s preferred behavior, while an insincere rule mandates something else. If the state wants drivers to go no faster than 55 miles per hour, then a sincere rule sets the speed limit at 55 mph, while an insincere rule sets the limit at 50 mph, 65 mph, or some other number. Later we will explain insincere rules in depth.

How do insincere rules lower enforcement costs? By making violations of law easier to prove. Enforcement of law requires many steps. The state must (1) observe the bad act, or at least gather evidence that it occurred, (2) identify and apprehend the perpetrator, (3) prove that the perpetrator committed the act, and (4) enjoin or punish the perpetrator. Many papers have followed Becker’s lead in

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3 One of us introduced insincere rules in a separate, aptly-named paper. See Michael D. Gilbert, Insincere Rules, 101 Va. L. Rev. 2185 (2015). The current paper explores a different mechanism through which insincere rules can improve compliance with the law. We discuss connections between these papers in Part III, infra.
focusing on the first, second, and fourth steps in this chain.\(^4\) We focus on the third step: proving guilt. Motivating our interest is the simple realization that proving a violation of law can be very expensive. The state often needs to gather evidence, negotiate with the offender, locate witnesses, prepare exhibits, try the case, persuade a judge or jury, and win on appeal. Every step of that process involves costs. Insincere rules can make the process easier—make enforcement cheaper—by converting hard cases into easy cases. Below we develop the argument with rigor. Here we illustrate with an example.

Suppose the state wants drivers to go 55 mph. The state sets the speed limit at 55 mph, meaning the rule is sincere. If a driver gets caught going 85, the case is easy. Yes, the state burns resources monitoring the road, stopping the driver, and administering a fine.\(^5\) But on the question of guilt the case is open-and-shut: he sped. What if a driver gets caught going 56 mph? This case is hard. The driver might fight the ticket. He might argue that the officer made a mistake by failing to hold the radar still. He might argue that the radar measures with error on sharp curves like the one he was traversing. Even if the driver is wrong, proving this takes work. The officer would have to testify, and the state would need to present evidence on proper calibration of the radar and the trustworthiness of its measurement. After all that, the state might still lose. Deterring someone from going 56 mph is simply not worth the trouble. By the same logic, deterring someone from going up to, say, 65 mph may not be worth the trouble. Savvy drivers will realize that they can drive as fast as 65 mph with impunity.

Now rerun the example with one change: an insincere rule. Instead of setting the speed limit at 55, suppose that the state makes it 45. The case of the driver going 85 mph remains easy. But the case of the driver going 65 mph now seems easy as well. Even after accounting for potential errors by the officer and radar, judges and jurors probably would conclude that a driver clocked at 65 mph in a 45 mph zone had broken the law. Foreseeing that proof will be easy, the officer will ticket the driver going 65 mph. And foreseeing the ticket, the driver will slow down. He may slow to, say, 60 mph—closer to the speed lawmakers wanted in the first place. By making hard cases easy, the insincere rule improves behavior.

This idea has implications, extensions, and limitations. First and foremost, it identifies a mechanism by which rule-makers—legislators, executives,

\(^4\) See, e.g., Polinsky & Shavell, supra note __, at 405 (“The theoretical core of our analysis addresses the following basic questions: Should the form of the sanction imposed on a liable party be a fine, an imprisonment term, or a combination of the two? Should the rule of liability be strict or fault-based? If violators are caught only with a probability, how should the level of the sanction be adjusted? How much of society’s resources should be devoted to apprehending violators?”).

\(^5\) In the economics literature on enforcement, fines are usually treated as costless transfers of wealth from perpetrators to the state. In reality, fines must have some social cost, however small, because they must be administered. See id. at 430-31 (analyzing enforcement when fines are socially costly).
agencies, judges, parents—can lower enforcement costs. Lowering those costs produces better behavior by regulated parties. Because of these benefits, we believe the mechanism, while new to scholars, is not new to rule-makers. For decades scholars have studied gaps between the law in books and the law in action. Just about everywhere lawyers cast their gaze law mandates one thing and regulated parties do another. Drunk drivers spend less time in jail, and governments protect fewer rights, than law requires.

Scholars bemoan these gaps, but perhaps their anguish is misplaced. Lawmakers may intentionally get the law in books “wrong” to get the law in action “right.” Gaps may reflect the strategic and beneficial use of insincere rules.

Our analysis uncovers a connection between the substance of law and its processes. Speeding tickets are typically civil offenses. Thus, the state’s burden of persuasion is preponderance of the evidence. What if the state’s burden were beyond a reasonable doubt? This produces a difference of degree but not kind. Given a speed limit of 55 mph, the driver clocked at 85 still presents an easy case, and the driver clocked at 56 still presents a hard case. As before, lowering the speed limit—adopting an insincere rule—would make the hard case easy. Just how insincere would the rule have to be? Under preponderance of the evidence, a speed limit of, say, 50 might make a driver clocked at 60 an easy case. Under beyond a reasonable doubt, it might take a speed limit of, say, 45, to make a driver clocked at 60 an easy case.

To generalize, the cost of meeting higher burdens of persuasion can be offset by increasingly insincere rules. Descriptively, this suggests that rule-makers will adopt the strictest rules in criminal law—which is exactly what many scholars perceive. Professor Stuntz argued that criminal liability has broadened,

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9 For example, Max Rheinstein called pervasive differences between law and practice “inane.” MAX RHEINSTEIN, MARRIAGE STABILITY, DIVORCE, AND THE LAW 351-53 (University of Chicago Press, 1972). Richard Abel states that early gap studies “were frequently directed by the belief that the gap, once revealed, could and should be eliminated.” Richard L. Abel, Law Books and Books About the Law, 26 STAN. L. REV. 175, 188 (1973). Law and Versteeg argue that countries with gaps between their constitutional rights and practices have “sham constitutions” and conclude, “It remains to be seen whether and by what means the gap between parchment and practice can be narrowed.” Law & Versteeg, supra note ___, at 935. Roscoe Pound blamed gaps on “our machinery of justice” that is “too slow, too cumbersome and too expensive” and argued that lawyers must “make the law in action conform to the law in the books.” Pound, supra note ___, at 35-36.
leading to a “world in which the law on the books makes everyone a felon.”\textsuperscript{10} Perhaps that broad liability has a silver lining.

Insincere rules may offset more than high burdens of persuasion. They may offset any impediment to a finding of guilt. For example, suppose a community believes (correctly) that the police enforce laws in a discriminatory way. A juror from this community will not convict a member of the community in an even remotely close case. To ensure conviction, lawmakers can try to improve police behavior, which is costly. Or they can use an insincere rule, which is cheap. Even a doubtful juror will convict in an easy case. Here we see an analogy to Becker: he argues it is cheaper to raise fines than to hire police, and we argue that it may be easier to enact strict laws than to win a community’s hearts.

As this example shows, insincere rules raise difficult normative questions. Lawmakers should improve the police, not tighten the rule, but they might tighten the rule if that option is available. More generally, insincere rules involve lying (or may appear to involve lying) to citizens about the content of law. Insincere rules also raise practical problems. In theory, a speed limit of 1 mph would make enforcing a 55 mph limit very easy, but in practice it would not. Many officers would ignore a speed limit that low. Likewise, many jurors from a distrusting community would nullify—they would refuse to convict—if the law seems artificially strict. For reasons like these, we do not believe insincere rules work or should be adopted in all settings.

Part I provides background on enforcement and other literatures related to our argument. Part II develops our theory. Part III distinguishes our theory from other concepts, like overinclusive and prophylactic rules, acoustic separation, and the like. Part IV places our theory in the broader context of how evidence law interacts with enforcement, deterrence, and truth.

I. LAW IN BOOKS, LAW IN ACTION

Cyclists ride without helmets. Truckers drive longer shifts than law allows. City ordinances prohibits smoking at bus stops, but smokers linger nearby. A quick glance at just about any slice of life reveals a pervasive and important phenomenon: laws mandate one behavior but yield another. Sometimes the slippage is minor, as in our bus stop example. Other times the stakes are higher. Twenty years after the Clean Water Act, 10,000 dischargers still lacked permits.\textsuperscript{11} Around the world, governments fail systematically to protect the rights enshrined

in their national constitutions. The legal scholar Roscoe Pound captured this regularity with a memorable phrase: there is a gap between the “law in books” and the “law in action.”

Why do gaps arise? Scholarship on public enforcement of law offers answers. Take the Holmesian “bad man” who is considering whether to violate a law. This person is not deterred from violating the law by any abstract force of nature or justice, but instead weighs the expected benefits of a violation (profit, revenge, the pleasure of enjoying illegally-downloaded music) against the expected costs (fines, imprisonment, social opprobrium). If the benefits exceed the costs, the bad man will break the law. If the state has not set the expected costs of violating the law high enough, then we should expect to see gaps between what the law mandates and what people actually do. Put another way, the law in books is what the statute or regulation says, but the law in action is what the bad man is actually deterred from doing.

The state can close gaps between the law in books and the law in action by increasing the expected cost of violating the law. It has many levers for doing so. It can, for example, raise the probability that transgressors will be caught. More cops usually mean less crime. Alternatively, the state can increase the expected cost of violating the law by raising sanctions. If you want to reduce littering, eliminate the minor fine for doing so, and put in its place ten years’ confinement in prison.

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15 See Oliver Wendell Holmes, The Path of the Law, 10 Harv. L. Rev. 457, 459 (1997) (“You can see very plainly that a bad man has as much reason as a good one for wishing to avoid an encounter with the public force … A man who cares nothing for an ethical rule which is believed and practised by his neighbors is likely nevertheless to care a good deal to avoid being made to pay money, and will want to keep out of jail if he can.”).
16 Id. (“If you want to know the law and nothing else, you must look at it as a bad man …”).
17 See Becker. Relatedly, the government can improve regulated parties’ perceptions of the expected sanction. See Bert I. Huang, Shallow Signals, 126 Harv. L. Rev. 2227, 2234–35 (2013) (analyzing the failure to publicize when one actor has permission to engage in behavior that is forbidden for other actors).
Gary Becker developed the latter idea, arguing that a combination of fewer police and severe penalties would be socially optimal. An example illustrates the logic. Suppose that drivers will stop at red lights if the expected cost of “running” them equals $100 or more. How can the state set the expected cost at $100? It can install a red light camera at every intersection, so that the probability of getting caught is 100 percent, and set the fine at $100. The expected cost of running a red light is then $100 (100% × $100). Or the state can secretly install a red-light camera at one in a hundred intersections, so the probability of getting caught is one percent, and set the fine at $10,000. The expected cost of running a red light is again $100 (1% × $10,000). While both approaches yield the same expected cost—and thus do equally good jobs of getting drivers to stop at red lights—the second approach requires many fewer cameras, saving the state a lot of money.

Becker’s prescription is fine in theory, but it faces challenges in practice. Publicity and morals place an upper limit on sanctions. “Tough on crime” makes for good politics, but “tough on trivial regulatory infractions” does not. A street vendor in New York received a $2,250 fine for using a table that was an inch too tall and two inches too close to a store entrance. A student was fined $675,000 for illegally downloading and sharing 30 songs. Run-of-the-mill traffic violations in California cost $500. Sanctions like these generate negative attention and political pressure, making it hard for politicians to follow Becker’s severe-sanction advice.

Even if severe sanctions do get enacted, they may not achieve their goal. This is because law enforcers may ignore them. If the penalty for littering is prison, cops may turn a blind eye to napkins in parks. Prosecutors may not charge, and jurors may not convict. When the penalties for violations—and especially minor violations—seem draconian, law is underenforced. This can happen at the highest levels of government. An example is the Obama administration’s

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18 For simplicity, we assume drivers cannot tell which intersections have cameras. Thus, they assume the probability of getting caught at any given intersection equals one percent.
19 According to a 2001 study, a single red light camera costs about $50,000. [https://www.cdc.gov/motorvehiclesafety/calculator/factsheet/redlight.html](https://www.cdc.gov/motorvehiclesafety/calculator/factsheet/redlight.html).
22 See James Andreoni, Reasonable Doubt and the Optimal Magnitude of Fines: Should the Penalty Fit the Crime?, 22 RAND J. Econ. 385, 385 (1991) (arguing that the magnitude of a penalty and the probability of conviction are not independent in practice). See also Kahan. And Robinson?
order that federal agents not deport immigrants brought to the United States illegally as children.\textsuperscript{25}

But suppose that politicians enact strict penalties and that the state apparatus faithfully enforces them. Becker’s approach may still fail if law breakers make mental mistakes. Some people treat low probability events as zero probability events.\textsuperscript{26} The threat of a sanction, even a severe one, may not deter these people if the probability of getting caught is low. Likewise, some people heavily discount the future.\textsuperscript{27} For them, today’s pleasure is a much higher priority than next month’s pain. Even severe penalties will not deter these people when there is a long enough lag between the benefit of law-breaking and the pain of punishment.

If the state cannot enact severe sanctions, or if those sanctions fail to achieve their goal, then another option remains: increase the probability of detection. The state can detect more violations of law by hiring more law enforcers (like cops, forest rangers, and air quality regulators), purchasing more equipment (like squad cars, listening devices, and testing kits), and paying more informants (like street criminals, whistleblowers, and foreign agents). Investments like these increase the probability of a law breaker getting caught. But as with raising sanctions, this approach faces a political and moral objection: the resources may be better used elsewhere. Spending another $1,000 on schools may do more for society than spending another $1,000 on red-light cameras.

Given this tradeoff, “optimal enforcement tends to be characterized by some degree of underdeterrence . . . because allowing some underdeterrence conserves enforcement resources.”\textsuperscript{28} In other words, gaps between the law in books and the law in action are consistent with socially optimal decision-making. Society is better off with some slippage in the law—and extra money for other priorities— than it is with no slippage and less money to spend elsewhere.

To be clear, this argument is tied inextricably to enforcement costs. Suppose the law in books prescribes the “best” behavior. If enforcement were costless, there would be no gap between the law in books and the law in action, and that would be ideal. Everyone’s behavior would be “best.” But enforcement is

\textsuperscript{25} Polinsky & Shavell, Economic Theory of Public Enforcement of Law, supra note 14, at 70. The dominant strand in the enforcement literature assumes that the state maximizes social welfare. See, e.g., Becker, supra note ___ , at 207; Polinsky & Shavell, Economic Theory of Public Enforcement of Law, supra note 14, at 49. A second line, growing from public choice theory, examines enforcement when the state is self-interested. See, e.g., David Friedman, Why Not Hang Them All: The Virtues of Inefficient Punishment, 107 J. Pol. Econ. 259, 262 (1999); Nuno Garoupa & Daniel Klerman, Optimal Law Enforcement with a Rent-Seeking Government, 4 Am. L. & Econ. Rev. 116, 116–17 (2002). In both cases, enforcement costs can limit enforcement.
costly, not costless. Gaps are optimal because the cost of enforcement exceeds the benefit. Society is better off with some “second best” behavior—and more money for, say, roads—than “best” behavior and no money for roads.

What if enforcement costs could be reduced? Society could elicit “better” behavior and still have money for schools and roads. Policymakers have long sought to lower enforcement costs. Their ideas have included technological innovations like red light cameras, ankle bracelets, smoke stack monitors, and the like. In the following pages we describe a different strategy with general applicability for reducing enforcement costs. The strategy does not arise out of technical innovation but from legal innovation regarding the content of the law.

II. ENFORCEMENT AND SINCERITY

This Part develops our theory. We begin by pinpointing an important and underappreciated source of enforcement costs: the requirement that a violation of law be proved before a penalty is imposed. Frictions of the proof system, like the high costs of hiring police, keep laws from being fully enforced. Then we show how insincere rules can reduce proof costs. Lawmakers can achieve better compliance with law by misrepresenting the conditions under which a wrong has been committed. In short, they can turn hard cases into easy cases. We discuss when this mechanism works well or fails, and we identify surprising implications for some legal concepts like legislative intent and burdens of persuasion.

A. The Cost of Proving a Wrong

The ideas developed in this paper have broad application, but to keep things as clear as possible, we illustrate them with the simple example raised in the Introduction. To repeat the setup, suppose that lawmakers have decided drivers should travel no faster than 55 mph on a particular stretch of highway. This speed is sincerely believed to strike the optimal balance of convenience, safety, and other factors that bear on speed. How might lawmakers go about enacting and enforcing the speed limit?

It might seem like there is only one course of action: set the speed limit at 55 mph, post signs to that effect, and deploy cops to watch for speeding vehicles. As discussed in Part I, there are still many details to consider. How many police should be assigned to monitor this highway? How severely should speeding drivers be fined? These considerations are explored in the literature, and we do

29 *Cf.* Douglass North, Nobel Prize Lecture available at ___ (“Only under the conditions of costless bargaining will the actors reach the solution that maximizes aggregate income regardless of the institutional arrangements. When it is costly to transact then institutions matter. And it is costly to transact.”).

30 See generally Polinsky & Shavell, supra note ___.
not focus on them. To put them aside, assume that the state has already optimized these levers as best it can.\textsuperscript{31} There is still more to consider.

Even when a violation of the speed limit is committed and detected, it is not certain that a penalty will be imposed. The driver can always dispute a ticket. If the driver disputes the ticket, the state cannot enforce the penalty without first proving in court that a violation has occurred.

Much goes into proving a violation of law, even in this simple setting. The ticketing officer would need to take the stand to testify about the manner in which the driver was observed. Assuming the officer relied on something more than subjective observation, details would need to be provided on how the driver’s speed was measured. Was it measured by the officer’s speedometer while pacing the driver down a length of road? By a hand-held radar or laser gun? By aerial surveillance drone?\textsuperscript{32} None of these detection technologies is perfect,\textsuperscript{33} and absent special laws to the contrary,\textsuperscript{34} the state would need to prove the accuracy of whatever method was used to estimate the driver’s speed.\textsuperscript{35} In principle, this includes not only the accuracy of the detection method (use of a radar gun, for example) but also the accuracy of any methods used to calibrate the detection method (calibration of a radar gun by speedometer or tuning fork, for example).\textsuperscript{36}

\textsuperscript{31} For completeness, we could also assume that the state will reoptimize these levels to account for any changes to the setup we introduce in the following pages. The point is that we are abstracting from these standard enforcement considerations throughout the remainder of the paper.


\textsuperscript{34} E.g. Va. Code Ann. § 46.2-882 (West) (providing that a radar gun reading “shall be accepted as prima facie evidence” of the speed a vehicle was driving, and providing that “a certificate, or a true copy thereof, showing the calibration or accuracy of... any tuning fork employed in calibrating or testing the radar... and when and by whom the calibration was made, shall be admissible [to address questions about calibration or accuracy]” as long as such calibration or testing was conducted within the last six months). But cf. State v. Bonar, 40 Ohio App. 2d 360, 319 N.E.2d 388, 389 (Ohio Ct. App. 1973) (finding that the state’s failure to present evidence of a radar gun’s accuracy, while not rendering the evidence inadmissible, does entitle the defendant to a directed verdict when the state’s only evidence was the radar gun reading).

\textsuperscript{35} See, e.g., Fed. R. Evid. 901 (requiring in federal courts, as in most state courts, that the proponent of evidence must show that the evidence is what it purports to be, including, for example, the basis for believing that a process or system—i.e. radar gun—produces an accurate result). See also Fed. R. Evid. 104(b) (providing that when evidence is relevant only upon the support of a foundational fact, evidence must be introduced sufficient to support that the foundational fact exists).

\textsuperscript{36} See, e.g., John Jendzurski Nicholas G. Paulter, Calibration of Speed Enforcement Down-The-Road Radars, 114 Journal of Research of the National Institute of Standards and Technology 137 (2009) (comparing the accuracy of different techniques for calibrating radar guns).
Even under ideal circumstances, with every piece of foundational testimony in place, uncertainty will remain about the driver’s actual speed.\(^{37}\)

Now consider the driver’s own defensive evidence. The driver could take the stand to testify—perhaps compellingly—that he or she was not speeding. To bolster this argument, the driver might call a disinterested passenger to testify that the driver was obeying the speed limit at the time of the stop. The driver could also point to detection angles, intervening vehicles, or reflective surfaces as factors that could have thrown off the reading of a radar gun;\(^{38}\) to wind or other weather conditions that can cause an artificially high reading;\(^{39}\) to the possibility that the officer’s own movements or inexperience biased a speedometer measurement or radar reading.\(^{40}\)

If the proof process in even this trivial speeding-ticket example sounds like an ordeal, imagine how much more involved it becomes in other settings. In the antitrust arena, the state’s proof that a merger could have anticompetitive effects will often involve hundreds of hours of depositions and live testimony, and thousands of pages of reports and exhibits. Securities fraud, environmental regulations, tax fraud, banking regulations, discrimination claims brought by the EEOC—in these areas and many others, the costs of proof can be substantial.

Two propositions should be apparent. First, the state’s detection of a violation of law does not end the costs that the state faces in seeking to enforce the law. Proving a violation of law is as costly as the proof process makes it. Second, even paying the costs of trying to prove a violation does not guarantee the state an opportunity to punish the transgressor. There is always the possibility

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\(^{37}\) See, e.g., BBC Inside Out — South West, Mobile Speed Cameras, (February 28, 2005) http://www.bbc.co.uk/insideout/southwest/series7/speed-cameras.shtml (illustrating some potential errors in speed detection and describing case studies of individuals who successfully opposed tickets based on speed gun readings)

\(^{38}\) E.g. Myatt v. Com., 11 Va. App. 163, 166, 397 S.E.2d 275, 277 (1990) (discussing expert testimony about “[t]he reflective qualities of the appellant's motor vehicle, the presence of the tractor-trailer truck behind the appellant's vehicle, the angle of the radar unit with respect to the highway, and its height above the highway” as factors properly challenging a radar unit’s accuracy on a particular occasion).


\(^{40}\) Cf. Decatur GHD & SCOUT User’s Manual § 7.4, http://www.decatureurope.com/uploads/Brochures/GHD-SCOUT%20User%20Manual%206-10-10-E.pdf (“Fan interference is the most common form of interference that you are likely to experience [when trying to measure driving speeds]. It is caused when the radar measures the speed of the vehicle blower fan.”); id. at § 12 (“Q. Will my radar work while my vehicle is moving? A. No, the GHD and SCOUT radar guns are a stationary only models, so your vehicle should be parked. You need to hold the radar steady while operating it.”).
that the judge or jury will be unpersuaded by the state’s evidence, in which case the lawbreaker will walk away unpunished.41

The second of these propositions is subject to an important caveat. All else equal, the probability of a loss by the state will typically shrink as the violation of law becomes more severe.42 This is easily illustrated by example.

Suppose that a hypothetical driver has been ticketed for going 90 mph in a 55 mph zone. The ticketing officer testifies that the driver subjectively appeared to be going about this speed, and the radar gun confirms it. Can the driver really undermine this evidence? Setting aside the possibility of pure fabrication by the officer, uncertainty around the measurement seems unlikely to win the day. The radar gun may be imperfect, but not that imperfect. Proving that the driver was speeding seems almost certain.

Now suppose that the driver has been ticketed for going 56 mph in the 55 mph zone. Even small uncertainties loom large in this setting. The state can call all the experts it wants in trying to bolster the 56 mph reading. But when considering all the possible ways that the measured speed could have been high by a mere 1 mph, the fact-finder may find this evidence unpersuasive. The odds of the state winning at trial now seem far lower, perhaps no greater than a coin flip.

What does this mean for the state’s ability to enforce the speed limit? It means, if we assume the state to be a rational actor, that even when agents of the state detect a violation of law, there may be good reasons not to try to enforce it. The state should decide when to enforce the law with a forward-looking view to costs and benefits. And it should decide not to attempt enforcement unless the expected benefit of doing so exceeds the cost.

We can capture this idea with a simple equation. When the state chooses to enforce—to ticket a driver—it pays a cost of $C$. This cost could be fixed, or it could vary, increasing in hard cases (the state needs more evidence) and decreasing in easy cases.43 The benefit of enforcement is $B$, which is not fixed. $B$ grows with the magnitude of the infraction. Intuitively, the state gets more benefit from deterring a 90 mph driver than it does from deterring a 56 mph driver. Proof is never certain; there is always a chance the state’s case falls apart. Thus, the benefit must be discounted by the probability of conviction, $p$. The

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41 To keep analysis simple, we abstract from the possibility that the cost of winning at trial may itself act as a form of punishment and deterrent to the bad man. While we do not dispute this possibility, accounting for it in our analysis appears to only complicate matters without fundamentally changing our results.

42 Holding all else equal means, among other things, holding fixed the amount of resources that the defendant is willing to spend on fighting the charge or claim. We do not disagree with the intuition that—depending on punishments and collateral implications—defendants might often feel more compelled to fight larger alleged infractions. Our point is to identify a marginal property of the system that applies regardless of what defendants choose to do with their resources.

43 We realize that $C$ and $B$ look fixed, not variable, but we are economizing on notation.
state should enforce when $pB > C$. Rearranging terms, the state should enforce when $B > C/p$.

Figure 1 illustrates. The benefit line captures $B$, the social gain from successfully penalizing a speeding driver. It reflects the deterrence gained by penalizing a violation of a certain size. The cost line captures $C/p$. It illustrates the opportunity cost of trying to prove a given violation of law. For large violations, like speeds of 90 mph and above, the probability of victory is almost certain ($p$ approaches 1), so the line simply reflects $C$, the social resources that go into putting on witnesses and presenting evidence at trial. For smaller violations, like speeds of 56 mph, the cost line reflects these same social expenses scaled up to reflect the possibility that the state will lose ($p$ approaches 0, and thus $C/p$ grows). The intuition works like this: as the probability of conviction shrinks, the social resources expended on prosecution are less likely to yield a deterrence benefit. Thus, the opportunity cost grows because the state could have spent the resources on something more productive.

44 Nothing turns on this being the only value that the state perceives from enforcing the law. Fines, for example, may be an important source of revenue for the state. And the public at large may derive some form of deontological value from seeing popular laws enforced. These additional benefits could easily be factored into the following analysis with few real changes in result or prediction.

Note also that while the benefit line in Figure 1 originates at 55 mph—implying that deterring drivers from going 54 mph provides no benefit to society—nothing in our analysis is particularly sensitive to this assumption.

Finally, we assign the benefit line a specific shape in Figure 1 starting at zero at the legal limit. Nothing turns on the shape, as long as it is upward sloping.

45 We implicitly assume that the state gets no deterrence benefit from a loss at trial, but this is not critical to our results.
The state should not rationally seek to prove small violations of the speed limit. The cost of attempting to enforce the speed limit against a driver clocked at, say, 60 mph exceeds the benefit, as Figure 1 shows. The speed at which the lines finally intersect is the breakeven point. As illustrated in Figure 1, this does not occur until 65 mph. It is irrational for the state to ticket drivers at slower speeds.

To tie this back to underenforcement, recall Justice Holmes’s suggestion that one should consider law from the perspective of the bad man.\textsuperscript{46} Correctly observing or intuiting that the state will not try to prove small violations of the speed limit, the bad man realizes that being clocked at speeds above the legal limit does not necessarily carry with it even the threat of punishment. In Figure 1, the bad man is free to go as fast as 65 mph without fear of any punishment at all, whether his speeding is detected or not.\textsuperscript{47} The speed limit in the books is 55 mph, but the speed limit in action is 65 mph.

This illustrates another source of the gap between the law in books and the law in action. It is similar to the socially efficient slippage that results from a decision to spend less on police officers and monitoring to conserve resources for schools and roads. But it is a distinct source of slippage resulting from the cost of

\textsuperscript{46} Holmes, supra notes ___, ___ and accompanying text.

\textsuperscript{47} This does not mean that the bad man will drive 65 mph. A precise statement of the bad man’s choice of speed would require further considerations of risk tolerance, the benefit to the driver of speeding, and the implications of other enforcement levers such as the probability of detection and the magnitude of penalty. For present purposes, it suffices to note that if the bad man builds the state’s inability to punish small violations of law into his driving decisions, it could only influence him in the direction of adopting a higher driving speed.
the proof system itself. Being connected to the proof system gives this source of slippage some concerning properties, but it also opens up novel avenues for mitigation.

To start with the concerning properties, consider what happens to enforcement as the burden of persuasion rises. Speeding is typically a civil offense, so our example implicitly assumes that the state’s burden of persuasion is preponderance of the evidence. In criminal cases, due process demands that the state prove a violation of law beyond a reasonable doubt.48 Suppose we were to change the burden of persuasion in our driving example, raising it from mere preponderance of the evidence to beyond a reasonable doubt.49 The state must have a lower probability of winning under a beyond a reasonable doubt standard than under a preponderance of the evidence standard. This shifts the cost curve to the right. Figure 2 illustrates how this changes the breakeven point at which the state should start trying to enforce the law.

As Figure 2 shows, higher burdens of persuasion lead to even greater gaps between the law in books and the law in action. The speed limit remains 55 mph, but given the higher burden drivers can go up to 70, not just 65, with impunity. The higher the burden of persuasion, the greater the violation of law must be before it will be rational for the state to enforce.

48 See In re Winship, 397 U.S. 358, 364 (1970) (holding “that the Due Process Clause protects the accused against conviction except upon proof beyond a reasonable doubt of every fact necessary to constitute the crime with which he is charged.”).
49 See Sullivan 2018 at *19 (commenting on the interpretation of these intermediate standards).
The point is not that higher burdens of persuasion are bad. The conventional account is that the costs of proving guilt beyond a reasonable doubt are outweighed by the gains from avoiding false positives: the guilty parties that go free under the standard are the price we willingly pay to reduce the frequency with which innocent parties are convicted. This false positive versus false negative tradeoff is well known. Figure 2 illustrates something that is not well known. As the burden of persuasion rises, the band of marginal violations that the state will not enforce widens. The cost of raising the burden of persuasion is not just that more guilty people charged with violating the law go free, but that all bad men can violate the law a bit more than before.

The discussion can be summarized succinctly: underdeterrence is inevitable when proof is costly. The source of this underdeterrence is not the traditional sources explored in the literature. It is not monitoring costs (a squad car, a radar gun, an officer’s salary) or inadequacy in the threatened sanction (the fine is too low). Rather, underdeterrence is the inevitable consequence of the evidentiary cost associated with proving a wrong. Proof is expensive—prohibitively expensive when the violation of law is small.

If proof costs frustrate enforcement, one wonders what lawmakers could do to combat the problem. Committing additional resources to fund litigation of small violations is not the answer. In fact, this would only make things worse by throwing away money on a gamble for which the costs have already been shown to outweigh the benefits. What lawmakers would ideally do is lower the cost of proof. How might this be achieved?

Figure 2 shows that raising the burden of persuasion increases the cost of proof, and thereby increases the gap between the law in books and the law in action. If lawmakers could lower the burden of persuasion, thereby reducing proof costs, they could shrink the gap.

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50 See, e.g., Addington v. Texas, 441 U.S. 418, 423–24 (1979) (“In a criminal case . . . the interests of the defendant are of such magnitude that . . . they have been protected by standards of proof designed to exclude as nearly as possible the likelihood of an erroneous [conviction]. In the administration of criminal justice, our society imposes almost the entire risk of error upon itself”); In re Winship, 397 U.S. 358, 372 (1970) (Harlan, J., concurring) (“I view the requirement of proof beyond a reasonable doubt in a criminal case as bottomed on a fundamental value determination of our society that it is far worse to convict an innocent man than to let a guilty man go free.”); 2 MCCORMICK ON EVIDENCE § 341 (Kenneth S. Broun ed., 7th ed. 2013) (“Society has judged that it is significantly worse for an innocent person to be found guilty of a crime than for a guilty person to go free…”).

The idea of varying the burden of persuasion to achieve better enforcement has been repeatedly suggested in the law and economics literature, and in more mainstream legal thinking before that. Lowering the burden of persuasion works in theory. However, it has little practical potential. The justice system has long encompassed roughly three discrete burdens of persuasion, and it seems unlikely that courts or lawmakers have the appetite to introduce new standards. Even if they were willing to attempt such an experiment, things like the constitutional mandate of proof beyond a reasonable doubt in criminal cases would frustrate efforts to vary the burden in important circumstances. Even without these frictions, it might be impossible to articulate burdens of persuasion to fact-finders with greater granularity. Even the three existing burdens of persuasion often seem too much distinction for the system to handle. The clear-and-convincing evidence standard, for example, has long been criticized as vague and inconsistent in its application across proceedings.

Fortunately, this does not end the analysis. There are other strategies that lawmakers could turn to in trying to reduce the state’s proof costs when enforcing the law.

B. Cost Reduction through Insincerity

Our thesis is that the state can lower the cost of proof, and therefore improve the behavior of regulated parties, by redefining the wrong. Suppose that lawmakers continue to believe that the optimal speed on a stretch of road is 55 mph. However, they do not adopt a sincere speed limit of 55 mph. Instead they adopt an insincere speed limit of 45 mph. Previously the probability of convicting

53 E.g., Jack B. Weinstein, Some Difficulties in Devising Rules for Determining Truth in Judicial Trials, 66 Colum. L. Rev. 223, 236 (1966) (commenting that, while affording criminal defendants the benefits of a high burden of persuasion is a "deliberate choice ... based upon deeply held moral values and ethical judgments[,]" in the case of a "particularly dangerous crime indulged in by relatively small numbers of the population and a relatively small number of suspects, a perfectly rational argument could be developed for conviction on the least shadow of a doubt.").
54 See Sullivan 2018; McCormack on Evidence 2013.
55 Cf. Michelson v. United States, 335 U.S. 469, 486 (1948) (Jackson, J.) (explaining that while a significant part of the law of evidence is archaic, paradoxical, and irrational, it should not be disturbed because “[S]omehow it has proved a workable even if clumsy system ... [and so to] pull one misshapen stone out of the grotesque structure is more likely simply to upset its present balance between adverse interests than to establish a rational edifice.”).
56 See supra notes 48, 50 and accompanying text.
57 Cf. 2 McCormack on Evidence § 340 (commenting that “no high degree of precisions can be attained” through things like alternative articulations of intermediate burdens of persuasion).
a driver clocked at, say, 60 mph was relatively low, so the opportunity cost of ticketing such a driver was high. With a 45 mph limit, the probability of convicting a driver clocked at 60 mph is relatively high, so the opportunity cost of ticketing such a driver is lower. Now the state might rationally ticket the driver going 60, whereas before it would not.

Figure 3 illustrates the logic. The optimal speed remains 55 mph. Thus, the benefit curve does not change position. As before, punishing a driver going 85 yields a large benefit, punishing a driver going 65 yields a small benefit, and punishing a driver going 55 or slower yields no benefit at all. In contrast, the cost curve does change position. It shifts inward. This captures the idea that cases that were previously hard have gotten easier. For any given speed, the cost of proving a violation of law is lower under the insincere rule than under the sincere rule.

The shift in the cost curve creates a corresponding shift in the breakeven point at which enforcement becomes worthwhile. As illustrated in Figure 3, when the speed limit is set at the sincere 55 mph level, it is irrational for the state to try to prove violations of the speed limit by drivers clocked at anything less than 65 mph. When the speed limit is reduced to the insincere level of 45 mph, it becomes rational to begin seeking to prove violations at speeds of 60 mph. The gap between the law in the books and the law in action looks even worse than before:
where this gap had previously been 10 mph.\textsuperscript{58} It is now 15 mph.\textsuperscript{59} But, in actuality, the state has moved closer to achieving compliance with its preferred speed of 55. Now drivers travel 60 mph instead of 65 mph.

To be clear, the state does not achieve the mandate of the insincere rule. Drivers do not follow the posted speed limit. But the state does not care. In seeking to change the behavior of the bad man, the state focuses on the one thing that the bad man prioritizes: the point where the threat of enforcing the speed limit becomes credible. This is what determines the law in practice. What the insincere speed limit does is reduce the cost of proof and thereby increase the state’s threat of credible sanction. The gap between law in the books and law in action is not eliminated. The bad man still speeds. But with the threat of punishment now more credible at lower levels of violation, the gap is smaller. The bad man does not speed as much.

\textbf{C. Interpretation and Implications}

The title of this paper, \textit{Insincere Evidence}, captures the mechanism by which insincerity reduces proof costs. An insincere rule gives the state a block of \textit{free} or \textit{artificial} evidence that can be used to help prove a violation of law. In the driving example, adopting an insincerely low speed limit is the functional equivalent of the state secretly giving police officers rigged radar guns that tack an extra 10 mph onto every reading.

Figure 4 illustrates this point. The solid cost curve applies when the speed limit is set at the sincere 55 mph level and radar guns are accurate. The dashed, black cost curve applies when the speed limit is set at the insincere 45 mph level and radar guns are accurate. Finally, the dashed, grey cost curve applies when the speed limit is set at the sincere 55 mph level but rigged radar guns add an extra 8 mph onto every reading. If the modification had instead been to add 10 mph onto every reading, then the dashed lines would have perfectly coincided.

\textsuperscript{58} Under the sincere speed limit of 55 mph, Figure 3 indicates a breakeven point of 65 mph. Thus, the gap between the law in action and the law in the books is $65 - 55 = 10$ mph.

\textsuperscript{59} Under the insincere speed limit of 45 mph, Figure 3 indicates a breakeven point of 60 mph. Thus, the gap between the law in action and the law in the books is $60 - 45 = 15$ mph.
In retrospect, this property is obvious. The effect of moving the speed limit from the sincere 55 mph level to the insincere 45 mph level is not to change the speed that a 60 mph driver was actually going. The effect is simply to turn what had been a 5 mph infraction into what is now a 15 mph infraction. And that is no different than adding 10 mph onto whatever speed the radar gun would have otherwise shown.

Equivalence in theory does not necessarily translate to equivalence in effect. There is a reason to think that an insincere rule may out-perform a rigged radar gun in practice. Whereas a rigged radar gun ceases to work if the fact-finder learns that it has been rigged, adoption of an insincere rule may continue to function even if the fact-finder doubts the sincerity of the rule. To be sure, the strategy seems like it would work best when the fact-finder fully believes the insincere speed limit to be the socially optimal speed limit. But suppose the fact-finder suspects that lawmakers’ may be acting insincerely. In the context of a formal legal proceeding, under the charge of deciding whether the evidence shows that the posted speed limit has been violated, the fact-finder may answer this question in the affirmative even in the presence of doubts about the social optimality of the posted speed limit.

As might already be clear, the possibility of insincere lawmaking presents a number of complications for the related notions of legislative intent and rationally motivated regulatory lawmaking. In the case of legislative intent, in order to reduce proof costs through insincerity, legislators must drive a wedge between what they consider to be socially optimal behavior for society (their sincere legislative intent) and what they publicly say to better effect that sincere intent in practice (insincerity in the text of a statute and in the public-facing
legislative history that accompanies it). While the possibility that legislators could bluster in their floor debate is not a shocking proposition, it is more disquieting to contemplate that they might exaggerate their sincere preferences in the substance of a rule or statute. Thus, the more one thinks insincere lawmaking may be occurring in practice, the less compelling it becomes to equate actual legislative intent with any of the traditional channels of statutory interpretation: text, floor debate, etc.

In the case of regulatory lawmaking, these same tensions present themselves in the context of an agency’s typical need to justify exercises of its rulemaking authority. Under the Administrative Procedures Act, as part of the rulemaking process an agency must produce “a concise general statement of [the] basis and purpose [of the adopted rule].”\(^{60}\) While this statement needn’t be exhaustive, the modern expectation is that it will indicate the policy questions at issue in the rulemaking decision, as well as the agency’s reason for choosing the rule that it has adopted.\(^{61}\) Substantive review of agency rulemaking often focuses on this explanatory statement in deciding whether agency action should be set aside as arbitrary and capricious.\(^{62}\) Though a deferential standard, this review is far from toothless.\(^{63}\)

Again, the possible use of insincerity complicates matters. Suppose, for example, that a regulatory agency faced the driving example we have been discussing. Could it access the cost reduction afforded by promulgation of an insincerely low speed limit? On first blush, the need to explain the basis for rulemaking would seem like an obstacle. But similar to the ability of legislators to misrepresent socially optimal laws, the agency may have leeway to misrepresent the relative costs, benefits, and policy considerations that explain its rulemaking. Moreover, there is reason to question how searching courts should be in substantive review of potentially insincere agency rulemaking. If the point of legislative empowerment of the agency was to achieve a given enforcement outcome, and if the agency better achieves this outcome through the adoption of insincerely preferred rules, then invalidation of those rules for their insincerity may not only result in less efficient enforcement of law, but may even fail to effect the intent of the legislature in empowering the agency in the first place.

\(^{60}\) APA Section 553, codified as 5 U.S.C.A § 553 (West).

\(^{61}\) See, e.g., Indep. U.S. Tanker Owners Comm. v. Dole, 809 F.2d 847, 852 (D.C. Cir. 1987) ("[S]uch a statement should indicate the major issues of policy that were raised in the proceedings and explain why the agency decided to respond to these issues as it did, particularly in light of the statutory objectives that the rule must serve.").

\(^{62}\) APA Section 706(2)(A), codified as 5 U.S.C.A. § 706 (West) (requiring a reviewing court to “hold unlawful and set aside agency action … found to be … arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law”).

Another interpretational equivalence is between insincere rules and burdens of persuasion. Just as insincere rules and rigged radar guns have the same theoretical effect on deterrence and enforcement, there is a functional equivalence between the adoption of an insincere rules and fine-grained modification of the state’s burden of persuasion.

Figure 5 illustrates this point. The easiest way to understand the figure is to think of it as a chronological series of events. To start, suppose that the state can prove a driver was speeding by merely showing that a preponderance of the evidence supports this claim. This starting point corresponds to the solid cost curve and its intersection with the benefit curve at 65 mph. Now suppose that—perhaps by judicial decree—the state is suddenly required to meet a higher burden of persuasion to prevail in these cases: proof by clear and convincing evidence. As discussed, this policy change has the effect of shifting the cost curve to the right, as illustrated by the dashed, black cost curve that intersects the benefit curve at 70 mph. The gap between the law in the books and the law in action has just grown wider. Finally, suppose that lawmakers react to this new higher burden of persuasion—and the weaker enforcement that they are achieving under it—by reducing the speed limit to an insincerely low level. As illustrated by the dashed, gray cost line, the insincere speed limit offsets the increase in proof costs created by the higher burden of persuasion. With a little bit more insincerity, the offset would be complete.

![Figure 5. Equivalence of Insincere Rule and Reduced Burden of Persuasion](image)

At first blush, this may seem alarming. Take criminal defendants and their constitutional right to the protection afforded by the highest burden of persuasion: proof beyond a reasonable doubt. One implication of this protection may be weakened, or even eliminated, by the simple act of more strictly defining what it is that constitutes a wrong. While this is an accurate proposition, any alarm arising from it owes only to a simplistic view of the
protection afforded by a given standard of persuasion. The effect of is not to show that insincere rules threaten the protection of the reasonable doubt standard, but to show that the reasonable doubt standard is not—by itself—much protection. The actual protection enjoyed by any defendant is a function of the burden of persuasion and the definition of a wrong. To the extent that the Constitution constrains one of these levers and not the other, its protection has never been more than Figure 5 suggests it to be.

There is also a more constructive way to think about this equivalence between insincerity and the burden of persuasion. As noted previously, law and economics scholarship has frequently discussed the value of careful manipulation of the burden of persuasion as a tool for achieving more efficient deterrence and enforcement of laws. As a practical matter, burdens of persuasion are not really susceptible to such fine-grained refinement, and thus have not fulfilled their theoretical promise. But many substantive legal thresholds are susceptible to fine-grained refinement. Adoption of appropriately insincere rules may thus substitute for fine-grained variation in the burden of persuasion. To the extent that insincere lawmaking is not already a mainstream practice, it represents a potential lever for increasing the efficiency of deterrence and law enforcement, at least under appropriate circumstances.

D. Some Limitations of the Insincere Approach

As described, the strategy of mitigating proof costs through the adoption of insincere rules may seem to exhibit all the benefits of theft over honest toil. It drives down the cost of proving a violation of law, making it easier for the state to punish transgressors. In so doing, it increases the state’s ability to deter violations of law, and more efficiently incentivizes compliance with laws. It does all of this at seemingly no cost to the state or society. No new police need to be hired. No new penalties need to be administered. At no greater cost than the ink needed to change the law, substantial social benefits may be unlocked.

The benefits of an insincere rule are indeed a boon, but there are situations in which insincerity works better than others, and there are even some conditions in which insincere lawmaking may backfire. We explore several such limitations below, starting with the observation that insincere lawmaking does not always promise great social benefit in the first place.

The potential benefits of adopting an insincere rule depend on the slope of the cost curve as it intersects the benefit curve. More concretely, the efficacy of this cost mitigation strategy depends on how much the possibility of losing at trial factors into enforcement decisions. illustrates this consideration.

64 Cf. BERTRAND RUSSEL, INTRODUCTION TO MATHEMATICAL PHILOSOPHY 71 (1919) (“The method of ‘postulating’ what we want has many advantages; they are the same as the advantages of theft over honest toil.”).
The top panel illustrates a situation in which the adoption of an insincerely low speed limit promises little benefit. In this graph, the cost curve is already becoming flat where it first intersects the benefit curve. The insincere rule provides limited benefit in this situation because shifting the cost curve to the left doesn’t change the intersection point that much. Intuitively, the fixed costs of proof (things like the cost of putting on witnesses) are the main drivers of slippage against the posted speed limit in this setting. Since adoption of an insincere rule does not modulate any of these fixed costs, its adoption doesn’t change social behavior dramatically.

By contrast, the bottom panel illustrates a situation in which adoption of an insincerely low speed limit provides an appreciable benefit. In this graph, the cost curve is more sharply downward-sloping where it first intersects the benefit curve. The adoption of an insincere rule makes a real difference, because
shifting the cost curve to the left more substantially changes the point at which it intersects the benefit curve. Intuitively, the possibility of a loss factors more heavily into marginal enforcement decisions under the sincere rule, and by reducing the probability of loss, the adoption of an insincere rule allows the state to more credibly threaten punishment of those who would otherwise commit modest violations of law.

One conclusion that seems to follow is that insincere rules may provide the most benefit when applied to causes and crimes that require the state to meet high burdens of persuasion. This is probably right, but the proposition could be taken too far. With different assumptions about the relative shapes of the cost and benefit curves in, the effect of an insincere rule could be magnified, even under the preponderance standard. And even if the insincere rule does not imply as large a benefit under the preponderance standard as it does under higher burdens of persuasion, its effect is still not zero. To the extent that this strategy reduces social costs and improves compliance with law without exposing the state to many additional costs, the approach might still be attractive under lower burdens of persuasion.

But does the adoption of an insincerely low speed limit really have no additional costs for society? In practice, there are at least two potentially important costs that could frustrate the state’s efforts to use insincere rules to reduce the costs of proof: (1) the distorting effects that adoption of an insincere rule could have on “good men” in society, and (2) the distorting effects that adoption of an insincere rule could have credulous law enforcement agents.

To start with the first and more intuitive of these costs, everything thus far has assumed a society composed entirely of Holmesian “bad men.” This assumption helps to focus analysis and is frequently relied upon in the enforcement literature. But in reality, there are “good men” who follow the law to the letter. The presence of good men in society is a problem for the insincere rules strategy, because the insincere rules that help to properly incentivize bad men will improperly incentivize good men.

This caveat is intuitive. In a society composed entirely of bad men, the use of an insincere rule may reduce proof costs, increase deterrence, and do all of this at no cost to society. But in a society composed of, say, 50% bad men and 50% good men, the same insincere rule may result in net social inefficiency. The bad men will speed less under the insincere rule (they will go, say, 60 instead of 65), but the good men drive slower than lawmakers think is best (they will go 45 instead of 55). The benefits of the insincere rule in correcting the behavior of the bad men in the population are offset—and possibly overtaken—by the distorting effects of the insincere rule on the behavior of the good men.

This is an important caveat, but it does not fundamentally change the availability of insincerity as a cost mitigation strategy. In a society composed of a mix of good and bad men, some insincerity may still be efficient if the cost-
mitigation benefits outweigh the distorting effects of the strategy on the good men in the population. And as the proportion of good men in the population declines, the cost of distorting their behavior shrinks, while the benefit of the insincere rule grows.

The second potential cost to using insincere rules lies in the possibility that the strategy will result in overenforcement of the law. The intuition runs as follows. If lawmakers want drivers to drive 55 mph, and if they adopt an insincere speed limit of 45 mph, law enforcers might conclude that driving faster than 45 mph is socially harmful. That conclusion is erroneous; lawmakers think that driving faster than 55 mph is harmful but driving between 45 and 55 mph is not. If law enforcers act on their erroneous conclusion, they will seek to prove violations of the speed limit at speeds lower than what lawmakers want.

Figure 7 illustrates this problem. Lawmakers prefer drivers to go 55 mph, and they have adopted an insincere speed limit of 45 mph. Enforcement agents mistake the insincere rule for a sincere statement of optimal driving speeds. Thus, the 55 mph (sincere) benefit line captures the true benefits of enforcement, but these credulous agents act as though the 45 mph (insincere) benefit line represents the benefits of enforcement. The credulous agents will begin seeking to prove violations of law at lower speeds than they would if they were acting from the sincere benefit curve. In the figure, they will begin ticketing drivers at 55 mph, which is where the insincere cost and erroneous benefit curves intersect. This may seem like a good thing, but it isn’t. Ticketing people at 55 mph creates costs and no benefit; those drivers are traveling at the optimal speed. The credulous agents overenforce the law.
Again, this is an important caveat to keep in mind, but it does not fundamentally change the availability of insincerity as a cost mitigation strategy. For one thing, the problem does not arise in the first place if agents focus on the sincere benefit curve instead of the insincere curve, as may occur if these agents are directed to this benefit curve or sufficiently sophisticated to intuit its location. For another thing, lawmakers might have other opportunities for limiting over-enforcement of laws, such as budgetary limitations that cause law enforcement agents to focus on larger violations in the region of those for which social efficiency is improved through enforcement and thus deterrence. Finally, even if the state’s agents are hopelessly credulous, there may still be instances in which adoption of an insincere rule confers more benefits (in terms of reduced proof costs) than costs (in terms of marginal over-enforcement).

E. Summary

The purpose of this Part is to develop the logic of how insincere rules may be used to mitigate proof costs, and thus to increase the social efficiency of law enforcement and deterrence. We can summarize that logic in short order. Enforcement costs cause underdeterrence. Proving a violation of law is an underexplored but important component of enforcement costs. Anything that lowers the costs of proof lowers enforcement costs, and thus improves deterrence. Insincere rules offer an intuitive strategy for lowering the costs of proof. This strategy works by converting minor violations of law (ordinarily cost-prohibitive to prove in court) into major violations of law. Driving 56 mph is a minor violation of a sincere speed limit of 55 mph but a relatively major violation of an insincere speed limit of 45 mph. Insincere rules cannot generally achieve
sincerely preferred social behavior, and are subject to some potential costs and limitations. But the principle of the strategy is robust, and in appropriate circumstances, some degree of insincerity will increase the efficiency of law enforcement and compliance with law.

III. DISTINGUISHING INSINCERE EVIDENCE

By lowering the costs of legal proof, insincere rules can increase the efficiency of law enforcement and improve the behavior of regulated parties. In Part IV we discuss philosophic arguments for and against this strategy, including the reasons to think that insincere evidence may be consistent with some of the highest principles of the legal system. But first we must distinguish our idea from others. Besides us, scholars have not used the language of insincere rules and insincere evidence. Scholars have, however, described concepts that relate, or might appear to relate, to our argument. Those concepts include conduct rules, decision rules, over-inclusive rules, and the like. To prove novelty, this Part distinguishes our work from those concepts. This is more than an exercise in housekeeping. Putting distance between those ideas and ours makes both clearer.

A. Gilbert on Insincere Rules

In 2015, one of us (Gilbert) published a paper titled Insincere Rules. That paper argues that lawmakers can improve the behavior of regulated parties with insincere rules, meaning rules that are more demanding than what lawmakers actually want. To adapt one of the paper’s examples, suppose lawmakers want factories to emit no more than 60 units of pollution. A sincere rule would cap emissions at 60 units, and factories might emit 70 units of pollution in response. An insincere rule would cap emissions at, say, 50 units, and factories might emit 60 units of pollution in response. In that case, the lawmakers prefer the insincere rule. It yields their preferred level of emissions.

One might wonder what differentiates this article from that prior work. The earlier paper introduced the term insincere rules, and it showed that insincere rules sometimes work better. The general conclusion of both papers—“by making the law in books wrong, lawmakers can get the law in action right” is the same.

This article extends the earlier work. What makes it novel is the mechanism. Gilbert argued that insincere rules can improve behavior through two (and only two) channels, one punitive and one deceptive. Neither overlaps with the channel—lowering the cost of proof—developed here.

65 Gilbert at 2187.
Take the punitive channel first. As explained above, lawmakers can improve compliance with the law by increasing penalties. Lawmakers can increase penalties directly, as when they double fines. Gilbert showed that lawmakers can also increase penalties indirectly by tightening rules.

An example will clarify. The speed limit is 55 mph, and the fine for speeding is $2 for every mile per hour that a driver exceeds the limit. Thus, if a driver gets caught going 65 mph, he pays a fine of $20. Suppose that lawmakers conclude that the fine is too low. Drivers speed too much. The conventional solution would be to increase the fine schedule. Instead of paying $2 for every mile per hour over the limit, speeders must pay, say, $3. Now the fine for going 65 in a 55 mph zone is $30 instead of $20. Gilbert showed that lawmakers have an alternative solution. They can leave the fine schedule alone—the fine remains $2 for every mile per hour over the limit—but drop the speed limit from 55 mph to 50 mph. Now a driver going 65 exceeds the limit by 15 miles per hour rather than 10, so now the driver must pay $30 rather than $20.

Both ways of increasing the penalty yield the same outcome: the fine for driving 65 mph equals $30. More generally, both ways make the fine for driving any particular speed higher than it was before. But only the second way involves an insincere rule. The lawmakers want drivers to go 55, but they make the speed limit 50. This insincere rule is punitive. It improves compliance by (indirectly) raising the penalty associated with a violation of law. Insincere rules have a punitive element whenever the sanction for a violation of law increases with the seriousness of the violation.

Now consider Gilbert’s second channel. It involves deception. Suppose that enforcing the law does not come with a fine. Instead, it comes with an injunction. To illustrate, suppose the pollution cap equals 60 units. If a factory emits more than that, and if the state enforces the law, the factory is forced to comply with the legal limit, 60 units, going forward. (This might be accomplished by, for example, placing a monitor on the smokestack.)

When enforcement comes with an injunction, the enforcement agent’s preferences matter. Suppose again that the cap on pollution is 60 units. If the enforcer favors that cap, he is especially apt to enforce the law. This does not mean he will react to every minor violation. Enforcement, after all, is expensive. But it means he is more prone to enforce than he would otherwise be. This is because enforcement will bring pollution to his preferred level—he gets exactly what he wants. Knowing that the enforcer is apt to enforce, factories will not push their luck. They might emit, say, 65 units of pollution but no more. In this situation, an insincere rule might work well. If the pollution cap equals 55 units,

66 To express the idea in a different way, the insincere rule takes a particular behavior that used to be classified as something akin to a misdemeanor and reclassifies it into something akin to a felony. Because felonies carry larger fines, the insincere rule enhances punishment. It does so without changing the fines for either misdemeanors or felonies.
the factory will reason as above and emit 60 units—exactly the amount that the enforcer thinks best.

For the insincere rule to have this benevolent effect on behavior, the enforcer must deceive the factory. The factory must believe that the enforcer prefers 55 units (the law in books), when in fact he prefers 60 units. If the factory sees through the ruse, the insincere rule performs badly.

In sum, Gilbert introduced insincere rules, but he studied only two mechanisms by which they can elicit better behavior, one punitive and one deceptive. Both of those mechanisms involve increasing the regulated parties’ costs, or perceived costs, of violating the law. This article introduces a third, and we suspect more common, mechanism: simplifying proof. It involves decreasing the state’s cost of enforcing the law.

B. Conduct and Decision Rules

Professor Meir Dan-Cohen distinguishes “conduct” rules, which direct the public on how to behave, from “decision” rules, which direct officials on how to treat people who violate the law.67 For example, a conduct rule forbids theft, and a decision rule instructs judges to punish theft unless it is committed under certain circumstances, like duress. With “acoustic separation,” members of the public do not perceive decision rules, just conduct rules. That can improve behavior and outcomes.68 People commit fewer thefts when they do not know that duress provides a defense. When thefts do occur, judges can, under exceptional circumstances, excuse them (as when they excuse theft to prevent starvation). In Dan-Cohen’s words, acoustic separation “permits the law to maintain higher degrees of both deterrence and leniency than could otherwise coexist.”69

Lawmakers might try to achieve acoustic separation, though Dan-Cohen did not push this possibility.70 Suppose they do. Does a lawmaker’s effort to

67 Dan-Cohen traces his work to Bentham. See id; see also Gerald J. Postema, Bentham and the Common Law Tradition 408, 448–52 (1986) (explaining Bentham’s distinction between the law directing social interaction and the law providing parameters for adjudication).
68 See Dan-Cohen, supra note ___, at 630–34
69 Id. at 665.
70 Id. at 635: “[A]ctual legal systems may in fact avail themselves of the benefits of acoustic separation by engaging in ‘selective transmission’—that is, the transmission of different normative messages to officials and to the general public, respectively…. I shall refer to these techniques as strategies of selective transmission. The term ‘strategies’ calls for an explanation. My use of the term should not be understood to connote deliberate, purposeful human action. Imputing to the law strategies of selective transmission does not, therefore, imply a conspiracy view of lawmaking in which legislators, judges, and other decisionmakers plot strategies for segregating their normative communications more effectively. Instead, strategies of selective transmission may be the kinds of strategies without a strategist that Michel Foucault describes in his analysis of power.” (internal citations omitted)
maintain acoustic separation—to publicize the conduct rule and hide the decision rule—resemble a strategic decision to adopt an insincere rule?

The answer is no. Under Dan-Cohen’s account, lawmakers want the public to obey the conduct rule. People should act as though theft is always forbidden, not as though it is usually forbidden. In contrast, lawmakers never want the public to obey the insincere rule. They adopt an insincere rule with the hope and expectation that people will violate it. In the driving example, you adopt a speed limit of 45 mph to elicit speeds close to 55 mph. If people strictly obey the speed limit—if they go 45 mph—then the insincere rule loses its value. A sincere speed limit of 55 mph would work better.

Here is another way to see the distinction. Acoustic separation works—it maintains those “higher degrees of both deterrence and leniency”—through ignorance. The public knows the conduct rule only. If the separation fails and the public discovers the decision rule, they will respond to it. Instead of treating all theft as forbidden, they will treat theft without duress as forbidden.

Insincere rules presuppose that people have discovered the decision rule. In our running example, the sincere speed limit (55 mph) is the conduct rule, and the speed limit coupled with the enforcement strategy (stop people going 65 mph or faster) is the decision rule. People know the decision rule, so they go 65 mph. Insincere rules are a strategic response when acoustic separation fails. Changing the conduct rule, which everyone ignores, from 55 mph to 45 mph changes the decision rule, which everyone heeds, from 65 mph to 60 mph.

**C. Over and Under-Inclusive Rules**

As every law student learns, rules are generally over and under-inclusive when assessed against their purposes. 71 To demonstrate, consider a simple rule: the 26th Amendment. 72 It grants Americans the right to vote beginning at the age of 18. Suppose the purpose of the rule is to confine suffrage to those with sufficient maturity, knowledge, and responsibility. 73 The rule is over-inclusive because it forbids too much. Some 17-year-olds are mature, knowledgeable, and responsible, yet they cannot vote. 74 The rule is under-inclusive because it permits too much. Some 18-year-olds are not mature, knowledgeable, or responsible, yet they can vote. Thus, application of the rule does not always promote its purpose. Sometimes the rule undermines its purpose.

71 For a discussion, see Frederick Schauer, Playing By the Rules 31-34 (1991).
72
73 Some may dispute this. The amendment was tied to the draft. Just assume this, that’s sufficient for our purposes.
74 And their vote today may affect whether they get conscripted at age 18.
Good rules balance the costs of over and under-inclusiveness. Instead of granting suffrage to 18-year-olds, suppose the 26th Amendment granted it to 19-year-olds. Increasing the voting age would mitigate the costs of under-inclusiveness. Remember those irresponsible 18-year-olds? Now they cannot vote, which is a plus. However, increasing the voting age would exacerbate the costs of over-inclusiveness. Responsible 18-year-olds are disfranchised, which is a minus. Good lawmakers account for these pluses and minuses and settle on the rule that balances them.

One might wonder if insincere rules are just especially over-inclusive rules. An example shows the argument. Suppose you want drivers to go 55 mph, as that speed would best balance expediency and safety. Suppose you adopt an insincere speed limit of 45 mph. It appears that you have simply drafted, and drafted intentionally, a very over-inclusive rule. The rule forbids a lot of benign behavior: speeds between 45 mph and 55 mph.

This logic is wrong. To see why, start with an intuition. Over-inclusiveness harms lawmakers. If they want every responsible person to vote, they suffer when their rule forbids responsible 17-year-olds from voting. This does not mean that lawmakers will change the rule. Perhaps granting suffrage at 18 is, given the balancing act described above, the best rule all things considered. But it does mean that lawmakers lament the rule's over-inclusiveness. In contrast, insincerity does not harm lawmakers. They do not suffer when their rule forbids safe drivers from going 46 mph. They welcome this prohibition because it encourages drivers to go 55 mph.

To develop the distinction, consider the process of lawmaking. In practice, lawmakers commingle decisions about the content of the law with decisions about its enforcement. Foreseeing the challenge of monitoring bathrooms, legislators change or abandon their law on transgendered people. Commingling makes lawmaking complicated. We can simplify matters, at least conceptually, by dividing the lawmaking process into two stages, balancing and calibrating. The balancing stage happens under the assumption (really the illusion) that enforcement is costless. Regulated parties will comply perfectly with whatever law the lawmakers produce. The question at this stage is, what law should they produce? The answer depends on their purpose and the balance between over and under-inclusiveness associated with different laws.

Once balancing is complete—once lawmakers have, as a matter of substance, the optimal law—they proceed to the calibrating stage. Calibrating means shattering the illusion. Lawmakers recognize that enforcement is not costless and that regulated parties understand this. Those parties will not comply perfectly with whatever law the lawmakers produce. This forces a reassessment.

75 “Good” rules do other things too. See generally Sunstein, Problems with Rules, Schauer.
76 And other things too.
Anticipating imperfect compliance, lawmakers calibrate their law. They change its content to mitigate the expected non-compliance. They may convert what had been a rule into a standard, or what had been a complex law into a simple law.\textsuperscript{77} They may convert what had been a strict law into a lenient one, or vice versa.

With this framework in hand, we can return to the question: are insincere rules just intentionally over-inclusive rules? No. Over-inclusiveness goes to the balancing stage, while insincerity goes to the calibrating stage. In balancing, lawmakers might adopt an over-inclusive rule. Despite its flaws, that rule \textit{commands} the best behavior overall. In calibrating, lawmakers might adopt an insincere version of that over-inclusive rule. Doing so \textit{elicits} the best behavior overall. Insincerity converts an over-inclusive law in books into an over-inclusive law in action.

\textbf{D. Prophylactic Rules}

Scholars use the term “prophylactic rule” in different ways. We work from the standard definition: a prophylactic rule is a judge-made rule that overprotects a constitutional right.\textsuperscript{78} The classic example is the \textit{Miranda} warning.\textsuperscript{79} The Fifth Amendment grants a privilege against self-incrimination. If police coerce a suspect into confessing, the Fifth Amendment prevents them from using the confession in court. In \textit{Miranda v. Arizona}, the Supreme Court held that police must tell suspects that they have rights to silence and counsel, and suspects must then waive those rights, for a confession to be admissible.\textsuperscript{80} The \textit{Miranda} warning overprotects the privilege against self-incrimination. The Court’s test—did you read them their rights, and did they waive them?—provides more protection for suspects than the Fifth Amendment requires.

Scholars disagree on whether prophylactic rules are common or rare, legitimate or illegitimate.\textsuperscript{81} Prophylactic rules have a converse (albeit one without a name): rules that underenforce constitutional rights.\textsuperscript{82} According to Professor Mitchell Berman, “the debate over prophylactic rules is parasitic upon a more fundamental contest over the logical structure of constitutional adjudication.”\textsuperscript{83}

Those debates, though interesting, do not concern us here. Our objective is just to show that prophylactic rules are not synonymous with insincere rules. To

\textsuperscript{77} Cite Kaplow.
\textsuperscript{78} See Caminker at 1. For other definitions, see id. at n2; Landserg, 926-930.
\textsuperscript{79} See Caminker. See also Berman.
\textsuperscript{80} See Joseph D. Grano, Prophylactic Rules in Criminal Procedure: A Question of Article III Legitimacy, 80 Nw. U. L. Rev. 100 (1985) (arguing that some prophylactic rules like the \textit{Miranda} warning are illegitimate); David A. Strauss, The Ubiquity of Prophylactic Rules, 55 U. Chi. L. Rev. 190 (1988) (arguing that prophylactic rules are common, necessary, and legitimate).
\textsuperscript{81} Lawrence Gene Sager, Fair Measure: The Legal Status of Underenforced Constitutional Norms, 91 Harv. L. Rev. 1212 (1978).
\textsuperscript{82} Berman at 50.
see the difference, consider a question: why do courts adopt prophylactic rules? Professor Evan Caminker provides an explanation in the Fifth Amendment context:

[A] seemingly straightforward, case-by-case inquiry into whether a constitutional norm has been transgressed will result in what might be called “adjudication errors,” meaning the production of false-negatives and false-positives. A judicial test generates a false-negative when it labels government conduct as permissible even though, were we omniscient, we would know that the conduct was actually unconstitutional. Conversely, a judicial test produces a false-positive when it labels government conduct as impermissible even though, were we omniscient, we would know that the conduct was actually constitutional.

[S]ometimes, the Court will conclude that the likelihood of false-negatives is unacceptably high; in other words, the direct doctrinal inquiry actually proves to be insufficiently protective of the constitutional values at stake given the persistence of unconstitutional conduct. I believe this is the best, and a fully sufficient, explanation for and justification of Miranda's so-called prophylactic rule[.]

This logic is familiar from above. Rules, including constitutional doctrines developed by courts, are over and under-inclusive. The precursor to Miranda was a totality-of-circumstances test. Courts considered, on a case-by-case basis, whether a suspect’s confession was coerced. In practice, this was imperfect. Some coerced confessions were admitted (the rule was under-inclusive), and some non-coerced confessions were not (the rule was over-inclusive). In Miranda, the Court concluded that the balance was off. The problem of under-inclusiveness was too great. The existing doctrine admitted too many coerced confessions, and the costs of those mistakes were too high. The solution lay in replacing the old doctrine with a new one, the Miranda warning. The Miranda warning overprotects the Fifth Amendment in the sense that it is self-evidently over-inclusive. It stops many non-coerced confessions from being admitted. But it may well be the best approach given the tradeoffs.

As this discussion shows, prophylactic rules are akin to deliberately over-inclusive rules. In the language from the prior section, they involve the balancing stage of lawmaking (or doctrine-making). They do not involve the calibrating stage of lawmaking, which is where insincere rules arise. A thought experiment proves the point. Lawmakers want and expect regulated parties to violate, at least to some degree, their insincere rules. The Supreme Court did not want or expect police to violate, to any degree, its Miranda warning.

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84 Caminker at 9.
85 Fallon, Berman, etc. explain that prophylactic rules are in part a court response to judges’ limited capacities and information.
E. Insincere or Pathological?

In 2001, Professor William Stuntz published an influential paper called *The Pathological Politics of Criminal Law*. His central argument was that various institutional incentives conspire to create an over-criminalized world. Under his account, legislators forbid just about everything, and prosecutors select whom to charge from among the laws’ many violators. Over-criminalization shifts authority from legislators and judges to prosecutors. Prosecutors effectively determine the law in action, and they may abuse their discretion. As before, our objective in this section is to prove the novelty of our claim. Thus, the question: did Stuntz preempt our argument about insincere rules?

He pursues one line of reasoning that might suggest the answer is yes. Here is a quote from the article:

> Suppose a given criminal statute contains elements ABC; suppose further that C is hard to prove, but prosecutors believe they know when it exists. Legislatures can make it easier to convict offenders by adding new crime AB, leaving it to prosecutors to decide when C is present and when it is not.\(^{86}\)

Stuntz returns to this kind of reasoning throughout his paper,\(^{87}\) and he describes it in various ways. Here is one of his characterizations. He compares two criminal statutes, one that is relatively narrow (for example, doing A, B, and C is a crime) and one that is relatively broad (doing just A and B is a crime).\(^{88}\) He argues that prosecutors can offset the breadth of the latter crime. The logic works like this. The statute forbids AB, but only a subset of people who do AB—including people who do AB and C—deserve punishment. Good prosecutors know this and act accordingly. Thus, the law says AB, but only acts like ABC gets punished.

This is convincing logic, but it is not an insincere rule. Instead, we understand Stuntz to be making an argument about over-inclusiveness. A crime with elements AB is over-inclusive. It punishes behavior that the state does not want to punish. Switching the crime from AB to something like ABC would mitigate over-inclusiveness, but it would exacerbate under-inclusiveness. What should the state do? The answer depends on the relative costs of over and under-inclusiveness. If prosecutors can reduce the costs of over-inclusiveness by not charging sympathetic people, then that tips the balance. The broader rule (doing just A and B is a crime) is better. That rule is not very under-inclusive, and prosecutors prevent it, in practice, from being over-inclusive.

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\(^{86}\) Stuntz at 519.

\(^{87}\) Id. at 519-20, 531, 537-38. Cf. 547-48.

\(^{88}\) Id. at 547-48.
As we said, Stuntz characterizes his point in different ways. The one we just described does not overlap with our concept, but another one does. In different places, Stuntz explains the replacement of crime ABC with crime AB in terms of enforcement costs. “Substituting an easy-to-prove crime for one that is harder to establish obviously makes criminal litigation cheaper for the government.”89 This sounds closer to calibrating than balancing. We would put it like this: Stuntz’s example gestures at a multi-element, binary, insincere rule.

We can unpack this phrase. Our running example, speed limits, involves a single-element offense. Whether a driver breaks the law depends on one variable only, speed. One can imagine a multi-element offense instead. Suppose a motorcyclist engages in reckless driving when he (1) drives faster than 55 miles per hour and (2) raises his front tire more than five inches off the ground. As we have explained, the cost of proof will prevent perfect enforcement. The law in books is 55 mph/five inches, but the law in action is, say, 65 mph/eight inches. Lawmakers could benefit from an insincere rule. They could make the law in books, say, 45 mph/two inches. This might induce the optimal law in action. Because the law involves more than one element, and because the threshold for each element is insincere, this is a multi-element, insincere rule. The logic behind the rule—how it elicits better behavior—matches the logic from Part II. The only difference is we have two elements instead of one.

Consider another distinction: elements and thresholds. Elements of an offense can be added or subtracted. Reckless driving can have two elements (speed and wheelies) or just one element (speed). Once the elements are determined, each gets a threshold.90 Driving turns into speeding at a threshold we call the speed limit. Likewise, lawful wheelies become unlawful at some threshold—say, five inches off the ground.

Our presentation of insincere rules has explicitly addressed thresholds. The element is speed, and lawmakers lower the threshold to improve behavior. Implicitly, however, we have also addressed elements. This is because when a threshold reaches zero, its element disappears. To illustrate, suppose again that a motorcyclist engages in reckless driving when he (1) drives faster than 55 and (2) raises his front tire more than five inches. This is the law in books. The law in action is 65 mph/eight inches. To shrink this gap, the state adopts an insincere rule. It lowers the wheelie threshold—from five inches to three inches and so on. When the threshold reaches zero, the wheelie element evaporates. Now reckless driving is a one-element crime rather than a two-element crime. It depends on speed only.

Given this logic, a lawmaker calibrating an insincere rule can approach the wheelie threshold in two ways. She can treat it as continuous, dropping the

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89 220.
90 We assume continuous variables.
threshold from five inches to four, 2.3, or whatever will elicit the best behavior. Or she can treat it as binary: the threshold stays at five inches, or it drops to zero, meaning the element goes away. There is no choice between.

Recall our description of Stuntz: he gestures at a multi-element, binary, insincere rule. Now the phrase makes sense. The crimes ABC and AB are multi-element. The crime AB is insincere. The state does not want to punish AB; it criminalizes AB only to lower the cost of enforcing ABC. The insincere rule is binary. The state does not lower the threshold on element C or even contemplate doing so. It simply eliminates C.

Our work, it turns out, builds on Stuntz. He gestured at the problem, offering a nice example that, under one characterization, represents an insincere rule. We generalize the idea. It works for one element-crimes; adding elements complicates matters without changing the logic. We show that over-inclusiveness is a separate matter (this line is blurry in Stuntz’s article). We show that the binary approach Stuntz contemplated represents a polar (and ham-handed) case. A continuous approach that fine-tunes the rule can work better. Finally, Stuntz focused on creating room for prosecutorial discretion in the criminal setting. We are focused on an orthogonal issue: the use of an insincere rule to overcome systemic slippage between the law in books and the law in action. Insincere rules have no necessary connection to pathological politics. Whatever the incentives of state actors, proof is costly. Insincere rules can lower that cost and improve behavior—in criminal law and everywhere else.

IV. EVIDENCE, PROOF, AND THE OBJECTIVES OF TRIAL

The enforcement lever we consider in this paper manipulates the evidentiary process in order to induce better compliance with law. The intuition is that proof costs drive a wedge between what lawmakers sincerely want to achieve and what they can actually effect in practice. It is always costly to prove a violation of law, and these costs can be prohibitive when the violation in question is small. Insincere rules mitigate this problem. By generating free evidence, an insincere rule reduces the costs of proving a violation of law, increasing the threat of punishment, and decreasing the incentive to violate the law in the first place.

The objective of this strategy is positive, but the way in which it goes about achieving that desired end may give rise to concerns. The entire approach rests on a systemic falsehood: intentionally misrepresenting, in law, what society actually wants people to do. The strategy reduces proof costs only by substituting a disingenuous fact-finding exercise for the genuine fact question that trial would otherwise be about. Rather than proving the fact of the sincere infraction (whether the defendant violated the speed limit by, say, 1 mph), trial is twisted to focus on the insincere infraction (whether the defendant violated the insincere speed limit by 11 mph).
These are understandable concerns, but not necessarily persuasive criticisms in the broader context of trial and the proof process. Trials are more than ex post exercises in reconstructing what has come to pass. And just as substantive law may validly aim to adjust ex ante incentives and deter certain behaviors in the population, so can trials and the proof process play a role in shaping these incentives. Cast in this light, the generation of insincere evidence might be a tame example of how the proof process diverges from the truth-seeking goal of trials.

A. Trials and Truths

It is often assumed that trials are, and should be, about one thing: the search for truth. This idea applies equally to the institution of trial, and to the rules of evidence that govern fact-finding in the trial setting. The same intuition motivates the related idea that trials—and the rules of evidence—are aimed at minimizing errors in fact-finding. The objective of minimizing errors is just another way of expressing the ideal of accurate discovery of truth as the primary objective of the litigation process.

Courts expound this view no less than scholars. The Supreme Court has, at times, waxed poetic in explaining that “[t]he fundamental basis upon which all rules of evidence must rest—if they are to rest upon reason—is their adaptation to the successful development of the truth.” In a similar vein, it has referred to the “very nature” of trial as “a search for truth.” It is easy to find lower courts of a similar mind. The third circuit, for example, has stated that “Any factfinding

91 See Nesson 1991 at 793 (describing “the ideal of the trial as a search for truth”); Robert S. Summers, Formal Legal Truth And Substantive Truth in Judicial Fact-finding—Their Justified Divergence in Some Particular Cases, 18 L. & Phil. 497, 497 (1998) (“Some natural scientists, some social scientists, some philosophers, and many others regularly assume that truth finding is the only important function of trial court procedures and the rules of evidence.”); Peck 1954 at 9 (“The object of a lawsuit is to get at the truth and arrive at the right result. That is the sole objective of the judge, and counsel should never lose sight of that objective in thinking that the end purpose is to win for his side.”); Frankel 1975 at 1033 (“Trials occur because there are questions of fact. In principle, the paramount objective is the truth.”)

92 See Sanchirico 2004 at 1120 (“Most analyses of evidence law take litigation’s prime object to be the discovery of truth about past events.”); Twinin 1984 at 272 (“There is undoubtedly a dominant underlying theory of evidence in adjudication, in which the central notions are truth, reason and justice under the law…”); Weinstein 1966 at 246 (“In case of conflict, the court’s truth-finding function should receive primary emphasis except when a constitutional limitation requires subservience to some extrinsic public policy.”).

93 See, e.g., Posner (1999) at 1480–84 (assuming that the objective of evidence law is to minimize errors in trial outcomes).


95 Funk v. United States, 290 U.S. 371, 381 (1933).

96 See Nix v. Whiteside, 475 U.S. 157, 166 (1986) (“Plainly, [the duty to advocate for one’s client] is limited to legitimate, lawful conduct compatible with the very nature of a trial as a search for truth.”) (emphasis added); id. at 174 (describing the lawyer as an “officer of the court and a key component of a system of justice, dedicated to a search for truth”) (emphasis added).
process is ultimately a search for truth and justice, and legal precepts that govern the reception of evidence must always be interpreted in light of this.”

The elevation of truth above all else may seem problematic for the insincerity lever. It is odd to think that a system so focused on the discovery of truth may be improved through the introduction of systematic falsehoods. But the situation is not so black and white.

First, even if one were to accept the view of trial as a process mainly devoted to the search for truth, it would not necessarily follow that insincere rules—and the generation of insincere evidence—were inimical to this goal. The truth of what has happened is sought the same under either a sincere rule or an insincere rule. In the driving example, the state seeks to prove that a driver was going 56 mph (a truth in the world); all that differs is legal standard to which this behavior is being compared (a question of law, at least partly outside the scope of the fact-finding exercise).

Second, there are reasons to question how accurate it is to assume such primacy of truth-discovery in the first place. For one thing, there are philosophic reasons to doubt whether trials can ever uncover truth in an absolute sense of the term. Reasonable arguments can be made, for example, that truth in a trial setting is basically a functional concept: “legal truth,” as opposed to a substantive or platonic truth. This creates space for legal truths defined relative to insincere rules to fit into the current framework. For another thing, even if there is some attainable truth to seek via fact-finding, there are reasons to question how suited the adversarial process is to the discovery of this truth. Adversarial litigants do not typically have duties, or even incentives, to develop truthful factual records at trial. Nor do the rules of ethics, evidence, or procedure generally compel the full development of a truthful record. Judge Jack Weinstein long ago made this

99 See Summers 1999 at 498 (“I define as ‘formal legal truth’ whatever is found as fact by the legal fact-finder (judge or lay jurors or both), whether it accords with substantive truth or not.”); cf. Morgan 1956 at 128 (“The trial is a proceeding not for the discovery of truth as such, but for the establishment of a basis of fact for the adjustment of a dispute between litigants. Still it must never be forgotten that its prime objective is to have that basis as close an approximation to the truth as practicable.”).
100 See, e.g., Jerome Frank, Courts on Trial: Myth and Reality in American Justice 80-102 (1950) (critiquing the notion that the adversarial process leads to the general discovery of truth).
101 See Frank, supra note __, at __ (illustrating ways in which trial attorneys are incentivized to conceal, rather than develop truthful testimony); Frankel 1975 at 1032 (“My theme, to be elaborated at some length, is that our adversary system rates truth too low among the values that institutions of justice are meant to serve.”).
102 This is not to say that proposals to the effective have not been voiced. See Frankel, supra note ___ at ___ (proposing reform efforts that would impose such duties); Weinstein, supra note ___ at
point quite forcefully: “trials are not designed to get at the total truth in all its
mystery; they only allow decision of narrow issues of fact and law within the
limitations of a moderately effective litigation system.”103

The limitations of the litigation system include various non-truth-seeking
objectives that plainly do cause courts and evidentiary records to deviate from
“truth in all its mystery” on a regular basis. The situations in which we do deviate
from the search for truth help to locate the insincere-evidence strategy within
current norms.

B. Broader Objectives of Proof and Evidence

The most obvious sense in which the proof process evinces aspirations
beyond the simple discovery of truth is in the heightened burdens of persuasion.
The highest standard of proof—beyond a reasonable doubt—is manifestly not
cconcerned with minimizing errors or approximating reality.104 Rather, it is aimed
at satisfying an important collateral social objective: reducing the probability of
wrongful punishment when the stakes are high.105

The reasonable doubt standard is a prominent illustration of how the proof
process is today manipulated to achieve desired social ends. But it is hardly the
only example. Trials, and the law of evidence, serve various objectives other than
the elicitation of truth.106 The advancement of these other objectives may even
result in the intentional distortion of truth.107 Where this happens, the objective is
typically to incentivize or disincentivize some particular type of social behavior.

___ (proposing similar reforms). To date, however, there seems to be little movement toward such
an overhaul of the adversarial system.
104 Frankel 1975 at 1037 (“[I]n the last analysis truth is not the only goal ... the question is not at
all ‘guilt or innocence,’ but only whether guilt has been shown beyond a reasonable doubt”);
Weinstein 1966 at 236 (describing the requirement of proof beyond a reasonable doubt as a
“conscious distortion[ of] the fact-finding process”).
105 See, e.g., In re Winship, 397 U.S. 358, 372 (1970) (Harlan, J., concurring) (“I view the
requirement of proof beyond a reasonable doubt in a criminal case as bottomed on a fundamental
value determination of our society that it is far worse to convict an innocent man than to let a
guilty man go free.”).
106 Summers 1999 at 499–500 (“[T]rial court procedures and the rules of evidence, though
generally directed at substantive truth, are also designed to serve other ends that actually come into
play in a particular case.”); Weinstein 1966 at 241 (“Even were it theoretically possible to
ascertain truth with a fair degree of certainty, it is doubtful whether the judicial system and rules of
evidence would be designed to do so. Trials in our judicial system are intended to do more than
merely determine what happened.”).
107 Freedman 1975 at 1065 (“[I]n a society that respects the dignity of the individual, truth-seeking
cannot be an absolute value, but may be subordinated to other ends, although that subordination
may sometimes result in the distortion of the truth.”); Weinstein 1966 at 236 (“The law mandates
many conscious distortions in the fact-finding process in order to gain some supposed social
advantage.”).
One obvious illustration is the exclusion of certain types of admittedly probative evidence in order to incentivize socially desired behavior. Thus, subsequent remedial measures are not admissible to prove negligence or culpability,\(^{108}\) encouraging more rapid remedy of potentially dangerous conditions. Offers to pay medical expenses are inadmissible to show liability for an injury, encouraging the early payment of these expenses.\(^{109}\) Similar reasoning supports rules rendering inadmissible certain statements made in the course of compromise negotiations and plea discussions.\(^{110}\) The normative argument for these rules is not that admissions made in the course of negotiations are irrelevant to ascertaining truth in fact-finding. It is hard to imagine anything more probative of truth. Rather, the exclusion of these statements is bottomed on the notion that the social benefits of incentivizing open negotiations outweigh the truth-suppressing tendency of these rules.

Many privileges are to the same effect. The attorney-client privilege clearly frustrates the discovery of truth, but does so in service of incentivizing open communications by a person seeking legal counsel.\(^{111}\) Likewise, the doctor-patient privilege,\(^{112}\) the priest-penitent privilege,\(^{113}\) the marital confidence privilege,\(^{114}\) and the spousal testimonial privilege,\(^{115}\) all incentivize some form of behavior or communication that is deemed sufficiently beneficial to warrant distorting the truth-seeking aspects of the fact-finding process.

Other privileges and exclusionary rules operate similarly, but in the other direction: manipulating the proof process in order to disincentivize and deter some undesirable behavior. For example, Rule 37 of the Federal Rules of Civil Procedure provides the flexibility for the judge to provide that certain facts will be artificially deemed true or false in order to penalize and deter failures to comply with discovery orders.\(^{116}\) This use of the proof process clearly diverges from

\(^{109}\) Fed. R. Evid. 409.
\(^{110}\) Fed. R. Evid. 408 (concerning compromise negotiations); Fed. R. Evid. 410 (concerning plea discussions).
\(^{111}\) See generally 1 McCormick on Evidence §§ 87–97 (2013).
\(^{112}\) See generally id. at §§ 98–105 (2013).
\(^{113}\) See Trammel v. United States, 445 U.S. 40, 51, 100 S. Ct. 906, 913, 63 L. Ed. 2d 186 (1980) (“The priest-penitent privilege recognizes the human need to disclose to a spiritual counselor, in total and absolute confidence, what are believed to be flawed acts or thoughts and to receive priestly consolation and guidance in return.”).
\(^{116}\) See FED. R. CIV. P. 37(b) (“If a party ... fails to obey an order to provide or permit discovery ... the court where the action is pending may issue further just orders. They may include the following: (i) directing that the matters embraced in the order or other designated facts be taken as established for purposes of the action, as the prevailing party claims; (ii) prohibiting the disobedient party from supporting or opposing designated claims or defenses, or from introducing designated matters in evidence; ...”).
truth-seeking, but does so for the purpose of disincentivizing a type of socially 
harmful behavior: refusal to produce evidence during the discovery process. 
Similar reasoning applies, in criminal prosecution, to the exclusion of evidence 
obtained without a warrant, without a proper Miranda warning, or subject to other 
procedural defects.\footnote{See, e.g., Mapp v. Ohio, 367 U.S. 643 (1961) (finding the need to exclude ill-gotten evidence incorporated against the states); Escobedo v. Illinois, 378 U.S. 478, 491 (1964) (evidence excluded when obtained by violation of constitutional right to representation); Miranda v. Arizona, 384 U.S. 436, 444 (1966) ("[T]he prosecution may not use statements, whether exculpatory or inculpatory, stemming from custodial interrogation of the defendant unless it demonstrates the use of procedural safeguards effective to secure the privilege against self-incrimination.").} Again, these rules manipulate the proof process in a way 
that may well frustrate truth and lead to the release of actual criminals.\footnote{See, e.g., \textit{Mapp}, 367, U.S. at 659 ("There are those who say, as did Justice (then Judge) Cardozo, that under our constitutional exclusionary doctrine ‘(t)he criminal is to go free because the constable has blundered.’ In some cases this will undoubtedly be the result.") (internal citations and footnotes omitted).} Again, 
that manipulation is in service of an important ex ante objective: here, 
incentivizing socially acceptable police conduct in the collection of evidence and 
information.

Implications for the strategy we consider in this paper should be obvious. 
To the extent that ex ante incentivization of a certain behavior is sufficiently 
important, there is ample precedent for manipulating the proof process in order to 
achieve that end.

\textbf{C. Incentivization through Cost Reduction}

A final argument that might be made against the insincere evidence 
strategy is that it differs in at least two respects from other common manipulations 
of the proof process. Whereas many existing manipulations seek to reward or 
punish some collateral behavior—speaking with an attorney or spouse, 
conducting an unwarranted search—the strategy we consider in this paper seeks 
to modulate the \textit{same} ex ante incentive as the underlying law. Specifically, it 
seeks to increase incentives to obey the law by reducing the cost of proving a 
violation of law. There are thus two possible distinguishing features of the 
strategy: (1) it modulates the same thing as the law in question, and (2) it does so 
where cost alone presents the obstacle to be overcome.

The first feature appears more substantial than it is. No one disputes that 
substantive law often aims at incentivizing or disincentivizing certain conduct or 
behavior.\footnote{See Sanchirico 2004 at 1220 ("When it comes to analyses of the ‘substantive law,’ the idea that legal rules set incentives for everyday behavior—incentsives to perform as contracted, to disclose accurate financial information, to take reasonable precaution, to adopt a safe product design, to eschew physical violence—occupies a central position.").} But the effort is futile if the proof process gets in the way.\footnote{See Summers 1999 at 497–98 ("[W]ithout findings of fact that generally accord with truth, the underlying policy goals or norms of the law could not be served. For example, a rule designed to}
of conditions needed to establish a violation were always prohibitively costly, for example, then the substantive law would never achieve its aim of changing incentives. If proof were sometimes too costly, then the substantive law would sometimes not achieve its aim. If the incentivization objective of the substantive law is socially desirable, then any modification of the proof process that tends to improve that incentivization scheme serves the same socially desirable end as the substantive law itself.121

The only remarkable thing about the preceding reasoning is that it needs to be articulated at all. As Chris Sanchirico notes, there is a peculiar lack of literature around the role that evidentiary rules and the proof process play in setting ex ante incentives, relative to the substantial role that these features of litigation do play in modulating incentives.122 If frictions in the proof process frustrate the incentivization goals of the substantive law, it only makes sense that lawmakers would want to modify the proof process to remove these frictions, where possible.123 This is what the insincere rule strategy does.

The second distinguishing feature is slightly more compelling. There is something to the idea that cost-reduction is an unseemly objective, particularly when it is used to motivate the injection of a bit of falsehood into the fact-finding process.

Again, however, including proof costs among valid societal concerns is not a new proposition.124 Alongside the discovery of truth, the Federal Rules of

secure safety on the highways by setting a speed limit of 70 mph and by punishing those who exceed it can not effectively serve its purpose if fact finders fail to find the true facts as to the speed of actual offenders and so let speeders go free of penalty.”)

121 Weinstein comes close to making this exact point. Weinstein 1966 at 243 (“Unless we are to assume that the substantive law is perverse or irrelevant to the public welfare, then its enforcement is properly the primary aim of litigation; and the substantive law can be best enforced if litigation results in accurate determinations of facts made material by the applicable rule of law.”). Here, however, what matters is not the accurate determination of facts, but the cost of doing so, that determines the degree to which the litigation process will achieve the substantive objectives of law.

122 See Sanchirico 2004 at 1222 (“[T]he literature’s treatment of litigation’s ex ante purpose is disproportionately cursory compared to the prominence of this purpose in actual system design.”); see also id. (“[T]he sizable gap between how the system actually regulates evidentiary foul play and how commentators believe it should is largely the result of the fact that the literature’s treatment of litigation’s ex ante purpose is disproportionately cursory compared to the prominence of this purpose in actual system design”).

123 See Sanchirico & Triantis 2008 at 72 (“The design of legal obligations, whether by a public body such as a legislature or by private contract, should anticipate the enforcement process that induces compliance.”); see also id. at 73 (“Anticipating the judicial resolution of future disputes, contracting parties are likely to be interested in the likelihood or cost of judicial truth-finding only to the extent that the court’s ability to discern the truth efficiently improves contract incentives and the gains from trade.”).

124 See Weinstein 1966 at 241 (stating that other objectives of the evidence system include “economizing of resources, inspiring confidence, supporting independent social policies,
Evidence list as their objective the elimination of “unjustifiable expense and delay.” The same phrase appears in the Federal Rules of Criminal Procedure. The Federal Rules of Civil Procedure provide that they should be construed “to secure the just, speedy, and inexpensive determination of every action and proceeding.”

It is definitional that more time and more social resources expended in the development of an evidentiary record would always result in a more complete reconstruction of historical truth. But practicality has never compelled that this argument be taken to the extreme of ignoring cost considerations in the structure of the litigation process. To the contrary, ignoring costs entirely would defeat the objectives of substantive law as effectively as not having any law at all.

If proof costs are to be included in the balancing of social interests served by laws and the litigation system, then we are back to the merits of the insincere evidence strategy as a means of potentially improving deterrence. This pits the cost-reduction and ex ante incentivization objectives of the insincere evidence strategy against some of the potential downsides of the strategy, including the way that it muddies correspondence between actionable conduct and the truth of socially preferred behavior. And to the extent that the benefits of insincerity outweigh the downsides, an affront to truth-seeking is justifiable. An English court made essentially this observation nearly 200 years ago:

The discovery and vindication and establishment of truth are main purposes certainly of the existence of Courts of Justice; still, [these objectives,] however valuable and important, cannot be usefully pursued without moderation … Truth, like all other good things, may be loved unwisely—may be pursued too keenly—may cost too much.

permitting ease in prediction and application, adding to the efficiency of the entire legal system, and tranquilizing disputants.”

Fed. R. Evid. 102. See also Fed. R. Evid. 403 (including “undue delay” and “wasting time” among the balancing factors on which a judge may exclude an otherwise relevant item of evidence).

Fed. R. Crim. Pro. 2 (“These rules are to be interpreted to provide for the just determination of every criminal proceeding ... and to eliminate unjustifiable expense and delay.”)


Weinstein 1966 at 242 (“A system for determining issues of fact very accurately in all tribunals might permit a few adjudications a year of almost impeccable precision. But the resulting inability of the courts to have time to adjudicate the thousands of other pending litigations would mean that justice would be frustrated; people could flout the substantive law with relative impunity, knowing that the likelihood of being brought to trial was remote; and plaintiffs would be forced to avoid litigation because of its extraordinary expense and delay.”).

Pearse v. Pearse, 1 Deg. & Sm. 11, 28 (1846).
CONCLUSION

[To be written.]
APPENDIX

The main text of this paper provides an intuitive explanation of our theory of proof costs and their effects on enforcement decisions and compliance with law. Here, we extend that treatment with a semi-formal description of our theory based on some basic assumptions about individual rationality and societal objectives.

The only potentially controversial aspect of the following model is its use of likelihood terms, rather than Bayesian probabilities, in describing the conditions under which a violation of law has been proven. One of us has elaborated elsewhere on the use of likelihood analysis as a model of fact-finding. Here, reliance on likelihoods allows us to be agnostic about prior distribution of violations in the overall population.\(^{130}\) Intuitively, the difference from a more conventional probability-based account of fact-finding is that a burden of persuasion is met not by proving a violation of law has occurred with high probability, but instead by showing that available evidence is sufficiently more consistent with the most plausible account of the law’s violation than it is with the most plausible account of non-violation. Using this as the definition of persuasion motivates the following simple model.

Suppose lawmakers seek to regulate a privately beneficial but socially costly activity. Let \(a \in \mathbb{R}\) be the activity-level choice of a given individual. All else equal, the individual prefers higher levels of \(a\) to lower levels. Let \(\tau \in \mathbb{R}\) be lawmakers’ choice of a legal limit on the level of \(a\). Activity levels \(a > \tau\) are subject to punishment by the state.

For convenience of exposition, suppose that state agents are able to perfectly observe the individual’s actual choice of \(a\), but cannot credibly disclose this information to the tribunal.\(^{131}\) Instead, the state is limited to proving a violation of law via objective evidence: a noisy signal of the actual activity level. Assume the combined weight of this objective evidence is distributed according to a normal distribution, centered on the true activity level and dispersed according to an exogenously fixed noise parameter, \(\sigma > 0\):

\(^{130}\) Cf. Davis, supra note ___ (noting the complexities that population distributions, prior probabilities, have in a probability-based model of the trial process).

\(^{131}\) Perhaps state agents cannot credibly disclose their knowledge of \(a\) because the fact-finder correctly predicts that these agents would tend to exaggerate the extent of any violation if given the chance. This setup is an easy way to think about the situation, but it is not the only possible construction of the model. Alternatively, the regulator could be considered to have no direct ability to observe \(a\), but instead an unbiased signal of \(a\). Because this signal is the regulator’s best estimate of the individual’s true activity level before further evidence is collected, it is the operative benchmark against which costs and benefits would be assessed. Subject to some wrinkles around the possible communication of asymmetric information by the individual, results in this alternative model would seem to be much the same as in the above model. Another approach would be to interpret the state as having \textit{ex ante} access to all available evidence of the regulated party’s activity level, but subject to uncertainty over how the fact-finder would weigh this evidence at trial. Again, after accounting for some idiosyncratic quirks, this approach would seem to result in the same basic results as the above model.
Agents of the state do not draw from the evidence distribution until after the costs of trial have been borne.

Violations of law are established by producing enough evidence to convince the fact finder that \( a > \tau \) by the applicable burden of persuasion. While it might seem natural to model this persuasion process in terms of the posterior distribution \( f(a|e) \), we do not assume any prior distribution \( f(a) \) in our model. Instead, we model the proof process via likelihood reasoning. Intuitively, the likelihood approach involves an iterative comparison of pairwise likelihood-ratio tests in order to determine whether \( a > \tau \) has been established. The end result is that proof of \( a > \tau \) under any given burden of persuasion requires an evidence draw, \( e \), such that the following condition is met:

\[
\sup_{a' > \tau} \frac{\phi(e|a', \sigma^2)}{\sup_{a' \leq \tau} \phi(e|a', \sigma^2)} > k,
\]

where \( \phi(\cdot | a', \sigma^2) \) is the probability density of the normal distribution evaluated under the assumed centrality parameter, \( a' \); where \( \sigma \) is the known noise parameter; and where \( k \) is a numeric representation of the applicable burden of persuasion. Sullivan argues that \( k = 1 \) corresponds to preponderance of the evidence; that something like \( 1 < k < 10 \) represents clear-and-convincing evidence; and that something like \( k > 10 \) represents proof beyond a reasonable doubt.\(^{133}\)

In the assumed case of evidence draws distributed according to the normal distribution it can be shown that the above general condition for proof is equivalent to an evidence draw, \( e \), such that

\[
e > \tau + \sqrt{2\sigma^2 \log k},
\]

with all variables as defined above.\(^{134}\) For a given choice of legal limit, \( \tau \), and for given levels of the burden of persuasion, \( k \), and noise parameter, \( \sigma \), the probability of successfully proving a violation of law for activity level \( a \) is thus

\[
f(a, \tau, k) = 1 - \Phi(\tau + \sqrt{2\sigma^2 \log k} | a, \sigma^2),
\]

for \( \Phi(\cdot | a, \sigma^2) \) the normal cumulative distribution function centered on the true activity level, \( a \), and with noise parameter, \( \sigma \). Basic comparative statics of this result align with intuition. For any given burden of persuasion, \( k \), the probability of conviction, \( f(a, \tau, k) \),

\[^{132}\text{The following generalizes in an obvious way to other evidence distributions.}\]

\[^{133}\text{Sullivan 2018, supra note } \ldots\text{.}\]

\[^{134}\text{Here is an informal proof. Since } k \geq 1 \text{ in every interesting application, a necessary condition for the state to win at trial is } e > \tau. \text{ For the preponderance of the evidence standard, this condition is both necessary and sufficient. For higher burdens of persuasion, assuming } e > \tau, \text{ the maximum likelihood estimator of } a \text{ is simply } e, \text{ and the constrained maximum likelihood estimator on the assumption that } a' \leq \tau \text{ is simply } \tau. \text{ As such, sufficient evidence of violation has been produced whenever } \phi(e|\sigma^2) > \phi(\tau|\sigma^2) \times k. \text{ Simplifying and solving this expression for } e \text{ leads to the stated condition.}\]
is increasing in $a$. And for any given activity level, $a$, the probability of conviction is decreasing in $k$ and $\tau$.

With this definition of the probability of successful proof in place, we can now operationalize the remainder of the model. While we would ideally focus on the state’s optimal choice of legal limit, $\tau$, and optimal enforcement strategy, the assumptions needed to characterize optimal decisions are more than we wish to defend at this point. To obtain tractable results without limiting our approach through these assumptions, we characterize how the choice of $\tau$ affects the necessary condition for non-strategic enforcement of laws: that the expected marginal costs of attempting to prove a violation of law should not outweigh the expected marginal benefits.

Defining this necessary condition requires comparatively modest assumptions. Specifically, we assume the existence of a known functional form for the cost of trying to prove a violation of law: $c(a, \tau) > 0$. We also assume a known functional form for the benefit of successfully proving a violation of law by any given choice of activity level. This is a reduced-form expression for whatever benefit society gets from the (unmodeled) marginal deterrence arising from successful punishment of a given level of violation: $b(a, \tau)$. Combining these terms with the probability of successful proof at trial, the necessary condition for the state to attempt to prove a violation of law is

$$b(a, \tau) \times f(a, \tau, k) > c(a, \tau).$$

As we explain in the paper, this necessary condition is more conveniently illustrated with the probability term on the cost side of the inequality:

$$b(a, \tau) > \frac{c(a, \tau)}{f(a, \tau, k)}.$$

Our main results are not especially sensitive to the parameterization of $b(a, \tau)$ and $c(a, \tau)$, or to other parameters like the level of noise around evidence draws, $\sigma$. As convenient choice of example parameters, all illustrations in the paper have been produced under the following definitions:

- Constant cost of attempted proof: $c(a, \tau) = 50$
- Quadratic benefits in extent of violation: $b(a, \tau) = 0.5 \times (\tau - a)^2$
- Noise term: $\sigma = 15$
- Preponderance burden: $k = 1$
- Clear-and-convincing burden: $k = 3$

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These assumptions would include precise specification of the welfare implications of different choices of $\tau$; specification of individuals’ exact preferences over all possible combinations of activity level, penalty, and probability of incurring a penalty, including any variation in this preference, in risk tolerance, or in strategic type; specification of the game-theoretic equilibrium strategies individuals adopt in deciding when to violate laws, and that both individuals and the state adopt in deciding when to litigate disputed violations of law; etc.