

# TRIAL COURT BUDGETS, THE ENFORCER'S DILEMMA, AND THE RULE OF LAW

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*Legal and economic scholarship generally assumes that people weigh costs and benefits in responding to legal rules. This same scholarship often assumes, however, that trial judges applying the law do not compare the costs and benefits of their own effort when implementing legal rules. Consideration of trial court effort results in the so-called enforcer's dilemma, a similar problem that infects the decision of plaintiffs to bring suit. Suppose the trial court devotes lots of its own effort in every case fully to minimize errors; it never triages the cases, dismissing on the pleadings or on summary judgment. Knowing, for example, that negligence is apt to result in liability, relatively few will violate the legal rule if they could avoid doing so at a reasonable cost. The pool of defendants causing accidents will then consist mainly of those who were nonnegligent. Understanding as much, the trial court should not waste its own effort or judicial time confirming what it knows to be true. Instead, the trial court has an incentive to deviate, to dismiss the cases after a cursory investigation, contradicting our initial assumption about the trial court's behavior. Given this profitable deviation, game theorists say that looking closely at every case that comes in the courthouse door cannot be an equilibrium. Instead, with trial courts operating under budget constraints we demonstrate that the only equilibrium involves treating like cases differently. Given the same facts, sometimes the court looks closely at the merits, meaning they let the case proceed beyond dismissal or summary judgment. Other times they do not. Yet this trial court strategy is inconsistent with the rule of law. After pointing out this persuasive feature of ex post adjudication, the conclusion turns to appellate review as a possible fix. It turns out that this "fix" suffers the same problem.*

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## I. INTRODUCTION

A central goal of legal scholarship is to predict the consequences of legal rules and make claims about which rules improve well-being or promote welfare, however construed. Much of that scholarship, especially research by writers with a law and economics bent, assumes that human actors subject to the law make decisions by comparing the costs and benefits of their behavior. The same scholarship, however, and quite peculiarly, often ignores that the implementation of legal rules is done by judges who themselves are human and engage in cost-benefit analysis.<sup>1</sup>

For example, the trial judge in a civil case must decide whether to let a case continue or resolve it on a preliminary motion. In making these choices the trial judge will likely ask whether the cost of exerting more of his own effort to keep the case on his docket is justified by the decrease in the likelihood of a mistake. To make this effort calculation the trial judge will use information about the kinds of cases that typically appear in litigation, they will be “rational” in the allocation of their own effort.<sup>2</sup>

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1. There is a growing legal and political science literature on the behavior of judges, as well as politicians who write statutory rules. Much of that literature is focused on the (political) preferences of judges, not the sort of cost-benefit analysis we discuss here. Some, most notably Judge Posner, have suggested treating judges as utility maximizing agents with preferences for leisure. RICHARD A. POSNER, HOW JUDGES THINK 59–60 (2008) (“Most people who seek or accept a judgeship derive more utility from leisure and public recognition, relative to income, . . . judges having a taste for leisure can indulge their tastes more easily than they could as practicing lawyers.”).

2. Economists have known about the enforcer’s dilemma for a long time. DREW FUDENBERG & JEAN TIROLE, GAME THEORY 17–18 (1991). Within law, a variant of the enforcer’s dilemma has been identified in discussions about whether plaintiff has an incentive to bring cases to trial. Scholars

Taking explicit account of such cost-benefit calculations by judges that implement the law alters some predictions from prior law and economics scholarship. First, many legal rules have weaker incentive effects than previously thought. Starting with Janusz Ordover's model,<sup>3</sup> scholars have recognized that plaintiffs will only bring suit if there is a sufficient chance that they face a negligent defendant and thus some recovery could be forthcoming. Thus, the fact that plaintiffs bear a cost of filing suit means that the negligence regime deterrence must be less than perfect.<sup>4</sup> The natural solution is to have the government commit to bringing the suit irrespective of its beliefs on the merits or to subsidize private lawsuits.<sup>5</sup> Our insight is that such solutions will not work if the trial court also bears a cost of effort. Even if suit is assured, the enforcer's dilemma simply moves to another actor, the trial courts.

Specifically, cost-benefit analysis causes trial courts to economize—reduce—the effort they put into evaluating or triaging particular cases because they anticipate that the legal rule has achieved some deterrence, making it likely that a defendant is blameless. Potential defendants, however, also anticipate the court's behavior, reducing the effort they put into complying with the law. This dynamic leads to less compliance by both court and noncourt actors overall.

Second, the application of law by the trial court will lack consistency, meaning like cases will not be treated alike. A comparison to the scholarship where plaintiffs bear a cost of filing a lawsuit is again fruitful. There the equilibrium often involves the plaintiff sometimes suing and sometimes not—an inconsistency in the filing of lawsuits.<sup>6</sup> But that is not the only problem. Assuming that problem is fixed another one pops up: discriminatory treatment by trial courts.

In our model discriminatory judicial treatment arises not for the usual reason, different judicial preferences. Instead, it arises because there is continual dependency between how judges allocate their effort at evaluating cases during the preliminary stages of adjudication and how noncourt actors behave. If defendants allocate more effort to obeying

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suggest that there must be some negligent defendants in the pool of tortfeasors for a lawsuit by a plaintiff to be cost-justified. See Keith N. Hylton, *Litigation Cost Allocation Rules and Compliance with the Negligence Standard*, 22 J. LEGAL STUD. 457 (1993); Janusz A. Ordover, *Costly Litigation in the Model of Single Activity Accidents*, 7 J. LEGAL STUD. 243, 244–45 (1978). As noted above, our contributions are to point out that (1) the equilibrium of the enforcer's dilemma when applied to trial courts is inconsistent with the rule of law; (2) the inconsistency is difficult if not impossible to combat by a redesign of the court system or through new procedural or evidentiary rules; and (3) the issue arises across lots of different areas of law.

3. *Id.* at 244–45.

4. *See id.* at 251 (Proposition 1).

5. *See id.* at 254 (“It is equally easy to show that with negligible litigation costs there exist mixed equilibria in which the share of negligent agents in the total population is arbitrarily close to zero.”).

6. See Hylton, *supra* note 2, at 457 (showing that lawsuits only occur when the plaintiff's harm—which is a random variable—exceeds a certain threshold, the threshold turns on the proportion of negligent defendants in the population); see also Kathryn E. Spier, *A Note on the Divergence Between the Private and Social Motive to Settle Under a Negligence Rule*, 26 J. LEGAL STUD. 613 (1997) (showing that a mixed strategy equilibrium exists where the plaintiff mixes between offering tough and weak settlements).

the law, judges allocate less to looking closely at their behavior in particular cases—they are more likely to simply dismiss the case on a motion rather than spend judicial resources on a trial. But when courts investigate defendants less, defendants allocate less effort to compliance.<sup>7</sup> This cycling can continue *ad infinitum*.

To make our claim concrete consider an example from tort law. In fleshing out the negligence standard in torts many scholars endorse the Hand Formula<sup>8</sup> which requires that courts hold defendants liable if the cost of the precaution is less than the expected harm, i.e., the probability of an accident times the harm from that accident. The Hand Formula presupposes that the trial court investigates the facts of each case and uncovers the cost of the precaution for the typical tortfeasor. Based on this information the trial court determines whether the particular defendant before it behaved reasonably. If defendants thought that trial courts would always uncover the cost of the precaution, potential tortfeasors would take care—and avoid accidents—when it is cost effective for them to do so and not take care—and perhaps trigger accidents—when it is not cost effective for them to do so.<sup>9</sup>

Yet if defendants acted in this manner, would a trial court always attempt to uncover the cost of precaution? If the trial court used cost-benefit analysis to ration its own resources, the answer is no. Because a potential tortfeasor's expectation of a full court investigation ensures he takes any cost-justified precaution, the court will reason that the defendant before it must not have taken precaution because its cost is greater than expected harm, i.e., the defendant is not liable. Hence, the court can conserve its own resources without increasing mistakes by granting the defendant's motion for summary judgment.

This economizing decision by the court, however, has a perverse feedback effect on the behavior of the potential tortfeasors. Knowing that the court will always dismiss a negligence suit, potential tortfeasors will not take any care, even if cost-justified.<sup>10</sup> Thus the Hand Formula—

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7. Of course, in the U.S. system, the trial court hears evidence from the litigants and does not actually conduct an investigation itself. To be clear, we use the word “investigation” to refer to the trial court resources devoted to managing the case and having it on its docket—the triage decision by the trial court. If the trial court dismisses the case on the pleadings or after summary judgment, it saves on the resources of overseeing a trial. We say that is a failure to investigate because the trial court dismissed the case before all the evidence is heard. It does so to clear its docket and thereby save time to do something else. Of course, the trial court might also care about the social costs of having a trial; the costs of the juror's time, for example. The assumption here is that trials always lead to the correct resolution. The assumption simplifies matters and allows us to focus on the resource allocation question.

8. *United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947); Richard A. Posner, *A Theory of Negligence*, 1 J. LEGAL STUD. 29, 32 (1972).

9. For simplicity we assume here that all defendants have access to the same precaution, which could cost a lot or a little. As we show in Part II.C, the analysis is not altered if it is assumed that some defendants cannot take precautions that the average defendant would find cost-justified.

10. Of course there is a secondary feedback effect on the inferences by rational courts as they will stop assuming that all defendants are innocent. This will partly strengthen the deterrence effect of the negligence rule. Yet that will have a tertiary feedback effect on potential tortfeasors behavior, and the cycle will repeat. Ultimately courts will never go back to being impartial. They will always put a thumb on the scale in favor of defendant's innocence.

in the hands of a rational court—does not have the desired effect of inducing efficient care decisions.

Now take the logic back a step. Whereas the trial court would grant summary judgment for a defendant if it thought the defendant expected to face a full investigation, the court would not grant summary judgment if it thought the defendant expected summary judgment. Instead, the court might be tempted to investigate the defendant's cost of precautions a bit more. It would never make sense to investigate the defendant fully in every case. As we have explained, the court wastes resources doing so if the defendant expected the court to fully investigate each case. The only stable equilibrium is for the court to randomly choose a subset of cases to investigate, and for potential tortfeasors to make careful decisions assuming only a subset of cases will be investigated. Thus, with rational trial courts one should not expect like cases to be treated alike.

Negligence is not the only area of law in which assuming cost-benefit analysis by trial courts undermines the effectiveness of the legal rule. There are other examples about which we will have much more to say, the law of self-defense, the enforceability of indefinite contractual agreements, and deference to agency interpretations of statute.<sup>11</sup>

Our claim is not without limits. The problem identified arises due to trial courts' efforts to economize on their own judicial decision costs. Therefore, rules with low decision costs tend to be unaffected. With such rules the trial court always spends the decision cost necessary to determine liability. Noncourt actors understand they will do so and behave accordingly. Strict liability, for example, is cheaper for trial courts to implement because it involves only verification that the defendant took some action and that the plaintiff suffered an injury. There is no need to determine fault by the defendant. Likewise, no liability rules tend to be robust. Once investigation into defendant fault is required, however, trial courts with limited resources will have trouble achieving equity even assuming that all accidents where liability could be found are brought to court.

We have used the term "rational" interchangeably with trial courts anticipating the selection of cases before it and weighing the costs and benefits of their own effort. Given that the term "rational" can have many connotations, we want to be precise about how we use the term. When we say that courts are rational we mean that their behavior satisfies three specific assumptions.

The first assumption is that trial courts are not completely myopic in forming expectations, in particular, expectations about the value of exerting greater effort on a given case. We will speak of trial courts—and present a model of their behavior—as if they are fully sophisticated par-

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11. Wickelgren and Friedman show how Bayesian inferences by jurors place a cap on the amount of deterrence the criminal law can provide. See Ezra Friedman & Abraham L. Wickelgren, *Bayesian Juries and the Limits to Deterrence*, 22 J.L. ECON. & ORG. 70 (2006). Our analysis builds to show that the problem is endemic to all appliers of law to facts and cannot be cured by appellate review.

ties that use Bayes Rule to update beliefs. Belief-formation by courts, however, raises problems, though perhaps to a lesser degree, even if the methodology courts employ is less than perfectly sophisticated. All that is required for trouble is that courts pay some attention to the incentives of the legal rules they apply. This is sufficient to encourage courts to exert less than full investigative effort in each case they hear: more precisely, it is enough the judges understand that, say, most cases in a particular pool or brought by a particular attorney are weak and deserve little effort before they can be resolved, whereas most cases in a different pool of cases or brought by a different attorney are likely to be strong and deserving of deeper, more probing judicial scrutiny.

The second assumption is that trial courts either have limited resources or view their own effort as costly. If trial courts had unlimited resources or suffered no cost when exerting effort, there would be no reason for public-minded courts not to fully investigate each case. Importantly, our argument does not rest on the assumption that courts are not publicly-minded. All that is required is some tradeoff when a court devotes ceaseless attention to a particular case. This tradeoff requirement is common both to our argument and to previous scholarship that endorses legal rules that balance decision costs and error costs.<sup>12</sup>

The third assumption is that trial courts cannot precommit to investigate each case. If trial courts could bind themselves to investigating each case, then rules like the Hand Formula would work as intended by law and economics scholars. For that reason, the decision to precommit to full investigation of that rule may also be optimal. It is only when courts cannot commit to investigation, when they have to make that decision after a particular case is filed, that full investigation becomes difficult to maintain and courts do not engage in it.

Together these three assumptions imply two sorts of behavior. First, the kinds of cases that appear in litigation will often influence how the trial courts allocate scarce resources—whether they look closely at a case or not. Second, anticipation of these choices will influence the behavior of potential plaintiffs and defendants which in turn will influence the cases that appear in litigation. It is the interplay of these two behaviors that ultimately determines the effectiveness and *ex post* fairness of legal rules.

What we find remarkable about our three assumptions about courts is not their validity, but rather that scholars make similar assumptions about parties *subject to* legal rules but not about parties *implementing* legal rules. Why the dissonance?

Perhaps judges are able to commit to fully investigating every case or can be forced to do so by rules of procedure and evidence. This explanation is plausible but ultimately unconvincing to us. There is a great deal of psychological research that questions the ability of individuals to

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12. See, e.g., CASS R. SUNSTEIN, ONE CASE AT A TIME: JUDICIAL MINIMALISM ON THE SUPREME COURT 9 (1999).

self-commit, and that research does not exempt judges and jurors from its scope. Moreover, there are numerous examples where courts take into account the process by which cases are selected for trial. For example, much of the death-is-different jurisprudence in criminal procedure is premised on concerns about the process by which capital cases are manufactured and prosecuted. In exploring the normative implications of our critique we are largely pessimistic. No evidentiary rule can shield trial judges from information about case selection—that is, about the kinds of activities that result in lawsuits. In addition, judges have the opportunity to learn. If they see, for example, a particular agency putting politics ahead of expertise, they will find it more difficult to defer over time especially if the rationale for deference is agency expertise.

Perhaps a second option is to devise procedural and substantive rules that are more conducive to rational behavior by judges, rules that both allow the trial court to make rational inferences from all available facts and yet ensure that noncourt actors behave appropriately before litigation starts. This leads to an insight, the law should make room for appellate courts to influence the allocation of trial court resources. By making motions easier or harder to grant, the appellate court can affect how trial courts spend resources, which in turn can provide the all-important commitment power. It is not enough, in other words, for the appellate court to specify an efficient legal rule and punish trial courts for making mistakes. The appellate court must also punish the trial court for resolving cases too early. And that is true even if such a resolution reflects the best allocation of trial court resources *ex post*. As we note in the Conclusion, however, such a punishment scheme by the appellate court also suffers from the enforcer's dilemma, so the solution will fall short.

The upshot, we think, is a cautionary note. Because judges implement the law in a cost-beneficial manner, the potential efficiency of legal rules is limited and there will be a tendency for the judiciary to treat like cases differently. The conclusion is drawn after we stack the deck in favor of making judge-made law work well. That is to say, we assume that all other conditions required to ensure rules ensure good behavior by legal subjects are present, e.g., the absence of judgment proofness, judicial error, the defendant's private information, and, most importantly, the fact that filing a lawsuit is costly.<sup>13</sup> It is also true even if judges have the best of intentions, i.e., are nonpartisan, faithful to the law, and public-minded.

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13. On the difficulties created by judgment-proofness, see STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 230–32 (2004); Yeon-Koo Che & Kathryn E. Spier, *Strategic Judgment Proofing*, 39 RAND J. ECON. 926 (2008). On overcoming some of the difficulties created by judicial error, see generally I. P. L. Png, Note, *Optimal Subsidies and Damages in the Presence of Judicial Error*, 6 INT'L REV. L. & ECON. 101 (1986). On the difficulties created when the defendant have private information about the cost of fabricating evidence, see generally Chris William Sanchirico & George Triantis, *Evidentiary Arbitrage: The Fabrication of Evidence and the Verifiability of Contract Performance*, 24 J.L. ECON. & ORG. 72 (2007).

Part II of this Article recounts the logic behind our claim that rational trial court behavior can undermine the incentive effect of legal rules. Although we focus on the negligence example, Part III documents a number of other legal rules that work as intended only if courts implementing them fail to update their beliefs about the merits of the case before them in light of the fact that the law has achieved some deterrence.

Part IV, in conclusion, discusses the normative implications of our claim. We explain our skepticism that further regulation of trial courts can (1) resurrect the incentives legal rules provide noncourt actors and (2) ensure the consistent application of law. We also, as discussed earlier, note a subtle take away from our analysis: the importance of allowing appellate courts to influence the allocation of trial court resources. By making motions easier or harder to grant, the appellate court can affect how trial courts spend resources, which, in turn, can provide the all-important commitment power. In closing, we spend some time considering whether appellate review of trial court behavior could successfully check and solve the enforcer's dilemma identified in the main body of the Article. An appendix contains a model formally demonstrating the logic of the claims made in the text.

## II. BASIC EXAMPLE: NEGLIGENCE LIABILITY

To illustrate the logic of the argument we begin with perhaps the seminal example of how common law legal rules can promote efficient behavior, the negligence standard in tort. Under that liability standard a tortfeasor is liable for an accident if it fails to take "reasonable care."<sup>14</sup> The classic law and economics account of negligence defines reasonable care as Judge Hand did in *Carroll Towing*—cost justified precautions.<sup>15</sup> More precisely, if the cost to the typical firm of taking care to avoid an accident (often denoted by  $B$ ) costs less than the expected loss from an accident (often denoted by  $pL$ ), then the care is reasonable.<sup>16</sup> If taking care costs more than the expected loss, then it is not reasonable.<sup>17</sup> A court should hold a tortfeasor liable in the former case but not the latter.

The Hand Formula leads to efficient care by potential tortfeasors if—and only if—trial courts implement that tort standard in a somewhat irrational manner, i.e., doing so while ignoring courts duty to efficiently manage judicial resources.

Consider the following example involving storeowners. Following a snowstorm there is a chance that a patron will slip and fall if the sidewalk

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14. See Patrick J. Kelley & Laurel A. Wendt, *What Judges Tell Juries About Negligence: A Review of Pattern Jury Instructions*, 77 CHI.-KENT L. REV. 587, 595 (2002) (collecting jury instruction and noting, as an example, a New York jury instruction stating "[n]egligence is lack of ordinary care. It is a failure to use that degree of care that a reasonably prudent person would have used under the same circumstances"). Kelley & Wendt provide references to other similar instructions used in other states. *Id.* at note 24.

15. United States v. Carroll Towing Co. 159 F.2d 169, 173 (2d Cir. 1947).

16. *Id.*

17. *Id.*

in front of a store is not shoveled. The expected cost of the accident is \$30, where  $p=1/5$  and  $L=150$ . For the typical storeowner shoveling the walk can either be expensive (costing \$50) or cheap (costing \$5). Each cost arises with the equal probability (1/2). Storeowners know whether shoveling is cheap or expensive.<sup>18</sup> Storeowners, after all, are in the industry. They have ready access to information about precautions such as this. In contrast, the trial court must hold a bench trial to uncover this information. For simplicity, assume that the trial court can at a cost of \$10 discover the cost of the typical storeowner's precaution with perfect accuracy.<sup>19</sup>

Some legal authority—the appellate court or a statute—instucts the trial court to find defendants negligent if they fail to take cost-justified precautions. Substantial prior scholarship suggests that the negligence rule, under some conditions, minimizes the sum of administrative costs, accident costs, and precautions costs.<sup>20</sup> The twist we add is that the legal authority needs the trial court to implement the negligence rule.

Trial courts care about getting things right—avoiding mistaken conviction or mistaken exoneration.<sup>21</sup> This could either be because they are truly publicly minded or they just want to avoid the shame of appellate reversal. Suppose, however, they also care about the cost of operating their own courts. Like the storeowners the trial court is rational. It spends resources on mistake avoidance when it is cost justified to do so.

Presumably the trial court cares more about big mistakes than small mistakes. To capture this effect suppose that the trial court's loss from a mistake is the difference between the cost of high-cost precaution and the accident cost (\$50–\$30 or \$20), and the trial court's loss from a mistaken exoneration is the difference between the accident cost and the cost of the low-cost precaution (\$30–\$5 or \$25).

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18. In this example, we assume that all storeowners are typical; specifically, they either all have access to the low cost precaution or to the high cost precaution, each event occurs  $\frac{1}{2}$  of the time. Thus, we embed the "objective" standard for tort in the example. See *Vaughan v. Menlove*, 132 Eng. Rep. 490 (1837) (C.P.) ("Instead, therefore, of saying that the liability for negligence should be coextensive with the judgment of each individual, which would be as variable as the length of the foot of each individual, we ought rather to adhere to the rule which requires in all cases a regard to caution such as a man of ordinary prudence would observe."). No defendant can argue that they were "atypical", with precautions different from their peers. The court, as noted, doesn't know whether precaution costs for the typical storeowner was low or high. It only observes the accident.

19. Of course, in the U.S. system, the trial court hears evidence from the litigants and does not actually conduct an investigation itself. To be clear, we use the word "investigation" to refer to the trial court resources devoted to managing the case and having it on its docket—the triage decision by the trial court. If the trial court dismisses the case on the pleadings or after summary judgment, it saves on the resources of overseeing a trial. We say that is a failure to investigate because the trial court dismisses the case before all the evidence is heard. It does so to clear its docket and thereby save time to do something else. Of course, the trial court might also care about the social costs of having a trial; the costs of the juror's time, for example. The assumption here is that trials always lead to the correct resolution. The assumption simplifies matters and allows us to focus on the resource allocation question.

20. GUIDO CALABRASI, THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS (1970); Steven Shavell, *Strict Liability Versus Negligence*, 9 J. LEGAL STUD. 1, 24–25 (1980).

21. Although we are discussing civil law judgments, we use the terms appropriate for criminal law judgments, because they are more succinct.

In what follows two scenarios are considered. In the first, the trial court is able to commit, before an accident even occurs, to expending resources on learning whether the cost of precaution was high or low in every case it hears. In the second case, the one of more interest to us, the trial court cannot commit to spend resources in this manner in all cases. This latter scenario corresponds to the normal course of events where the trial court chooses whether to investigate after the defendant decides whether to take precautions, and if an accident materializes the plaintiff brings a case to the court.

#### A. Trial Courts Can Commit

Suppose that a court can precommit to investigate every case brought to court *before* those cases occur. What would the expected benefit to the court be with such a precommitment strategy? A store-owner would make their choice in light of the court's precommitment to spend resources on every case, including their case, and the perfect accuracy of the court's investigation. She knows that liability will follow if the precaution costs turn out to be low and she fails to take it. As a result, she takes precautions if the costs happen to be low (since expected damages of \$30 exceed the costs of \$5). She forgoes precautions when they are expensive (since costs of \$50 exceed the expected damages of \$30). The court must pay \$10 for every case that is brought. However, only half of the time do storeowners fail to take precaution (that is, the percentage of times that the "typical" precaution is expensive). And it is only in those cases that customers suffer slip and fall accidents and are sued. Thus the expected loss to the court is \$5.

If, instead, the trial court decided not to precommit to investigating whether precautions were cost-justified in each case, it has two potential options. First, it might commit to declaring, without doing any investigation, that no reasonable storeowner would invest in precaution, implying that slip and fall accidents result in no liability. Anticipating dismissal on the pleading storeowners will always fail to take precautions. Customers slip and fall in front of each store and each storeowner is sued. Following through on its strategy the trial court mistakenly exonerates one-half of defendants. The trial court's loss from this strategy is the probability precautions are low cost ( $1/2$ ) multiplied by the loss from mistaken exoneration (\$25) resulting in an expected loss to the court of \$12.50 per case.

Alternatively, the trial court might commit to declaring as a matter of law that all reasonable storeowners would always take precaution implying strict liability for slip and fall accidents. Anticipating liability storeowners will take precautions when they have low cost (since expected damages of \$30 exceed the precaution cost of \$5) and not when they have high cost (since cost of \$50 exceeds the expected damages of \$30). Only half the storefronts have slip and fall accidents and that half of storeowners are sued. Following through on its strategy the trial court

mistakenly convicts in all cases, and it suffers a loss of \$20 per case. This results in an expected loss to the court of \$10.

Comparing the three losses, precommitting to investigate each case generates the smallest expected loss (\$5) to the court. Therefore, the trial court finds it optimal to commit to investigate.

#### *B. Trial Courts Cannot Commit*

Suppose now that the trial court cannot commit to investigate each case before it arises. Instead the court must make its investigation decision *after* a storeowner decides whether to take precautions, an accident occurs, and a case is brought. In other words, the trial court makes its investigation decision in light of the distribution of cases that appear in court. Suppose the Hand Formula worked as intended. The defendant takes precautions when they cost \$5 and fails to take precautions when they cost \$50. Accidents arise and suits are brought. The trial court understands that accidents occur only when the typical defendant has access to high cost precautions.

At that point what should the trial court do? It could spend \$10 and learn that defendant did, in fact, face a high precaution cost. But why would the trial court spend money confirming what it already knows? The trial court, instead, has an incentive to simply rule that there is no factual question and that the defendant is not liable.

Such a ruling, however, generates a feedback effect. Anticipating dismissal of all cases, no storeowner would take precaution even if precaution costs were low. Of course, the rational court—being rational—would anticipate this response. It would no longer hold all defendants not liable because there is a chance that shop owners would fail to take cost-justified precautions. But the court would not behave like the trial court with commitment—always investigating. Instead, the court would oscillate back and forth between investigating and not investigating the cases. The law, as applied by the trial court, will appear to be arbitrary or random.

To see why, consider the stability of three trial court strategies: (1) declaring all defendants not liable, (2) investigating the merits of the case every time; (3) investigating the merits in 1/6th of the cases and holding the defendant not liable as a matter of law in all other cases.

#### *I. Declare All Defendants Not Liable*

Suppose that the trial court always finds defendants not liable without conducting an investigation. No defendant would take care. The trial court's expected loss is \$12.50 for reasons similar to those given in Section A. The trial court can do better by investigating the merits of the case and avoiding the mistaken exoneration. That strategy results in a loss for the trial court of \$10. Since investigation generates a higher pay-

off for the trial court than declaring all defendants not liable, we can reject that strategy as part of an equilibrium.

## 2. *Investigate the Merits in Each Case*

If the court investigated all cases, the shop owner would fail to take care when precautions costs were high and take precaution when costs were low. If she did not and there was an accident, the court would investigate her and discover she had low precaution costs. She would be held liable and suffer expected damages of \$30. It would be cheaper for her to take care for \$5. The court's rational inference upon seeing an accident but before undertaking an investigation is that the defendant must not be liable. The court knows what to do to avoid a mistake *before it even investigates*. As noted, the rational court would not want to spend money confirming what it already knows.<sup>22</sup> The trial court should simply find the defendant not liable as a matter of law. We can thus also reject the "investigate-always" strategy as part of an equilibrium.

## 3. *Investigate the Merits in 1/6 of Cases*

Finally, suppose that the trial court investigates the merits of 1/6th of the cases involving an accident. In the other cases, the court grants the defendant's motion to dismiss or for summary judgment, finding them not liable. When faced with a high precaution cost the shop owner would not take care. But when facing a low precaution cost, the shop owner fails to take care 2/3rds of the time.

Why? Facing a low cost of precaution, the shop owner receives the same payoff as if she does not, so she would have no incentive to take care more or less often. To see this, note that if the shop owner takes care, she incurs a cost of \$5 for sure and prevents the accident for sure. If she does not take care, her payoff depends on whether the accident occurs and whether the court investigates—i.e., does not resolve the case in the defendant's favor on the motion to dismiss. If she does not take the low cost precaution, the defendant expected loss depends on (1) whether the accident transpires (which occurs with probability 1/5); (2) whether the trial court investigates the accident and discovers that the defendant faced a low cost of precaution (which occurs with probability 1/6); (3) the damages the defendant must then pay (\$150). The shop owner's expected payoff from a failure to take the available low cost precaution is \$5 (i.e.,  $1/5 \times 1/6 \times \$150$ ).

Notice also that if the shop owner fails to take care 2/3rd of the time, the court's best response is to investigate 1/6 of the cases. In other words, the court cannot increase its payoff by investigating in more or fewer cases. The loss from investigating a case is \$10. The court's expected loss from a failure to investigate is the chance of a mistaken exon-

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22. See discussion *supra* Part I.

eration times the loss from a mistaken exoneration. In this example the chance of a mistaken exoneration is 2/5 (given that care is never taken when costs are high and not taken when costs are low 2/3 of the time).<sup>23</sup> The expected loss from a failure to investigate is thus 2/5 times 25, or \$10. The court has no incentive to change its rate of investigation.

Naturally the numbers we have generated are arbitrary. In the appendix we provide a more general game theoretic model of the interaction. If the cost of care was different, if the court's cost of investigation was different, if the court's weight placed on mistakes, or if the cost of an accident was different, the shop owner facing low costs would take care and the court would investigate cases with different probabilities.<sup>24</sup>

Before concluding we can add one more wrinkle to the analysis. Up to this point we have assumed that it was costless for the plaintiff to file suit. Thus, each time an accident materialized, the defendant faced a suit. The only question was whether the trial court was apt to dismiss the case or let it proceed to trial. Suppose now that the plaintiff had a cost of filing suit of \$8. Would she do so given the behavior of the defendant and the anticipated behavior of the trial court? The answer is yes. Of the defendants who cause accidents, 2/5 had a low cost of precaution and as a result would be found liable if the trial court investigated. Upon a finding of liability, the plaintiff is awarded his loss, which in our example is \$150. Finally, the trial court investigates 1/6 of the time. Thus, the expected recovery for the plaintiff from filing suit is  $2/5 * 1/6 * 150$  or \$10. Since the expected benefit exceeds the cost of filing suit, the plaintiff always files.

Two lessons can be drawn from our example. First, in the equilibrium wherein a trial court makes its effort decision after a case is brought the shop owner takes the low cost precaution only a fraction of the time. Assuming trial courts efficiently manage resources to avoid mistakes changes the incentive story used to justify the Hand Formula. As in the case with costly litigation, the result involves less deterrence than predicted by the Hand Formula.

Note all the things the model assumed away, many of which other scholars have suggested lead to under-deterrance. Individuals did not fail to understand when liability would attach.<sup>25</sup> The court did not have trouble detecting whether the accident occurred. The court did not fear chilling socially valuable behavior and as a result set the sanction lower than necessary to deter all harmful behavior.<sup>26</sup> For the bulk of the analy-

23. The low cost type of defendant fails to take care sixty-six percent of the time. The high cost type always fails to take care. Given these strategies, the probability that an accident resulted from the failure of the low-cost type to take care is given by Bayes rule.

$$P(\text{low cost precaution}|\text{accident}) = \frac{.5 * .66}{.5 * .66 + .5 * 1} = \frac{2}{5}$$

24. See the analysis in the appendix.

25. See John E. Calfee & Richard Craswell, *Some Effects of Uncertainty on the Compliance with Legal Standards*, 70 VA. L. REV. 965, 974–94 (1984) (noting that uncertain legal standards can, under certain conditions, lead to underdeterrance).

26. See Louis Kaplow, *Burden of Proof*, 121 YALE L.J. 738, 763 (2012).

sis lawsuits were costless to file eliminating the problems raised by Ordover.<sup>27</sup> We rigged it to give the Hand Formula the best chance at success of inducing efficient care decisions. It did not happen.

The inefficiency cannot be fixed by increasing the sanction. Such a move cures underdeterrence but leads to overdeterrence. Suppose that the court increased the sanction to \$1000. Then the shop owner would always take precautions. But that is inefficient. When precautions are quite expensive, they should not be deployed because the precaution costs outweigh the expected losses from the accident.<sup>28</sup>

The second lesson is that a legal system with rational trial courts and rational litigants can lead to arbitrary application of law to facts. Under the assumption that lawsuits are costless to file, cases with identical facts will be decided differently. In one case the court may allow defendants and plaintiffs to present evidence (i.e., what we refer to as spending resources to investigate the merits). In the next case it may resolve the case for the defendant without hearing any evidence. The defendant anticipates and incorporates this varying application of law to the facts into his decision making process when it comes to care. And, indeed the arbitrariness in the trial court system induces people to take care a fraction of the time when the cost of precaution is low.

In other words different judicial preferences are not needed to get like cases treated differently.<sup>29</sup> It can be the consequence of the reaction and counterreaction of trial courts and litigants. To generate a predictable legal system might therefore require restricting the ability of trial courts to make inferences from the selection of cases into litigation. It might also require that the appellate court make rules about procedure dictating how a trial court spends investigation resources. That is, how easy it is for the trial court to resolve cases on a motion. Neither is easy to do because enforcement of these checks by the appellate court with limited resources raises the same enforcer's dilemma problem.

### III. ADDITIONAL EXAMPLES

This Part provides a number of other examples where rational courts that make decisions about allocation of attention to cases after they arise, i.e., lack the ability to precommit, are unable to achieve efficiency or treat like cases alike. The examples are drawn from a wide range of legal areas. Our intent is not to be exhaustive but rather give a flavor of the way our analysis might apply across fields.

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27. Ordover, *supra* note 2.

28. See Richard A. Posner, *A Theory of Negligence*, 1 J. LEG. STUD. 29, 32–33 (1972) (“It may be the cost of installing safety equipment or otherwise making the activity safer, or the benefit forgone by curtailing or eliminating the activity. If the cost of safety measures or of curtailment—whichever cost is lower—exceeds the benefit in accident avoidance to be gained by incurring that cost, society would be better off, in economic terms, to forgo accident prevention.”).

29. For a model showing that discriminatory treatment of cases can result from judicial learning, see Scott Baker & Claudio Mezzetti, *A Theory of Rational Jurisprudence*, 120 J. POL. ECON. 513 (2012).

### A. Self-Defense

Criminal offenses define activities society wishes to deter. Defenses define circumstances where, despite the occurrence of the crime, the law chooses not to hold the defendant responsible. Defenses include necessity, duress, insanity, and self-defense. The theory behind defenses is that, even though the crime transpired, society feels that the punishment should not be dispensed.<sup>30</sup> Sometimes the crime is said to be justified, while other times the crime is said to be excused.<sup>31</sup> For our purposes what matters is that criminal defenses embody a value choice. Defenses allow the legal system to judge conduct that is typically destructive but not worthy of punishment in specific cases.

As criminal law scholars long ago recognized, the trouble is not the existence of defenses, but rather their application.<sup>32</sup> Every person who commits, say, assault has an incentive to claim self-defense. The task of the legal system is to determine what conduct falls into the class of defenses and what conduct does not.

Consider two types of assault: the first involving actual self-defense and the second a false claim of self-defense. The assault involving actual self-defense cannot be avoided. The defendant strikes because he harbors a legitimate fear of bodily injury. The assault involving the false claim of self-defense can be avoided. The second defendant could have used language to diffuse the situation or walked away. The defendant himself knows whether he truly acted in self-defense. The court must spend social and judicial resources to uncover this fact. It must hold a trial and let witnesses testify.

Suppose, for the sake of argument, defendants believe the trial court will allow any case brought by the prosecutor to potentially go to trial. The trial court will never push for settlement or hint to the prosecutor that she should drop the case. Those actions can be thought of as investigation costs (the spending of judicial resources to find out what happened). Knowing that he will never be let off the hook, the second

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30. See George P. Fletcher, *The Right and the Reasonable*, 98 HARV. L. REV. 949, 958 (1985) ("A justification negates an assertion of wrongful conduct. An excuse negates a charge that the particular defendant is personally to blame for the wrongful conduct."). Whether the defense comes in the form of an excuse or a justification, society does not punish behavior it normally would.

31. See Kent Greenawalt, *The Perplexing Borders of Justification and Excuse*, 84 COLUM. L. REV. 1897, 1900 (1984) (discussing the difference between excuse and justification).

32. In 1984 Meir Dan-Cohen expressed the difficulty as follows:

For centuries criminal lawyers have been troubled by the question whether duress should operate as a defense to a criminal charge. Some have maintained that, even when external pressures impel an individual toward crime, the law should by no means relax its demand that the individual make the socially correct choice. If anything, the opposite is the case: "[I]t is at the moment when temptation to crime is strongest that the law should speak most clearly and emphatically to the contrary." Proponents of the defense, by contrast, have emphasized the unfairness of punishing a person for succumbing to pressures to which even his judges might have yielded. These conflicting arguments seem to impale the law on the horns of an inexorable dilemma. The law faces a hopeless trade-off between the competing values of deterrence and compassion (or fairness); whichever way it resolves the question of duress, it must sacrifice one value to the other.

Meir Dan Cohen, *Decision Rules and Conduct Rules: On Acoustic Separation in Criminal Law*, 97 HARV. L. REV. 625, 632–33 (1984) (internal citation omitted).

defendant is deterred. That is to say, sufficiently fearing application of criminal sanctions, that defendant backs down in his encounter. The first defendant by assumption cannot be deterred. This resolution is efficient. Those defendants who can avoid assaulting their aggressor do so. Defendants who cannot, do not.

But, after the fact, the trial court will want to let all defendants off the hook. It will want to push the prosecutor for leniency. It will want to use the powers of judicial discretion to attempt to avoid a trial. The reason is that it knows that the defendant is not guilty. The trial court's incentive to push the prosecutor to drop the case or recommend a generous plea offer does not flow from the familiar reason that, *ex post*, sanctioning defendants is often inefficient.<sup>33</sup> Rather, the trial court has limited resources and, as a result, does not want to spend its time and resources holding a trial in an attempt to figure out which defendants are guilty and which ones are innocent unless such expenditures are cost justified. If most defendants will have valid self-defense claims, as predicted in the last paragraph, such expenditures are not worthwhile. The trial court should instead push for settlement or push for the prosecutor to drop the case before any evidence is taken. Yet the anticipation of these actions ruins the deterrent effect of the sanction, undermining the prediction of the past paragraph.

If trial courts invest their limited resources for holding trials in the validity of self-defense claims until the marginal benefit of that investment equals its marginal cost, a stable equilibrium will track our negligence example. The first defendant commits assault. The second defendant, however, assaults sometimes and not others. Moreover, the legal system sometimes investigates the defendant's circumstances (i.e., holds a trial), while other times it exonerates him without investigation (the prosecutor drops the case or settles for a small penalty). We have again arbitrariness in the application of law to facts.

### B. Indefinite Contractual Agreements

At common law, an agreement lacking an essential term was deemed too indefinite to enforce. The modern approach relaxes the common law rule. Article 2 of the UCC, for example, instructs the court to enforce an agreement if the parties had an intent to contract and there exists a reasonably certain basis for giving a remedy.<sup>34</sup>

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33. See David Friedman, *Why Not Hang Them All: The Virtues of Inefficient Punishment*, 107 J. POL. ECON. 259, 260 (1999) ("For a simple example, consider an offense currently punished by a 10-year prison term imposed on offenders with a probability of .6. The certainty equivalent to the criminal of that punishment lottery is the same as the certainty equivalent of some lower probability of execution—say .1. Obviously a reform is in order. We shut down the prison. Every time we convict a criminal, we roll a die: 1–5 we let him go, 6 we hang him."); see also Jean Tirole, *Incomplete Contracts: Where Do We Stand?*, 67 ECONOMETRICA 741, 753 (1999) ("After all, courts send people to jail even though this is *ex post* socially inefficient.").

34. U.C.C. § 2-204(3) (1978).

Some scholars argue that the purpose of the indefiniteness doctrine is to avoid cost-shifting from private contracting parties to publicly subsidized courts.<sup>35</sup> Contracting parties know better than courts what they want.<sup>36</sup> If possible, parties should fill in the terms *ex ante* rather than foist the duty on courts.<sup>37</sup> A refusal to enforce indefinite agreements encourages contractual completeness easing the burden on the court.

That said, contracts may be incomplete because parties failed to realize they had left a gap. Alternatively, filling the gap might not be worth it given, say, a low probability that the contingency governed by the gap will materialize.<sup>38</sup> In those cases strict application of the indefiniteness doctrine frustrates the parties' intention. It makes sense for the court to fill in the gap *ex post* rather than have the parties do it *ex ante*.

In the language of efficiency we want trial courts to fill in gaps where it is cost-effective for them to do so (either because the contingency is rare or could not have been anticipated). At the same time trial courts should refuse to fill gaps where the parties could have cheaply completed the terms at the contracting stage.

Supposing that the trial court has limited resources and an inability to commit fully to investigating all cases complicates this simple efficiency story. Suppose one pair of contracting parties faces a high cost of completion, while a second pair faces a low cost of completion. Following our by-now-familiar practice, suppose also that the trial court does not know the actual cost faced by the contracting pair absent spending an investigation cost.

The sort of investigation we envision that trial courts might undertake is similar to that in, for example, *Joseph Martin, Jr. Delicatessen, Inc. v. Schumacher*.<sup>39</sup> In that case the parties agreed to agree on the renewal rate for a lease agreement.<sup>40</sup> The court refused to enforce the agreement, however, reasoning that the parties failed to provide a way to fix the rate.<sup>41</sup> It noted in passing how the parties could have made the court's task easier by, say, conditioning the payment on a recourse to an "objective extrinsic event, condition or standard on which the amount was made to depend."<sup>42</sup>

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35. See Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L. J. 87, 97 (1989) ("This justification—that *ex ante* contracting can be cheaper than *ex post* litigation—can also explain the common law's broader rule that 'for a contract to be binding the terms of the contract must be reasonably certain and definite.'") (internal citation omitted)).

36. Benjamin E. Hermalin et al., *Contract Law*, in HANDBOOK OF LAW AND ECONOMICS 26 (A. Mitch Polinsky & Steven Shavell eds. 2007) ("[I]nterferences or restrictions on the contract the parties sign cannot increase the Pareto efficiency of the contracted-for outcome; that is, there should be freedom of contract if the only welfare issue is the efficiency of the outcome achieved by the contract from the perspectives of the parties to the contract.").

37. Ayres & Gertner, *supra* note 35, at 97.

38. See Steven Shavell, *On the Writing and the Interpretation of Contracts*, 22 J. L. ECON. & ORG. 289, 290 (2006).

39. 417 N.E.2d 541 (N.Y. 1981).

40. *Id.* at 542.

41. *Id.* at 544.

42. *Id.*

Back to our hypothetical, imagine that the court commits to investigate the circumstances of the contract in every case. It then fills in the terms as the parties intended, but only if investigation reveals that the contracting costs were high—the parties could not have filled in the terms at a reasonable cost. The low-cost contracting pairs fill in the terms: these contracts are not indefinite and do not end up in litigation. The high cost pairs fail to do so. The court investigates and fills in the blanks for the high cost pair. The court only helps—by filling in the terms—those who could not have done it themselves.

Absent commitment, such a nice result cannot happen. The court will worry that some “low cost” contracting are asking the court to fill in the gap when they really should have done it themselves. Fearful of this fact, the court will, on occasion, decline to even ask what the parties intended—that is to say, they will on occasion fail to complete the contract for the parties. The low-cost pair on occasion will fill in terms themselves. Other times they will refrain from doing so hoping to shift the cost onto the court.

This equilibrium generates two predictions about the treatment of indefinite contracts. First, courts will on occasion fill in an indefinite term even where there exists reasonable grounds for them to think the parties could have done so themselves. This first prediction corresponds to the outcome where the court fails to investigate but the contracting pair had low completion cost. Second, courts will apply the doctrine haphazardly—filling a gap in one contract although the contract is actually too indefinite while filling the same gap in another contract because it is not indefinite.<sup>43</sup>

### C. Agency Deference

Administrative law rests many doctrines on the logic that agencies have policy expertise. For example, in *Chevron, U.S.A., Inc. v. Natural Res. Def. Counsel, Inc.*<sup>44</sup> the Supreme Court articulated its famous two-step analysis for reviewing agency’s interpretation of statutes. In the first step the court checks whether the relevant text of the organic statute being interpreted by an agency is ambiguous.<sup>45</sup>

If so, the court in the second step approves the agency’s interpretation of that text so long as the interpretation is reasonable.<sup>46</sup> In applying the test to the statutory term at issue in *Chevron* the Court nodded to

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43. Some empirical evidence is consistent with the predictions. See Robert E. Scott, *A Theory of Self-Enforcing Indefinite Agreements*, 103 COLUM. L. REV. 1641, 1652–53 (2003) (comparing a random sample of indefiniteness cases) (“In thirty-four cases the court enforced the contract despite the defendant’s claim that the agreement was indefinite. In the remaining fifty-five cases the court denied enforcement, despite finding that the parties had concluded an agreement . . .”).

44. 467 U.S. 837 (1984).

45. *Id.* at 842–43.

46. *Id.*

agency expertise.<sup>47</sup> Justice Breyer expanded on this notion in a First Circuit case decided shortly after *Chevron*. In *Mayburg v. Secretary of Health & Human Services*, then Judge Breyer said that the amount of deference a court owes varies in proportion to the degree to which the question of law relates to “agency’s (rather than the court’s) administrative or substantive expertise.”<sup>48</sup> Statutory interpretation is not the only area where arguments about agency expertise hold sway. In evaluating an agency rule where the science is uncertain, for example, the court typically defers to the agency reasoning that the agency is in a better position to make judgment calls in areas of scientific uncertainty.

Yet, on occasion the politics of the agency, rather than expertise, drive judgments about the interpretation of data in a rule-making procedure or the agency’s interpretation of a statute.<sup>49</sup> In that case judicial deference might not be warranted. The issue is whether the court can maintain a commitment to defer. Again, our analysis suggests that absent commitment doctrinal stability is hard to achieve.

Consider a stylized example. An issue—be it interpretation of a statute or approval of an agency rule—arises. It is one of two types. The first type is an issue that is resolved the same whether the agency deploys expertise or politics. That is to say, in determining an issue—for example, how a statute should be interpreted—an agency using expertise will reach the same answer as an agency using raw politics. The second type of issue is one where the agency will reach different answers depending on whether it resolves the issue based on politics or expertise. The trial court cannot tell simply from observing an outcome that accords with the agency preferences whether the agency based its decision on expertise or politics. By investigating—granting little deference—the trial court, however, learns which of the two types of issue was in play.

The agency prefers that the trial court affirm its resolution of the issue. The trial court wants to prevent mistakes, if doing so is cost-effective. As in the negligence example, suppose the trial court must make its audit decision after it observes the outcome in the agency. If the agency knew the trial court always deferred, the agency would always base its decisions on politics rather than expertise. But then the trial court would not always want to defer. On the other hand, if the agency through the trial court never deferred, i.e., it always investigated the issue *de novo*, the agency would resolve all issues based on expertise. Given this, the trial court would always want to defer after the fact. So neither always investigating nor always deferring is a stable situation.

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47. *Id.* at 865 (“Congress intended to accommodate both [competing] interests, but did not do so itself on the level of specificity presented by these cases. Perhaps that body consciously desired the Administrator to strike the balance at this level, thinking that those with great expertise and charged with responsibility for administering the provision would be in a better position to do so . . . .”).

48. *Mayburg v. Sec'y of Health & Human Servs.*, 740 F.2d 100, 106 (1st Cir. 1984).

49. Cass R. Sunstein, *Factions, Self-interest, and the APA: Four Lessons Since 1946*, 72 VA. L. REV. 271, 281 (1986) (“The debate over the respective roles of ‘expertise’ and ‘politics’ in agency decisionmaking has proved to be one of the most persistent in administrative law.”).

This example demonstrates the difficulty of sticking with a consistent level of agency deference. The analysis predicts confusion in the doctrines surrounding review of agency decision making, an outcome that administrative law scholars have already observed.<sup>50</sup>

We do not deny that doctrinal confusion might simply be the result of court confusion. The federal bench does not know what the right answer is. But, in a more dynamic story one can see how a feedback loop via case selection might work. To start, the court defers to agencies. Agencies—knowing they can now get away with political judgments—do so. The court then sees a bunch of cases where it suspects the agency put politics above expertise and so shifts the doctrine back to a more substantive review, and the cycle continues.

#### IV. ARE COURTS RATIONAL?

We have shown that trial courts can undermine substantive legal rules if they are rational in certain ways.<sup>51</sup> But are trial courts rational in these ways? In particular do they to some extent consider incentive effects of legal rules, the case selection those effects imply, and their limited resources in deciding whether to allow a case to continue or not and in determining how much more evidence to hear before making a judgment?

To some extent scholars that propose legal rules for the incentive effects they have on the people on so-called primary behavior are estopped from disputing our assumption.<sup>52</sup> When many of these scholars forecast the effect of a legal rule, they assume that the subjects of that rule are partly rational in the way we describe.<sup>53</sup> They assume that these subjects are somewhat sophisticated in how they form beliefs about other actors and weight the costs and benefits of their own efforts.<sup>54</sup> Why would trial courts not also be rational in the same way? After all, judges are subject to the same rule when they are not casting judgment on litigants. If these persons are rational when a rule is applied to them, why are they not rational when they apply the rule to others?

As for readers—scholarly or otherwise—who do not rely on rational-actor models to analyze the effect of rules—there is no contradiction in doubting the rationality of courts. Perhaps judges do not satisfy the rigorous standard for rationality upon which our central claim rests. Al-

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50. See Cass R. Sunstein, *Chevron Step Zero*, 92 VA. L. REV. 187, 190 (2006) (describing shifts in the application of the Chevron doctrine).

51. See *supra* Part II.

52. Every law and economics scholar makes this move.

53. Although not always defined with sufficient rigor, some form of rationality is the common assumption among law and economics scholars. See Richard A. Posner, *Rational Choice, Behavioral Economics, and the Law*, 50 STAN. L. REV. 1551, 1551 (1998) (noting that behavioral law and economics sees law and economics as “handicapped by its commitment to the assumption that people are rational”).

54. For papers envisioning Bayesian updating of the type our trial court deploys, see Friedman & Wickelgren, *supra* note 11; Spier, *supra* note 6.

ternatively, even if these decision makers are capable of rationality, procedural rules governing the conduct of cases may limit their ability to act on inferences about case selection. We take up these two possibilities in succession. But first we offer some examples which show that courts, in more and less obvious ways, both understand that legal rules impact behavior and consider the likely quality of cases selected for litigation when deciding on the effort to be spent scrutinizing that case.

#### A. Examples of Court Rationality

The first piece of evidence that trial courts understand is that legal rules alter behavior, and, as a result, the distribution of litigated cases is the success of the law and economics movement. That movement not only elevates the consequentialist approach to evaluating legal rules; it also forecasts consequences assuming people respond rationally to these rules. Some of the leading lights of the movement Richard Posner, Frank Easterbrook, and Guido Calabresi are among the elite federal appellate court judges in the country.<sup>55</sup> Judge Posner, in particular, is the most highly cited living appellate court judge, not just by academic authors, but also by other judges.<sup>56</sup>

It is not surprising then that the economic analysis of law now pervades court decision making.<sup>57</sup> Courts regularly consider the rational response to legal rules across common law fields such as tort, contract, criminal, and property, as well as more modern fields such as corporate law, consumer law<sup>58</sup> and antitrust law. They consider the incentive effects of negligence,<sup>59</sup> strict liability<sup>60</sup> and vicarious liability<sup>61</sup> rules in tort cases,<sup>62</sup> the effect of remedies in contracts<sup>63</sup> and torts<sup>64</sup> cases, the im-

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55. See, e.g., *Dynamic Mach. Works, Inc. v. Mach. & Elec. Consultants, Inc.* 352 F. Supp. 2d 83, 84 (D. Mass. 2005) (calling Posner and Easterbrook among the nation's "foremost jurists").

56. We found 254 citations to Posner's law and economics textbook *THE ECONOMIC ANALYSIS OF LAW* alone (search for "Economic Analysis of Law" in all cases database on Westlaw conducted July 6, 2012).

57. See, e.g., *In re Perry Cnty. Foods, Inc.*, 313 B.R. 875, 893 (Bankr. N.D. Al. 2004) ("[E]mploying economic theory and analytical devices as a portion of the decisional processes for legal issues is an accepted practice by courts and legal commentators."), and supporting citations therein.

58. See, e.g., *Wachovia Bank, N.A. v. Foster Bancshares, Inc.*, 457 F.3d 619, 623 (7th Cir. 2006) (Posner, J.) (exploring least cost avoider in forged check case).

59. See, e.g., *MCI, LLC v. Patriot Eng'g & Envtl., Inc.*, 487 F. Supp. 2d 1029, 1040 n.9 (S.D. Ind. 2007) (explaining incentive effect of Hand Formula); *In re City of New York*, 475 F. Supp. 2d 235, 241 (E.D.N.Y. 2007) (noting that since the common carrier has comparative advantage at protecting passengers, the duty of extraordinary care is justified—but that is captured in reasonableness standard in negligence).

60. See, e.g., *O'Malley v. Am. LaFrance, Inc.*, No. 00-CV-1421 (ARR), 2002 WL 32068354, at \*5 (E.D.N.Y. Dec. 30, 2002) (discussing incentive effect of strict products liability).

61. See, e.g., *Patterson v. Blair*, 172 S.W.3d 361, 364 (Ky. 2005) (discussing incentive effects of respondeat superior liability).

62. See, e.g., *In re Jones*, 311 B.R. 647, 654 (Bankr. M.D. Ga. 2004) (noting that defendants consider benefits and tort costs in decisions about precautions); *Primus v. Alfred Sanzari Enterprises*, 833 A.2d 697, 704–05 (N.J. Sup. Ct. Law Div. 2003) (noting that the purpose of tort liability is deterrence).

63. See, e.g., *Spirit Locker, Inc. v. EVO Direct, LLC*, 696 F. Supp. 2d 296, 306 (E.D.N.Y. 2010) (explaining the incentive effect of penalty clauses); *Ortiz v. Lyon Mgmt. Grp.*, 157 Cal. App. 4th 604, 619 n.11 (2007) (discussing concept of efficient breach). *Dynamic Mach. Works, Inc. v. Mach. & Elec.*

portance of both probability of apprehension and the penalty to the deterrence of crime,<sup>65</sup> how limited liability blunts the incentive effects of tort and contract remedies,<sup>66</sup> and the consequentialist rationale for various property rules.<sup>67</sup>

And it is not just the incentive effects of rules that they apply. Courts are aware of the incentive effects of contingency fee arrangements<sup>68</sup> and comprehend the occasional conflicts of interest between attorneys and clients.<sup>69</sup> They understand that fee shifting statutes and the like affect which cases are brought to court.<sup>70</sup>

Moreover, the wide array of court sources for citations in the footnotes for the last two paragraphs itself illustrates how widespread the consideration of incentive effects are in the judiciary.<sup>71</sup> There are citations from federal courts and state courts at all levels. This sort of analysis can be found in published opinions as well as unpublished ones. Cherry picking is not required.

Beyond the direct evidence that courts discuss incentives in debating legal rules, there is indirect evidence of the role that selection, in particular, plays in the level of scrutiny that courts employ in various areas of the law. An initial example is constitutional criminal procedure, especially in capital cases, where concerns about the behavior of police in investigating cases, prosecutors in filing cases, and prior state courts in hearing cases have led both subsequent and higher courts to interpretations of constitutional rights and remedies such as the exclusionary rule and new trials to encourage better case selection and processing on the part of police and prosecutors.<sup>72</sup> These procedural rules are designed to

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Consultants, Inc., 352 F. Supp. 2d 83, 89 (D. Mass. 2005) (noting that contract remedies deter opportunistic behavior).

64. See, e.g., *United States v. Cienfuegos*, 462 F.3d 1160, 1165 (9th Cir. 2006) (discussing the incentive effects of restitution remedy in tort); *Jones v. Reagan*, 696 F.2d 551, 554 (7th Cir. 1983) (observing that punitive damages can cause overdeterrence); *Asher v. Unarco Material Handling*, 862 F. Supp. 2d 551, 553–54 (E.D. Ky. 2012) (noting that reforming the collateral source rule would reduce deterrence).

65. *In re Weiss*, 839 A.2d 670, 677 (D.C. 2003) (explaining how deterrence depends on expected punishment).

66. See, e.g., *Allied Capital Corp. v. GC-Sun Holdings, L.P.*, 910 A.2d 1020, 1043 n.57 (Del. Ch. 2006) (noting that limited liability leads to under capitalization).

67. See, e.g., *Willcox v. Stroup*, 467 F.3d 409, 413 (4th Cir. 2006) (noting that the incentive effect of possession rule in property is to reduce violence).

68. See, e.g., *Wess v. Storey*, No. 2:08-cv-623, 2011 WL 1463609, at \*11 (S.D. Ohio Apr. 14, 2011) (explaining the incentive effect of contingency fees).

69. See, e.g., *Sylvester v. Cigna Corp.*, 369 F. Supp. 2d 34, 45 n.13 (D. Me. 2005); *Lubin v. Farmers Group, Inc.*, No. 03–03–00374–CV, 2009 WL 3682602, at \*9 n.15 (Tex. App. Nov. 6, 2009); *Vermont v. Homeside Lending, Inc.*, 826 A.2d 997, 1013 (Vt. 2003) (noting cases highlighting agency problems with attorney representation in class action cases).

70. *Friolo v. Frankel*, 28 A.3d 752, 775 (Md. Ct. Spec. App. 2011) (discussing the incentive effect of fee-shifting statute on litigation).

71. See *supra* notes 55–69.

72. The procedural protections in *Miranda* were designed to prevent police from using coercive tactics to extract confessions. See *Miranda v. Arizona*, 384 U.S. 436 (1966) (“The 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. By custodial interrogation, we mean questioning initiated by law enforcement officers after a person has been taken into custody or otherwise deprived of his freedom of ac-

change how those charged with administering legal rules do so with the ultimate aim of changing the cases that later courts hear. For example, when courts correct a bad jury instruction they do not expect that they will see that same instruction in future cases.

Attention to case selection also manifests itself in the differential scrutiny that courts employ when evaluating different types of cases. Judges appear to consider the average quality of cases in a class when determining how much to scrutinize that class of cases. For example, appellate judges have for a long time given habeas cases less scrutiny.<sup>73</sup> A common rationale given is that prisoners have low opportunity costs from litigating because they are behind bars.<sup>74</sup> As a result it is suggested habeas petitions might not be prescreened for quality by litigants as other suits may be.<sup>75</sup> And so it makes less sense for trial courts to spend much effort closely examining the merits of each habeas petition.

Another well-known example involves the slide between *per se* liability and the rule of reason in antitrust cases. Judges impose *per se* liability when, after seeing a number of cases involving a particular commercial practice, they discover that in most—if not all—the cases the defendant's practice was anticompetitive. The rationale for *per se* liability is that the cost of further investigation of these cases is greater than the gain to absolving the rare innocent defendant of liability.<sup>76</sup> In other words, the court has prejudged these cases based on past experience about the distribution of liable and nonliable defendants that engage in a practice. Conversely, as courts start seeing more and more cases where a defendant has a plausible efficiency justification for a previous *per se* il-

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tion in any significant way. As for the procedural safeguards to be employed, unless other fully effective means are devised to inform accused persons of their right of silence and to assure a continuous opportunity to exercise it, the following measures are required. Prior to any questioning, the person must be warned that he has a right to remain silent, that any statement he does make may be used as evidence against him, and that he has a right to the presence of an attorney, either retained or appointed." (internal citation omitted)). The *Brady* rule is designed to force the prosecutor to turn over exculpatory evidence, thereby changing the kinds of cases that come to trial (i.e., leaving only those cases in trial where the prosecutor did not have any exculpatory evidence). *Brady v. Maryland*, 373 U.S. 83, 87 (1963) ("We now hold that the suppression by the prosecution of evidence favorable to an accused upon request violates due process where the evidence is material either to guilt or to punishment, irrespective of the good faith or bad faith of the prosecution.").

73. Habeas cases are often prescreened by a staff attorney at a court to reduce the burden of these cases on judges. See Joseph L. Hoffman, *Innocence and Federal Habeas After AEDPA: Time for the Supreme Court to Act*, 24 FED. SENT'G. REP. 300, 302 (2012) ("The initial screening of federal habeas petitions usually is conducted by court personnel known as 'staff attorneys' or 'court clerks,' working under the supervision of, and with subsequent review of their recommendations by, federal magistrates and federal district judges.").

74. *Madrid v. Gomez*, 190 F.3d 990, 996 (9th Cir. 1999) ("However, it is certainly conceivable that, because of significant potential gains and low opportunity costs, prisoners generally file a disproportionate number of frivolous suits as compared to the population as a whole.").

75. Dan Gustafson et al., *Pro Se Litigation and the Costs of Access to Justice*, 39 WM. MITCHELL L. REV. 32, 37 (2012) (reporting results from a survey conducted by the Federal Judicial Center for the Judicial Conference Committee on Court Administration and Case Management, which found "the most common issues presented for judges and chambers staff were the poor quality of pleadings and submissions and the *pro se* litigants' lack of knowledge and skills to litigate their cases. The next most common issues were frivolous cases, repeat filers, a rising caseload, and the demand *pro se* cases place on the courts." (internal citation omitted)).

76. Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 9–10 (1984).

legal practice, the court will switch back to the rule of reason standard that requires the court to consider the facts of each case before deciding liability.<sup>77</sup>

A similar practice can be found in tort law. *Res ipsa loquitur* can be premised on the idea that certain outcomes—such as finding a medical instrument inside the body of a patient after surgery—are so unlikely if the defendant took reasonable care that the court need not inquire into the actual care taken by the defendant before imposing liability.<sup>78</sup> Negligence *per se* can similarly be motivated. That doctrine holds defendants liable for actions prohibited by statute or regulation.<sup>79</sup> The decision of the legislature to prohibit a certain activity displaces the court's inquiry into the reasonableness of the activity on the logic that the legislature or administrative agency's decision has already decided that the activity is not justified in most (but perhaps not all) cases. In other words, in torts cases courts rely on their own or the legislature's judgments about the average case in a class to avoid probing inquiries into particular cases from that class.

Courts not only consider the quality of cases, but also the quality of judgments in lower level tribunals in allocating attention across cases. As noted, judges give deference to administrative agencies because of their expertise.<sup>80</sup> Recently judges have observed the low quality of decision making by immigration judges and have begun to afford those courts less deference.<sup>81</sup>

### B. Courts are Rational

That courts consider the context in which a case arises when determining the level of scrutiny they give that case should not be surprising. Given the demands on their time, judges have an incentive to carefully ration their attention across cases.

Judges are not only subject to the law when they remove their robes, as many where litigators before they became judges. As such, they understand the incentives that litigants have to bring and settle cases. Indeed, when judges were litigators, scholars who forecast the incentive effect of legal rules assumed that they were rational. It is unlikely that litigators lose this attribute when they become judges.

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77. United States v. Microsoft Corp., 253 F.3d 34, 84 (D.C. Cir. 2001) (“[T]he rule of reason, rather than per se analysis, should govern the legality of tying arrangements involving platform software products.”); Continental T. V., Inc. v. GTE Sylvania Inc, 433 U.S. 36 (1977) (abandoning the per se rule for vertical restraints on trade in favor of the rule of reason analysis).

78. Bruce L. Hay & Kathryn E. Spier, *Burdens of Proof in Civil Litigation: An Economic Perspective*, 26 J. LEG. STUD. 413, 425–26 (1997).

79. See RESTatement (SECOND) OF TORTS § 286 (1965).

80. See supra text accompanying notes 44–47 (discussing Chevron).

81. Pasha v. Gonzales, 433 F.3d 530, 531 (7th Cir 2005) (“At the risk of sounding like a broken record, we reiterate our oft-expressed concern with the adjudication of asylum claims by the Immigration Court and the Board of Immigration Appeals.... The performance of these federal agencies is too often inadequate. This case presents another depressing example.”).

Not only do judges have experience at behaving rationally, but they are selected, if anything, on how rational they are. Judges who are appointed to their posts, certainly at the federal level and likely the state level, are chosen in part on capacity. Finally, we have never heard anyone suggest that judges are selected on the basis of being able to ignore information about case selection. It is advertised that justice is blind, and thus judges are screened on their ability to avoid bias. But the bias society seeks to avoid in selecting judges concerns factors such as the race and gender of litigants that are not causally related to liability<sup>82</sup> and that, historically, have attracted pre-judgment that was race-based and inconsistent with equal protection.

Elected judges might seem a different matter. The process has been criticized for attracting personnel that appeal to populist sentiment rather than even-handed application of the law.<sup>83</sup> While this may result in bias, e.g., a lower standard for convicting and a tendency toward harshly sentencing criminal defendants, these biases evince preferences for different legal rules, but not a tendency towards irrational application of existing rules and poor management of judicial resources. Indeed, in the criminal context they may mimic the effect of rational courts rather than counter them. A rational court would assume that prosecutors positively select cases based on guilt, increasing the tendency of the court to convict any defendant. The policy biases introduced by elections could replicate these effects even if the elected judges are irrational.

Finally, there is recent empirical evidence that casts doubt on criticisms of elected judges. Although elected judges produce lower quality decisions, they issue more decisions, and the latter effect may offset the former.<sup>84</sup> Moreover, defenders of election suggest they are valued by voters and that alternatives, such as Missouri's merit selection system, just change the nature of bias that judges have from favoring voters' preferences to the state bar's preferences.<sup>85</sup>

## V. IMPLICATIONS AND CONCLUSION

A judicial system committed to efficiency must (1) ensure that parties are sued when they cause injuries, and (2) ensure that trial courts ignore case selection. The first point is well known in academic literature. The second less so. We note that trial courts are consistently asked to determine whether *this* defendant in *this* case is liable. They do not

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82. While certain groups may have higher rates of offending, often the association is mere correlation rather than causation including, nondemographic factors such as wealth or education.

83. See, e.g., *Republican Party of Minnesota v. White*, 536 U.S. 765, 793 (2002) (O'Connor, J. concurring).

84. Stephen J. Choi et al., *Professionals or Politicians: The Uncertain Empirical Case for an Elected Rather than Appointed Judiciary*, 26 J. L. ECON. ORG. 290 (2010).

85. See Brian T. Fitzpatrick, *The Politics of Merit Selection*, 74 MINN. L. REV. 6, 75 (2009); Chris W. Bonneau, *A Survey of Empirical Evidence Concerning Judicial Elections*, FEDERALIST SOC. (Mar. 12, 2012), <http://www.fed-soc.org/publications/detail/a-survey-of-empirical-evidence-concerning-judicial-elections>.

ask—and are not called upon to ask—whether a finding of liability or further investigation into the merits will enhance efficiency overall. In evaluating motions to dismiss and summary judgment motions the question is whether it makes sense to allow *this* case to proceed forward. Has *this* plaintiff met his burden of production? Legislatures and appellate courts, by contrast, often decide whether a legal rule creates good or bad incentives for similar future cases. But such pronouncements do not end the matter. The trial court still must implement the legal rule and in that implementation unavoidable consideration of incentive effects will tend to undermine the overall efficiency and equity of the legal rule.

For example, an appellate court can say that negligence means the taking of cost-justified precautions. Yet, as noted in Part II, this legal rule creates efficient care decisions if and only if trial courts applying the legal rule ignore how it alters the cases appearing in litigation. And that is true even if we can somehow assure that all cases potentially involving liability are brought to trial.

The appellate court might reverse the lower court for a failure to properly investigate the case—dismissing a case prematurely. Notice, however, that the appellate court faces two significant hurdles in using review in this manner. First, like the trial court the appellate court has a limited budget. If it investigates the effort choice of the trial court all the time (using, say, *de novo* review of whether the underlying issue involves a factual or legal issue), the trial court will have an incentive to do what the appellate court prefers. The trial court, say, will give each case the exact same treatment. But, knowing that the trial court is complying with the appellate court's preference, the appellate court will have an incentive not to be rigorous in its appellate review to save on resources. The same problem we identified between the trial court and the defendant arises between the trial court and the appellate court. In equilibrium the appellate court will not apply the standard of review consistently across cases and the trial court will not comply perfectly with what the appellate court prefers.

Second, imagine a legal rule that no negligence cause of action can be dismissed as a matter of law. Such a rule runs into either of two problems. First, the trial court may not have the time to hear the merits of every single case, because they simply cannot comply with the dictate. Second, the trial court complies but this gradually delays the hearing of cases. The cost of these delays to litigants at some point outweighs the benefit of more efficient incentives from the initial negligence rule.

Our first conclusion, then, is that efficiency and court rationality conflict. Our second conclusion is that rational courts coupled with rational actors generate inconsistency in the application of law. In negligence cases lower courts investigate the merits in some cases but not others. Jurors set a high evidentiary bar in some cases but not others. Courts defer to agency interpretation of statutes in some cases but not others, and so on.

Such fluctuations in the law, we submit, are inevitable. The literature before us makes plain that any equilibrium where plaintiffs bear a cost of suit can result in discrimination in the filings of lawsuits. Some plaintiffs are lucky and do not get sued while others are not so lucky. Our point is that even assuming the problem of inconsistent suits is solved the problem of inconsistent application of law remains.

This problem does not arise (necessarily) from the heterogeneity in the political views of the judiciary. Instead, where the legal system is operating at its best and where plaintiffs file suit all the time, uncertainty will be generated if the court's inferences regarding the behavior of potential plaintiffs and defendants is to be consistent. We have not been able to come up with a way to eliminate this uncertainty. It is simply a cost of having legal rules implemented by rational courts.

## APPENDIX: A GENERAL MODEL OF COURT RATIONALITY

Here we present a game-theoretic model that generalizes the negligence example given in Part II. The game consists of two players: a trial judge and a potential defendant. The potential defendant has private information about the cost of precaution. The trial judge's strategy space consists of three possible actions. First, at a cost  $K$ , he can investigate the merits of the case. Denote this action I. Second, he can declare without investigation that the defendant is not liable. Denote this action NL. Third, he can declare without investigation that the defendant is liable. Denote this action L.

The defendant's strategy involves a decision whether to take a precaution or not. Absent precautions, the plaintiff suffers an expected harm  $ph$  where  $p$  is the probability of the accident and  $h$  is the resulting harm. To simplify the exposition, assume that all injured plaintiffs sue.

Defendants come in two types. With probability  $q$  the defendant has access to a precaution with cost  $c$  (the low cost type). With probability  $1-q$  the defendant has access to a precaution with a cost  $C$  (the high cost type). Assume that  $C > ph > c$ . Thus, it is efficient for the low-cost type to take precautions and inefficient for the high-cost type to take precautions. The defendant's payoff is the precaution cost if taken or the damages he expects to pay if precaution is not taken. Of course, the latter payoff depends on the choices made by the trial court.

Given a negligence rule that requires conviction if  $ph$  is greater than the cost of precaution, the trial judge mistakenly exonerates when he fails to hold liable a low-cost defendant. The trial judge mistakenly convicts when he holds liable a high-cost defendant. The trial judge's loss from a mistaken exoneration is  $m$  and his loss associated from a mistaken conviction is  $M$ . Absent investigation the trial judge does not know the defendant's precaution cost. The trial judge's belief that the defendant is a low precaution type is denoted by  $\beta$ .

### *Trial Court Can Commit*

The timing of the game when the trial court commits to an audit strategy is as follows. The trial judge picks and commits to an audit strategy; that is, I, NL, or L, which the defendant observes. Nature draws the defendant's type. The defendant decides whether to take precautions or not. The audit strategy is carried out and the payoffs realized.

When solving the model notice that the high precaution type will never take care. If the trial court holds the defendant liable as a matter of law, the damage payment is less than the precaution cost. If the trial court investigates, the high cost precaution type who fails to take the precaution will be found not liable. Finally, if the trial court finds all defendants not liable as a matter of law, the damage payment is zero and as a result it is not in the high precaution type's interest to take precautions.

Now consider the following strategy profile. The trial judge commits to investigate, the low cost type takes the precaution if the trial court commits to investigate or commits to holding the defendant liable as a matter of law; he fails to take precautions if the trial court commits to holding the defendant not liable as a matter of law (because the trial court's audit strategy is observed before the defendant acts, to construct the low cost defendant's strategy we must define an action for each possible strategy of the trial court). The high cost type never takes precautions no matter what audit strategy the trial court selects. The trial judge's payoff in this strategy profile is  $-K$ . Given the commitment to investigate the low cost type cannot deviate and increase his payoff. If he fails to take the precaution, he suffers a loss of  $ph$ . If he takes the precaution, he suffers a loss of  $c$ , which is strictly less than  $ph$ . Further, as argued above, the high cost type is always better off foregoing the precaution.

For this strategy profile to be an equilibrium we must check whether the trial judge can change his audit strategy and increase his payoff. Two deviations are considered. First, the trial judge might commit to declaring everyone liable, the action L. In that case, as noted, low-cost types will take precautions; high-cost types will fail to do so. The trial judge will mistakenly convict for sure in the event a case arises (which occurs if the defendant draws a high cost—an event which happens with probability  $1-q$ ). The expected loss from this strategy is thus  $(1-q)M$ .

Second, the trial judge might commit to declaring everyone not liable, the action NL. Lacking fear of a legal sanction, no defendant type will take precautions. The trial judge will mistakenly exonerate some defendants. The expected loss from this audit strategy is thus  $qm$ .

Together these two deviations suggest there exists an equilibrium in which the trial court commits to investigate in every case whenever  $K < \min\{qm, (1-q)M\}$ , which we assume to be true.

#### *The Trial Judge Cannot Commit to An Audit Strategy*

Now suppose that the trial judge makes the investigation decision after the defendant decides on his precaution. This yields a signaling game wherein the occurrence of the accident might signal the defendant's type. Unlike the previous case, the "perfect Bayesian" equilibrium can no longer involve separation of the defendant types. Consider the possibility of a separating equilibrium where (1) the low cost type takes precaution, (2) the high type fails to take precautions, and (3) the trial judge declares the defendant who caused an accident not liable as a matter of law. Given this proposed equilibrium, after an accident materializes the trial court believes that the defendant had high costs for sure. Given this belief, the trial judge's best response is to declare the defendant not liable as a matter of law. He is acting optimally given his beliefs. But we must ensure that neither defendant type as an incentive to devi-

ate. Yet, in the proposed equilibrium the low cost defendant type has an incentive to deviate since liability is not in the offering. As a result the separating equilibrium is not a solution to the game.

Next consider a pooling equilibrium as a candidate for a solution to the game. In this proposed equilibrium, neither defendant type takes precautions and the trial judge investigates. In this case the occurrence of an accident provides no new information to the trial judge as it is only an uninformative signal. The trial judge's beliefs are  $\beta=q$ . The trial judge's payoff from investigation is  $-K$ . Given his beliefs and the assumptions we made earlier, investigation is the best response. But we must also check for profitable deviations by each defendant type. In this case (with investigation) the low-cost type has an incentive to deviate, to take the precaution and avoid liability. Therefore, this pooling equilibrium is not a solution to the game.

The equilibrium must be in mixed strategies. Let the low cost type fail to take precautions with probability  $\sigma$ . To randomize the trial judge must be indifferent between investigation and finding the defendant not liable as a matter of law. For this to occur we need

$$(1) K = \beta'm$$

where  $\beta'$  is the posterior belief that the defendant has a low cost. This posterior must be derived from Bayes rule and the equilibrium strategies of the defendant types. Doing so implies that

$$\beta' = \frac{\sigma q}{\sigma q + (1-q)}.$$

Solving, we get

$$\sigma^* = \frac{(1-q)\beta'}{q(1-\beta')}$$

Likewise, the low cost type defendant must be indifferent between taking precautions and not. That implies the trial court must investigate and find the defendant liable with probability  $\mu$ , where  $\mu$  satisfies  $c=\mu ph$ , which means

$$\mu^*=c/ph.$$

This equilibrium leads to the results articulated informally in the main body of the Article. The low cost type defendant only takes precaution some of the time. By contrast, as argued above, with commitment to the audit strategy the defendant takes the low cost precaution every time. In short, there is less deterrence absent commitment. Further, the application of law to the facts is probabilistic when the court makes its investigation decision after the defendant acts.