# Hard Cases Make Bad Law?
# A Theoretical Investigation

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**Abstract**

This paper uses formal models to probe the famous aphorism that "hard cases make bad law." The analysis recovers the aphorism's core qualitative intuition but also enriches and extends it. I show that when special hardships exist, difficult cases and important cases are more likely to make bad law, and the effects of difficulty and importance interact. But, conditional on making bad law, more difficult cases make less-bad law. I also show how lawmaking is affected by an entrepreneurial litigator who can influence the selection of cases that the court uses to make law. The litigator moves the law closer to her own preferred rule by strategic case selection that is sensitive to the dynamic of hard cases making bad law, but in doing so she improves the expected rule, even when her preferred rule is at odds with the socially optimal rule. Beyond the single-court context assumed by the aphorism, the paper analyzes strategic interaction in a judicial hierarchy. Here, even cases that do not pose a special hardship may make bad law, and the effect of difficulty is nonmonotonic. Overall, the analysis illuminates the effects of particular case characteristics on general laws. The insights enrich our understanding of judicial lawmaking in common law systems—where general laws are made by particular cases—and may also apply to nonjudicial settings.

"Hard cases make bad law" is one of the most famous aphorisms in Anglo-American law, but its precise meaning and logic are not entirely clear. This paper analyzes a series of formal models of adjudication to understand and probe the familiar saying. The analysis recovers the aphorism's core insight—that where strict application of a generally sound law would present an exceptional hardship to someone, the court may be tempted to bend the law to avoid the hardship. But formal analysis also enriches, qualifies, and extends that insight. The concept of special hardship is concretely conceptualized by salient facts that cannot be explicitly reflected in legal doctrine. And the idea of "hard" case is enriched by understanding it to mean not just a case posing a special hardship but also an "important" case or a "difficult" case. It is shown that when a case does not pose a special hardship, importance and difficulty do not make a difference to the quality of laws. But when a case poses a special hardship, important cases are more likely than unimportant cases, and difficult cases are more likely than easy cases, to make bad law. However, conditional on bad law being made, difficult cases actually make less-bad law than easy cases. Importance and difficulty also interact in interesting ways. A case must be sufficiently important for the maginal effect of difficulty to kick in, and a case must be sufficiently difficult for the marginal effect of importance to kick in.

These insights capture a critical feature of the common law system—that general laws are made not in abstract anticipation of various future permutations of case facts but in the context of particular facts. The paper also investigates another critical feature of judicial lawmaking—that courts make law by resolving cases brought to them *by others*. Entrepreneurial litigators can move the law closer to their liking by selecting cases for litigation in a way that is sensitive to how particular case characteristics affect general laws. The process is more conducive to social welfare when the entrepreneurial litigator's preferred rule is closer to the socially optimal rule. But, when a litigator has modest powers of case selection, entrepreneurial litigation improves lawmaking relative to random case selection even when the litigator's preferred rule is far from the ideal rule, because a litigator who cares only about the mass of future cases rather than the particular case at hand will select cases in a way that circumvents the tendency of courts to let hard cases make bad law.

The impact of entrepreneurial litigators on the quality of lawmaking is more ambiguous when they have greater powers of case selection. The analysis identifies three distinct regimes, depending on the proximity of the litigator's ideal rule to the socially optimal rule. For litigators with strong prosocial preferences, an incremental increase in selection powers always enhances the quality of laws, and society is always better off with an impact litigator than without. For litigators with moderately prosocial preferences, an increase in selection powers is welfare-enhancing up to a point but becomes welfare-reducing after that point; nevertheless, the setting with an impact litigator is always preferable to one without an impact litigator. For litigators with extreme preferences, modest selection power is better for law-making than a setting without impact litigators; but increases in selection power eventually become sufficiently problematic that a setting without an impact litigator is preferable.

The foregoing applies to a single court making law by deciding a case, the context apparently assumed by the aphorism. But it is also fruitful to explore whether hard cases make bad law in a judicial hierarchy. For present purposes, the most relevant aspect of judicial hierarchy is lower courts' fact discretion. Trial courts are better positioned than appellate courts to observe case facts, and appellate courts defer substantially to trial courts' findings of fact. Informational asymmetry, trial courts' strategic factfinding, and appellate courts' strategically responsive rulemaking complicate the insights from a single-court analysis. Unlike the single-court context, in a judicial hierarchy difficult and important cases can make bad law even if the case does not pose a special hardship. More important cases are still more likely to make bad law. However, the mechanisms through which case importance affects the quality of resulting law are entirely different from the mechanism in the single-court context. Moreover, the importance of the case to the trial court operates differently on legal outcomes than the importance of the case to the appellate court. The effect of difficulty is nonmonotonic—the cases that are most likely to make bad law are intermediately difficult, not the easiest cases but not the hardest cases either. Finally, when bad law is made, it is bad not only in the weak sense of diverging from the appellate court's ideal rule but also in the strong sense of being Pareto-dominated for both courts.

Beyond promoting a clearer understanding of an oft-posited relationship and its underlying mechanisms, the present exercise is broadly fruitful in understanding judicial lawmaking. As discussed, a fundamental feature of the common law process is that the lawmaking function of courts is inextricable from their dispute-settling function, so the particular characteristics of one or a few cases can exert great influence on the development of generally applicable law. This feature of the common law process is incorporated into the case space approach pioneered by Kornhauser (1992) and now standard in judicial politics (see Lax (2011) and Kastellec (2017) for reviews), which recognizes the distinction, as well as the linkage, between courts' rulemaking and dispute-settling functions. Other papers have fruitfully exploited this potentiality of the case space framework. For example, Lax (2012) discusses how various attributes of rules and issue areas affect a court's optimal rule choice in a choice-theoretic setting; Carrubba and Clark (2012) integrate both rule and disposition components into a court's payoff function and discuss a potential tradeoff between the two; and Shahshahani (2019) shows how trial courts' fact discretion sharpens appellate courts' rule-disposition tradeoff. The present paper advances our understanding of how particular case attributes influence general law by engaging deeply with judges' and lawyers' longstanding qualitative insights and developing them more precisely.

The implications of the analysis are not limited to judicial politics. General lawmaking in response to particular problems or crises is common in legislative and administrative settings as well. For example, the War Powers Act purported in response to particular abuses by President Nixon to rework the general balance of congressional-executive authority in warmaking. More recently, federal and state gun control legislation was prompted by and tailored to school shootings in Columbine in 1999 and Parkland in 2018, although such mass shootings account for a small fraction of gun-related deaths and more pervasive problems of violence did not inspire similar legislative efforts. The idea that the particular might influence the general, and that the influence may be distortionary, are thus generic problems in the politics of policymaking. Of course, there are important differences between judicial and nonjudicial arenas of lawmaking. A deeper understanding of the judicial setting and how it differs from other settings can help us see how far the idea that hard cases make bad law travels.

Section 1 reviews the origins and usage of the aphorism. Section 2 constructs a series of formal models to clarify, enrich, contest, and extend the core qualitative insights. Section 3 informally discusses implications and extensions. Section 4 concludes.

# 1 Origins and Usage

Heuston (1978), in his short and informative survey of the aphorism, gives examples of similar ideas appearing in the 17th and 18th Centuries. But the aphorism in its present form was apparently first used in a number of English cases dating to the early 19th Century. Discussing these cases is useful in giving an idea of what the saying meant to those who said it and how the logic worked in real cases.

The earliest usage I know of was in *Hodgens v. Hodgens*, 4 CI Fin. 323 (1837). The facts of this case are convoluted and colorful, involving underage marriage, kidnapping, and evasion of authorities by hiding in a cask of groceries. To summarize: A wealthy wife left her husband and their two children. The husband petitioned the court for maintenance of the children out of the wife's property, claiming his own resources were insufficient. The law at the time did not recognize any duty of maintenance on the mother's part while the father was alive. In spite of this, a court in Dublin ruled in favor of the father so the children would not become destitute. On appeal the House of Lords reversed, Lord Wynford remarking as follows: "We have heard that hard cases make bad law. This is an extremely hard case, but it would indeed be making bad law . . . if your Lordships affirmed this order" (*id.* at 378). Lord Wynford expressed the hope that, even in the absence of any civil legal duty, "this lady will still recollect that there is another law by which she is bound,—the law of God and nature,—which will compel her suitably to maintain those children"; but, as far as courts are concerned, "we have to decide this case according to the law" (*id.* at 377-78).

In *Winterbottom v. Wright*, 10 M. & W. 109 (1842), Wright contracted with the Postmaster General to provide a coach to transport mail. Atkinson separately contracted with the Postmaster General to furnish horses for the coach, and also hired Winterbottom to drive the coach. Winterbottom was injured in an accident and sued Wright, claiming that latent defects in the coach caused the accident. Notwithstanding Winterbottom's "unfortunate" predicament, the court held for Wright because his contractual duty to keep the coach safe was owed to the Postmaster General, not to Winterbottom, who was not party to any contract with Wright. Baron Rolff wrote, "it is, no doubt, a hardship upon the plaintiff to be without a remedy, but, by that consideration we ought not to be influenced. Hard cases, it has been frequently observed, are apt to introduce bad law" (*id.* at 116).

*Hodgens* and *Winterbottom* capture the essence of the aphorism: When a case presents a particular hardship, the court is tempted to vary a generally sound law to avoid the hardship, resulting in a new law that, though perhaps fine for the case at hand, would be unsound as a general rule of conduct. This is how most commentators understand the aphorism. For example, Garner's *Dictionary of Legal Usage* says the "catchphrase refers to the danger that a decision operating harshly on the defendant may lead a court to make an unwarranted exception or otherwise alter the law" (Garner (2011), 403). Heuston (1978), 31, and Radin (1938), 40-42, say essentially the same thing. Schauer (2006) runs farther with the idea, arguing that because cases (not just cases posing a special hardship) are unrepresentative of the range of problems that the law would be called upon to resolve, case-by-case lawmaking makes bad law.

But *Hodgens* and *Winterbottom* do not express all there is to the qualitative insight. Something was added by the dissenting opinion of Oliver Wendell Holmes, Jr. in *Northern Securities Co. v. United States*, 193 U.S. 197 (1904). Rail barons E. H. Harriman and James Hill, who each controlled large railroad companies, competed to acquire the Chicago, Burlington and Quincy Railroad. Hill was supported by J. P. Morgan. The contest was fierce and rattled the stock market. But the contenders eventually reconciled, agreeing to form the Northern Securities Company as a holding company to manage CB&Q as well as the rail lines they previously owned. Northern Securities became the largest company in the world, stoking fears of monopoly. President McKinley refused to go after the merger under the new Sherman Antitrust Act. But he was soon assassinated, and his successor Theodore Roosevelt ordered the Department of Justice to prosecute. The Supreme Court invalidated the combination, holding that mergers between directly competing firms are per se illegal. (Northern Securities was thereafter broken up.) Four Justice dissented. Holmes wrote in dissent (*id.* at 400-401):

> Great cases, like hard cases, make bad law. For great cases are called great, not by reason of their real importance in shaping the law of the future, but because of some accident of immediate overwhelming interest which appeals to the feelings and distorts the judgment. These immediate interests exercise a kind of hydraulic pressure which makes what previously was clear seem doubtful, and before which

even well settled principles of law will bend.

This is the most-cited articulation of the maxim. It expresses the *Hodgens-Winterbottom* intuition about special case characteristics distorting generally sound legal judgment, but it also expresses something more. What the Holmes quotation adds, I think, is the idea of a case's "great"ness or importance. A case posing a special hardship always tempts the judge to bend the law to avoid the hardship, but the temptation is easier to resist when that hardship is localized. Hence the decisions in *Hodgens* and *Winterbottom*, recognizing the distortionary temptation only to rebuff it. When the hardship falls on a broader class of people or relates to a pressing public concern, however, the temptation is harder to resist. Hence, as Holmes saw it, the *Northern Securities* majority's succumbing to rampant antimonopoly sentiment and veering from the sound path of law. (Of course, this is not to endorse Holmes's position in *Northern Securities*, much less the rules of *Hodgens* and *Winterbottom*; the point of canvassing judicial usage, rather, is to get a feel for the logic of the saying.)

I think it's fair to say that, taken together, the ideas in *Hodgens*, *Winterbottom*, and *Northern Securities* exhaust the meaning of "hard cases make bad law" as generally understood. For example, I have canvassed all references to the aphorism in Supreme Court opinions, finding them to be variations on the same theme, sometimes in landmark cases, often quoting Holmes, and often in dissent.[1] Judicial usage, then, suggests two senses of a "hard" case: first, a case that poses a special hardship, and second, a case that is particularly important.

But there is a third sense in which the concept of "hard cases" is commonly used in legal discourse. The third sense of "hard" is "difficult," the opposite of "easy." A hard case in this sense is a case that is not readily resolvable by reference to precedent or other

[1]E.g., *United States v. Clark*, 96 U.S. 37, 49 (1877) (Harlan, J., dissenting); *Allen v. Morgan County*, 103 U.S. 515 (1880); *F.C.C. v. WOKO, Inc.*, 329 U.S. 223, 229 (1946); *Dennis v. United States*, 341 U.S. 494, 528 (1951) (Frankfurter, J., concurring); *New York Times Co. v. United States*, 403 U.S. 713, 753 (1971) (Harlan, J., dissenting); *id.* at 759 (Blackmun, J., dissenting); *Nixon v. Administrator of General Services*, 433 U.S. 425, 505 (1977) (Burger, C.J., dissenting); *Green v. Georgia*, 442 U.S. 95, 98 (1979) (Rehnquist, J., dissenting); *Skinner v. Railway Labor Executives' Ass'n*, 489 U.S. 602, 654-55 (1989) (Marshall, J., dissenting); *Hilton v. S.C. Pub. Railways Comm'n*, 502 U.S. 197, 207 (1991) (O'Connor, J., dissenting); *Board of County Commissioners v. Umbehr*, 518 U.S. 668, 710 (1996) (Scalia, J., dissenting); *Caperton v. A.T. Massey Coal Co.*, 556 U.S. 868 (2009) (Roberts, C.J., dissenting); *Kansas v. Carr*, 136 S. Ct. 633, 651 (2016) (Sotomayor, J., dissenting).

authorities. To put it in the language of Ronald Dworkin's famous article of the same title, "hard cases" are those in which "no settled rule dictates a decision either way" (Dworkin (1975), 1060). The question of how judges should go about deciding hard cases is a central problem in the field of jurisprudence (e.g., Dworkin (1975); Posner (2002); Shapiro (2007)). Less abstract thinking about difficult cases—sometimes called, helpfully, "close" cases—also surfaces in the writing of judges (e.g., Sutton (2010)). To my knowledge, the aphorism has never been used to mean "difficult cases make bad law."[2] Nevertheless, one may wonder how the difficulty of a case influences the quality of rulemaking, and how difficulty interacts with the other two senses of hardness. These questions will be addressed in the formal analysis that follows.

Having surveyed the usage of judges and legal commentators, we now have rich enough intuition to build on. The next section takes on board the qualitative intuitions and sharpens them with the aid of some formalism. First I show how cases involving special hardship pose a tradeoff between a good result in the particular case and a good general law. Next I discuss the effects of difficulty and importance. Then I introduce entrepreneurial litigators. Finally I analyze judicial hierarchy.

# 2 Models

## 2.1 Building Blocks

Lets see how each word of the saying can be analytically conceptualized.

*Hard*. All three senses of hardness will be considered. Special hardship will be conceptualized as a latent dimension of case facts that, for whatever reason (e.g., administrability

[2] However, Justice Stevens is fond of "easy cases make bad law." E.g., *Burnham v. Superior Court*, 495 U.S. 604, 640 (1990) (Stevens, J., concurring); *Ankenbrandt v. Richards*, 504 U.S. 689, 718 (1992) (Stevens, J., dissenting); *Hudson v. United States*, 522 U.S. 93, 106 (1997) (Stevens, J., concurring). In using this variation, Justice Stevens seems to think he is inverting the traditional expression, which is not right because the opposite of "hard" in the traditional usage is not "easy." In any event, Justice Stevens's frequent use of the expression seems to be for rhetorical effect and, as far as I can tell, does not articulate any reason why easy cases would tend to make bad law. Other Justices have attempted to articulate a rationale for the variation—see *O'Bannon v. Town Court Nursing Center*, 447 U.S. 773, 804 (1980) (Blackmun, J., concurring); *Heckler v. Chaney*, 470 U.S. 821, 840 (1985) (Marshall, J., concurring)—but the line of thought is indistinct and pursuing it would take us too far afield.

or evidentiary considerations), cannot be explicitly reflected in legal doctrine. Importance will be conceptualized as how much the court cares about the case's disposition (compared to how much it cares about the rule or future cases). And difficulty will be conceptualized as the closeness of the case to the court's ideal cutpoint rule.

*Cases.* In accordance with the case space approach, a case will be modeled as a bundle of facts. Or, more precisely, of facts that are or should be legally relevant. Going back to (a slightly stylized version of) the *Hodgens* case, we can think of the *law* (or *rule*) as specifying some threshold allocation of financial child-maintenance duties between husband and wife, holding that the wife has duties up to that threshold. (Specifically, the *Hodgens* court's rule was that the wife's share of duties is 0, but one can imagine a rule imposing any share of financial maintenance duties on the wife.) The case would then consist of what share of maintenance was actually borne by the wife in the controversy before the court, and the court's rule would then generate a *disposition* of the case, meaning a determination of whether or not the wife is in compliance with her legal duties. For higher-dimensional rules (e.g., if the legal allocation of maintenance duties also depended on the spouses' relative wealth), the case would be modeled as a higher-dimensional bundle of facts. More precisely, a case $x$ is a point in fact space $X \subset \mathbb{R}^n$, and a rule $r$ is a hyperplane dividing the fact space into two half spaces, each corresponding to a disposition $d \in \{0, 1\}$. See Figure 1. The fact space will be taken to be the unit cube in $\mathbb{R}^n$.

Figure 1 goes here

*Make.* The idea of a case making law presupposes that the rule of the case will have application beyond that particular case. In a *Hodgens*-type case, for example, the court cannot just say the wife wins (or loses), but must specify a threshold allocation of maintenance duties—a rule—that makes the wife win (or lose). Moreover, this rule applies not just to the parties in the case that makes the law but to future parties as well.

*Bad.* The badness of the law captures the extent to which the dispositions achieved by the law over the expected run of future cases overlap with the dispositions that would have been achieved by the court's ideal rule. For example, Figure 2 shows an ideal rule ($H$) and two announced rules ($r_1$ and $r_2$) in one dimension. (The court's ideal rule is called $H$

because the court is the final (high) court; when a lower court is introduced, that court's ideal rule will be $L$.) $r_1$ is "worse" than $r_2$ because the dispositions it generates overlap less with the dispositions that would have been generated by $H$.[3] As the figure makes clear, one-dimensional fact spaces have the nice property that the measure of dispositional non-overlap has a convenient closed-form expression, namely, the distance between the announced rule and the ideal rule ($|r - H|$). In higher dimensions there is no such convenient shorthand, and the analysis of rule badness is correspondingly trickier.

Figure 2 goes here

*Law.* As discussed above, a "law" means a rule that divides the fact space into half spaces corresponding to two dispositions (win or lose).

Now consider the court's utility function. Given the qualitative discussion, we must make clear that the court cares both about the disposition of the case at hand and about the rule made by the case (i.e., about the disposition of future cases). In one-dimensional fact space, this is nicely captured by

$$U = -|r - H| + e\mathbb{1}\{d = d_H\} \tag{1}$$

where $r$ is the rule of the case, $H$ is the court's ideal rule, and $e$ is the dispositional payoff, which accrues if and only if the disposition of the case ($d$) conforms to the court's ideal disposition ($d_H$). Ideal disposition means the disposition demanded by the court's ideal rule, that is, $d_H = \begin{cases} 1 & \text{if } \ x < H \\ 0 & \text{if } \ x \geq H \end{cases}$.

So the first term in Equation (1) is the court's rule utility and the second term is disposition utility, with $e$ capturing the case's importance. To summarize: In the single-court models that follow, the court decides a case by choosing a rule, which generates its payoff as per equation (1).

[3] Of course, this assumes that the distribution of case facts is uniform over the fact space. That assumption will be retained throughout. The purpose of the analysis is to discover the impact of certain case characteristics on certain attributes of resulting laws; the cleanest way to do that (at least for a first cut) is to abstract away from the confounding effects of case distribution and selection. A similar exercise could be carried out for an arbitrary distribution (with appropriate assumptions, e.g., CDF $F$ supported on a connected set and strictly positive density $f$ over the support of $F$), but that would confound the focus.

## 2.2 Single Court with Perfectly-Inclusive Doctrine

First consider the context of a single court that decides the case by making a rule, where the rule incorporates all factual dimensions that the court finds relevant. The idea of perfect inclusiveness is that the law is capable of reflecting all the facts that matter—in other words, there are no "special hardships" of which the law cannot take account. In that context, the court's unique optimal action would be to set the rule at its ideal point ($r = H$ in one dimension, the choice of the ideal separating hyperplane in higher dimensions). This rule is the unique maximizer of the rule component of the court's utility function, and it would also guarantee the correct disposition of the case. Notice that this rule choice is uniquely optimal irrespective of case importance or case difficulty. In particular, case importance does not matter because, given perfectly-inclusive doctrine, the ideal rule always generates the correct disposition. The foregoing (summarized in Remark 1) is obvious; the purpose is simply to establish a benchmark for later analyses.

**Remark 1.** *In the single-court context, if doctrine is perfectly inclusive then cases never make bad law.*

## 2.3 Single Court with Under-Inclusive Doctrine

Next consider the context where a single court decides the case by setting a rule, but the rule cannot reflect all relevant factual dimensions. This may be because a doctrine that attempted to take account of all relevant facts would become too complicated to enforce, or because gathering evidence on all relevant facts would be too costly, or for some other reason. In any event, there are some kinds of facts which are relevant to the proper or just disposition of the case but which cannot be reflected in legal doctrine. For example, the judges in *Hodgens* were concerned about the children's destitution, but they did not feel that legal doctrine could feasibly incorporate this concern.

To develop intuition, consider the context where a perfectly-inclusive legal doctrine would take account of facts in two dimensions ($x_1$ and $x_2$), but it's practically feasible for doctrine to only consider facts in one dimension ($X_1$). In particular, suppose the court's ideal perfectly-inclusive rule (the "first-best rule") is given by $x_1 = x_2$, so ideal dispositions are

$$d_H = \begin{cases} 1 & \text{if } \; x_1 < x_2 \\ 0 & \text{if } \; x_1 \geq x_2 \end{cases}. \tag{2}$$

Given under-inclusiveness, though, the court must choose a rule of the form $r = x_1$, so dispositions will be

$$d = \begin{cases} 1 & \text{if } \; x_1 < r \\ 0 & \text{if } \; x_1 > r \end{cases}. \tag{3}$$

(To avoid epsilon problems, assume the court can choose the disposition when $x_1 = r$.) Clearly, then, doctrine is unavoidably imperfect: For any rule choice, some cases will be decided correctly (i.e., as dictated by the first-best rule) and some not, as Figure 3 shows.

Figure 3 goes here

Now consider a court that wants to make the best practically feasible rule (the "second-best rule")—i.e., the rule that would decide the largest possible mass of cases in accordance with the first-best rule. (In Figure 3, pick $r$ to maximize the regions marked ✓. Formally, maximize $\Pr(d = d_H)$.) It is a simple calculus exercise to verify that the second-best rule is $r = 1/2$. The question of whether hard cases make bad law can now be understood as whether difficult or important cases are more likely (than easy or unimportant cases) to cause the court to deviate from its second-best rule, resulting in more-than-necessary distortion away from the first-best.

First consider case importance. A case comes before the court, and the court must decide whether to choose the second-best rule or deviate from it to get the right disposition, hence making bad law. The court would be willing to sacrifice the second-best rule if and only if $e > |x_1 - 1/2|$.[4] So an increase in case importance increases the probability of making bad

[4] This formulation uses $-|x_1 - 1/2|$ as a reduced form for the court's rule utility (expected future disposition utility). The expression can be microfounded by calculating expected future dispositional utility from two-dimensional cases as a function of different one-dimensional rules, which shows that rule utility is indeed single-peaked and symmetric around a maximum at $r = 1/2$ (though the microfounded form of the loss function is quadratic rather than linear).

law. In particular, the court would be willing to make bad law in the interval $(1/2-e, 1/2+e)$, but not outside it. (Even inside this interval, a case may not pose a rule-disposition tradeoff,[5] in which case the court need not make bad law, though it would have been willing to do so if the tradeoff had been posed.) Figure 4 shows the regions of case facts leading to bad law for different values of $e$, demonstrating how the area increases in $e$. The leftmost panel shows the extreme scenario where the case is utterly unimportant ($e = 0$), so the court is never willing to sacrifice the second-best rule; the rightmost panel shows the other extreme where the case is very important ($e > 1/2$), so the court is always willing (if necessary) to sacrifice the rule; the middle panel shows intermediate importance ($e = 1/4$).

Figure 4 goes here

Next consider case difficulty. This can be conceptualized as the distance between the legally-articulable dimension of case facts and the second-best rule (in this case, $|x_1 - 1/2|$), which captures the idea that "close" cases could go the other way if the case facts were just a little bit different. (Keep in mind that less distance means more difficulty.) It is clear from Figure 4 (panels (b)-(c)) that hard cases are more likely to make bad law. (Formally, $\Pr(r \neq 1/2 \,|\, X_1 = x_1)$ is decreasing in $|x_1 - 1/2|$.) When the first dimension of the case is closer to the second-best cutpoint, the probability of conflict between the first-best and second-best dispositions is higher, so the case is more likely to pose a rule-disposition tradeoff, so the court is more likely (provided the case is important enough) to deviate from the second-best rule, making bad law. (Formally, for $x_1 < 1/2$, $\frac{\partial}{\partial x_1}\Pr(X_2 < X_1 \,|\, X_1 = x_1) > 0$, and for $x_1 > 1/2$, $\frac{\partial}{\partial x_1}\Pr(X_2 > X_1 \,|\, X_1 = x_1) < 0$.)

The analysis so far has clarified a number of points. First, we saw how a case posing a special hardship can make bad law, capturing the intuition in *Hodgens* and other cases and commentaries. Second, when a case poses a special hardship, important cases are more likely than unimportant cases to make bad law, capturing Holmes's intuition in *Northern Securities*. Moreover, when a case poses a special hardship, difficult cases are more likely than easy cases to make bad law, a relationship that has not been considered in the qualitative usage.

[5] I.e., if $x \in \{(x_1, x_2) \,|\, x_1 \in (1/2-e, 1/2) \text{ and } x_1 < x_2\} \cup \{(x_1, x_2) \,|\, x_1 \in (1/2, 1/2+e) \text{ and } x_1 > x_2\}$.

The analysis also shows the interaction of case importance with difficulty. At any level of importance below a certain threshold, the case must be sufficiently difficult for the marginal effect of importance to kick in. And, at any given level of difficulty, the case must be sufficiently important for the marginal effect of difficulty to kick in. Otherwise, the marginal effects are zero.[6]

In addition, the formalization allows us to say more about equilibrium laws. The qualitative intuition is that hard cases make bad law, but how bad? Consider again, for any level of case importance, the region of case facts that would make bad law. Within that region, as Figure 4 makes clear, harder cases actually make *less*-bad law. That is so because, when case facts along the legally-articulable dimension are close to the second-best cutpoint, the court can flip the disposition of the case by only a small deviation from the second-best rule, resulting in minimal loss of overlap over the mass of future cases with first-best dispositions. By contrast, when case facts are far from the second-best cutpoint (easy cases), the level of rule distortion necessary to flip the disposition is high. Conditional on making bad law, more difficult cases make less-bad law. (There is no analogous effect for case importance; conditional on making bad law, the degree of badness does not change in case importance.)

The discussion in the last two paragraphs has important substantive implications. The essential element that ties case characteristics to the quality of laws is the common law's intertwining of courts' dispute-settling and lawmaking functions. This, when combined with another essential element of judicial lawmaking—that courts make law through deciding cases brought to them *by others*—underlines the potential power of entrepreneurial litigators. They can by careful selection of cases exploit a court's focus on the case at hand, and its concern about considerations that are morally but not doctrinally relevant, to alter the course of the law. The formal analysis crystallizes these intuitions, showing the effect of various case characteristics on the probability and magnitude of deviation from second-best doctrine. But the analysis also shows the limits of entrepreneurial litigation. Persuading a court to veer

[6]Formally, the first statement is that given any $\tilde{e}$ such that $\tilde{e} < 1/2$, for $\frac{\partial}{\partial e}\Pr(r \neq 1/2) > 0$ to hold we must have $x_1 \in (1/2 - \tilde{e}, 1/2 + \tilde{e})$. Otherwise, $\frac{\partial}{\partial e}\Pr(r \neq 1/2) = 0$. The second statement is as follows: Denote $d \equiv |x_1 - 1/2|$. Given any case $\tilde{x}$, for $\frac{\partial}{\partial d}\Pr(r \neq 1/2) < 0$ to hold we must have $e > |\tilde{x_1} - 1/2|$. Otherwise, $\frac{\partial}{\partial d}\Pr(r \neq 1/2) = 0$.

from its second-best doctrine in the interest of achieving the right disposition is easier when the facts of the case are not too far from the second-best cutpoint; on the other hand, when the facts are not too far, the court can get the right disposition by slight rule distortion. Impact litigators desiring more drastic legal change need a case of correspondingly drastic importance. Depending on the context, such a case may never be available. The insights from the single-court context can be summarized as follows.

**Proposition 1.** *When one court makes law by deciding a case,*

1. *Cases not posing a special hardship never make bad law.*
2. *Among cases that pose a special hardship, more important cases are more likely to make bad law.*
3. *Among cases that pose a special hardship, more difficult cases are more likely to make bad law.*
4. *At any level of importance below a certain threshold, the case must be sufficiently difficult for the marginal effect of importance to be nonzero.*
5. *At any level of difficulty, the case must be sufficiently important for the marginal effect of difficulty to be nonzero.*
6. *Conditional on making bad law, more difficult cases make less-bad law.*

## 2.4 Single Court with Entrepreneurial Litigator

The last section brought into relief the potential role of entrepreneurial litigators. This section introduces a new game to further explore the topic. My object is to show how the law may be changed by lawyers and legal activists who take interest in a lawsuit not out of concern for a particular client but with an eye to development of general law. The importance of such "impact litigators," both on the left and on the right, is widely acknowledged.[7]

[7]Prominent examples of left-leaning impact litigation include the NAACP's efforts to end state-sanctioned racial segregation in the South during the mid-Twentieth Century; the work of lawyers and activists to move a sympathetic Warren Court toward broader protections for criminal defendants and dissident speechmakers; and the ACLU's continued efforts to shape the laws pertaining to immigration, race, and sexual orientation

Impact litigators have a vision of what they want the law to be, and survey the field to select a case that is apt to realize their vision (e.g., Hartocollis (2017)). In making this selection, they take advantage of judges' proclivity to let the particular facts of a case influence the making of general law—i.e., the dynamic of "hard cases make bad law"—so the analysis dovetails with Section 2.3.

The players are a court ($C$) and an impact litigator ($L$). The court makes law in the context of deciding a case. Its decision is guided, as before, by both rule utility and disposition utility. As in Section 2.3, the case has two factual dimensions, $x_1$ and $x_2$, only the first of which can be reflected in doctrine, as well as an importance dimension $e$. The impact litigator's role is to help determine which case comes before the court as the vehicle for general lawmaking. The litigator understands that the vehicle matters—i.e., that the resulting rule ($r$) might be different depending on case characteristics $(x_1, x_2, e)$—so she wants to select for litigation a case that would produce a law close to her ideal rule. Of course, the litigator's ideal rule ($r_L$) might be different from the court's ($H$), so the litigator is not curating cases with an eye toward the development of "good" law (as the court understands that to be). Moreover, unlike the court, the impact litigator does not find any one case intrinsically more important that any other and does not care how a particular case comes out; all she cares about is the legal rule that will govern the mass of future cases.

Sequence of play is as follows:

1. Nature draws a case $(x_1, x_2, e)$ according to $F_{x_1}$, $F_{x_2}$, $F_e$. $L$ decides whether or not to bring the case. If $L$ brings the case then $C$ decides the case by choosing a rule $r$, which generates a disposition. If $L$ does not bring the case then the game proceeds to the second stage.

2. Nature draws a case $(x_1, x_2, e)$ according to $F_{x_1}$, $F_{x_2}$, $F_e$ and $C$ decides the case by choosing $r$.

Payoffs are as follows:

(see, e.g., Tushnet (1987), Epp (1998), Mack (2012)). On the right, prominent examples include the rolling back of Fourth Amendment protections for criminal defendants after the Warren Court; the use of litigation in tandem with other strategies to advance the deregulatory thrust of corporate and antitrust law in the latter part of the Twentieth Century; and the strategic use of the First Amendment to protect corporations (see, e.g., Teles (2008), Weinrib (2016), Hartocollis (2017)).

$$U_C = -|r - H| + e\mathbb{1}\{d = d_H\} \tag{4}$$

$$U_L = -|r - r_L| \tag{5}$$

Equation (4) is the familiar judicial payoff function from Section 2.3, incorporating both rule and disposition utility. Equation (5), by contrast, captures the long horizon of impact litigators, who care only about the rule and not about any particular disposition. In the model, impact litigators have a role in selecting cases, but their role is limited: They can "take a pass" on one bad draw from the mass of cases, but they cannot hold off indefinitely until an ideal case comes along because at some point Nature will force the resolution of the legal issue by shooting up a random case to the court. The idea is that the environment is rife with cases and people want their cases heard; impact litigators can influence which case will be the one that makes law, but they do not have a monopoly over litigation and if they pass up their opportunity for strategic selection then a randomly selected case will determine the law.

In addition to the court and the impact litigator, this section also considers the welfare effects of rulemaking. Welfare is conceptualized by reference to the *rule* utility of the court, disregarding its disposition utility. Formally,

$$W = -|r - H| \tag{6}$$

As in section 2.3, this welfare benchmark takes the court's ideal rule as the measure of "good" law. One may think of the welfare function as the payoff function of a hypothetical judge who shares the court's view of what law is best but does not share the court's myopia or preoccupation with the particular case at hand; it's the payoff function of a philosopher king of the world with a long horizon (which is how Justice Holmes in *Northern Securities* and the Lords and Barons in *Hodgens* and *Winterbottom* appeared to think of themselves). Expected welfare is thus measured by reference to expected deviation from good law.

As before, I focus on a court with the first-best cutpoint $x_1 = x_2$, yielding the second-best rule $r = 1/2$ (or $H = 1/2$). I will also assume as before that the facts $(x_1, x_2)$ are distributed uniformly over the unit square. And I will assume that case importance $e$ is distributed uniformly over $[0, 1/2]$ (recall that a case with $e = 1/2$ is the maximally important case for which the court is always willing if necessary to sacrifice the rule to the disposition). Although the model in this section can in principle be solved for any cumulative distribution function (with appropriate differentiability and continuity assumptions), the uniform distribution has the advantage of simplicity and a clean focus on the effects of strategic case selection.

***First benchmark: no impact litigator.*** It is useful to begin the analysis with the simple model in which there is no impact litigator—that is, a game with only the second stage. This is of course equivalent to the model in Section 2.3. The court's optimal strategy is to pick its ideal rule ($r = 1/2$) whenever there is no conflict between rule and disposition utility or the case is insufficiently important; and to distort the rule to the minimum extent necessary to achieve its preferred disposition ($r = x_1$) whenever there is a rule-disposition conflict *and* the case is sufficiently important (recall Figure 4 and associated discussion). That is,

$$r = \begin{cases} x_1 & \text{if } \; x_1 > 1/2 \; \text{ and } \; x_2 > x_1 \; \text{ and } \; e > x_1 - 1/2 \\ x_1 & \text{if } \; x_1 < 1/2 \; \text{ and } \; x_2 < x_1 \; \text{ and } \; e > 1/2 - x_1 \\ 1/2 & \text{otherwise} \end{cases} \tag{7}$$

The resulting rule is shown in Figure 5. As Figure 5b shows, most cases make good law but some cases make bad law. In expectation there is some deviation from the ideal rule, and the expected magnitude of this distortion can be calculated to be 1/48.[8]

Figure 5 goes here

***Second benchmark: ideal impact litigator.*** Next consider an impact litigator who shares the court's view of what the proper law is—that is, $r_L = 1/2$. This impact litigator's payoff function is the same as the court's, except that the impact litigator does not care

[8] Formally,

$$EW = \int_0^{0.5} \int_0^{x_1} \int_{0.5-x_1}^{0.5} x_1 - 0.5 dF_e(e) dF_{x_2}(x_2) dF_{x_1}(x_1) + \int_{0.5}^{1} \int_{x_1}^{1} \int_{x_1-0.5}^{0.5} 0.5 - x_1 dF_e(e) dF_{x_2}(x_2) dF_{x_1}(x_1)$$

which, given our distributional assumptions, can be calculated to be $-1/48$.

about case disposition. That is, the impact litigator has the same payoff function as the hypothetical long-horizon judge whose view is the measure of welfare.

Solving backwards: In the second stage (if there is one), the court decides the case according to the decision rule of equation (7). So the impact litigator's expected payoff from moving to the second stage (the same as the expected welfare calculated above) is $-1/48$. Accordingly, in the first stage, the impact litigator brings the case drawn by Nature if her expected payoff from the case exceeds $-1/48$ and does not bring the case otherwise. At this juncture it is important to resist the temptation to conclude that the impact litigator brings case if and only if $|x_1 - 1/2| < 1/48$. Note that, if the impact litigator brings case in the first stage, the court's optimal decision rule is the same as its optimal decision rule for a case brought in the second stage (equation (7)). So the impact litigator indeed brings case if $|x_1 - 1/2| < 1/48$ (i.e., if the first dimension of facts is sufficiently close to her ideal point, regardless of the second factual dimension and case importance); but the impact litigator also brings case if the case does not pose any rule-disposition tradeoff or if it is insufficiently important to the court, because in both those scenarios the ideal rule ($r = 1/2$) would result. The impact litigator's equilibrium strategy is specified by the following decision rule:

$$L \text{ does } \textit{not} \text{ bring case iff} \begin{cases} x_1 < 23/48 \quad \text{and} \quad x_2 < x_1 \quad \text{and} \quad e > 1/2 - x_1 \\ \textit{or} \\ x_1 > 25/48 \quad \text{and} \quad x_2 > x_1 \quad \text{and} \quad e > x_1 - 1/2 \end{cases} \tag{8}$$

The regions of the parameter space for which the impact litigator would *not* bring case are shown in Figure 6. As the figure shows, the impact litigator brings case for most configurations of case facts and case importance, and the probability that the game ends in the first stage is high. This is because, for most possible configurations, the resulting rule is $r = 1/2$, which is the impact litigator's ideal rule and, of course, preferable to the expected value of proceeding to the second stage; even among those cases which would not produce good law, some have first-dimension facts so close to the ideal rule that the rule distortion is smaller than the expected rule distortion in stage two (i.e., $|x_1 - 1/2| < 1/48$).

Figure 6 goes here

The upshot is that expected welfare is higher in the game with an "ideal" impact litigator than in the model without an impact litigator. It's easy to see why. The impact litigator can take a pass on one round of litigation, and she uses this power to not bring some hard cases that would make bad law. Because the impact litigator's conception of "bad" law is the same as the welfare benchmark, the impact litigator's strategic case selection improves welfare. With positive probability the impact litigator brings case in the first round, in which case she (and general welfare) are better off than expected in the second stage (i.e., than expected without an impact litigator); with the complement of that probability she does not bring case in the first stage, in which case the expected payoff is the same as without an impact litigator. Therefore, expected welfare in the ideal-impact-litigator game is a convex combination of expected welfare in the no-impact-litigator model and something higher. Welfare improves when a social-welfare-minded litigator has one more bite at the apple of case selection.

***General case: any impact litigator.*** We are now ready to discuss the model more generally, and to see how the impact litigator's ideal rule affects outcomes of interest. Consider, without loss of generality, an impact litigator whose ideal rule is to the right of the court's ($r_L > 1/2$). (The case of $r_L < 1/2$ is symmetric.) Again the game is solved backwards, and the court's equilibrium decision rule is given by equation (7). This time, however, the impact litigator's welfare is not the same as general welfare. If the game proceeds to the second stage, the impact litigator's payoff is given by

$$U_L^2 = \begin{cases} x_1 - r_L & \text{if } \ x_1 < 1/2 \ \text{ and } \ x_2 < x_1 \ \text{ and } \ e > 1/2 - x_1 \\ x_1 - r_L & \text{if } \ x_1 > 1/2 \ \text{ and } \ x_2 > x_1 \ \text{ and } \ e > x_1 - 1/2 \ \text{ and } \ r_L \geq x_1 \\ r_L - x_1 & \text{if } \ x_1 > 1/2 \ \text{ and } \ x_2 > x_1 \ \text{ and } \ e > x_1 - 1/2 \ \text{ and } \ r_L < x_1 \\ 1/2 - r_L & \text{otherwise} \end{cases} \tag{9}$$

Based on this (and without belaboring the details), the impact litigator's expected second-stage utility is calculated to be

$$EU_L^2 = -\frac{r_L^4}{3} + \frac{4r_L^3}{3} - 2r_L^2 + \frac{r_L}{3} + \frac{1}{6} \tag{10}$$

(Note that this expression equals $-1/48$ when $r_L = 1/2$. Note further that the impact litigator's expected second-stage payoff is decreasing in the distance between her ideal rule and the court's ($\partial EU_L^2/\partial r_L < 0$).)

In the first stage, the impact litigator brings case if and only if her payoff from doing so is greater than the expected second-stage payoff in equation (10). Calculating the circumstances under which this inequality will hold is somewhat involved, but the logic is broadly the same as in the second benchmark model analyzed above. It is useful to divide the cases which the impact litigator might bring into two categories: (1) cases that the court would decide by making good law ($r = 1/2$), and (2) cases that the court would decide by making bad law ($r \neq 1/2$, which implies $r = x_1$). For the impact litigator to bring a case in the first category, the distance between her ideal rule and the court's ideal rule must be sufficiently small to overwhelm the expected utility of rulemaking in the second stage (i.e., $1/2 - r_L \geq EU_L^2$). Likewise, for a case in the second category to be brought, the distance between the resulting rule and the impact litigator's ideal rule should be sufficiently small (i.e., $-|x_1 - r_L| \geq EU_L^2$). It turns out that the relevant inequality is *always* satisfied in the first category of cases. That is, all impact litigators, regardless of their ideal rule, will always bring a case that makes good law ($1/2 - r_L \geq EU_L^2 \; \forall r_L \in [1/2, 1]$). As for the second category of cases, there is an interval of first-dimension case facts around the impact litigator's ideal rule for which the impact litigator is willing to bring case. The bounds of this interval, which I denote $[\underline{x}_1, \overline{x}_1]$, move with the impact litigator's ideal rule. The lower bound is always below 1/2 (equaling 1/2 when $r_L = 1$) and the upper bound increases with $r_L$ until it reaches 1 for sufficiently large values of $r_L$.[9] Figure 7 shows regions of the fact space in which impact litigators are not willing to bring case for a fixed value of case importance, with the four different panels depicting the relevant regions for four impact litigators with

[9] Formally, the impact litigator's equilibrium strategy is given by the following decision rule:

$$L \text{ does } \textit{not} \text{ bring case iff} \begin{cases} x_1 < \underline{x}_1 \quad \text{and} \quad x_2 < x_1 \quad \text{and} \quad e > 1/2 - x_1 \\ \textit{or} \\ x_1 > \overline{x}_1 \quad \text{and} \quad x_2 > x_1 \quad \text{and} \quad e > x_1 - 1/2 \end{cases} \tag{11}$$

where $\underline{x}_1 = -\frac{r_L^4}{3} + \frac{4r_L^3}{3} - 2r_L^2 + \frac{4r_L}{3} + \frac{1}{6}$ and $\overline{x}_1 = \begin{cases} \frac{r_L^4}{3} - \frac{4r_L^3}{3} + 2r_L^2 + \frac{2r_L}{3} - \frac{1}{6} & \text{if } r_L \leq \overline{r}_L \\ 1 & \text{if } r_L > \overline{r}_L \end{cases}$
and $\overline{r}_L$ is the value of $r_L$ that solves $\overline{x}_1(r_L) = 1$, which is an irrational number slightly smaller than 0.75.

increasingly extreme ideal rules.

Figure 7 goes here

Figure 8 shows the probability that a case will be brought in the first stage as a function of the impact litigator's ideal rule. Notice that the relationship is nonmonotonic. The probability of bringing a case initially increases as the impact litigator's ideal rule diverges from the court's ideal rule, but once the divergence becomes sufficiently large (roughly, for $r_L > 0.72$), the probability of bringing a case declines in the impact litigator's ideal rule. The intuition behind this result can be appreciated by fixing case importance and considering how the regions where the impact litigator will not bring case change as the impact litigator's preferred rule moves away from the ideal rule (Figure 7 and its caption).

Figure 8 goes here

Ultimately, the analysis in this section shows how welfare, defined by reference to expected deviation from good law, changes with the impact litigator's preferred rule. Figure 9 depicts this relationship. The blue curve shows expected equilibrium welfare as a function of the impact litigator's ideal rule, and the mustard horizontal line shows expected welfare without an impact litigator. Not surprisingly, expected welfare declines as the impact litigator's ideal rule diverges from the court's ideal rule. A litigator whose view of the law is closer to the standard of social welfare will curate cases in a way that is more likely to enhance welfare. Interestingly, though, expected welfare is always higher when an impact litigator is present than when she is absent, even when her ideal rule is maximally divergent from the court's. That is because—like the hypothetical philosopher-king judge and unlike the actual judge in the game—the impact litigator has a long time horizon. She cares only about the rule, not about the disposition of the case that makes the rule, and in serving this long-term interest she often selects cases that do not pose a rule-disposition tradeoff for the court. In other words, the impact litigator promotes the promulgation of good laws by strategically selecting cases that avoid the dynamic of "hard cases make bad law." From the viewpoint of rulemaking, the benefits of such strategic case selection outweigh the costs imposed by the impact litigator's desire to locate the rule as close as possible to her *own* preferred rule.

Figure 9 goes here

Proposition 2 summarizes the insights from the game with an impact litigator.

**Proposition 2.** *To come in future drafts.****

## 2.5 Entrepreneurial Litigator with More Selection Power

The previous section considered a strategic setting where the impact litigator has one "pass" at selecting a case before surrendering case selection to Nature. That is, the litigator can decide whether one case drawn from the case space goes before the court and, if she vetoes that case, then the second draw goes before the court and makes the rule. But imagine a model where the impact litigator could look at more than one draw before having to surrender case selection to Nature. In such a model the number of "passes" afforded to the impact litigator captures her selection power. A natural question then is how social welfare changes as the litigator's selection power increases: Do emerging laws become monotonically worse? Are we better off without an impact litigator?

This section answers these questions. I make the previous section's two-period model more complex by considering an $n$-period model where the impact litigator can choose sequentially from $n - 1$ cases before Nature pushes a case up to the court. On the other hand, I simplify the model by considering one dimension instead of three. Cases are chosen randomly from the line, and it is assumed that the rule of the case is simply its location. So the assumption is that Nature selects only hard cases (hence the court's choice of locating the rule at the case facts), and the question is *which* hard case will be chosen to make the rule. In other words, *all* cases (except for a measure-zero point) make bad law, and it is the *degree* of badness that we're interested in. Such a setting is realistic in acknowledging the improbability of perfectly ideal rules. More to the point, the simplification allows for a sharper focus on the effect of selection power. The insights from the one-dimensional model travel unambiguously to the three-dimensional model for extremely high or low levels of selection power, but the effects of selection power in the intermediate range are more cleanly graspable in the one-dimensional model.

Sequence of play is as follows:

(1) Nature draws a case $x$ according to $F_X$. $L$ decides whether or not to bring the case. If $L$ brings the case then $C$ decides it by choosing $r = x$ and the game ends. If $L$ does not bring the case then this case disappears and the game proceeds to the next stage.

$\vdots$

$(n-1)$ Nature draws a case $x$ according to $F_X$. $L$ decides whether or not to bring the case. If $L$ brings the case then $C$ decides it by choosing $r = x$ and the game ends. If $L$ does not bring the case then this case disappears and the game proceeds to the next stage.

$(n)$ Nature draws a case $x$ according to $F_X$. $C$ decides the case by choosing $r = x$ and the game ends.

I assume again that $X \sim U[0,1]$. The litigator's payoff and the welfare benchmark are the same as before:

$$UL_n = -|r - r_L| \tag{12}$$

$$W_n = -|r - 1/2| \tag{13}$$

where the index $n$ denotes the expected payoff of an $n$-period game.

In analyzing this game it is useful to define, for an $n$-period game, the equilibrium expected distance from the litigator's ideal rule and from the welfare benchmark, which I call $D_n$ and $DW_n$ respectively. (So $D_n = -UL_n$ and $DW_n = -W_n$.) Social welfare and the litigator's payoff are analyzed by investigating how these quantities change with $n$.

With respect to the impact litigator's welfare, the intuition is straightforward (though the proofs are not trivial): As selection power increases, the expected distance between the equilibrium rule and the litigator's ideal rule decreases. What is more, the expected distance becomes arbitrarily small as the litigator's number of passes becomes arbitrarily large. (Formally, I show that the sequence $(D_n)$ is decreasing and converges to 0.)

What is the welfare impact of increasing the impact litigator's selection power? It turns out, as in Section 2.4, that a little bit of selection power (that is, one pass) is always preferable to no selection power. Welfare improves when we move from a setting with no impact litigator to a setting with an impact litigator who has one pass at case selection, even for the most extreme of impact litigators. (That is, $W_2 \geq W_1 \, \forall r_L$.) The intuition is that an impact litigator's interest in a rule close to her own ideal rule also works against the establishment of rules that are far from the socially optimal median rule; even impact litigators with extreme preferences to one side of the ideal median rule help social welfare by vetoing cases that would make a rule close to the other extreme.

But does an increase in selection power continue to enhance welfare at higher levels of selection power? And is the impact litigator's presence always socially preferable to her absence, even if she has great selection power? The answers to these questions depend in nuanced ways on the distance between the impact litigator's ideal rule and the socially optimal rule. Three different regions of litigator preferences yield three different sets of answers. For impact litigators with preferences very close to the socially ideal rule, an impact-litigator game with *any* number of passes is preferable to a game without an impact litigator. What is more, for these impact litigators, welfare always improves as the litigator's selection power increases. For impact litigators with preferences that are intermediately close to the ideal rule, it is no longer true that expanding the litigator's selection power is always beneficial; rather, expanding selection power is welfare-improving up to a point but becomes welfare-reducing after that point. However, for these intermediate impact litigators, it remains true that we are worse off without an impact litigator than with an impact litigator with *any* number of passes (even after increases in selection power have begun to erode social welfare compared to lower levels of selection power). For impact litigators with preferences far away from the ideal rule, just as with intermediate impact litigators, increases in selection power are welfare-improving up to a point and become welfare-reducing after that point. However, unlike in the previous case, there are levels of selection power at which we are better off without an impact litigator.

The intuition behind these results is that the impact litigator always uses her selection power to filter out cases that would make a bad rule from the perspective of her ideal rule. When her ideal rule is very close to the socially ideal rule, the litigator and the hypothetical long-horizon judge are never working as cross purposes: As the litigator brings the equilibrium expected rule closer to her own ideal rule, she also brings it closer to the socially ideal rule. But when the impact litigator's ideal rule is a little bit farther away from the socially ideal rule, the effects of increased selection power are no longer unambiguously good. In the beginning, increases in selection power are beneficial because the litigator will use her enhanced selection power to weed out extreme cases (that is, cases that would make a rule far from both her own ideal rule and the socially ideal rule). But, as selection power grows, the impact litigator can afford to be more discriminating; she begins to weed out not only extreme cases but also some cases that are bad for her agenda but not so bad for social welfare. That is why, for intermediate impact litigators, expanding the litigator's selection power is welfare-improving only up to a point. Nevertheless, because an intermediate impact litigator's preferences are not that far from the socially ideal rule, society is always better off with such an impact litigator, even if arbitrarily powerful, than without. Finally, for impact litigators with extreme preferences, an incremental increase in selection power is welfare-improving at low levels of selection power but welfare-reducing at high levels of selection power, for the same reason as in the intermediate case. However, because these impact litigators' preferences are far from the social optimum, giving them ever greater selection powers can make society worse off, even compared to a setting with no impact litigator. Society is better off with no case curation at all—despite the dangers of hard cases making bad law—than with an extremely powerful impact litigator with extreme preferences, who in expectation will select an extreme hard case that makes extremely bad law. Insights from the multiperiod game are summarized in Proposition 3.

**Proposition 3.** *In the $n$-period game,*

1. *The impact litigator's expected payoff is increasing in her selection power. Moreover, as the impact litigator's selection power becomes arbitrarily large, the expected rule gets arbitrarily close to the impact litigator's ideal rule. Formally, $D_{n+1} < D_n \, \forall \, n$ and $(D_n) \to 0$.*

2. *Society is better off with any impact litigator who has one pass than without an impact litigator. Formally, $W_2 > W_1 \, \forall \, r_L \in (0, 1)$ and $W_2 = W_1$ when $r_L \in \{0, 1\}$.*

3. *When the impact litigator's ideal rule is very close to the socially ideal rule, society is better off with an impact litigator than without, and an increase in the litigator's number*

*of passes always improves social welfare. Formally,* $\exists\, d$ *such that, for all* $r_L \in B_d(1/2)$*,* $W_n > W_1 \,\forall\, n > 1$ *and* $W_{n+1} > W_n \,\forall\, n$*.*

4. *When the impact litigator's ideal rule is intermediately close to the socially ideal rule, society is better off with an impact litigator than without; however, an increase in the litigator's number of passes improves social welfare up to a point and reduces social welfare after that point. Formally, for all* $r_L$ *such that* $|r_L - 1/2| \in [d, 1/4]$*,*
   (a) $W_n > W_1 \,\forall\, n > 1$ *and*
   (b) $\exists\, n'$ *such that* $W_{n+1} > W_n \,\forall n \leq n'$ *and* $W_{n+1} < W_n \,\forall n > n'$
   *(but in the special case of* $|r_L - 1/2| = d$ *we have* $W_{n'} < W_{n'+1} = W_{n'+2} = ...$*).*

5. *When the impact litigator's ideal rule is far away from the socially ideal rule, society is better off with an impact litigator than without iff the impact litigator has a sufficiently small number of passes; moreover, an increase in the litigator's number of passes improves social welfare up to a point and reduces social welfare after that point. Formally, for all* $r_L$ *such that* $|r_L - 1/2| > 1/4$*,*
   (a) $\exists\, n'$ *such that* $W_{n+1} > W_n \,\forall\, n \leq n'$ *and* $W_{n+1} < W_n \,\forall n > n'$ *and*
   (b) $\exists\, n''$ *such that* $W_n < W_1 \,\forall\, n \geq n''$*.*

## 2.6 Judicial Hierarchy with Perfectively-Inclusive Doctrine

The aphorism implicitly presupposes a single court making law by deciding a case. But in fact judiciaries are hierarchically structured. This section extends the analysis to a two-level judicial hierarchy. In particular, I am interested in how the informational asymmetry between trial and appellate courts, as well as the factfinding discretion of trial courts, alter the analysis.

By way of background (see Shahshahani (2019), 1-2, for fuller exposition and citations to primary sources): Appellate courts decide discrete issues arising in a case. They do not take evidence or hear witnesses, but simply hear legal arguments by counsel. By contrast, trial courts manage a case from start to finish, supervising the litigants and helping them develop the factual record. So it is generally understood that, though appellate courts have access to a factual record on appeal, trial courts know more about case facts. Ostensibly in recognition of trial courts' superior factfinding position (and possibly also for other reasons that are beyond the scope of the present inquiry), American appellate courts (both federal and state) are required to review trial courts' findings of fact under the deferential "clear error" standard. Unlike trial courts' legal determinations, which can be overturned whenever the appellate court finds them to be wrong, trial courts' factual determinations cannot be overturned unless they are *clearly* wrong.

The model in this section, which is based on Shahshahani (2019), takes the procedural institution of clear-error review as fixed. The players are a higher court $HC$, with ideal rule $H$, and a lower court $LC$, with ideal rule $L$. The fact space is one-dimensional and doctrine is perfectly inclusive. Sequence of play is as follows:

1. Nature selects the true case facts ($x_t \in \mathbb{R}$) and a signal of case facts ($x \in \mathbb{R}$). $LC$ observes both $x_t$ and $x$, but $HC$ observes only $x$. From $HC$'s perspective, true case facts are uniformly distributed on an epsilon ball around the signal: $(X_t \,|\, X = x) \sim U[x - \epsilon, x + \epsilon] \; \forall x$.

2. $LC$ decides whether to engage in costly factfinding ($\varphi = 1$) or not ($\varphi = 0$), and determines what facts to report, $x'$. $LC$'s choice of $x'$ is restricted as follows: $x' \begin{cases} = x & \text{if } \varphi = 0 \\ \in [x - \epsilon, x + \epsilon] & \text{if } \varphi = 1 \end{cases}.$

3. $HC$ announces the rule $r$, which determines the disposition as follows: $d = \begin{cases} 1 & \text{if } x' < r \\ 0 & \text{if } x' > r \end{cases}.$

   If $r = x'$ then $HC$ can choose either disposition.

Payoffs are:

$$U_{HC} = -|r - H| + e_h \mathbb{1}\{d = d_H\} \tag{14}$$

$$U_{LC} = -|r - L| + e_\ell \mathbb{1}\{d = d_L\} - c\varphi \tag{15}$$

where $d_L$ and $d_H$ are the courts' ideal dispositions, as before.

A strategy for $HC$ is the choice of a rule $\left(\sigma_{HC} : \mathbb{R} \times \{0,1\} \times [x-\epsilon, x+\epsilon] \to \mathbb{R}\right)$. A strategy for $LC$ is the choice of whether to engage in factfinding and what facts to report, subject to the constraints identified above $\left(\sigma_{LC} : \mathbb{R} \times [x-\epsilon, x+\epsilon] \to \{0,1\} \times [x-\epsilon, x+\epsilon]\right)$. Players are expected utility maximizers. The solution concept is perfect Bayesian equilibrium. Without loss of generality, assume $L > H$ and $H = 0$.

Note that the informational environment of this model is different from the single-court context in that the trial court knows more about case facts than the appellate court. The appellate court knows the neighborhood of true case facts whereas the trial court knows the precise location. (Of course, $x_t$ need not be interpreted as the literal truth, but some best estimate of it.) The parameter $\epsilon$ indexes the radius of the neighborhood. Higher $\epsilon$ denotes a more fact-intensive case, such that the public signal conveys only a general indication of where the true facts are and the trial court's factfinding discretion is concomitantly greater.

Judicial preferences in this model are like the single-court models: The courts are interested both in getting the right disposition for the present case and in making the right rule to govern future cases (though the two courts don't have the same view of what constitutes the "right" rule and disposition). The only difference is that the trial court's payoff function also has a cost term ($c$), which accrues if and only if it engages in factfinding ($\varphi = 1$).

The idea of costly factfinding is for the trial court to buy credibility to report facts beyond the public signal. Substantively, this can be interpreted as any number of discretionary case management decisions that would add to the trial court's workload but would enable it credibly to go beyond the "cold record" that the appellate court can see—for example, holding an evidentiary hearing on a motion to suppress the evidence in a criminal case, or allowing wider discovery in a civil case. If the trial court does not engage in factfinding, it must report facts at the public signal. If it does engage in factfinding, it can report facts anywhere within the epsilon neighborhood. Such facts reported by the trial court are not clearly erroneous, and the appellate court must take them as given.[10] So the appellate court's rule generates a disposition by reference to the case facts reported by the trial court ($x'$),

[10]One can construct a more complicated model where the trial court can report facts anywhere but facts outside the epsilon neighborhood are clearly erroneous and reversible, but it would reduce to essentially the same model because reporting clearly erroneous facts would be dominated.

not the public signal (nor the true facts).

The source of strategic tension in the model is the trial court's use of its factfinding discretion to obtain its preferred disposition. (So as not to suck out this source of strategic behavior, it will be assumed that $c < e_\ell$—meaning the cost of factfinding alone is not so large as to deter all factfinding motivated by a desire to flip the case's disposition.) In particular, when the courts' ideal dispositions conflict, the trial court is tempted to misreport the facts to get the disposition it wants. On the other hand, the appellate court knows of this strategic incentive, so it may not believe the facts reported by the trial court. And even though it cannot directly override those facts (because of the clear-error standard of review), it can distort the rule to change the disposition. So, as in Section 2.3, the appellate court faces a rule-disposition tradeoff, but the source of the tradeoff is different and it exists even when doctrine is perfectly inclusive.

Moreover, the appellate court's Bayesian assessment of the trial court's factfinding is complicated by the fact that the trial court's factfinding may not be deceptive; instead, the trial court may be attempting to correct the mistaken impression of true case facts created by the signal. See Figure 10. It is useful to distinguish these two varieties of factfinding. "Helpful factfinding" is when the trial court uses its factfinding power to report case facts that are on the same side of the appellate court's ideal point as the true case facts; "deceptive factfinding" is when the trial court uses its factfinding power to report case facts that are on the opposite side of the appellate court's ideal point as the true case facts. Formally, helpful factfinding means $\varphi = 1$ and $\text{sign}\{x'\} = \text{sign}\{x_t\}$; deceptive factfinding means $\varphi = 1$ and $\text{sign}\{x'\} \neq \text{sign}\{x_t\}$.

Figure 10 goes here

With a sense of the strategic forces at play, we are now in a position to discuss the impact of a case's difficulty and importance on the quality of resulting law. The first important result concerns very easy cases. When the public signal is very far from the appellate court's ideal rule (i.e., if $x > \epsilon$ or $x < -\epsilon$), the appellate court, though uncertain about the precise location of case facts, knows all that it needs to know about them. If the public signal is very far to the left then the appellate court knows that the true facts are also to the left of its ideal point ($x < -\epsilon \implies \Pr(x_t < 0) = 1$), so its ideal disposition is 1. By the same token, if the public signal is very far to the right then its deal disposition is 0. Moreover, when the public signal is so extreme, the trial court cannot move the operative facts from one side of the appellate court's ideal rule to the other (i.e., $\text{sign}\{x\} = \text{sign}\{x'\}$). Therefore, for extreme public signals, setting the rule at its ideal point is the unique maximizer of the appellate court's payoff function—regardless of the facts reported by the trial court. Very easy cases never make bad law.[11] (It follows immediately that, for extreme public signals, the trial court never engages in factfinding.)

**Remark 2.** *When doctrine is perfectly inclusive, very easy cases never make bad law.*

Note well the generality of this result. Remark 2 does not pertain to a specific equilibrium of the game; rather, it says there exists no equilibrium in which very easy cases ever make bad law. It turns out that similarly general results cannot be stated about case importance. The proof of this is by construction: It will be seen in discussing the equilibrium below that, for any nonzero value of $e_h$, there are regions in the parameter space where the rule is distorted with positive probability. The same is also true about $e_\ell$ (maintaining, however, the assumption that $c < e_\ell$).[12] To achieve a fuller appreciation of the impact of various case characteristics on the quality of resulting laws, consider an equilibrium of the game where bad lawmaking can happen.

Figure 11 goes here

[11]The foregoing takes the location of $x$ to be the measure of difficulty, but a similar result would obtain if the location of $x_t$ were taken to be the measure. Given the distribution of $X_t \mid X$, more extreme values of $x_t$ are more likely to be associated with extreme values of $x$, so very easy cases (in the $x_t$-based sense) are more likely to get extreme public signals, which never make bad law. Beyond this statement about probabilities, the result that sufficiently easy cases *never* make bad law would still obtain if easiness were defined by reference to $x_t$: Note that a case with $x_t \notin (-2\epsilon, 2\epsilon)$ never makes bad law. In the discussion of equilibrium that follows, it will be more convenient to take $x$ as the measure of difficulty, but essentially the same results would obtain under the alternative $x_t$-based definition given that $E(X_t \mid X = x) = x$.

[12]As noted above, the purpose of the assumption is to maintain the trial court's incentive to engage in factfinding in order to flip a case's disposition. If the cost of factfinding alone outweighed the case's importance to the trial court then, in the absence of other considerations, the trial court would not engage in factfinding even if factfinding would guarantee its preferred disposition; the central substantively-motivated strategic purpose of factfinding would be sucked out. It does *not* immediately follow, however, that if $e_\ell < c$ then there must be no factfinding in equilibrium (and, therefore, no bad lawmaking). The possibility of constructing arbitrary off-path beliefs makes the task of making claims about $e_\ell$ that must be true in any equilibrium harder than it might first appear.

The equilibrium outcomes of factfinding and rulemaking as a function of the public signal are portrayed in Figure 11 (a precise characterization appears in Proposition 5 in the appendix). For extreme realizations of the public signal ($x \notin (-\epsilon, \epsilon)$), $LC$ never engages in factfinding and $HC$ always sets the rule at its ideal point (see Remark 2).

Next consider the region $x \in (0, \epsilon)$. In this region, it is useful to consider what would happen if $HC$ were to always set its ideal rule ($r = 0$). Then, $LC$ would not have an incentive to engage in factfinding if $x_t > L$ because it could get its preferred disposition even without bearing the cost of factfinding. However, if $x_t < L$ then $LC$ would engage in factfinding and set $x' < 0$ to get its preferred disposition, which it could not get without factfinding. Now consider whether $HC$ would keep the rule at $r = 0$ in response to this sort of factfinding. As discussed in connection with Figure 10, $HC$'s decision is complicated by the fact that it does not know whether $LC$'s factfinding is helpful or deceptive. If $LC$'s factfinding is helpful then $HC$ is better off keeping the rule at 0 because that would guarantee both its preferred rule and its preferred disposition. But if $LC$'s factfinding is deceptive then $HC$ might be better off changing the rule to $r = x'$ in order to reverse the dispositional effect of the factfinding and prevent the loss of dispositional utility—provided, however, that the gain in dispositional utility is worth the cost in rule utility that would be borne by setting $r = x'$.[13] Ultimately, then, $HC$'s response to $LC$'s factfinding depends on two considerations: (1) $HC$'s posterior belief that $LC$'s factfinding is deceptive, and (2) the amount of rule utility that $HC$ would have to sacrifice to guard against the probable loss of dispositional utility. For values of $x$ close to 0, both considerations lead $HC$ toward keeping the rule at its ideal point; for values of $x$ close to $\epsilon$, by contrast, both considerations pull $HC$ toward choosing $r = x'$ in response to $x' < 0$.

These dynamics lead to an equilibrium with a threshold structure. The threshold $x^*$ in the interval $(0, \epsilon)$ specifies the value of $x$ at which, provided $LC$ sets $x'$ as far to the left of 0 as possible (which is in its interest to do), $HC$'s expected utilities from $r = 0$ and $r = x'$ are equal. $HC$ would "tolerate" $LC$'s factfinding below $x^*$ but not above $x^*$—meaning that if $x > x^*$ and $x' < 0$ then $HC$ would set $r = x'$ to counteract the factfinding.

[13]Note that $HC$ would never distort the rule away from its ideal point more than the minimum extent necessary to reverse the dispositional effect of $LC$'s factfinding. So, when $x' < 0$, $HC$ would never set $r < x'$.

$LC$'s factfinding behavior in turn depends on $HC$'s anticipated response to factfinding. Below $x^*$, $HC$ would tolerate any factfinding, so $LC$ engages in factfinding whenever necessary to flip the case's disposition and does not engage in factfinding otherwise (i.e., if $x_t > L$ then $\varphi = 0$, and if $x_t < L$ then $\varphi = 1$ and $x' < 0$). Above $x^*$, as discussed, $HC$ would not tolerate $LC$'s strategy of engaging in factfinding whenever necessary to obtain $LC$'s preferred disposition. Rather, in equilibrium, $LC$ sometimes engages in factfinding and $HC$ sometimes tolerates it. The key to sustaining this strategy profile in equilibrium is that $LC$ is more likely to engage in helpful than deceptive factfinding. (That is, $\Pr(x' < 0)$ is higher when $x_t < 0$ than when $x_t > 0$. The precise relationship between the probabilities is stated in the appendix.) In the absence of such a relationship between the probabilities of helpful and deceptive factfinding, $HC$ would never tolerate factfinding above $x^*$. As it is, $HC$ sometimes tolerates $LC$'s factfinding ($r = 0$) and sometimes does not ($r = x'$), and the choice not to tolerate is what produces bad laws.

Finally, consider the region $x \in (-\epsilon, 0)$. Again it is useful to consider what would happen if $HC$ were to always set its ideal rule. Then, again, $LC$ would engage in factfinding if and only if it would change the disposition to $LC$'s ideal rule (i.e., $\varphi = 1$ and $x' > 0$ if $x_t > L$, and $\varphi = 0$ otherwise).[14] But here, unlike when $x \in (0, \epsilon)$, such factfinding can never be deceptive because if $x_t > L$ then $x_t > 0$ as well. Therefore, $HC$ always keeps the rule at its ideal point and the case never makes bad law.

Having worked through the logic of the equilibrium, let us step back and consider its lessons for the substantive questions motivating the analysis. The most general lesson is that in a judicial hierarchy with factfinding discretion, unlike in the single-court context, cases may make bad law even if doctrine is perfectly inclusive. The intuition is that, when the trial court is more informed about case facts than the appellate court, its strategic factfinding confronts the appellate court with a rule-disposition tradeoff. When that tradeoff is finely balanced, the appellate court randomizes between sacrificing the disposition to the rule and sacrificing the rule to the disposition, and the latter choice is what produces bad laws. Rule distortion, then, is the result of the trial court's strategic exploitation of the appellate court's

[14] In this region, factfinding can occur with positive probability only if the two courts' ideal points are close (namely, if $L < \epsilon$). If $L \geq \epsilon$ then the fact that $x < 0$ implies $x_t < L$, so $LC$ does not need to engage in factfinding to get its preferred disposition.

uncertainty and its deferential review of factfinding.

Note that strategic interaction in the judicial hierarchy is necessary for this result; simply introducing uncertainty into the single-court context would not have produced bad laws. In the single-court context with perfectly-inclusive doctrine, even if the court receives an arbitrarily noisy signal of case facts, it would still always announce the ideal rule as long as its signal is accurate in expectation (i.e., as long as $E(X) = x_t$). This follows immediately from expected-utility maximization and the logic of Section 2.2. In that context, some cases would get the wrong disposition, but no case would make bad law.

Next consider the impact of case importance on the probability of making bad law. One must distinguish case importance to the appellate court ($e_h$) and the trial court ($e_\ell$). When the appellate court cares greatly about a case, it is more willing to sacrifice rule utility to guard against the possible loss of disposition utility. Therefore, the range of realizations of the public signal for which the appellate court would always tolerate the trial court's factfinding shrinks ($\partial x^*/\partial e_h < 0$). Concomitantly, there is a larger range in which the trial court sometimes engages in factfinding and the appellate court sometimes distorts the rule (the range $x \in (x^*, \epsilon)$), so there are more cases making bad law with positive probability. The mechanism is subtle. The trial court anticipates the appellate court's reduced willingness to tolerate factfinding and is deterred by it, so there is actually *less* factfinding in aggregate. However, there is more of the kind of factfinding that the appellate court sometimes does not tolerate, which is what accounts for greater rule distortion.

The effect of case importance to the trial court works in a different way. When the trial court cares more about a case, it is more willing to bear the cost of factfinding and accept the risk of being punished by a bad rule. Therefore, in the region with a positive probability of rule distortion ($x \in (x^*, \epsilon)$), the appellate court must increase its probability of rule distortion to keep the trial court indifferent between engaging and not engaging in factfinding ($\partial p/\partial e_\ell < 0$, where $p$ denotes $\Pr(r = 0)$ conditional on $LC$'s factfinding; see appendix). In the end, like cases that are important to the appellate court, cases that are important to the trial court are more likely (than cases that are less important) to make bad law. But the two effects operate through different mechanisms: A marignal increase in case importance to the appellate court expands the region where rule distortion can occur;

a marginal increase in case importance to the trial court leaves the region unchanged, but leads to greater rule distortion *within* the region.

Finally, consider the effect of case difficulty (parametrized by $x$). There is an analogue to the single-court context with perfectly-inclusive rules in that very easy cases never make bad law (Remark 2). Beyond those extreme cases, though, matters are complicated. The effect of case difficulty is both asymmetric and nonmonotonic. When the public signal is to the left of the appellate court's ideal rule ($x < 0$), bad lawmaking never happens, regardless of case difficulty. The intuition, again, is that in this region the trial court's factfinding to help itself also helps the appellate court. By contrast, when the public signal is to the right of the appellate court's ideal rule, bad law may be made.[15] But the effect of case difficulty is nonmonotonic—the cases that may make bad law are not the easiest cases ($x > \epsilon$), nor the most difficult cases ($x \in (0, x^*)$), but rather intermediately difficult cases ($x \in (x^*, \epsilon)$). The intuition for why really easy cases never make bad law was covered in discussing Remark 2. The intuition for why really difficult cases do not make bad law goes back to the appellate court's rule-disposition tradeoff: When a case is really difficult, (1) the equilibrium probability that the trial court's factfinding is deceptive is relatively low, and (2) the appellate court would have to sacrifice a great deal of rule utility to counter the dispositional effect of the factfinding, so the court does not distort the rule.

The final lesson of this section is that when a judicial hierarchy makes bad laws, it makes laws that are bad for *both* courts. Rule distortion produces a rule that is bad not just in the weak sense of deviating from the higher court's ideal rule but also in the strong sense of being Pareto-dominated. That is, there are rules that both courts would prefer to the distorted rule. (Namely, when the rule is distorted, we have $r < 0$, so there are laws in the interval $[0, L]$, e.g., $r = 0$, that both courts would prefer.) This strong form of distortion is required to reverse the dispositional effect of the trial court's factfinding and to punish the trial court. A rule on the Pareto frontier ($r \in [0, L]$) would fail to accomplish both tasks and would not deter the trial court from deceptive factfinding. The main substantive insights of this section are summarized in the following proposition.

[15] Of course, the asymmetry would have been on the opposite side if we had assumed $L < 0$ instead of $L > 0$.

**Proposition 4.** *When a judicial hierarchy makes law by deciding a case and doctrine is perfectly inclusive,*

1. *Unlike in the single-court context with perfectly-inclusive doctrine, some cases may make bad law.*
2. *Very easy cases never make bad law.*
3. *There is no nonzero level of case importance to the appellate court that would guarantee no bad laws.*
4. *Assuming the case's importance to the trial court is not outweighed by the cost of factfinding, there is no level of case importance to the trial court that would guarantee no bad laws.*
5. *Cases that are more important to the appellate court are more likely (than cases that are less important) to make bad law.*
6. *Cases that are more important to the trial court are more likely (than cases that are less important) to make bad law.*
7. *The cases that may make bad law are intermediately difficult.*
8. *Bad laws are Pareto-dominated.*

# 3 Discussion

This section illustrates some of the implications of the foregoing analysis and contemplates some extensions.

## 3.1 The Maxim at Play

Section 1 described the early cases that apparently gave rise to the saying "hard cases make bad law." But the logic of the saying is not limited to quaint old cases. There is no better illustration than *Bush v. Gore*, 531 U.S. 98 (2000), which determined the winner of the

2000 Presidential election. In a *per curiam* opinion split 5-4 along familiar ideological lines, the U.S. Supreme Court reversed the judgment of the Florida Supreme Court ordering a recount of Presidential election ballots in Florida, holding that such a recount would violate the Equal Protection Clause by treating voters disparately. Halting the recount had the effect of confirming the pre-recount results, so George W. Bush beat Al Gore to become the 43rd President of the United States. The decision has been much talked about, and this is no place to relitigate its merits.[16] Suffice it to say that it has all the hallmarks of a hard case making bad law. The case was hard both in the sense of incorporating salient extra-doctrinal facts and in the sense of being important (the first two senses of "hard" discussed in Sections 1 and 2.1). And the case apparently made bad law: Justice Stevens's lament in dissent that "the loser" from the decision was "the Nation's confidence in the judge as an impartial guardian of the rule of law" (*id.* at 129 (Stevens, J., dissenting)) has been widely echoed, and the decision was received negatively by the public, major newspapers, and law professors.[17] One can plausibly conclude that the high stakes hanging on the case, combined with the fact that an explicit weighing of the stakes was outside the reaches of relevant doctrine, made for a decision that distorted law to arrive at a desired outcome—an interpretation on all fours with the core logic of the maxim.

The same logic also operates in more obscure corners of the law. A good illustration is the recent copyright case of *Garcia v. Google.* Cindy Lee Garcia sued to compel Google to take down from YouTube the trailer for a movie in which she had made a cameo appearance, claiming that she owned the copyright in her performance under the Copyright Act. Well-settled precedent held that authorship of a "joint work" under the Copyright Act resides only in a creative "master mind" who has "artistic control" over the whole enterprise, which in the case of a movie "would generally limit authorship to someone at the top of the screen credits, sometimes the producer, sometimes the director, possibly the star, or the

[16] I emphasize again that my object is not to comment on the legal or moral bona fides of any specific judicial decision but rather to illustrate the logic of the aphorism and the model by reference to cases that can plausibly be thought to embody that logic.

[17] A survey by Cole (2006) found that of the 36 unsigned editorials in the top 20 newspapers by circulation in the week following the decision 18 were critical, 12 were neutral, and 6 were positive; of the 39 signed op-eds published in the same newspapers in the same time period 26 were critical, 5 were neutral, and 8 were positive; and of the 78 law review articles published in 2001-2004 commenting on the decision 35 were critical, 32 were neutral, and 11 were positive. ***[Cite also public opinion polls and law professors' letter.]

screenwriter" (*Aalmuhammed v. Lee*, 202 F.3d 1227, 1233 (9th Cir. 2000)). The rationale is that a broader standard of authorship, such as one that deemed anyone who had made an independently copyrightable contribution to be an "author" of a "joint work," would impose immense transaction costs and holdup problems, especially in movies, which involve huge production teams (*id.*). Under this precedent it is obvious that Garcia did not have a claim to authorship of the movie based on her five-second cameo appearance. The claim that her authorship interest in her *performance* gave her the right to enjoin the movie's authors from its distribution seemed equally hopeless. This was an easy case (i.e., not "hard" in the third sense) that Garcia would surely lose under ordinary circumstances.

But these were no ordinary circumstances. The film at issue was *Innocence of Muslims*, an anti-Islam vehicle depicting Muhammad as a murderer and pedophile that caused uproar and led to protests by Muslims the world over (including, possibly, the protests culminating in the 2012 attack on the U.S. Consulate in Benghazi, Libya). What is more, Garcia had no idea what she was getting into when she answered the casting call for *Desert Warrior*, ostensibly an action-adventure flick set in the Arabian desert. Her short cameo performance was later edited in with other footage to serve the movie's purposes, and her lines were dubbed over to say "Is your Mohammed a child molester?" After the trailer was posted on YouTube, a fatwa was issued to kill everyone involved in the film, and Garcia received numerous death threats. The case thus fits the "missing dimension" model of Section 2.3 perfectly: There were facts that seemed plainly relevant to a just disposition of the case but that did not, and plausibly could not, figure into the legal doctrine that was being asked to generate the disposition (i.e., copyright authorship). The temptation to twist the law to obtain the desired result was great, and Judge Kozinski yielded to the temptation in ruling for Garcia while making some dubious pronouncements about copyright doctrine (*Garcia v. Google, Inc.*, 766 F.3d 929 (9th Cir. 2014)).

It bears noting that the Ninth Circuit took the case *en banc* and reversed the panel's decision (*Garcia v. Google, Inc.*, 786 F.3d 733 (9th Cir. 2015) (en banc)). Seen in light of the model, this can be explained by the fact that $x_2$ was in the right place to generate bad law but $e$ was not. The case was "hard" in the first sense of posing a special hardship but not "hard" in the second sense of being greatly important, involving as it did the misfortune of only a single individual, however sympathetic. It was a hard case like *Hodgens* and *Winterbottom* but not a great case like *Northern Securities* and *Bush v. Gore*, and the temptation to make bad law was accordingly found easier to resist.

Beyond individual cases, there are entire *fields* that seem to me susceptible to the "hard cases make bad law" dynamic. These are fields in which doctrinal issues are often posed in the context of cases involving parties who are sympathetic for reasons unrelated to the central purpose of the doctrine. I will provide two illustrations.

First, consider the doctrine of genericide in trademark law. By granting producers the exclusive use of their marks to identify the source of their goods or services, trademark law reduces consumer search costs and encourages producer investments in quality by halting the "market for lemons" dynamic (Akerlof (1970)) that would result if producers could tread on others' marks (see, e.g., *Qualitex Co. v. Jacobson Products Co., Inc.*, 514 U.S. 159, 163-64 (1995); *Groeneveld Transport Efficiency, Inc. v. Lubecore Int'l, Inc.*, 730 F.3d 494, 511-14 (6th Cir. 2013)). These purposes are well served by "distinctive" marks that are capable of identifying the source of products (e.g., Kodak for film), but not by "generic" marks that refer to the product itself rather than just its source (e.g., Cookie for cookies) (see *Abercrombie & Fitch Co. v. Hunting World*, 537 F.2d 4 (2d Cir. 1976) (identifying four categories of marks in terms of distinctiveness)). Trademarking a generic mark would be tantamount to a monopoly on a useful word, raising rivals' communication/advertisement costs and consumers' search costs and subverting the competitive purposes of trademarks. Trademark law therefore does not protect generic marks.

The problem I'm concerned with arises in connection with terms that were once distinctive brand identifiers but have arguably become generic through common use over time. Courts are sometimes called upon to decide whether a once-distinctive term has become generic (aka "genericide"), a decision which requires determining whether "the primary significance of the term in the minds of the consuming public is ... the product [or] the producer" (*Kellogg Co. v. Nat'l Biscuit Co.*, 305 U.S. 111, 118 (1938)). Examples of genericide include aspirin, cellophane, elevator, escalator, and thermos; examples of successful defenses against claims of genericide include Plexiglas, Teflon, Xerox, and Google.

In my view genericide cases as a category pose a "hard cases make bad law" problem because the court is effectively asked to punish a manufacturer for its success. As the aforementioned examples indicate, genericide cases often involve extremely successful companies who were so dominant that their names became synonymous with what they were selling. So although the fundamental policy behind the refusal of trademark protection to generic marks does not seem to depend on *how* a term became generic, judges' natural reluctance to punish a company for being too good occasionally results in troubling pronouncements. For example, in a recent case involving Google, the Ninth Circuit stated: "Even if we assume that the public uses the verb 'google' in a generic and indiscriminate sense, this tells us nothing about how the public primarily understands the word itself" (*Elliott v. Google, Inc.*, 860 F.3d 1151, 1159 (9th Cir. 2017)). Contemplate the absurdity of this sentence—the court is saying that the primary public use of a term "tells us nothing" about the primary public understanding of that term. My qualm with the case is not that Google should have lost and forfeited its mark; as the concurring opinion pointed out, the record evidence provided ample reasons to reject the contention that "google" has become a generic term, without any need to hold that evidence of usage as a verb is categorically irrelevant (*id.* at 1163 (Watford, J., concurring)). The problem is that, in its zeal to protect Google against an interloper, the court held that an obviously probative category of evidence is irrelevant as a matter of law, distorting doctrine with potentially adverse consequences for future cases. The logic operates much as before; the difference is that here the problem arises not because of some peculiarity in a particular case but generically in a category of cases.

My second illustration speaks to a broader problem. The Fourth Amendment protects the public against unreasonable searches and seizures. This protection was held by the Warren Court to embody an "exclusionary rule" that makes any evidence uncovered by searches conducted in violation of the Fourth Amendment inadmissible in criminal prosecutions (e.g., *Mapp v. Ohio*, 367 U.S. 643 (1961)). Fourth Amendment doctrine for the past half century or more has developed almost exclusively in the context of whether inculpatory evidence is to be excluded from a criminal defendant's trial—with the consequence that citizens' privacy rights have been curtailed because of judges' natural aversion to the idea that "the criminal is to go free because the constable has blundered" (*People v. Defore*, 242 N.Y. 13, 21 (1926) (Cardozo, J.)).

In a way the entire history of post-Warren Court (or even post-*Mapp*) Fourth Amendment law has been a history of finding ways not to apply the exclusionary rule. ***[Many cases to cite] Sometimes courts can accomplish this by decoupling the right from the remedy—that is, by holding that the exclusionary rule would not apply *even if* the Fourth Amendment were violated. But the scope of such a maneuver is limited by precedent holding that the exclusionary rule is constitutionally required, not merely a judicial prophylactic. Moreover, the exclusionary rule has become such a fixture of the criminal procedure landscape and such a political lightning rod that its outright repudiation is too drastic to be attempted even by hostile judges. So the judicial aversion to criminals suppressing evidence of their wrongdoing by using the exclusionary remedy continues to limit the broader public's ability to invoke the underlying right.

For example, the "third party doctrine" holds that a person does not have a "reasonable expectation of privacy" in information voluntarily conveyed to third parties, so the government's acquirement of such information does not constitute a "search" or "seizure" triggering the Fourth Amendment's application. The rule was originally developed in cases where a criminal defendant had confided incriminating information to an undercover informant (e.g., *On Lee v. United States*, 343 U.S. 747 (1952); *Lopez v. United States*, 373 U.S. 427 (1963)), but it would later operate to erase Fourth Amendment protection for entire categories of personal information that citizens routinely and without much practical choice disclose to private parties such as banks, phone companies, and email and Internet service providers (e.g., *United States v. Miller*, 425 U.S. 435 (1976) (a person has no Fourth Amendment interest in his bank records); *Smith v. Maryland*, 442 U.S. 735 (1979) (installation of pen register on phone was not a "search" triggering Fourth Amendment protection)). The Supreme Court has recently woken up to the threat that a broad third-party doctrine poses to citizen privacy in the digital age, and has shown signs of willingness to curtail the doctrine's reach (see *Carpenter v. United States*, 585 U.S. — (2018)). But as long as Fourth Amendment law is primarily made in cases where the immediate consequence of upholding the right is letting a criminal go scot-free, these hard cases will continue to make bad law.

A further connection between criminal procedure cases and the formal model seems worth drawing out. I showed that although difficult cases (i.e., "hard" in the third sense) are more likely to make bad law, such cases tend, conditional on making bad law, to make less-bad law. A similar trend may be discerned in the evolution of post-Warren Court criminal procedure. The cases that chip away at the exclusionary rule tend to be difficult cases that test the edges of existing doctrine; correspondingly, though, they chip away at doctrine incrementally. By contrast, the occasional case that drives through a major doctrinal change tends to be not so close (hard in the third sense) but important (hard in the second (and, of course, first) sense). For example, in *Nix v. Williams*, 467 U.S. 431 (1984), the Supreme Court established an "inevitable discovery" exception to the exclusionary rule, holding that evidence obtained by a clear constitutional violation was nevertheless admissible because the evidence would have been discovered by legal means anyway. The exception is significant in that it provides a way to admit evidence, even if obtained by clearly unconstitutional means, through a thought experiment about what would have happened if the violation had not occurred. A clue to the success of the exception's proponents can be found in the fact that the case involved a conviction of first-degree murder for the kidnapping and killing of a ten-year-old girl.

## 3.2 Judicial Techniques for Circumventing the Maxim

In the model a case makes law and the law sticks for future cases. In reality things are not so cut and dried. Judges can lessen the force of the maxim by limiting the extent to which the law resulting from the disposition of one case applies to similar cases in the future. Such limiting techniques can be usefully divided into two related categories: (1) ignoring a case, or "limiting it to its facts," and (2) "distinguishing" an inconvenient precedent in questionable ways, including by pretending that it says something other than what it actually says.

*Bush v. Gore*, which served as a leading illustration of the maxim at play, serves equally well as an illustration of the first way to evade the maxim's force. The decision has been practically ignored in subsequent jurisprudence. Despite its prominence, it does not seem to have played any role in the development of Equal Protection doctrine. The decision was remarkable in this connection because the process of consigning it to oblivion by limiting it to its facts was started not in subsequent opinions but in the opinion itself. The Justices were apparently so aware of their questionable doctrinal work that they announced, "Our consideration is limited to the present circumstances" (531 U.S. at 109).

The second technique can be seen in Fourth Amendment cases, in two directions. First, the string of decisions that reversed some of the protections afforded to criminal defendants by the Warren Court's "criminal procedure revolution" seized on stray remarks, dicta, inconsistencies, and ambiguities in the Warren Court's opinions to create toeholds for exceptions that eventually accumulated to erode the inconvenient precedent. Second, recent decisions like *Carpenter* (above) and *United States v. Jones*, 565 U.S. 400 (2012), that have rolled back some of the Burger and Rehnquist Courts' rolling back of Fourth Amendment protections have done so by seizing on certain technological realities that purportedly distinguish the present era, even though the holding and reasoning of the precedents being distinguished betray little trace of being technology-specific.

But these limiting techniques can go only so far. The common law process is based on case-by-case accumulation of precedent, and if judges were to disregard caselaw willy-nilly then the precedent system would break down. Such a breakdown would be equally bad news for the judges who ignored or misrepresented other judges' opinions. So the use of the circumventing techniques comes at a steep cost, and the prevailing equilibrium seems to be characterized by pretty solid adherence to precedent. Courts do not routinely ignore or misdistinguish binding precedent.

Fourth Amendment cases illustrate this well. There can be little doubt that the Justices who sought to roll back constitutional protections for criminal defendants would have preferred to abolish many of those protections outright. Some, like Chief Justices Burger and Rehnquist, said as much in contemporaneous dissents and extrajudicial writings. Once in control of a majority, however, these counterrevolutionaries did not simply ignore inconvenient precedent or abolish it by meaningless distinctions. Rather, they used legally colorable (if thinly veiled) techniques to limit the reach of inconvenient precedent, even though this approach resulted in less dramatic change and doctrinal incoherence.

Another illustration comes from trademark law. In *Two Pesos v. Taco Cabana*, 505 U.S. 763 (1992), the Supreme Court held that "trade dress" (meaning the "total image" of a product or business) can be "inherently distinctive," meaning it can receive trademark protection by virtue of its distinctive appearance and without requiring any proof that consumers associate the trade dress with a particular source of products. Soon thereafter the

Court apparently decided that it had made a mistake. It revisited the issue in *Wal-Mart Stores v. Samara Brothers*, 529 U.S. 205 (2000), this time holding that the trade dress at issue could be protected only upon a showing that consumers associated the trade dress with a particular source. But the Court was reluctant to overrule a recent decision on the same issue, so it distinguished *Two Pesos* by reference to the *kind* of trade dress at issue in that case. The Court held that the trade dress in *Two Pesos* was "product packaging" (or something "akin to product packaging"), whereas the trade dress in *Wal-Mart* was "product design," and product design can never be inherently distinctive. The *Wal-Mart* decision corrects some of the problems created by *Two Pesos*, which had given short shrift to legitimate concerns that protecting trade dress as inherently distinctive might inhibit competition by allowing the trademarking of functional product features. But *Wal-Mart* created its own problems by requiring courts in future cases to draw the evanescent line between product design and product packaging. The bad law in *Two Pesos* could not be costlessly averted; the cost of leading to problematic doctrinal distinctions is itself a cost of bad laws.

In short, the limiting techniques have severe limitations. Law once made is really sticky.

## 3.3 Can Hard Cases Make *Good* Law?

The model assumes that some inherent limitation makes doctrine incapable of reflecting certain dimensions of case facts. The limitation's existence is important to the model (though its source is not). It implies that cases raising salient but extra-doctrinal factual issues do nothing to cause a reconsideration of what the appropriate doctrine should be; all they do is create distractions (from the viewpoint of global rule development) that might divert judges from the path of true law. Imagine instead that cases with salient extra-doctrinal facts point up important issues that doctrine should but currently does not address. Then the doctrinal variations caused by cases posing a special hardship are not always distortions; they might be appropriate concessions to previously unheeded realities.

Consider *Winterbottom* in this new light. A modern reader of the opinion is not likely to commend the court for sticking to the privity-of-contract rule in the face of the coach driver's unfortunate injury; to the contrary, one is likely to read the case as showing the silliness of the privity-of-contract rule. Indeed that is how courts eventually came to view the matter. The privity-of-contract rule was repudiated in the United States by Judge Cardozo's celebrated opinion in *McPherson v. Buick*, 217 N.Y. 382 (1916) (see Shadmehr, Cameron and Shahshahani (2019)), and in England by *Donoghue v. Stevenson* [1932] UKHL 100. A plausible interpretation is that confrontation with doctrinally unaccounted-for facts in cases like *Winterbottom* served in time to alert common law judges to the shortcomings of existing doctrine, causing them to revise and improve outdated laws. In this interpretation, hard cases make good law by forcing the consideration of important but previously unconsidered issues.

Of course, it is neither realistic nor theoretically interesting to conceptualize hard cases as having only this enlightening quality. A more promising avenue of inquiry would be to see hard cases as embodying both the potential to distract judges from good lawmaking and the potential to teach judges something legally relevant about the world. The starting point can be not that doctrine is inherently limited to certain dimensions but that expanding the dimensionality of doctrine comes at a substantial cost, so the desirability *vel non* of expansion depends on the distribution of case facts along both the accounted- and unaccounted-for dimensions. In such a learning model courts update their priors about the distribution of global case facts by seeing new cases and then choose doctrine. It would be particularly interesting to analyze entrepreneurial litigators in this framework. An impact litigator may help the court by giving it accurate information about the distribution of case facts, but she may also mislead the court because her ideal rule is not the same as the court's, so the court may not update or may update skeptically. The issues raised by such a setting are obviously common to many models of strategic information transmission (see Milgrom (2008) and Sobel (2009) for surveys). The extension is beyond my present scope but can be profitably pursued in future work.

# 4 Conclusion

To come in future drafts.

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# Figures

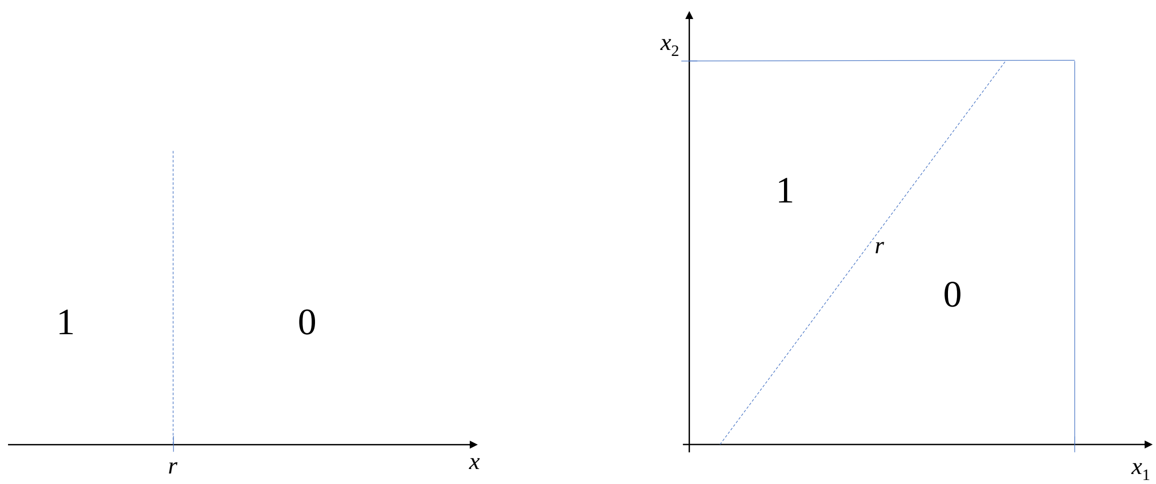



Figure 1: Rules in one-dimensional (left) and two-dimensional (right) case space.

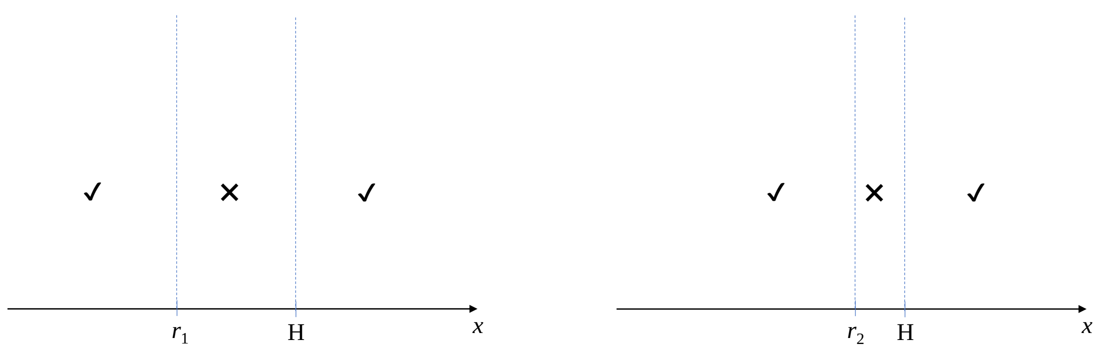



Figure 2: An ideal rule ($H$) and two non-ideal rules ($r_1$ and $r_2$). $r_1$ is "worse" than $r_2$ because the dispositions it generates fail to overlap with $H$'s dispositions for a greater region of the fact space (marked with $\times$).

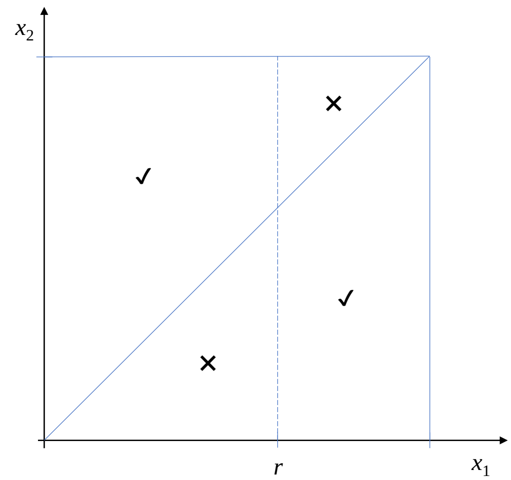



Figure 3: The ideal rule ($x_1 = x_2$) takes cognizance of facts in two dimensions, but the practically-feasible rule $r$ can take cognizance of facts only on one dimension ($x_1$). Inevitably, for any choice of $r$, some cases will be wrongly decided (marked with $\times$).

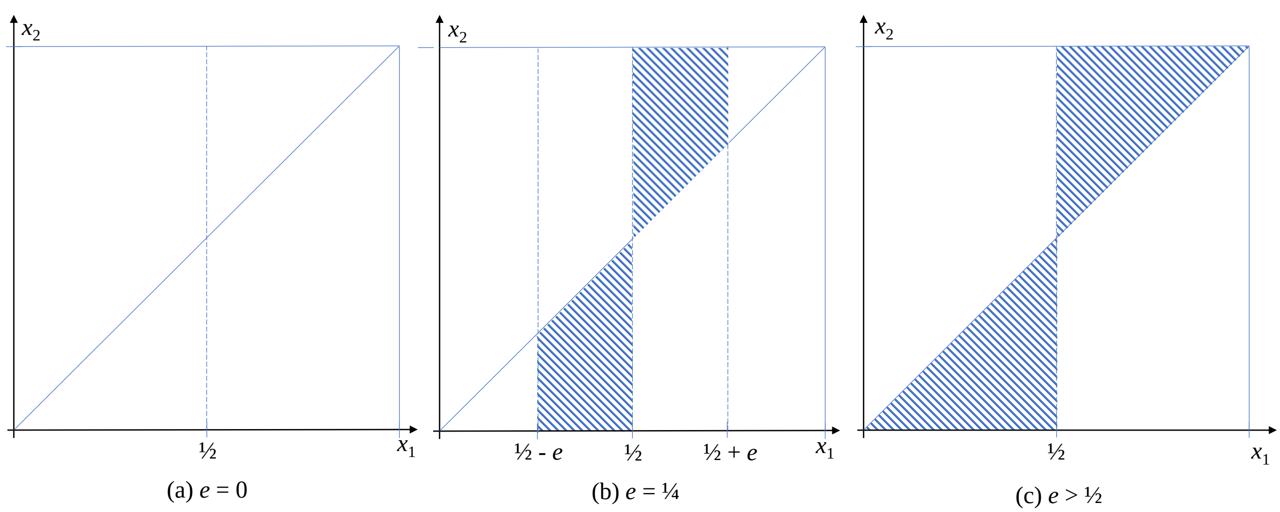
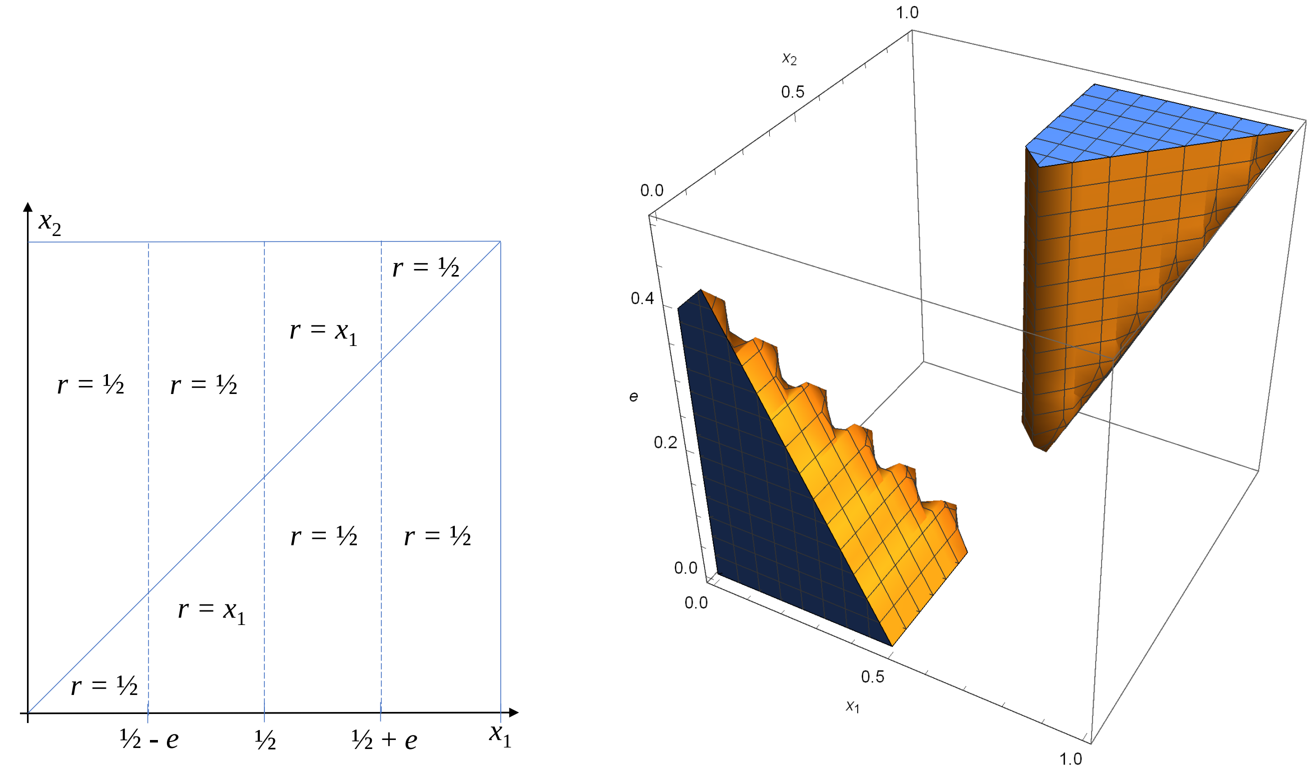



Figure 4: Case facts in the shaded regions make bad law. In panel (a), cases are utterly unimportant ($e = 0$), so no cases make bad law. In panel (b), cases are moderaly important ($e = 1/4$), so the court is willing to sacrifice the rule to the disposition whenever $x_1 \in (1/4, 3/4)$, and in this interval some cases make bad law. In panel (c), cases are very important ($e > 1/2$), so the court is always willing to sacrifice the rule to the disposition, and a case makes bad law whenever the dispositions demanded by the second-best rule ($x_1 = 1/2$) and the first-best rule ($x_1 = x_2$) do not overlap.




(a) equilibrium rule for a fixed $e$

(b) "bad law" regions in parameter space

Figure 5: Equilibrium rule as a function of case characteristics. Panel (a) shows the equilibrium rule as a function of $x_1$ and $x_2$ for a fixed value of $e$. The filled part in panel (b) shows the regions in the entire parameter space where bad law ($r \neq 1/2$) would result.

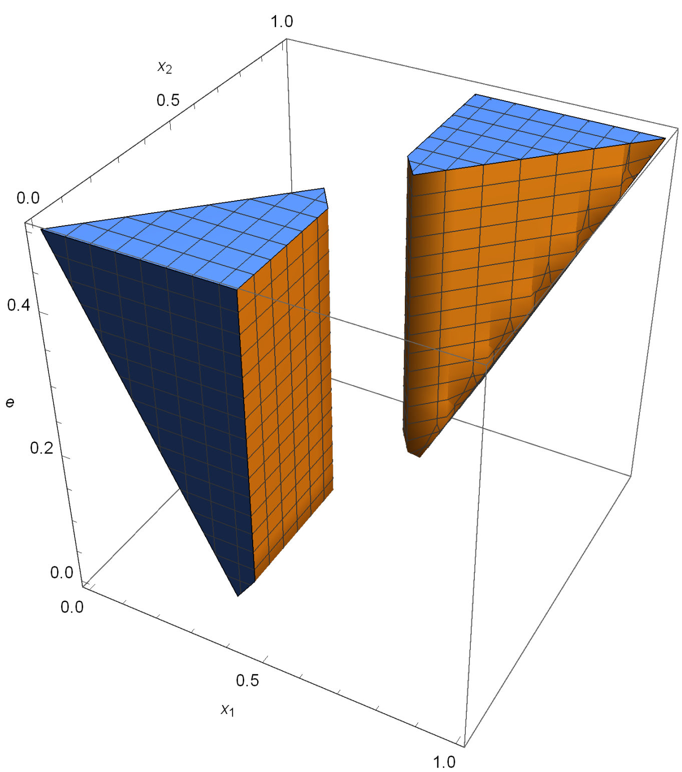



Figure 6: Regions of the parameter space where an impact litigator with ideal rule 1/2 would not bring case.

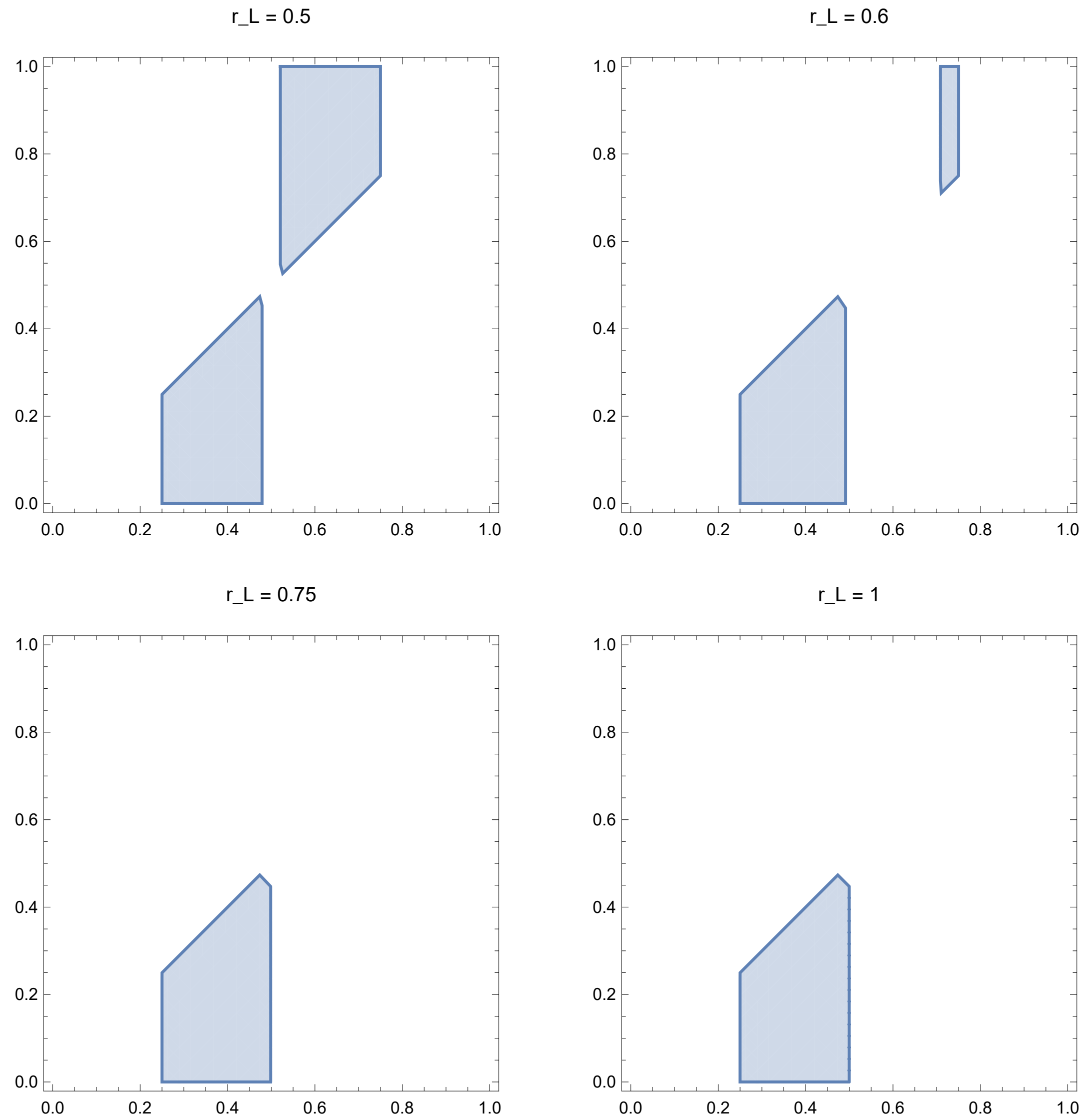



Figure 7: This graph shows, for a fixed value of case importance ($e = 1/4$), the regions of case facts $(x_1, x_2)$ for which impact litigators with four different ideal points would *not* bring case. When the impact litigator has the same ideal rule as the court (upperleft panel), the don't-bring-case regions to the left and right of $x_1 = 1/2$ are symmetric. As the distance between the impact litigator's ideal rule and the court's ideal rule grows, the don't-bring-case region to the left of 1/2 grows while the region to the right of 1/2 shrinks. Initially, the growth to the left is slower than the decline to the right, so the don't-bring-case region shrinks and the probability of bringing a case increases. But once the gap between the two ideal rules has become sufficiently large, the relative rates of growth and decline flip and the don't-bring-case region starts growing (i.e., the probability of bringing a case decreases). Indeed, after the impact litigator's ideal rule has passed a certain threshold, the don't-bring-case region to the right of 1/2 disappears altogether and the only effect of further ideal-rule divergence is to increase the don't-bring-case region to the left of 1/2.

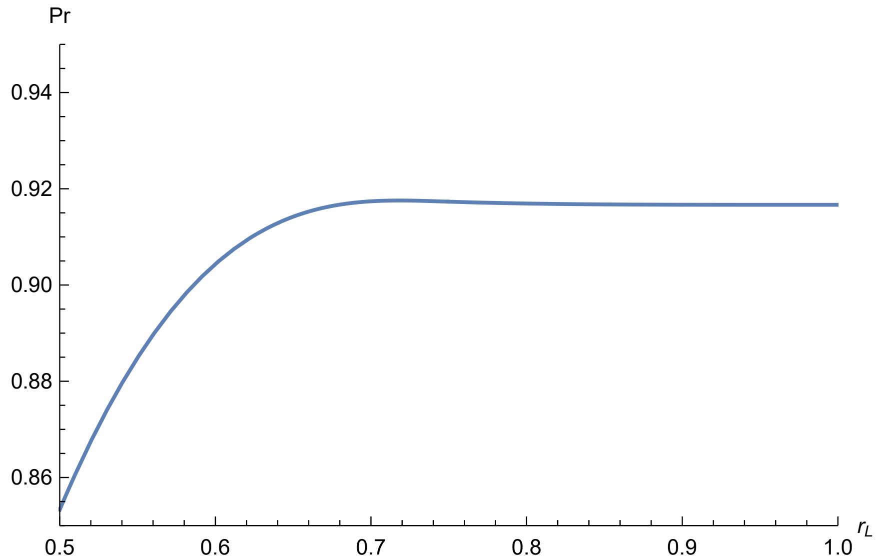



Figure 8: The probability that the impact litigator will bring case in the first stage as a function of the impact litigator's ideal rule $r_L$. The probability is initially increasing in $r_L$ but then becomes decreasing after $r_L$ passes a certain threshold (roughly, $r_L > 0.72$). Note that the probability is strictly decreasing in this region, though the rate of decline is so low that the graph appears like a horizontal line.

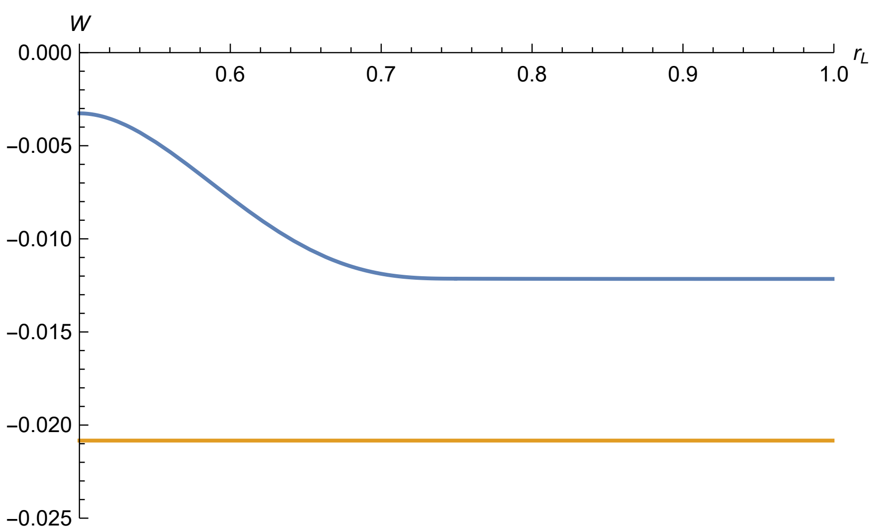



Figure 9: Expected welfare, defined as expected proximity to the court's ideal rule $r = 1/2$. The blue curve is expected equilibrium welfare as a function of the impact litigator's ideal rule $r_L$, and the mustard line is expected welfare without an impact litigator. Welfare is decreasing in the distance between the court's and litigator's ideal rules. (The blue function is strictly decreasing, though for high values of $r_L$ the rate of decline is so low that the line appears horizontal.) However, welfare is always higher with an impact litigator than without, even when the impact litigator's ideal rule is maximally far from the court's.

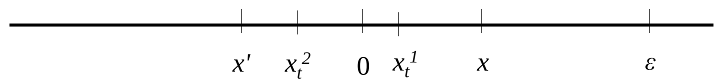



Figure 10: $HC$ sees the signal $(x)$ and $LC$'s factual report $(x')$, but not the true facts, so it does not know whether $LC$'s factfinding is helpful or deceptive. If $x_t < 0$ (as in $x_t^2$) then the factfinding is helpful; but if $x_t > 0$ (as in $x_t^1$) then the factfinding is deceptive.

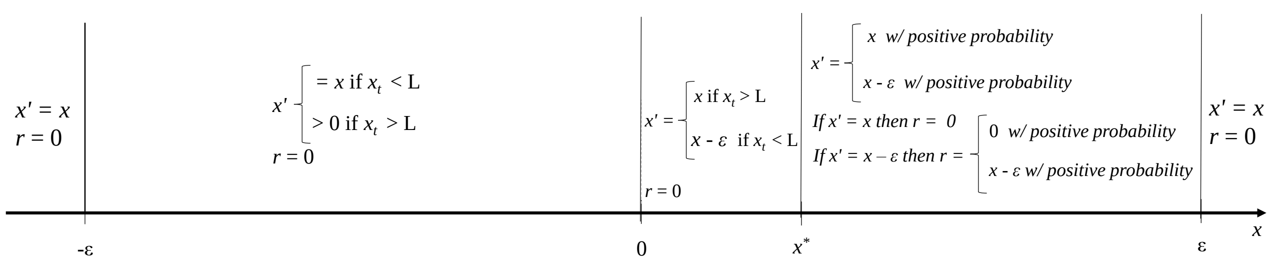



Figure 11: Equilibrium outcomes of factfinding and rulemaking as a function of the public signal in the judicial-hierarchy game with perfectly-inclusive doctrine. Cases make bad law with positive probability when $x \in (x^*, \epsilon)$.

# Appendix: Formal Statements and Proofs

**Section 2.3.** The proofs are straightforward and involve no greater complexity than discussed in the main text.

**Section 2.4.** The proofs for this section involve backward induction and probability calculations with successive rounds of multiple integration. The logic of the proofs closely follows the discussion in the main text and footnotes. In future drafts I will make the discussion in the main text shorter and will include precise mathematical derivations here. For now, the interested reader can hopefully follow the discussion in the main text, and I am happy to supply more details if needed.

**Section 2.5.**

Without loss of generality, I will assume $r_L \geq 1/2$. The proofs for $r_L < 1/2$ are symmetric. To avoid the proliferation subscripts, I will abuse notation and use $r$ instead of $r_L$ to denote $L$'s ideal rule.

**Proof of Proposition 3.1.** To begin note that
$D_1 = E(|r - X|) = E(r - X|X < r)\Pr(X < r) + E(X - r|X > r)\Pr(X > r) = r^2 - r + 1/2$.
Moreover, $D_{n+1} = E\{|X - r|\big|X \in B_{D_n}(r)\}\Pr(X \in B_{D_n}(r)) + D_n(1 - \Pr(X \in B_{D_n}(r))$.
It is easy to verify that $r - D_1 < 1/2\,\forall\, r < 1$. There are two cases to consider, (1) $r + D_1 \leq 1$ and (2) $r + D_1 > 1$, which is to say (1) $r \leq 1/\sqrt{2}$ and (2) $r > 1/\sqrt{2}$.
For case (1), note that $D_{n+1} = D_n(1 - D_n)$. Given that $D_1 < 1$, it is clear that the sequence $(D_n)$ is decreasing. To see that $(D_n) \to 0$, suppose for contradiction that $(D_n)$ does not converge to 0. Then, given that $(D_n)$ is bounded below by 0, there exists $\epsilon \in (0, 1)$ such that $D_n > \epsilon\,\forall\, n$. Now $D_n > \epsilon \implies 1 - D_n < 1 - \epsilon$, so for all $n$ we have
$D_{n+1} = D_n(1 - D_n) < D_n(1 - \epsilon) < D_{n-1}(1 - \epsilon)^2 < ... < D_1(1 - \epsilon)^n$. But $\lim_{n\to\infty} D_1(1 - \epsilon)^n = 0$, which implies that $(D_n) \to 0$, a contradiction.
For case (2), if $r = 1$ then
$D_{n+1} = E(1 - X|X > 1 - D_n)\Pr(X > 1 - D_n) + D_n \Pr(X < 1 - D_n) = D_n(1 - D_n/2)$, and it follows by the same argument as in case (1) that the sequence converges to 0.
Finally consider the case $r \in (1/\sqrt{2}, 1)$. As before,
$D_{n+1} = E\{|X - r|\big|X \in B_{D_n}(r)\}\Pr(X \in B_{D_n}(r)) + D_n(1 - \Pr(X \in B_{D_n}(r))$, so $(D_n)$ is decreasing. Now either there exists $\overline{n}$ such that $r + D_n < 1\,\forall n \geq \overline{n}$ or there does not exist

such $\overline{n}$. If such $\overline{n}$ exists then for all $n \geq \overline{n}$ the sequence takes the form $D_{n+1} = D_n(1 - D_n)$, and $(D_n) \to 0$ by the same argument as in case (1). If such $\overline{n}$ does not exist (which implies that $(D_n)$ does not converge to 0) then for all $n$ we have

$D_{n+1} = E(X - r|X \in (r,1)) \Pr(X \in (r,1)) + E(r - X|X \in (r - D_n, r)) \Pr(X \in (r - D_n, r)) + D_n \Pr(X < r - D_n) = \dfrac{(1-r)^2}{2} + D_n(r - \dfrac{D_n}{2})$. Now recall the sequence we obtained when $r = 1$ and call that sequence $(D'_n)$ (with $D'_{n+1} = D'_n(1 - D'_n/2)$). Note that $D'_1 > D_1 = r^2 - r + 1/2 \,\forall\, r < 1$, and note that one can verify (using the assumption that $r + D_n > 1 \,\forall\, n$) that if there exists some $n$ such that $D'_n > D_n$ then $D'_{n+1} > D_{n+1}$. It follows that $D_n < D'_n \,\forall\, n$, which implies, because $(D'_n) \to 0$, that $D_n \to 0$, proving our claim and contradicting the assumption that the hypothesized $\overline{n}$ does not exist. □

**Proof of Proposition 3.2.** Recall that $D_1 = r^2 - r + 1/2$. Accordingly $DW_1 = 1/4$. Now $DW_2 = E(|X - 1/2|\big|X \in B_{D_1}(1/2)) \Pr(X \in B_{D_1}(1/2)) + (1/4)(1 - \Pr(X \in B_{D_1}(1/2)))$. Note that $E(|X - 1/2|\big|X \in B_{D_1}(1/2)) < 1/4 \,\forall\, r < 1$ (and $E(.) = 1/4$ for $r = 1$), so $DW_2 < DW_1 \,\forall\, r < 1$ (and $DW_2 = DW_1$ for $r = 1$). □

**Proof of Propositions 3.3-3.5.** We begin with a useful lemma.

**Lemma 1.** *For any $n$ such that $B_{D_n}(r) \in [1/2, 1]$,*
*$DW_n > DW_{n+1} > DW_{n+2} > ...$ if $DW_n > r - 1/2$ and*
*$DW_n < DW_{n+1} < DW_{n+2} < ...$ if $DW_n < r - 1/2$.*

**Proof of Lemma 1.** Note that $DW_1 = 1/4$ and, for all $n$,
$DW_{n+1} = E\{|X - 1/2|\big|X \in B_{D_n}(r)\} \Pr(X \in B_{D_n}(r)) + DW_n(1 - \Pr(X \in B_{D_n}(r)))$. Now if $B_{D_n}(r) \in [1/2, 1]$ (which also implies by the decreasingness of $(D_n)$ that $B_{D_{n+1}}(r) \in [1/2, 1]$) then we obtain $DW_{n+1} = (r - 1/2)2D_n + DW_n(1 - 2D_n)$. Because $DW_{n+1}$ is a convex combination of $r - 1/2$ and $DW_n$, it follows that $DW_{n+1} > DW_n$ if $DW_n < r - 1/2$ and $DW_{n+1} < DW_n$ if $DW_n > r - 1/2$. □

Now consider three cases separately: (1) $r \in (1/2, 1/\sqrt{2})$, (2) $r > 3/4$, (3) $r \in [1/\sqrt{2}, 3/4]$.

Case 1 ($r < 1/\sqrt{2}$): In this case $B_{D_n}(r) \in (0,1) \,\forall\, n$, so
$DW_{n+1} = E\{|X - 1/2|\big|X \in B_{D_n}(r)\}2D_n + DW_n(1 - 2D_n)$. Now for all $n$ such that $r - D_n < 1/2$, we know that $E\{|X - 1/2|\big|X \in B_{D_n}(r)\}$ is increasing in $D_n$ and therefore decreasing in $n$. So for all $n$ such that $r - D_{n-1} < 1/2$, we have $DW_1 > DW_2 > ... > DW_n$. Note moreover that, for all $n$ such that $r - D_n < 1/2$ and $B_{D_n}(r) \in (0,1)$, we have

$E\{|X-1/2|\big|X\in B_{D_n}(r)\}>r-1/2$. Now let $n'$ be the first $n$ such that $B_{D_n}(r)\in[1/2,1]$. Because $E\{|X-1/2|\big|X\in B_{D_{n'-1}}(r)\}>r-1/2$ and $DW_{n'-1}>E\{|X-1/2|\big|X\in B_{D_{n'-1}}(r)\}>r-1/2$, it follows that $DW_{n'}>r-1/2$ and $DW_{n'+1}=(r-1/2)2D_{n'}+DW_{n'}(1-2D_{n'})\in(r-1/2,DW_{n'})$. Therefore, by Lemma 1, $DW_{n'+1}<DW_{n'+2}<...$ We have shown $(DW_n)$ is decreasing, which proves Proposition 3.3.

Case 2 ($r>3/4$): Let $n'$ be the first $n$ such that $r-D_n\geq 1/2$. Then $r-1/2>1/4>DW_1>DW_2>...>DW_{n'}=$
$E\{|X-1/2|\big|X\in B_{D'_{n-1}}(r)\}\Pr(X\in B_{D'_{n-1}}(r))+DW_{n'-1}(1-\Pr(X\in B_{D'_{n-1}}(r))$. Now
$DW_{n'+1}=$

$$\begin{cases} E\{X-1/2|X\in(r-D_{n'},1)\}\Pr(X\in(r-D_{n'},1))+DW_{n'}(1-\Pr(X\in(r-D_{n'},1)) & \text{if } \ r+D_{n'}\geq 1\\ (r-1/2)2D_{n'}+DW_{n'}(1-2D_{n'}) & \text{if } \ r+D_{n'}<1\end{cases}$$

which, in either case, yields $DW_{n'+1}>DW_{n'}$.

As for $DW_{n'+2}$: If $r+D_{n'}\leq 1$ then $r+D_{n+1}<1\,\forall\, n\geq n'$ and, because $DW_{n'+1}<r-1/2$, it follows by Lemma 1 that $DW_{n'+1}<DW_{n'+2}<...$ If $r+D_{n'}>1$: If $r+D_{n'+1}\leq 1$ then, by the same argument as above, $DW_{n'+1}<DW_{n'+2}<...$; if $r+D_{n'+1}>1$ then $DW_{n'+2}=$
$E\{|x-1/2|\big|X\in(r-D_{n'+1},1)\}\Pr(X\in(r-D_{n'+1},1))+DW_{n'+1}(1-\Pr(X\in(r-D_{n'+1},1)))>DW_{n'+1}$
where the inequality follows from the fact that
$E\{|x-1/2|\big|X\in(r-D_{n'+1},1)>E\{|x-1/2|\big|X\in(r-D_{n'},1)>DW_{n'+1}$. So we have $DW_{n'+1}<DW_{n'+2}$ and, repeating the same argument, we obtain $DW_{n'+2}<DW_{n'+3}<...$
We have shown that, for all $r>3/4$, there exists $n'$ such that $DW_1>DW_2>...>DW_{n'}$ and $DW_{n'}<DW_{n'+1}<...$ Finally note that $(D_n)\to 0 \implies (DW_n)\to r-1/2>DW_1$, which concludes the proof of Proposition 3.5.

Case 3 ($r\in[1/\sqrt{2},3/4]$): Let $n'$ be the first $n$ such that $r-D_n\geq 1/2$ and note, for all $r\in[1/\sqrt{2},3/4]$), that $r-D_n\geq 1/2 \implies r-D_n\leq 1$. We know that
$1/4=DW_1>...>DW_{n'}=E\{|X-1/2|\big|X\in B_{D_{n'-1}}(r)\}\Pr(X\in B_{D_{n'-1}}(r))+DW_{n'-1}(1-Pr(.))$.
Indeed, it turns out that $n'=2\,\forall\, r\in[1/\sqrt{2},3/4]$ (and that $r-D_2=1/2$ for $r=1/\sqrt{2}$).
So $DW_{n'+1}=DW_3=(r-1/2)2D_2+DW_2(1-2D_2)$. One can calculate that $DW_2=\dfrac{(1/2-r+D_1)^2}{2}+\dfrac{1}{8}+\dfrac{r-D_1}{4}$, and $DW_2<r-1/2 \iff r>\overline{r}$ where $\overline{r}\in(1/\sqrt{2},3/4)$ is an irrational number ($\overline{r}\approx 0.7349$).

Therefore, $\begin{cases} DW_1 > DW_2 > ... & \text{for } r \in [1/\sqrt{2}, \overline{r}) \\ DW_1 > DW_2 \quad \text{and} \quad DW_2 < DW_3 < ... & \text{for } r \in (\overline{r}, 3/4] \\ DW_1 > DW_2 = DW_3 = ... & \text{for } r = \overline{r} \end{cases}$

Note that $r \in [1/\sqrt{2}, \overline{r})$ fall in Proposition 3.3 and $r \in [\overline{r}, 3/4]$ fall in Proposition 3.4. This concludes the proof of Proposition 3. □

**Section 2.6.**

**Proposition 5.** *The following profile of strategies and beliefs characterizes a perfect Bayesian equilibrium of the judicial-hierarchy game with perfectly-inclusive doctrine.*

1. *If $x \geq \epsilon$ or $x \leq -\epsilon$ then HC sets $r = 0$ and LC sets $\varphi = 0$.*
   *HC's beliefs are that $\Pr(x_t < 0 | x \geq \epsilon) = 0$ and $\Pr(x_t < 0 | x \leq -\epsilon) = 1$.*
2. *If $x \in (-\epsilon, 0)$ then HC sets $r = 0$ and LC sets $\begin{cases} \varphi = 0 & \text{if } x_t < L \\ \varphi = 1, x' \geq 0 & \text{if } x_t \geq L \end{cases}$.*
   *HC's beliefs on path are given by Bayes' rule.*
   *Off path, $\Pr(x_t < 0 | \varphi = 1, x' < 0) = 1$ and $\Pr(x_t < 0 | x' \geq 0) = 0$.*
3. *Define $x^* = \begin{cases} x_m^* & for\ L \geq x_m^* + \epsilon \\ \dfrac{2\epsilon + L + e_h - \sqrt{L^2 + e_h^2 + 6Le_h}}{2} & for\ L < x_m^* + \epsilon \end{cases}$ and $x_m^* = \dfrac{\epsilon^2}{e_h + \epsilon}$.*
4. *If $x \in [0, x^*]$, then*
   - *HC sets $r = \begin{cases} 0 & \text{if } EU_{HC}(r = 0) \geq EU_{HC}(r = x') \\ x' & \text{if } EU_{HC}(r = 0) < EU_{HC}(r = x') \end{cases}$.*
     *In particular, if LC sets $x' = x - \epsilon$ then HC sets $r = 0$.*
   - *LC sets $\begin{cases} \varphi = 1, x' = x - \epsilon & \text{if } x_t < L \\ \varphi = 0 & \text{if } x_t \geq L \end{cases}$.*
   - *HC's beliefs on path by Bayes' rule. Off path, $\Pr(x_t < 0 | \varphi = 1) = \begin{cases} 0 & \text{if } x' \geq 0 \\ \dfrac{\epsilon - x}{2\epsilon} & \text{if } x' < 0 \end{cases}$.*
5. *If $x \in (x^*, \epsilon)$ then*

- *HC sets* $\begin{cases} r = 0 & \text{if } x' \geq 0 \\ r = x' & \text{if } x' \in (x-\epsilon, 0) \\ r = \begin{cases} 0 & \text{w/ prob. } p \\ x' & \text{w/ prob. } 1-p \end{cases} & \text{if } x' = x - \epsilon \end{cases}$

  *where* $p = \dfrac{a + c + \epsilon - x}{a + e_\ell + \epsilon - x}$.
- *LC's strategy is*
  - *if* $x_t < 0$ *then* $\begin{cases} \varphi = 0 & \text{w/ prob. } 1 - \pi_1 \\ \varphi = 1, x' = x - \epsilon & \text{w/ prob. } \pi_1 \end{cases}$
  - *if* $x_t \geq 0$ *then* $\begin{cases} \varphi = 0 & \text{w/ prob. } 1 - \pi_2 \\ \varphi = 1, x' = x - \epsilon & \text{w/ prob. } \pi_2 \end{cases}$

    *where* $\pi_2 = \left(\dfrac{\epsilon - x}{\epsilon + x}\right)\left(\dfrac{\epsilon - x + e_h}{x - \epsilon + e_h}\right)\pi_1$.
- *HC's beliefs on the equilibrium path are given by Bayes' rule. Off path,*

  $\Pr(x_t < 0 | \varphi = 1, x' \geq 0) = 0$ *and*

  $\Pr(f_t < 0 | x' \in (x - \epsilon, 0)) = \Pr(x_t < 0 | x' = x - \epsilon)$.

*Proof.* The proof of this proposition is long and will be typeset in future drafts. It follows the logic of similar results in Shahshahani (2019), but some details are different. The precise specification of strategies for $x \in (x^*, \epsilon)$ and the closed-form expressions given for $p$, $\pi_1$, and $\pi_2$ are accurate for $L \geq 2\epsilon$; other values of $L$ require some changes.