

# A THEORY OF LITIGATION SIGNALS

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## INTRODUCTION

Discovery is under attack. In recent years, litigants in the federal courts have a narrower right to discovery proceedings. The Supreme Court reversed a 50 year precedent, urging trial courts to require plaintiffs a higher standard of pleading to survive a dismissal and proceed to discovery.<sup>1</sup> And in December 2015, new amendments to the Federal Rules of Civil Procedure—which are designed to curb the right to conduct discovery—took effect.<sup>2</sup> This contemporary anti-discovery trend reflects a fiery debate. On the one hand, discovery entails “enormous expense,” which can “push cost-conscious

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<sup>1</sup> Bell Atl. Corp. v. Twombly, 550 U.S. 544, 555-63 (2007).

<sup>2</sup> For a more elaborate discussion of these amendments see *infra* notes \*\*\*-\*\*\*.

defendants to settle even anemic cases before reaching those proceedings.”<sup>3</sup> On the other hand, a narrower right to discovery cuts the access of many plaintiffs to justice, allegedly leading to “a significant decrease in enforcement and vindication of federal constitutional and civil rights.”<sup>4</sup>

The crux of this debate is the plight of the uninformed. In many situations, defendants know the merits of the case but the plaintiffs do not. To illustrate, take a typical medical malpractice case. The injured lacks information regarding the doctor’s negligence, while the doctor is well-informed about her fault.<sup>5</sup> Other areas of law likewise suffer from this asymmetry of information problem, notable examples include employment discrimination, securities fraud, and antitrust.<sup>6</sup> Given this asymmetries of information, numerous stakeholders have harshly criticized the anti-discovery trend. Without meaningful discovery, the argument goes, uninformed plaintiffs cannot infer the value of their claims.

Are they?

This Article proposes a new perspective to look at these questions. Our departure point is that defendants can indirectly “signal” to the uninformed plaintiffs relevant information. Consider an uninformed injured who files a lawsuit against a doctor, without knowing whether the defendant-doctor is negligent or not. The non-negligent doctor is motivated to indicate the strength of her defense to the plaintiff—if she convinces the uninformed plaintiff of her merits, the latter will be induced to drop the claim (or settle for small sums). In fact, the informed party can employ a variety of litigation strategies to achieve this goal. For instance, the non-negligent doctor can send the plaintiff the following message:

I am confident that I was not negligent. You can proceed to discovery and costly trial, but eventually I am going to win. To help convince you of this I offer to pay your legal expenses should you move forward and win at trial. Moreover, in case you take me to trial and I win, you are exempt from reimbursing me for my legal expenses. I am willing to make this unilateral promise because I know that you will likely lose.

This type of message is not uncommon in pre-dispute contracts—these provisions are often referred to as one-way fee-shifting agreements.

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<sup>3</sup> *Twombly*, 550 U.S. at 559.

<sup>4</sup> Howard M. Wasserman, *Iqbal*, *Procedural Mismatches, and Civil Rights Litigation*, 14 LEWIS & CLARK L. REV. 157, 157 (2010) (discussing the new, heightened pleading standards). The anti-discovery trend seems to be a part of a broader trend that restricts access to justice, in various forms. For these processes see, e.g., Arthur Miller, *Simplified Pleading, Meaningful Days in Court, and Trials on the Merits: Reflections on the Deformation of Federal Procedure*, 88 N.Y.U. L. REV. 286 (2013).

<sup>5</sup> Bone, *Frivolous Suits*, *infra* note 17, at 550.

<sup>6</sup> [Reference]

Intuitively, these provisions can convey information. Negligent defendants would not hasten to commit to pay, if they lose the case, their rival's expenses. Non-negligent doctors, by contrast, are more confident about their odds at trial, and hence they are more willing to propose a one-way fee-shifting clause. Another common litigation technique that the non-negligent doctor can employ to signal its strength is waiver of rights. Consider the following:

You sued me in a state court. It seems that I can remove the case to a federal court, which is, as both of us know, a better forum for defendants. Nonetheless, I forego my right to remove the case. I am willing to do so because I know that I was not negligent and I would like to convince you that if you move forward you will lose the case.

Waivers of procedural rights are common in practice, and, for the same reasons, can indicate the strength of the claim of the defendants who choose to take this course. Along these lines, other litigation strategies can fulfill a similar signaling function. Broadly, these moves can be referred to as "litigation signals."

This Article offers a theory of litigation signals, a topic that the literature has failed to address. We first classify the myriad of litigation signals into three broad categories. The first consists of signals in which an informed party takes upon herself, unilaterally, a costly measure that benefits the other party, or in short, "unilateral signals." This includes various legal strategies, such as waivers of rights, dropping important claims, and one-way fee-shifting. The second category is signals in which an informed party takes upon herself a costly measure that benefits a third party, rather than her rival litigant. We refer to these signals as "third-party signals." Examples include an offer to pay sums of money to charity should the informed party lose. The third category is "cooperative litigation signals," which involve agreed-upon offers and concessions between the two litigants. As we demonstrate, these distinctions are essential to a comprehensive understanding of litigation signals. They help to identify those types of signals that are workable and the un-workable ones.

Given the heated debate over the proper scope of discovery, and the capacity of litigation signals to convey information without formal, judge-supervised discovery, the scholarly disregard of litigation signals is unfortunate. A better understanding of litigation signals has important implications for the desirable design of civil procedure and court rules.

Part I provides background for the Article, laying out the centrality of the notion of asymmetric information in current legal debates—"[t]he most

important problem in dispute resolution”<sup>7</sup>—and the focus on discovery proceedings as the vehicle to bridge the asymmetries. Part II explains the concept of “signaling,” which is used more generally, in economics, law, and other disciplines, to analyze the behavior of parties in asymmetric information settings. As this Part shows, several litigation strategies can serve as informational signals, where one-way fee-shifting and dropping claims are paradigmatic examples.

Part III inspects litigation signals more closely, relying on a game-theoretical model of settlements (the Mathematical Appendix provides a more comprehensive discussion of the model). This Part distinguishes between unilateral, third-party, and cooperative litigation signals. Unilateral litigation signals are litigation strategies that convey information but require no cooperation between the parties, e.g., “I am willing to drop my statute of limitations claim as a signal that attests to my strength.” While these signals may seem intuitive, we show that in fact they are not likely to occur in practice, as they typically entail too much costs to the informed defendants who employ them. The informed who use unilateral signals are indeed more likely to settle their cases. However, as they “disarm” themselves, if they are taken to trial they can expect to pay a higher amount; for similar reasons, unilateral signals provide the plaintiff more leverage in settlement negotiations. Third-party signals implicate parties other than the plaintiff and the defendant, e.g., “If I lose, I promise to donate a certain amount to charity as a signal to my strength.” We demonstrate that these signals are less costly for the informed defendants and hence more likely in practice than unilateral signals. This preference for third-party litigation signals stems from the fact that they prevent the plaintiff from taking advantage on the defendant’s signal (the money goes to charity, rather than the plaintiff). Nonetheless, in typical cases informed defendants will refrain from employing these signals—when taken to trial, these signaling defendants will have to pay more than they should (where the additional money goes to charity). Cooperative signals require more intricate contractual agreements between the parties, e.g., “If you take me to trial, I will waive my jurisdiction defense, but in exchange you will pay me a specified amount.” These signals solve the problems associated with unilateral and third-party signals, and in principle they can always benefit the informed defendants who desire to indicate their strength, e.g., non-negligent doctors. However, the cooperative nature of these signals requires increased transaction costs and greater sophistication. Against this backdrop, Part III proceeds to discuss litigation signals in actual settlement negotiations. On the one hand, there seem to be several limitations on the use of litigation signals—for example, cooperative signals, the most effective

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<sup>7</sup> Robert J. Rhee, *Toward Procedural Optionality: Private Ordering of Public Adjudication*, 84 N.Y.U. L. REV. 514 (2009).

ones, require more transaction costs to execute. On the other hand, while direct empirical data is hard to collect, some real-world evidence are in line with the use of litigation signals.

Part IV discusses the implications of our analysis. First, the Article sheds another light on the contemporary debates on discovery. Simply put, we challenge the notion that, in asymmetric information situations, necessary information is “only gained through some court-supervised discovery.”<sup>8</sup> This suggests that the real effect of the current anti-discovery trend may be more limited than expected. Second, the discussion on litigation signals pertains to the optimal freedom of parties to choose their own procedures—with more leeway, for example, to voluntarily drop claims, informed parties will find signaling easier. While parties can generally fashion their procedures, several rules undermine the use of litigation signals. Some states, for example, forbid voluntary one-way fee-shifting provisions. And according to the Federal Rules of Civil Procedure, litigants can freely add claims, weakening the ability of informed parties to signal information by credibly dropping claims. Third, our discussion should urge courts to create procedures that facilitate signaling. A simple mechanism to do so will enable informed litigants to promise to pay an additional amount to the court’s coffers, contingent on losing the case—a signaling device that can be effective in some cases.

#### I. THE ASYMMETRIC INFORMATION PROBLEM

Parties have many reasons to litigate—such as vindicating their rights, hurting their rivals, and achieving monetary gains. At the same time, parties have strong reasons to settle. As litigation is costly to both sides, settlements are mutually beneficial. We should expect, then, that parties in a legal process would find a contractual solution—settlement—that saves their joint litigation costs. Indeed, the vast majority of cases settle. In the U.S. Federal Courts, for example, an estimate of approximately 2 percent of civil cases go to trial.<sup>9</sup> Cases that fail to settle are aberrations.

In this reality, and given that litigation is costly,<sup>10</sup> it is all the more important to understand the process leading to settlements and the reasons some cases fail to settle. A possible explanation for the failure to settle is “transaction costs.”<sup>11</sup> But at least in their narrow sense, transaction costs

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<sup>8</sup> Wasserman, \*\*\*, at 169.

<sup>9</sup> Kathryn E. Spier, *Litigation*, in 1 HANDBOOK OF LAW AND ECONOMICS 259, 268 (A. Mitchell Polinsky & Steven Shavell eds., 2007).

<sup>10</sup> Spier, *supra* note 9, at 262-64. *See also* STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 281 (2004) (“Existing data suggest that in the United States the administrative costs of the liability system are large. Many studies find that . . . for every dollar received by a victim, a dollar or more is spent delivering the dollar to him.”).

<sup>11</sup> The logic is similar to that presented by Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960)—absent transaction costs, we would expect the parties to achieve a

should not be prohibitively high—the parties know each other, and the costs of negotiating a mutually beneficial deal seem relatively small.<sup>12</sup> Trials, then, should be explained on other grounds.

Starting with Bebchuk and Reinganum and Wilde,<sup>13</sup> the literature has offered a powerful analytical tool to understand settlement failures— asymmetric information.<sup>14</sup> The idea is straightforward: in many instances one of the parties holds relevant information, whereas the rival party is unaware of that information.

Consider a medical malpractice claim, pursued by John. John went through an unsuccessful medical procedure that left him severely injured. While John may have good reasons to believe that his doctor was negligent, it is also possible that the doctor’s behavior was impeccable, and the medical procedure failed due to unrelated reasons. Importantly, the relevant information lies with one of the parties—the defendant/doctor, in this case— whereas the other party, the plaintiff John, only knows that, with some probability the doctor was negligent.

To demonstrate the effect of this information asymmetry, suppose that the uninformed John files a lawsuit and that the defendant/doctor proposes to settle the case for miniscule sums. John believes that this is a fair settlement, provided that it came from non-negligent defendants. However, uncertain about the actual behavior of the doctor, John suspects that the defendant proposes less than she actually should. Therefore, John may well turn a low settlement offer down and pursue a trial.<sup>15</sup> In some cases, the foregoing

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transaction that maximizes their gains (or, in our case, minimizes their litigation expenses).

<sup>12</sup> Cf., John J. Donohue III, *Opting for the British Rule, or If Posner and Shavell Can't Remember the Coase Theorem, Who Will?*, 104 HARV. L. REV. 1093, 1101-02, 1109-11 (1991) (suggesting that the costs for the litigating parties to reach contractual agreements, at least with regard to fee-shifting stipulations, are not prohibitively high).

<sup>13</sup> Respectively, Lucian A. Bebchuk, *Litigation and Settlement under Imperfect Information*, 15 RAND J. ECON. 404 (1984); Jennifer Reinganum & Louis Wilde, *Settlement, Litigation, and the Allocation of Litigation Costs*, 17 RAND J. ECON. 557 (1986).

<sup>14</sup> The theoretical literature that demonstrates this point, under numerous variations, is too vast to be summarized in this footnote. The classic papers are Bebchuk, *supra* note 13 (showing how some settlements are prevented under a theoretical model in which defendants have private information and the uninformed plaintiff holds all bargaining power); Reinganum & Wilde, *supra* note 13 (same, under a model in which plaintiffs have private information and the defendant holds all bargaining power); Kathryn E. Spier, *The Dynamics of Pretrial Negotiation*, 59 REV. ECON. STUD. 93 (1992) (same, under a setting similar to Bebchuk, *supra* note 13, where there are several rounds of negotiation). For a general survey of this literature see Andrew F. Daughety & Jennifer F. Reinganum, *Revelation and Suppression of Private Information in Settlement-Bargaining Models*, 81 U. CHI. L. REV. 83 (2014).

<sup>15</sup> While the intuition for the detrimental effect of asymmetric information on settlements is simple, the technicalities can be formidable. Part III.A.1 explains in more detail the game-theoretical foundations of the description in the text, and subpart A to the Appendix provides

dynamic might lead John to completely drop a meritorious suit—implying that informed defendants can sometimes avail themselves of plaintiffs’ ignorance.<sup>16</sup>

This simple example also demonstrates other relevant features of the information asymmetry theoretical models. First, if the case proceeds to trial, the private information the defendant holds would typically become public, e.g., through testimonies or pre-trial discovery. Second, while litigation can reveal the actual behavior of the doctor during the operation, it entails considerable expenses to both sides.<sup>17</sup> Third, the parties are typically aware of their strengths and limitations—the doctor knows that John is uninformed regarding the causes for the medical procedure’s failure; and John understands that the doctor knows the reasons for the failure.<sup>18</sup> Fourth, John can assess the likelihood that medical procedures fail due to doctors’ fault; however, he does not know whether *her* surgery did not succeed due to negligent behavior.<sup>19</sup>

Indeed, medical malpractice is an area of law widely considered to exhibit asymmetric information problems. Typically, the “patient has no direct knowledge of what the doctor did,”<sup>20</sup> while the doctor is well-aware of the merits of the case—“the quality of care actually delivered.”<sup>21</sup> In addition to

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a more formal analysis of this basic model. Cf., Reinganum and Wilde, *supra* note 13 (modeling a close dynamic).

<sup>16</sup> This result holds when John has a good case against negligent defendants, but he is better off not suing non-negligent defendants (*i.e.*, John’s claim against the latter is a so-called “negative expected value” suit). See Bone, *Modeling Frivolous Suits*, 550-566 (analyzing these situations).

<sup>17</sup> Relatedly, in some cases it may be feasible for the uninformed to conduct pre-filing investigations and independently reveal the defendant’s private information. However, in typical medical malpractice cases—as the example in the text suggests—such independent investigation seems too costly to pursue. Cf., Robert G. Bone, *Modeling Frivolous Suits*, 145 U. PA. L. REV. 519 (1997) [hereinafter Bone, *Frivolous Suits*] (analyzing, in the context of negative expected value lawsuits, the capacity of the uninformed to independently acquire information).

<sup>18</sup> In formal terms, the assumption is that aside from the private information all relevant parameters are common knowledge.

<sup>19</sup> These assumptions are embedded in virtually all theoretical models of this type. See, e.g., Daughety & Reinganum, *supra* note 13, at 85-87. Another embedded assumption is that the informed party cannot credibly convey the information to the other party prior to its revelation at the court. E.g., Robert H. Gertner & Geoffrey P. Miller, *Settlement Escrows*, 24 J. LEGAL STUD. 87, 99 (1995) (explaining why trial reveals information that the parties cannot voluntarily and credibly disclose prior to trial).

<sup>20</sup> Bone, *Frivolous Suits*, *supra* note 17, at 550.

<sup>21</sup> Patricia M. Danzon, *Tort Liability: A Minefield for Managed Care?*, 26 J. LEGAL STUD. 491, 495 (1997). See also Bone, *Frivolous Suits*, at 561 n.121, 562 n.124 (providing references for the asymmetric information phenomenon in medical malpractice cases). See also Robert G. Bone, *Twombly, Pleading Rules, and the Regulation of Court Access*, 94 IOWA L. REV. 873, 926 n.219. (2009) [hereinafter Bone, *Pleading Rules*] (same); Lonny S.

medical malpractice asymmetric information problems plague other areas of law. A notable example is discrimination in general and employment discrimination in particular. Generally, “unearthing discrimination is difficult [for the plaintiff] because evidence of a defendant’s intent or practices is often in its exclusive possession.”<sup>22</sup> For similar reasons, other areas, such as securities fraud, antitrust, and civil rights litigation, are also vulnerable to asymmetric information problems.<sup>23</sup> While the foregoing relates to information that only resides with the defendant, the plaintiff can also possess private information. For example, it is sometimes asserted that the plaintiff “ha[s] first-hand knowledge of the level of damages she has suffered,”<sup>24</sup>

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Hoffman, *Burn Up the Chaff with Unquenchable Fire: What Two Doctrinal Intersections Can Teach Us About Judicial Power over Pleadings*, 88 B.U. L. REV. 1217, 1261 & n.257 (2008) (stating that “[m]edical malpractice cases are one context in which information asymmetries can often be profound” and providing references to this proposition).

<sup>22</sup> See, e.g., Malveaux, at 91. See also Hubbard, at \*19-\*20 (“It is possible that any given one was fired for reasons related to intentional discrimination, but it is also possible that she was fired for entirely separate reasons, such as poor individual performance or downsizing by the employer.”). Due to the inherent problems in proving discrimination, the uninformed party sometimes resorts to statistical discrimination. But this too has its own problems. See, e.g., the Simpson paradox.

<sup>23</sup> Bone, *Pleading Rules*, *supra* note 21, at 925 & n.217, explains the private information that defendants have in these contexts:

[S]ecurities fraud plaintiffs are likely to have difficulty obtaining the information necessary to allege scienter. Antitrust plaintiffs suffer from similar problems . . . And those civil rights suits involving constitutional rights that feature defendant’s intent as an element also fit this profile.

See also Hubbard, H. J. Hubbard, *A Fresh Look at Plausibility Pleading*, U. CHI. L. REV. at \*4 (forthcoming 2016) (“Scholars have expressed concern for civil rights plaintiffs, and especially employment discrimination plaintiffs, who often lack direct evidence of the defendant’s motives at the outset of litigation); Alexander A. Reinert, *The Costs of Heightened Pleading*, 86 IND. L.J. 119, 159 (2011) (highlighting “large information asymmetries” in cases the defendant’s “state of mind plays a large role,” including “civil rights, constitutional, and employment discrimination cases”); Hoffman, *supra* note 21, at 1261-64 (detailing the asymmetric information problems that plaintiffs suffer in “[securities fraud, antitrust litigation,] other kinds of corporate wrongdoing suits, civil rights suits, libel suits, intellectual property claims, and labor and employment matters.” *Id.*, at 1262); Suzette M. Malveaux, *Front Loading and Heavy Lifting: How Pre-Dismissal Discovery Can Address the Detrimental Effect of Iqbal on Civil Rights Cases*, 14 LEWIS & CLARK L. REV. 65, at 92 & n.163 (2010) (focusing on the “numerous ways [in which] civil rights claimants suffer informational inequities” (footnote omitted) and suggesting that other areas such as “antitrust, conspiracy, product liability, and environmental claims” suffer from similar problems); Howard M. Wasserman, *Iqbal, Procedural Mismatches, and Civil Rights Litigation*, 14 LEWIS & CLARK L. REV. 157, 168 (2010) (“The two most notable pieces of information that are beyond plaintiff’s reach at the outset are evidence of defendants’ subjective state of mind and evidence of defendants’ private, behind-closed-doors conduct, [particularly affecting] a range of constitutional rights . . .” (footnote omitted)).

<sup>24</sup> Spier, *supra* note 9, at 272. See also the related examples in Bone, *Frivolous Suits*, *supra* note 17, at 542.

while defendants can only know the distribution of possible harms among different plaintiffs.

The literature, then, has recognized asymmetric information as a major problem, perhaps even “[t]he most important problem in dispute resolution.”<sup>25</sup> It is difficult to empirically validate the predictions that asymmetric information models generate.<sup>26</sup> Nevertheless, what we know to date seems consistent with the asymmetric information premise.<sup>27</sup>

A straightforward remedy to the asymmetric information problem is formal, court-supervised discovery. By forcing the informed defendant to provide information to the uninformed plaintiff, discovery bridges informational gaps. Indeed, this important role of discovery proceedings has garnered considerable attention in the literature.<sup>28</sup> As commonly asserted, in asymmetric information cases “only formal discovery is able to provide

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<sup>25</sup> Rhee, *supra* note 7, at 548.

<sup>26</sup> “[T]he empirical work so far has to be considered preliminary.” Keith N. Hylton & Haizhen Lin, *Trial Selection Theory and Evidence*, in 8 ENCYCLOPEDIA OF LAW AND ECONOMICS—PROCEDURAL LAW AND ECONOMICS 487, 505 (2d ed., Chris William Sanchirico ed, 2012). The predictions of asymmetric information models should be compared to other predictions, and in particular the ones stemming from the influential model of Priest and Klein. George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984). In a nutshell, unlike the asymmetric information notion, Priest & Klein assume that parties have divergent expectations with regard to the result at trial—a paradigmatic example can be mutual uncertainty about the way in which the presiding judge will interpret the law. To the extent mutual uncertainty is the reason for settlement failures, this “implies that the selection of cases that go to trial involves cases wherein the likelihood of either side winning approaches 50%”; in contrast, asymmetric information models predict that the failure to settle will result in skewed win rates. Andrew F. Daughety & Jennifer F. Reinganum, *Settlement*, in 8 ENCYCLOPEDIA OF LAW AND ECONOMICS—PROCEDURAL LAW AND ECONOMICS 386, 439 (2d ed., Chris William Sanchirico ed, 2012).

<sup>27</sup> In line with the predictions of asymmetric information models, in areas in which defendants typically possess informational advantages their win rate with respect to cases that made it to trial is higher than 50%. Hylton & Lin, *supra* note 26, at 500-01. Note that the divergent expectations model also gains empirical support. *Cf.*, *id.*, at 501-05 (surveying and explaining empirical studies); Joel Waldfogel, *Reconciling Asymmetric Information and Divergent Expectations Theories of Litigation*, 41 J.L. & ECON. 451 (1998) (attempting at reconciling conflicting evidence, and suggesting that asymmetric information models are more consistent with cases that terminated before discovery whereas the divergent expectations model is more consistent with other cases); Daniel Klerman, *The Selection of Thirteenth-Century Disputes for Litigation*, 9 J. EMPIR. LEGAL STUD. 320 (2012) (presenting evidence that are consistent with both theories).

<sup>28</sup> See, e.g., Bruce L. Hay, *Civil Discovery: Its Effects and Optimal Scope*, 23 J. LEGAL STUD. 481 (1994) (discussing the effects of discovery); Amy Farmer & Paul Pecorino, *Civil Litigation with Mandatory Discovery and Voluntary Transmission of Private Information*, 34 J. LEGAL STUD. 137 (2005) (exploring the role of mandatory discovery versus voluntary disclosure under various models, and concluding that at least in some cases mandatory discovery is essential to induce settlements).

plaintiffs with information necessary to plead adequately.”<sup>29</sup> From this standpoint, it is no wonder that the recent restrictions on discovery have received wide disapproval.

This Article takes a different approach. Instead of court-supervised formal discovery proceedings to transmit information, we highlight the power of informed parties to convey their privately-held information, in a myriad of ways, to their rivals.

## II. SIGNALING IN SETTLEMENT NEGOTIATIONS

### A. *Signaling and Asymmetric Information*

Asymmetric information is not unique to legal settings. Tools that were developed to analyze this problem in other disciplines and settings can be useful in our understanding of legal disputes. Notably, the economics literature utilizes the concept of “signaling” to analyze asymmetric information settings. Signaling refers to the power of the informed parties to convey their private characteristics to the uninformed parties, where the latter cannot otherwise observe these traits. For simplicity, we can think that, from the perspective of the uninformed party, there are “good” and “bad” types of informed parties, which can diverge, for example, with regard to the merits of their case, the quality of their product or service, etc. In the absence of concrete information, the uninformed party would treat “good” and “bad” types of informed parties identically. Hence, the “good” informed types would have an incentive to signal their type to the uninformed party, in order to distinguish themselves from the bad types, and in anticipation of receiving a better treatment. But in order for the signal to be informative, it has to be a signal that the bad type would find not worthwhile to mimic. Otherwise, the bad types would mimic the good types by sending the same signal, and the signal will lose its informative value.

In a seminal article in 1973, economics Nobel laureate Michael Spence offered the first signaling model. Spence posits higher education as a costly signal—“good” prospective employees use costly education to signal their type in the job market and distinguish themselves from “bad” employees. This strategy can be successful as education is assumed to be more onerous to the “bad” types. Hence, potential candidates in the job market may pursue higher education even if it does not improve their skills and has no inherent value (i.e., education is useful solely for its signaling quality).<sup>30</sup> Along these lines, the concept of signaling has been employed by scholars from several

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<sup>29</sup> THE 2010 REPORT, at 6. *See also* Wasserman, at 169 (in asymmetric information situations, the necessary information is “only gained through some court-supervised discovery.”).

<sup>30</sup> Michael Spence, *Job Market Signaling*, 87 Q. J. ECON. 355, 362-63 (1973).

disciplines to analyze various settings.<sup>31</sup>

### B. *Litigation Strategies as Signals*

A similar logic can apply to litigation settings that suffer from asymmetric information problems. Consider areas such as medical malpractice or employment discrimination, in which defendants are typically informed as to the merits of the case whereas plaintiffs are not. For the same reasons that “good” employees are willing to invest in costly signals, we should expect “good” defendants—those whose actual liability is likely small—to strive to signal the merits of their case to uninformed plaintiffs. By doing so, “good” defendants can distinguish themselves from “bad” ones and reduce their expenses. Indeed, “good” defendants actually indicate their merits by simply proposing low settlement offers.<sup>32</sup> Low offers are more likely to be rejected by the plaintiff; hence these defendants assume a greater risk of trial, in which they may end up paying the plaintiff’s damages. However, relative to negligent, “bad” defendants, for “good” defendants trial is expected to bear fewer costs. By merely proposing lower settlements, then, “good” defendants indicate that they are more willing to go to trial as they are more confident concerning their merits.

This is, however, a very primitive signaling technique. It relies solely on the amount the defendant offered to settle the case. We argue that there is a wide array of richer and more complex signaling devices, which manifest themselves through various litigation maneuvers. And even more so—these signaling techniques can be far more effective than merely offering a low settlement. To present this intuition, the following provides two paradigmatic examples of litigation strategies that can be used as signals: one-way fee-shifting provisions and dropping claims.

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<sup>31</sup> Economists have employed the concept of signaling in the context of advertising and paying dividends, costly practices that can convey the quality of firms’ products and their financial strength. *See, respectively, Paul Milgrom & John Roberts, Price and Advertising Signals of Product Quality*, 94 J. POL. ECON. 796 (1986), and B. Douglas Bernheim & Lee S. Redding, *Optimal Money Burning: Theory and Application to Corporate Dividends*, 10 J. ECON. & MANAGEMENT STRATEGY 463 (2001). A famous example of the use of signaling in evolutionary biology is the peacock’s tail—which can signal to potential mates the unobservable genetic qualities of the peacock sporting the tail. AMOTZ ZAHAVI & AVISHAG ZAHAVI, *THE HANDICAP PRINCIPLE: A MISSING PIECE OF DARWIN'S PUZZLE* xiv (1999). For applications by legal scholars, see, e.g., Eric A. Posner, *Symbols, Signals, and Social Norms in Politics and the Law*, 27 J. LEGAL STUD. 765 (1998) (hypothesizing that social norms can serve as a signal that distinguishes between individuals who tend to cooperate and non-cooperators); Daniel A. Farber, *Rights as Signals*, 31 J. LEGAL STUD. 83 (2002) (explaining the wave of constitutionalism in developing countries as signals).

<sup>32</sup> One of the first articles that introduced asymmetric information to models of settlements discusses this signaling technique. Reinganum & Wilde, *supra* note 13.

1. Voluntary one-way fee-shifting

While the American rule holds that each party carries his or her legal expenses the parties can generally stipulate over this rule. Consider the following message from the informed defendant to the uninformed plaintiff:

Hypothetical I—One-way Fee Shifting. “I offer to pay your legal expenses should you take me to trial and win. In case you take me to trial and I win, you are exempt from reimbursing me for my legal expense. I am willing to do so because I am confident that I am going to win, and to help convince you of this.”

Intuitively, this provision can serve as a signal, which attests to the strength of the claims of the defendant who delivers the signal. Consider a medical malpractice case. If this defendant was the negligent, weak doctor, the argument goes, she would not be willing to offer a provision in which she promises to pay—if she loses—her opponent’s legal expenses. By contrast, a strong, non-negligent doctor can more easily assume that risk—because she knows that she will likely prevail. Hence, the doctor’s promise to reimburse the plaintiff for his legal expenses should he win indicates the strength of the doctor’s claims.

Voluntary one-way fee-shifting provisions are not uncommon. A study that examined commercial contracts found such asymmetric fee-shifting clauses in approximately 17% of the contracts.<sup>33</sup> Strikingly, voluntary one-way fee-shifting provisions are highly common in situations that typically suffer from asymmetric information—such as loan agreements—where the provision works against the informed party.<sup>34</sup> On their face, these provisions are puzzling. Why would litigants voluntarily offer to pay their rival’s expenses in case of a loss, without insisting on the rival’s obligation to pay their expenses in case they win?

The literature has extensively analyzed the reasons behind mandatory one-way fee-shifting rules,<sup>35</sup> but it completely neglected the common, voluntary adoption of these clauses.<sup>36</sup> This oversight is unfortunate. The

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<sup>33</sup> Theodore Eisenberg & Geoffrey P. Miller, *The English Versus the American Rule on Attorney Fees: An Empirical Study of Public Company Contracts*, 98 CORNELL L. REV. 327, 352 (2013). While Eisenberg & Miller examine pre-dispute, commercial contracts, during the course of litigation there seem to be few, if any, stipulations on the default fee-shifting rule. Donohue, *supra* note 12, at 1110 n.38.

<sup>34</sup> In these situations one-way fee-shifting provisions can be found in the majority of contracts. Eisenberg & Miller, *supra* note 33, at 356-57.

<sup>35</sup> E.g., Thomas D. Rowe, Jr., *The Legal Theory of Attorney Fee Shifting: A Critical Overview*, 1982 DUKE L.J. 651 (1982) (presenting various rationales, such as fairness and the desire to incentivize lawsuits in certain areas).

<sup>36</sup> The only discussion of voluntary one-way fee shifting we found is Eisenberg & Miller, *supra* note 33. While Eisenberg & Miller’s Article is descriptive, it briefly attempts to

concept of signaling can help explain these clauses—as the strong informed type may be willing to commit to one-way fee-shifting in order to indicate its strength to the rival.

## 2. Waiving claims

A similar logic applies to acts in which one of the parties drops a claim. Consider the following example, based on an actual case:

Hypothetical II—Dropping Claims. A renowned law professor was sued in defamation in a French court, following an unflattering book review that her journal published. The case has no contacts to France and the professor holds a strong, preliminary jurisdiction defense. Nonetheless, she asks the court to drop the jurisdictional issue and move to the merits.

As before, this hypothetical can nicely fit the idea of signaling. A defendant with a weak case on the merits would not hasten to drop her substantial preliminary defense. But a defendant whose merits are strong would be more confident to forego the preliminary jurisdictional claim. Hence, to the extent the defendant is privately informed regarding the merits of the case, her move conveys information and indicates her strength (on the merits).<sup>37</sup>

Hypothetical II can be generalized to any case in which privately informed parties, who differ with respect to a particular issue, have otherwise similar claims. In fact, there seem to be numerous such “similar” claims that can be dropped to signal one’s strength. The most important of which are preliminary defenses in areas such as medical malpractice and employment discrimination. In these areas, as was already mentioned, the defendant is privately informed with regard to the merits of the case as the plaintiff lacks important factual information. However, with regard to the preliminary

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explain the popularity of these clauses in certain situations in the following terms: “in [certain] type[s] of cases, the allocation of responsibility for harm is clear . . . [and] imposing the full cost of the harm—including the costs of the other party’s defense in litigation—on the responsible party makes sense.” *Id.*, at 370-72.

<sup>37</sup> This example is inspired by an actual case, in which Joseph Weiler, an NYU professor and the Editor-in-Chief of the *European Journal of International Law*, was sued in defamation in a French court. The reason was an unflattering book review that Weiler’s journal published. The reviewer was a German professor, and the author of the book was an Israeli academic. On its face, the case was unrelated to France and Weiler held a strong, preliminary jurisdiction defense. Nonetheless, he “specifically asked the Court not to examine [the] jurisdictional challenge as a preliminary matter,” and proceeded to win the case on the merits. While we use this example to demonstrate signaling through dropping claims, the story is more complicated; apparently, Weiler requested to move to the merits in order “to challenge this hugely dangerous attack on academic freedom.” Joseph Weiler, *In the Dock, In Paris*. *EJIL:TALK!* (Jan. 25, 2011), available at <http://www.ejiltalk.org/in-the-dock-in-paris/>.

defenses that the defendant might raise—e.g., statute of limitations—neither party has informational advantage. Hence, the preliminary claim, whose value is known to both sides, can be used to indicate the value of each defendant’s merits. Given that parties typically have the freedom to waive procedural rights, one can think of various other litigation strategies that can accomplish a similar goal.<sup>38</sup>

In light of the growing interest in signaling models among legal scholars, on the one hand, and the ongoing debates over asymmetric information in litigation settings on the other hand, we were surprised to find that the literature has scarcely discussed the power of litigants to signal the merits of their case. The disregard of this issue is particularly surprising as it encompasses two major bodies of literature—sophisticated game-theoretical models of settlements; and policy-oriented legal scholarship.

Several game-theoretical articles have identified distinct litigation features that can be used to signal information—examples include filing for costly injunctions, investing in observable pretrial preparation, and utilizing intermediaries such as attorneys and litigation funders.<sup>39</sup> As it focuses on concrete signaling “technologies” this body of literature underestimates the power of litigants to break asymmetric information problems through signaling. Moreover, the game-theoretical literature is typically oblivious to the legal background and the concomitant policy implications; this Article, in contrast, discusses the legal implications in detail. Several legal scholars mention the ability of litigating parties to signal information. However, these discussions are often cursory.<sup>40</sup> Similarly to the game-theoretical literature,

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<sup>38</sup> For several concrete examples of signaling through waiving procedural rights see *infra* note 40.

<sup>39</sup> See Thomas D. Jeitschko & Byung-Cheol Kim, *Signaling, Learning, and Screening Prior to Trial: Informational Implications of Preliminary Injunctions*, 29 J.L. ECON. & ORG. 1085 (2012) (signaling through filing injunctions); Philippe Choné & Laurent Linnemer, *Optimal Litigation Strategies with Observable Case Preparation*, 70 GAMES AND ECONOMIC BEHAVIOR 271 (2010) (signaling through investing in observable pretrial preparation); Shmuel Leshem, *Contingent Fees, Signaling and Settlement Authority*, 5 REVIEW OF LAW AND ECONOMICS 435 (2009) (the signaling effect of delegating to attorney control over settlements); Ronen Avraham & Abraham Wickelgren, *Third-Party Litigation Funding—A Signaling Model*, 63 DEPAUL L. REV. 233 (2014) (signaling through third party financing). More generally, as explained above, low settlement offers also constitute a signal, though this signal is ineffective relatively to the litigation signals we discuss. See generally Daughety & Reinganum, *supra* note 13.

<sup>40</sup> See, e.g., Bone, *Frivolous Suits*, *supra* note 17, at 573-576 (suggesting that plaintiffs can commit to pay a bond if their case turns to be frivolous, thereby deterring at least some frivolous plaintiffs from presenting their case as non-frivolous); Rhee, *supra* note 7 (proposing that parties would “elect to shift [their] fees to the loser upon prevailing, so long as the party’s good faith belief in the merit of the case is bonded by the assumption of a higher standard of proof,” and suggesting that such “election may serve an important signaling function that conveys essential information.” *Id.*, at 518, 551); Hubbard, *supra* note

these discussions only highlight concrete signaling mechanisms without providing a general theory thereof. As a result, this body of literature misses the wide breadth of litigation signals and the intricate ways in which they are delivered.

Our approach is different. We do not limit ourselves to specific litigation features, such as dropping claims or one-way fee-shifting.; rather, we provide a comprehensive theoretical account of the ways in which litigants can signal their merits.<sup>41</sup> To do so, the next Part takes a closer look into the mechanics of litigation signals, relying on a game-theoretical model. Our more general approach yields more comprehensive and precise understanding of this subject—and, as a result, more concrete legal implications.<sup>42</sup> The next part presents our model of litigation signals.

### III. THE MECHANICS OF LITIGATION SIGNALS

We utilize a game-theoretical model to closely inspect various classes of litigation signals. While this approach of course provides a simplified description of actual bargaining processes, this methodology can result in valuable insights.<sup>43</sup> After presenting these insights, this part discusses their implementation, and limitations, in real-world situations. (The interested readers can find more technical discussion in the Mathematical Appendix).

#### A. A Model of Litigation Signals

We first discuss a benchmark model, in which no particular signal other than the offer itself is utilized; then we proceed to various classes of signals—unilateral, third-party, and cooperative signals.

##### 1. Benchmark model

We demonstrate litigation signals in an asymmetric information setting in

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\*\*\*, at \*7 (arguing that “plaintiffs with strong claims need a way to credibly signal the strength of their case [and] [c]ivil procedure itself provides just such a mechanism: pleading!”). *Cf.*, Daphna Kapeliuk & Alon Klement, *Contracting Around Twombly*, 60 DEPAUL L. REV. 1, 20-22 (2010) (arguing that contracting firms can agree on certain pleading standards in order to signal private information); Daniel J. Seidmann & Alex Stein, *The Right to Silence Helps the Innocent: A Game Theoretic Analysis of the Fifth Amendment Privilege*, 114 HARV. L. REV. 430 (2000) (discussing the signaling value of the right to remain silence in criminal proceedings).

<sup>41</sup> As we focus on the capacity of informed litigants to signal their information through contractual modifications to their settlement offer, our approach is somehow similar to J.J. Prescott & Kathryn E. Spier, *A Comprehensive Theory of Civil Settlement*, N.Y.U. L. REV. (forthcoming 2016). Prescott and Spier also study the capacity of parties to modify their settlements, though they do not discuss asymmetric information situations.

<sup>42</sup> [refer to later]

<sup>43</sup> *Cf.*, Bone, *Frivolous Suits*, *supra* note 17, at 525-27 (discussing the advantages of modeling pre-trial bargaining in legal scholarship).

which defendants are privately informed whereas plaintiff are not—one can think of many representative situations.<sup>44</sup> For expositional purposes, we will employ a medical malpractice setting. We will refer to the defendants/doctors as females and plaintiffs as males. In the model there are two types of informed defendants—in broad terms, the model describes “careless” doctors, who failed to take proper precautions and thus expect to pay after trial a high amount; and careful doctors, who conducted the medical procedure with more safeguards, hence their liability is likely small. The doctors can assess their expected liability at trial—while the court is not immune to mistakes, the careless doctors can expect to pay after trial, on average, a larger amount than the careful ones. We can think, for example, that the failed operation resulted in damages of 150, and the only question is whether the doctor was negligent or not. The careless doctor predicts, for instance, that there is a 66.67% probability that the court finds she was negligent and rules against her, such that her expected liability is  $150 * 2/3 = 100$ . Similarly, the careful doctor assesses that there is a 40% probability of a judgment against her, hence her expected liability is  $150 * 0.4 = 60$ . Following the common description of asymmetric information, we assume that before trial the plaintiff cannot distinguish between these two types of doctors, although he can assess their distribution in the population. For the sake of example, we will assume that the plaintiff knows that the odds that he faces a strong, rather than weak doctor are 50%.

We assume the following bargaining procedure. First, the plaintiff brings a lawsuit against the informed doctor. Then, the doctor can make a take-it-or-leave-it settlement offer to the plaintiff. If the plaintiff accepts the offer the case is settled; otherwise, it goes to trial. If there is a trial, each party incurs his or her litigation expenses, i.e., there is no fee-shifting and the American rule applies. For simplicity, we will assume that these costs equal 25 for each party, defendants and plaintiffs alike. The single offer assumption is of course a simplifying description, as in actuality there may be counteroffers and revisions of the original settlement. However, it is a standard tool that essentially conceptualizes a bargaining process in which one of the parties—here the defendant, who proposes the settlement—has superior bargaining power.<sup>45</sup>

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<sup>44</sup> *Supra* note \*\*\*

<sup>45</sup> For a more elaborate discussion see Daughety & Reinganum, *supra* note 13, at 85, who explain why despite being “a highly stylized story . . . [t]he vast majority of the papers in the settlement literature have employed this canonical form of modeling.” While more sophisticated models have allowed for multiple rounds of negotiations, the main insights of the simple, single-offer model persist. See, e.g., Kathryn E. Spier, *The Dynamics of Pretrial Negotiation*, 59 REV. ECON. STUD. 93 (1992) (studying asymmetric information settings in which there are multiple rounds of negotiation). See also Hylton & Lin, *supra* note 26, at 500 (explaining why models in which the informed party makes the offer better approximate

This setting can be solved in the following manner. With no asymmetric information problems, we would expect the careless physician to offer as a settlement an amount equal to her expected liability at trial minus the plaintiff's litigation costs—or,  $100 - 25 = 75$  under the foregoing numerical example. The plaintiff should accept this offer with certainty, as he gains nothing from rejecting it—the reason is that this amount, 75, exactly reflects the payoff of the plaintiff from going to trial against the careless doctors.<sup>46</sup> As a settlement offer of 75 will be accepted for sure, there is no reason for the careless defendant to offer more than that sum. For similar reasons, the careful defendant has no reason to offer more than her expected liability minus the plaintiff's litigation costs, or,  $60 - 25 = 35$  in our numerical example. Therefore, with no informational asymmetries, all cases settle—the careless doctors settle for 75, and the careful ones settle for 35.

However, due to asymmetric information problems the plaintiff cannot distinguish, before trial, between careful and careless defendants. The careless defendants may attempt to bluff, claim that they are careful defendants and offer a low settlement offer (35, in the foregoing numerical example). Hence, the plaintiff cannot trust low settlement offers and he has to reject some of them—leading to costly trials.

This dynamic results in an equilibrium in which the careless doctors always offer a high settlement offer, 75 in the numerical example. By doing so, these defendants reveal their type; the plaintiff, who is certain that this offer is made by a careless doctors, can always accept it.<sup>47</sup> The logic for this result is as follows. If the careless doctor would attempt to mask as careful one by offering a low settlement, 35, she risks going to trial, as the plaintiff rejects some low offers. If taken to trial, she expects to pay both her legal expenses and (with some probability) the plaintiff's damages. In equilibrium the careless defendant does not find it profitable to bluff. Accordingly, the rate at which the plaintiff rejects low offers, of 35, can be derived mathematically—it should be sufficiently high to guarantee that the weak defendant does not gain from mimicking the strong one. In the foregoing numerical example, the plaintiff can be expected to accept ~55% of the low offers of 35 he receives.<sup>48</sup>

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pre-trial bargaining).

<sup>46</sup> Technically, the weak defendant can propose a slightly higher amount than her expected liability minus the plaintiff's litigation costs, in order to ensure that the plaintiff is better off taking her offer.

<sup>47</sup> This is a classic result. For a similar result in a slightly different and more complicated setting, see Reinganum & Wilde, *supra* note \*\*\*.

<sup>48</sup> If the careless doctor reveals her type, she expects to pay 75 (her settlement offer would be accepted with certainty). If she mimics as careful doctor and offers 35, her payoff depends on the rate at which the plaintiff takes her to trial—if the plaintiff accepts, she pays 35; if the plaintiff rejects, she expects to pay 125 (her expected liability plus her litigation

Note that for the careful doctor trials are less costly, as her expected liability is smaller than the careless doctor. Hence, although the plaintiff rejects many low offers the strong defendant still proposes a low settlement offer, in the amount of 35. As we found that high offers of 75 are accepted for sure and low offers are accepted ~55% of the time, we can now predict the general rate of litigation in this example, which is ~22%.<sup>49</sup> These cases fail to settle due to asymmetric information problems, i.e., the inability of plaintiffs to distinguish before trial between careful and careless doctors, or more generally, between strong and weak defendants.

From this model we can also predict that the greater litigation costs are, the higher the settlement rate is—intuitively, when trial is more costly parties will have bigger incentives to avoid it. Likewise, the larger the gap between careful and careless doctors, or more generally, strong and weak defendants—the smaller the settlement rate is. In that case, weak defendants profit more from masking as strong ones, such that the asymmetric information problems are aggravated.<sup>50</sup> These general results are standard ones in the relevant literature.<sup>51</sup>

This benchmark situation describes, in essence, a very simple, even primitive, signaling mechanism, which is embedded in the offer itself. The strong defendant—careful doctor in our example—signals her strength by offering a low settlement under the risk of going to trial if the plaintiff rejects this offer; and the risk of going to trial is more onerous for the weak defendants/careless doctors. However, this is a basic signal, which only uses the amount offered; there is reason to believe that informed defendants can use mechanisms other than the offer itself to signal their strength. We argue, then, that the informed defendants can convey information more effectively through more sophisticated signals. We classify these different litigation signals to three broad classes (i) unilateral signals; (ii) third party signals, (iii) cooperative signals.

## 2. Unilateral litigation signals

We argue that in asymmetric information environments informed parties can signal the strength of their cases—unilaterally—in multiple ways, most notably through unilateral promises taking place if the settlement offer is

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expenses). Suppose that the plaintiff accepts  $y$  low offers of 35—in that case,  $y$  can be calculated such that the careless defendant is just indifferent between mimicking and revealing her type:  $75 = 35 * y + (1 - y) * 125$ , hence  $y = 0.55$ .

<sup>49</sup> As the careless doctor always settles, the careful defendant is taken to trial with a 55% probability, and half of the doctors are careful, the rate of litigation is  $(1 - 0.55) * 1/2 = 0.22$ .

<sup>50</sup> The mathematical explanation for these two predictions can be found in the Mathematical Appendix.

<sup>51</sup> *E.g.*, Reinganum and Wilde, *supra* note 13.

rejected and the case proceeds to trial. The gist is the fact that the (possible) event of trial conveys some information that the parties can utilize.

To illustrate this approach consider the following hypothetical message, which accompanies a settlement offer made by an informed defendant to an uninformed plaintiff:

Hypothetical III—Multiplier Provision. “As a defendant, the private information that is available to me tells that I am not likely to be found liable. To help convince you of this, I promise to pay you twice your judgment should you reject this settlement offer, the case goes to trial, and the court rules against me.”

Intuitively, this provision can be an effective signal as it harms weak defendants to a greater extent than strong ones. The strong defendants are less likely to lose at trial; hence, compared to weak defendants, the strong ones can more readily promise to augment their liability in the event of losing at trial. As noted before, the logic that Hypothetical III expresses has garnered scarce attention from legal scholars.<sup>52</sup>

Moreover, while Hypothetical III uses a multiplier of 2 on the judgment as a signal, it in fact generalizes several other litigation strategies that constitute unilateral signals. Previously, we noted that voluntary one-way fee-shifting provisions can serve as litigation signals.<sup>53</sup> Assuming that litigation costs are in the range of a third of the judgment,<sup>54</sup> these provision are actually identical to a unilateral multiplier of ~1.3 on the judgment, to be paid in case the promisor loses. Likewise, the signaling function that waiver of claims fulfills,<sup>55</sup> can also be expressed as an implicit multiplier on the judgement.<sup>56</sup> Hypothetical III, then, captures a wide range of litigation

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<sup>52</sup> See *supra* notes 39-40 and accompanying text. Related to this logic is a line of game-theoretical literature that uses a mechanism design approach to show that settlements can be encouraged if a post-judgment transfer is conditioned on the trial outcome. Kathryn E. Spier, *Pretrial Bargaining and the Design of Fee-Shifting Rules*, 25 RAND J. ECON. 197 (1994); Alon Klement & Zvika Neeman, *Against Compromise: A Mechanism Design Approach*, 21 J.L. ECON. & ORG. 285 (2005); James D. Miller, *Using Lotteries to Expand the Range of Litigation Settlements*, 26 J. LEGAL STUD. 69 (1997). This approach employs a more abstract framework that disregards specific bargaining protocols to study the highest possible settlement rates under different constraints. In contrast, while this Article is in line with this literature, our analysis provides the specific contractual tools that implement the desired results and demonstrates the contractual tools that are non-workable.

<sup>53</sup> *Supra* Part II.B.1.

<sup>54</sup> E.g., Herbert M. Kritzer, *The Wages of Risk: The Returns of Contingency Fee Legal Practice*, 47 DEPAUL L. REV. 267, 285 (1998) (“One-third is the ‘standard’ contingency fee figure”).

<sup>55</sup> *Supra* Part I.B.2.

<sup>56</sup> To illustrate consider a case in which the expected liability of the defendant on the merits is 100. Her preliminary jurisdiction argument is likely to be accepted with a 20%

strategies that are, in fact, unilateral signals that hinge on the outcome at trial.

The effectiveness of such unilateral signals is seemingly straightforward; indeed, several legal scholars did allude to the possibility of signaling through unilateral promises.<sup>57</sup> However, this perception is deceptive. A closer analysis reveals that unilateral signals are highly unlikely. More precisely, they require the fulfillment of two conditions. First, the differences between “good” and “bad” defendants should be significant, such that the ratio between their expected liabilities is more than 3. Second, and even more importantly, unilateral signals require that litigation costs will be substantive, in order of more than half of the expected liability. The Mathematical Appendix provides a complete proof of these claims. The intuition, however, is the following.

Consider our previous example, where careless- and careful-doctors expect to pay at trial 100 and 60, respectively, and the plaintiff cannot distinguish between these two types before trial. To the extent careful doctors signal their strength through promising to pay a multiplier on the judgment, careless doctors are indeed less likely to mask themselves as careful ones, as they are more likely to lose and eventually pay the multiplier. Hence, offering a multiplier always reduces the rate at which settlement offers are taken to trial, and in this regard, it improves the situation of careful doctors.

But this is only a part of the picture. Promising to pay a multiplier in case of a loss at trial is also counterproductive for careful doctors, for two reasons. First, careful doctors now expect to pay more at trial if their settlement offer is rejected. Indeed, they expect to pay twice as much if they offer a multiplier of 2. Second, and no less importantly, once the careful doctor promises to pay a multiplier, the plaintiff demands a higher settlement offer. We showed previously that, if the plaintiff believes that he faces a careful defendant he will agree to settle for 35—if he rejects this offer, he goes to trial and expects to gain the same amount: 60, the doctor’s expected liability, minus his litigation costs, 25. However, once the careful doctor promises to pay a multiplier, the plaintiff is more eager to go to trial, and as a result, he has more leverage during negotiation. With a multiplier of 2, if the plaintiff rejects the offer and goes to trial, he expects to gain 95:  $60 \times 2$ , the careful doctor’s expected liability times a multiplier of 2, minus the plaintiff’s litigation costs, 25. Hence, the careful doctor who promises to pay a

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probability; hence, with the preliminary defense, the defendant’s expected liability is only 80. By dropping the preliminary defense, the defendant in fact commits to inflate her liability by a factor of  $100/80$ —akin to a multiplier of 1.25 on the judgment.

Of course, waivers of claims and multipliers on the judgment are not identical. A possible relevant difference between the two is that waiver of claims usually saves litigation costs, while multipliers may increase litigation costs if a trial eventually takes place.

<sup>57</sup> *Supra* note 40.

multiplier has to offer a higher settlement to the plaintiff. One can demonstrate that unilateral signals are typically detrimental to the strong defendants and hence will rarely be used by them.

In sum, there are three moving forces in the background. A careful defendant making a unilateral signal enjoys a higher settlement rate; but she makes a higher settlement offer and expects to pay more if the offer is rejected. This analysis holds for all unilateral signals, including straight multipliers, voluntary one-way fee-shifting provisions, and waiver of claims.<sup>58</sup> Unilateral signal may seem intuitive, but our closer inspection reveals, then, that we cannot expect these signals to be triggered in each and every case.

When would we expect the parties, then, to employ unilateral signals? Our analysis can predict that informed defendants, careful doctors in the foregoing example, employ these provisions only when two conditions are met. First, the gap between the strong and weak defendants is sufficiently wide (the weak defendants' liability is greater than three times the strong defendant's liability).<sup>59</sup> Second, litigation costs should be sufficiently large—at the least, more than half of the strong defendant's liability (and perhaps even greater, depending on the gap between the strong and weak defendants).<sup>60</sup> These are restrictive conditions. In the foregoing numerical illustration, where the expected liability of the careful- and careless-doctors is 60 and 100, and litigation costs are 25, unilateral signals are impossible; for the gap between the different doctors is not sufficiently large and trial is not sufficiently costly. More generally, empirical evidence suggests that each side's litigation costs are typically lower than half of the expected judgement,<sup>61</sup> hence the second condition is rarely met. Unilateral multiplier

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<sup>58</sup> With a voluntary one-way fee-shifting provision, the informed defendant gains from the higher settlement rate that accompanies the signal; but she pays more—the plaintiff's litigation expenses—if she loses at trial; likewise, as a trial is less costly for the plaintiff, he is now more eager to reject and the defendant must offer a higher settlement. With a waiver of, say, preliminary defense, the careful defendant again better indicates her strength, enjoying a higher settlement rate; but she is more likely to lose, as she dropped an important claim; and she made the plaintiff more likely to win, hence the plaintiff demands a higher settlement to avoid trial.

<sup>59</sup> Intuitively, these situations intensify the risk of careless-doctors mimicking as careful ones, making costly signals more valuable. *See supra* text accompanying note 50.

<sup>60</sup> Intuitively, costly litigation stresses the need to find ways to bridge informational gaps and avoid costly trials.

<sup>61</sup> As a rough benchmark, contingent fees typically constitute around 1/3 of the actual judgment, *supra* note 54, suggesting that litigation expenses are lower than half of the judgment. Moreover, the total expenses that are associated with litigation—of both parties and the court—are estimated to be, by and large, equal to the judgment, SHAVELL, *supra* note 10, at 281. Hence it is unlikely to expect that each party's litigation costs are greater than half of the expected judgment.

provisions, then, should be uncommon in actuality.

When they are employed, are unilateral litigation signals effective? Again, it is tempting to think that, if the parties chose to employ them, unilateral signals would have a meaningful effect. But this intuition is misleading. For the same reasons that they are not likely to be employed, unilateral signals are also likely to have a minimal effect when triggered. As unilateral signal harms the position of careful doctors, these doctors are likely to utilize, at best, a modest signal, e.g., commit to pay little beyond their judgment. With modest signals, the resulting savings in trials are minimal.<sup>62</sup>

This section elaborated on the class of signals that are employed unilaterally and benefit the rival party. It used the multiplier provision example to capture a wide range of litigation strategies, such as voluntary commitments to one-way fee-shifting and waiver of claims. This class of signals indicate the strength of the informed defendant's claims, but it also harms her and improves the plaintiff's position. Hence, in general, these signals will be employed in narrow enclaves and under restrictive conditions. Moreover, even when they are employed, they are not likely to bring to a meaningful real-world change.

### 3. Third-party litigation signals

Multiplier provisions can be modified to make them less costly for the defendant. Consider the following hypothetical provision in a settlement offer:

Hypothetical IV—Third Party Multiplier. “My private information tells that my case is strong. To help convince you of this, if you reject this settlement offer, the case goes to trial, and the court rules against me, I promise to pay in addition to the judgment a sum equal to the judgment to charity.”

Third party litigation signals, along the lines of Hypothetical IV, are more likely to be triggered. The intuition is the following. As before, the commitment to pay in the event of a loss signals the strength of the strong-defendant's claim, generating more settlements. Similarly to unilateral signals, third-party signals harm the strong defendant, who now expects to pay more if she loses the case (through donation to charity). Take a careful doctor who expects, without any signal, to pay after trial  $150 \cdot 0.4 = 60$ ; with a third party signal similar to Hypothetical IV, this doctor expects to pay at trial  $150 \cdot 2 \cdot 0.4 = 120$ , where 60 goes to the plaintiff and 60 to charity. These two contradictory forces are identical to both unilateral and third-party signals.

Third party litigation signals, however, differ with respect to unilateral signals in the following manner. Unilateral signals make the plaintiff more

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<sup>62</sup> For a numerical illustration *see infra* note 145 and accompanying text.

eager to litigate, as they entail a promise to augment the judgment (in case the defendant loses). Hence, the defendant who offers a unilateral signal should concomitantly raise her settlement offer to the plaintiff. Third-party signals are different, because they are self-commitments that do not benefit the plaintiff—the additional sums go, for instance, to charity, rather than the plaintiff’s pocket. As the plaintiff does not directly benefit from the signal, his appetite for trial, so to speak, remains the same. Therefore, the defendant need not inflate her settlement offer. To illustrate numerically, consider a careful doctor who commits to a third-party signal along the lines of Hypothetical IV. When she goes to trial under the third-party provision, this strong defendant expects her payments after trial to be  $150 \cdot 2 \cdot 0.4 = 120$ . However, a plaintiff that faces this strong defendant will agree to settle for  $60 - 25 = 35$ : this is the plaintiff’s gain if he goes to trial under the third-party signal, an amount identical to the benchmark, no-signal case. As a result, the conditions for third-party signals to work are less restrictive than unilateral signals.

In sum, self-commitments to third-parties, contingent on losing the case, remove one hurdle for the strong defendants to signal their type. However, this class of signals still embodies a tradeoff—it enables the strong defendants to better indicate their type and gain more settlements; but it is also costly, as this signal entails the risk of an additional payment. In this sense third-party signals are more likely than unilateral ones, but the informed parties may still find them counter-productive.

When would parties choose to employ third-party signals, then? Our model shows that while they are capable of reducing the rate of trials, third-party signals are typically too costly to pursue. More precisely, third-party signals require one condition: they are possible only where the litigation costs are sufficiently large: at the least, more than half of the strong defendant’s liability.<sup>63</sup> As we noted before, evidence suggests that typical cases do not meet this condition.<sup>64</sup>

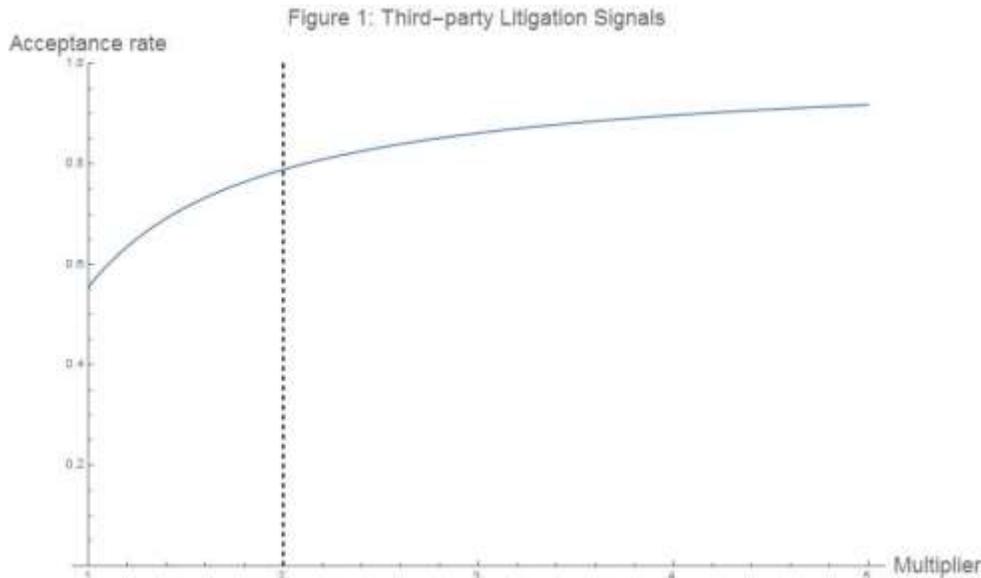
When third-party are employed, are they effective? Unlike unilateral signals, to the extent the foregoing condition is met, strong defendants would like to commit to a high multiplier. Intuitively, higher multipliers make the signal more effective; and as the plaintiff does not directly benefit from the multiplier (the excess goes to charity) the higher multiplier does not reflect a higher settlement offer. Figure 1 shows how the rate at which low offers are accepted rises with the multiplier, under the foregoing numerical assumption (expected liabilities for the careless and careful defendants are 100 and 60, trial expenses are 25 to each party):<sup>65</sup>

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<sup>63</sup> The third part of the Mathematical Appendix discusses this point in greater detail.

<sup>64</sup> *Supra* note 61 and accompanying text.

<sup>65</sup> Figure 1 illustrates the possible effect of a multiplier on acceptance rate—in this



The y-axis is the rate at which low offers are accepted, and the x-axis is the multiplier promised by the defendant, from 1 to 5. The left side of the x-axis represents a multiplier of 1—i.e., the benchmark situation, in which the plaintiff promises nothing beyond her liability at trial. As can be seen from the graph, the acceptance rate at the benchmark situation is ~55%. The dashed line represents the case mentioned in Hypothetical IV, a multiplier of 2 on the judgment (where the excess goes to charity). Figure 2 shows that, with a multiplier of 2, the acceptance rate could jump to ~79%. Note that even a moderate multiplier could lead to considerably lower acceptance rates. For instance, with a multiplier of 1.34 (one third of the final judgment goes to charity), the rate of acceptance is ~68%.<sup>66</sup>

#### 4. Cooperative litigation signals

We have shown that unilateral and third-party litigation signals can be effective in increasing the rate of settlements. However, they are not likely to be triggered in actuality, as the strong defendants, who desire to signal their strength, find these signals too costly. One can overcome this problem by a more sophisticated litigation signal, which requires some cooperation between the parties—cooperative litigation signals.

In these signals, the informed party, the defendant in previous examples, commits to augment her liability, should her settlement offer be rejected, but only in exchange for a specified sum reflecting the higher risk she incurs.

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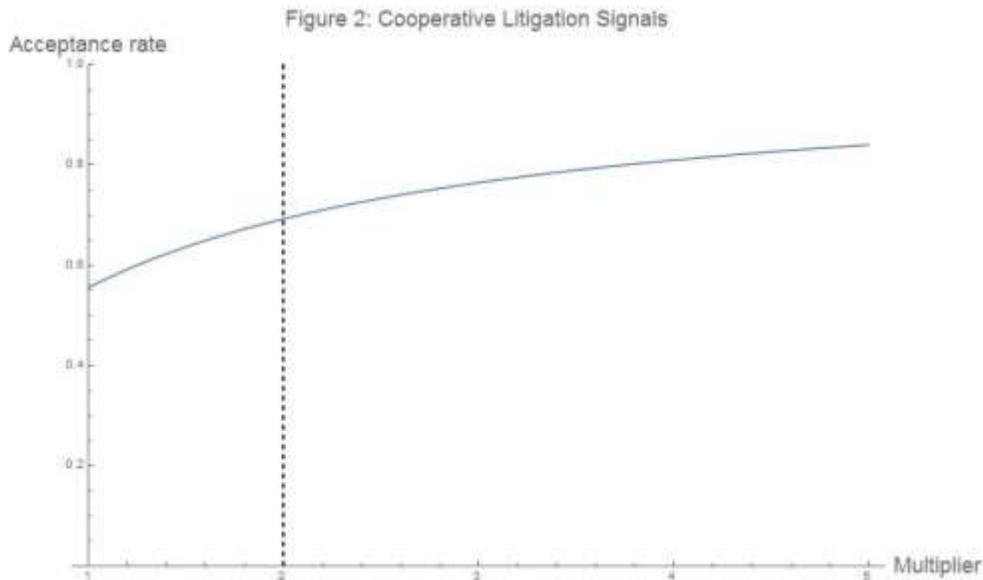
specific numerical example third-party signals would not be employed, as the costs of trial are too low, relative to the careful doctor's expected liability.

<sup>66</sup> Recall that in the model all high offers are settled, hence the actual rate of litigation is smaller than the rate at which low offers are rejected.

Consider the following message from an informed defendant to an uninformed plaintiff:

Hypothetical V—Multiplier with Upfront Payment.—“Here is my settlement offer. You can either (1). Accept it. (2). Reject it and go to trial. (3). Reject the offer and go to trial in which, if I lose, I promise to pay you twice your judgment, in return for an upfront, specified amount.”

Figure 2 shows how cooperative signals can reduce the rate of trial.<sup>67</sup>



The elegant and powerful feature of cooperative litigation signals is that they are costly to weak defendants who disguise as strong ones, but are costless to strong defendants. A payment from the plaintiff to the informed defendant is essential to achieve this goal—intuitively, in Hypothetical V this upfront payment should fully reimburse strong defendants for the risk of losing at trial (and pay twice the judgment).

To illustrate consider the foregoing numerical example, where the careless and careful doctors’ expected liability at trial is 100 and 60. Along the lines of Hypothetical V, the careful doctor now offers a multiplier of 2 on the judgment, conditional on losing the case, but in exchange she demands an upfront payment. This upfront payment should equal the careful doctor’s expected liability—60. With this cooperative signal provision the careful doctor expects to pay after trial an amount of  $60 * 2 = 120$ ; but she gains 60

<sup>67</sup> The numerical example used here is identical to Figure 1, and the dashed line again marks a multiplier of 2 on the judgment, as in Hypothetical V.

as an upfront payment. Hence, she expects to pay to the plaintiff 60, as if she did not commit to a multiplier. Now consider a careless doctor who presents herself as careful one, offering the same cooperative signal provision. This masking defendant can expect to pay at trial  $100 * 2 = 200$ ; but her gain from the upfront payment is only 60 (because she presented herself as a careful doctor). Hence, a masking defendant who mimics this cooperative signal expects to be penalized at trial and pay  $200 - 60 = 140$ , beyond her actual liability.<sup>68</sup> In sum, while defendants who offer truthful settlements are not punished by the cooperative signal provision, masking weak defendants expect to suffer greater losses. The larger the multiplier the higher the penalty to the masking weak defendants, while the expected liability of the strong types from trial remains the same. Put differently, higher multipliers allow the strong defendants to better signal their merits, leading to fewer settlements. (Although even relatively modest multipliers can generate a considerable increase in the rate of settlements, as Figure 2 demonstrates<sup>69</sup>).

As the Mathematical Appendix proves, unlike unilateral and third-party signals cooperative signals require no pre-requisites and they can always be effective. Moreover, the class of cooperative signals can take many forms. The gist is the uninformed plaintiff's payment, in exchange for the defendant's commitment. This payment can be made before or after trial; and it can be a fixed sum or conditional on losing the case.<sup>70</sup> Likewise, cooperative signals need not use straight multipliers on the judgment, and they can be executed through other signaling technologies, such as dropping claims and one-way fee-shifting.<sup>71</sup>

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<sup>68</sup> A weak defendant who goes to trial without this provision expects to pay to the plaintiff only 100.

<sup>69</sup> Consider our standard setting in which the strong- and weak-defendants' expected liabilities are 60 and 100, respectively, litigation costs are 25, and the share of strong- and weak-types in the population of defendants is equal. In this situation, neither unilateral nor third-party signaling is available, as the legal expenses are not sufficiently high (less than half of the expected judgment). However, cooperative signals can be effective. As a comparison, the benchmark rate of litigation in this setting is ~22.2% per our simulations. *Supra* note 49. A cooperative signal provision in which the strong defendant promises a multiplier of 1.3 on the judgment should the plaintiff win (in exchange for a fixed payment) results in a lower litigation rate, ~19.6%. A multiplier of 2 on the judgment further reduces the rate of litigation to ~15.4%—a reduction of almost one third in trials compared to the benchmark situation.

<sup>70</sup> Hypothetical V demonstrates a fixed payment made before trial. A conditional post-trial payment can take the following form: "Should she lose the case, the defendant agrees to pay  $x$  in addition to the judgment against her; in return, the plaintiff agrees to pay to the defendant an amount  $z$  in case he loses." Of course,  $x$  and  $z$  should be calculated such that it is costless for strong defendants to commit while it is costly for weak defendants to mimic the provision the strong defendant's signal.

<sup>71</sup> For the functional similarity between straight multipliers and other litigation strategies, such as waiver of claims and voluntary stipulations on fee-shifting rules, see *supra*

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We can summarize the findings of our analysis. First, signals can be used in the litigation context in order to convey information and facilitate settlements. The basic logic is similar to other signaling mechanisms—the strong defendants, who have private information that they cannot communicate, can engage in a voluntary commitment to the uninformed plaintiff, e.g., to pay more than they should in case they lose at trial. As these commitments are more costly for the weak defendant, this signal can separate strong from weak defendants in a cheaper way. In essence, these commitments rely on the fact that trials convey at least some information—hence a payment conditional on the judgment can serve as an effective signal.

Second, litigation signals can be triggered unilaterally—strong defendants can harm themselves in order to credibly convey the strength of their cases to the plaintiff. This logic is somehow intuitive, given the wide interest in signaling mechanisms more generally; indeed, several legal scholars alluded to this option. However, our analysis shows that unilateral signals reduce trials but they will typically not be utilized, as they are too costly for the informed defendants. Put differently, unilateral signals are socially valuable,<sup>72</sup> but they ordinarily do not benefit the party who holds private information.

Third, committing to pay a third-party conditional on losing the case can make these signals less costly, hence third-party signals should be more likely than unilateral signals. However, overall, third-party signals are also unlikely.

Fourth, litigation signals can be widely effective only when they are embedded in more complicated and less-intuitive settlement contracts. We refer to these provisions as cooperative signals, as they require cooperation between the informed defendant (who commits to pay more than she should in case the plaintiff wins at trial) and the uninformed plaintiff (who agrees to a certain payment in exchange for the defendant’s commitment). These provisions guarantee that the informed parties who convey truthful information are not harmed by invoking the signal. Cooperative signals are valuable from a societal perspective and they also benefit the informed defendants who use them.

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notes 53-56 and accompanying text. To illustrate, waiver of claims can be integrated into a cooperative signal provision through the following message from an informed defendant: “I am offering you a low settlement offer. To convince you that I am a strong defendant, if you reject my offer I am willing to drop my defense in exchange for a fixed payment.”

<sup>72</sup> We refer to these signals as socially valuable as they decrease the likelihood of costly trials. These signals can also have various ex-ante implications, e.g., decreasing the expected liability of non-negligent defendants and increasing the expected liability of negligent ones. Analyzing these effects is beyond the scope of this Article.

### B. Litigation Signals in the Wild

We do not purport to claim that our model precisely captures actual settlement negotiations behavior. Like other models, it provides a stylized description of real-world settings. Of course, litigants are not perfectly rational decision-makers, and real-life situations are more complicated than any model. It is plausible to believe, though, that models of this kind capture a wide range of actual settlement negotiations.<sup>73</sup> Specifically, while we discussed a concrete bargaining setting, our analysis eventually rests on plausible assumptions—it applies in general to asymmetric information situations in which the informed party has some bargaining power.<sup>74</sup>

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<sup>73</sup> Indeed, empirical evidence corroborates at least some of the predictions of other mathematical models of litigation. *See, e.g.*, the sources cited in *supra* note 27. For a more elaborate discussion on the fit of game-theoretical litigation models to actual settings see, *e.g.*, Hubbard, at \*21-22. Hubbard acknowledges that litigants “do not always make cool-headed calculations about litigation costs and benefits.” However, he concludes that motivations such as “[s]pite, [i]ndignation, and [o]ptimism” “surely temper the general results” of game-theoretical models, “but these considerations themselves ought not be overstated.” *Id.*, at \*21. Among other things “it is usually more realistic to treat the decisionmaker as the plaintiffs’ attorney, who has both the expertise, incentive, and emotional detachment to make decisions driven fundamentally by [cost-benefit calculations].” More generally, individual motivations of this sort should be reflected by the settlement—if the defendant knows that the plaintiff is particularly indignant she should raise her offer.

<sup>74</sup> We have tested our model against various settings with different underlying assumptions. We found that our general predictions are similar, and we briefly present here our conclusions. We have conducted most of these extensions in a companion, technical paper titled *Judgment Contingent Clauses*. First, a more complicated model, with an infinite number of different defendants with varying degrees of liability, rather than merely “weak” and “strong” ones, provides similar insights. Second, to the extent the parties’ resources are limited, such that they cannot credibly commit to a generous multiplier, the parties may still enjoy lower settlements. As Figures 1 and 2 show, even promises to relatively modest multipliers on the judgment generate a considerable reduction in the rate of trials. Third, in the main model we assumed that the plaintiff is better off bringing the lawsuit against all defendants (though the defendants’ expected liabilities vary). Similar predictions hold in situations in which the uninformed plaintiff has a good case against the weak defendant; but he is better off dropping the suit against the strong defendant, *i.e.*, the suit has a negative expected value against some defendants. Fourth, we assumed throughout that each side carries his or her legal expenses, under the so-called American rule; the results are similar under the British rule, in which the loser pays the winner expenses. Fifth, we accounted for the rising costs of litigation that are associated with inflating the stakes of the case through a multiplier. Our predictions are similar, under the assumption that litigation costs are relatively lower the greater the stakes, *i.e.*, investment in litigation has a decreasing marginal utility. Note that the decreasing marginal utility of investment in litigation is a plausible assumption, which is often made by legal scholars, *e.g.*, Avery Katz, *Judicial Decisionmaking and Litigation Expenditure*, 8 INT’L REV. L. ECON. 127, 129 (1988); David

Against this backdrop, to what extent do parties actually employ litigation signals? We do not claim that in all asymmetric information cases parties find the way to signal their type. There are several limitations on the actual use of litigation signals. In particular, transaction costs may hinder signaling in settlement negotiations. While unilateral and third-party signals seem relatively easy to execute, we have shown that they are not privately beneficial in typical cases, and hence will not be triggered ordinarily. However, cooperative signals—which in principle are always effective—are more difficult to undertake, as they require the parties to agree on two bilateral payments.<sup>75</sup>

Relatedly, one may suspect that lawyers impede the realization of litigation signals. Naturally, lawyers have an interest in a prolonged litigation; this is particularly true for defense lawyers, who are paid on an hourly basis (rather than contingency fee). Lawyers, then, may hesitate to take proactive and more sophisticated steps—such as committing to a multiplier or “disarming” their client through the waiver of valuable claims—to induce settlements. More generally, there seems to be little innovation in the legal market; prior literature has indeed pointed to the inability of lawyers to stipulate over default rules to the benefit of their client.<sup>76</sup>

Finally, the overarching legal environment does not seem to encourage litigation signals. As will be discussed in the next part, specific doctrines of

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Rosenberg \*\*\*, and is consistent with empirical studies. EMERY G. LEE III & THOMAS E. WILLGING, FED. JUDICIAL CTR., LITIGATION COSTS IN CIVIL CASES: MULTIVARIATE ANALYSIS—REPORT TO THE JUDICIAL CONFERENCE ADVISORY COMMITTEE ON CIVIL RULES (2010). Sixth, we can apply a similar analysis to cases in which the plaintiff is informed and the defendant is not. Seventh, the same results hold when the informed party uses a fixed commitment, rather than a multiplier on the judgment; likewise, in cooperative signals the up-front payment can be paid before or after trial, and it can be supplanted by a contingent payment. Eighth, we stress that we do not require courts to be perfect decision-makers; judges in our model can make errors, and it suffices that courts, on average, are able to distinguish between strong and weak parties.

<sup>75</sup> Cf., Donohue, *supra* note 12, at 1109-10 (distinguishing between procedural stipulations that improve both sides’ position and stipulations that are overall beneficial but require side payments from one party to another, and explaining why the latter requires “added negotiation costs that . . . will prevent some of [them].”).

<sup>76</sup> See, e.g., John C. Coates, IV, *Explaining Variation in Takeover Defenses: Blame the Lawyers*, 89 CAL. L. REV. 1301 (2001) (concluding, based on empirical analysis, that commercial lawyers do not implement the best takeover defenses for their client firms); Eisenberg & Miller, *supra* note 33, at 375 (in the context of attorneys that can advise their clients to stipulate over default rules of procedure, “no obvious market process exists that would drive out less efficient clauses”). This does not mean that there are no legal innovations. Martin Lipton, for instance, has famously devised the takeover defense known as “poison pill.” E.g., Lynn A. Stout, *Takeovers in the Ivory Tower: How Academics Are Learning Martin Lipton May Be Right*, 60 BUSINESS LAWYER 1435 (2005). Such innovations, though, seem to be rare.

procedure inhibit signaling—and through some modifications, courts can create an environment more conducive to litigation signals.

Although there are various limitations on the implementation of litigation signals, we suspect that they are relatively common. While direct empirical data is hard to collect and future research may shed more light on this point, the existing data seem to fit the litigation signals perspective. Recall that parties do not have to use explicit multipliers to signal their merits. Rather, litigation signals can be more subtle. They can be expressed through voluntary one-way fee-shifting rules and/or embedded in the process of pre-trial negotiation over procedural concessions. Indeed, parties often stipulate over default procedural rules.<sup>77</sup> Moreover, parties sometimes choose to voluntarily adopt a one-way fee-shifting rule, a puzzling practice that lacks direct explanation. The litigation signals approach provides such a justification. Along these lines, it is not uncommon for parties to explicitly waive important claims—and even more so, to implicitly refrain from raising them. In that sense, every filed motion can be utilized to convey valuable information—through the arguments the parties chose not to make, in addition to the arguments they explicitly made. Accordingly, a recent study finds that the *mere filing* of a non-discovery motion encourages settlements.<sup>78</sup> This finding is at least somehow surprising, as these motions seem to have no direct informational value. The litigation signals perspective provides a solid theoretical background for these data.<sup>79</sup> More generally, there seems to be a discrepancy between the fact that the vast majority of cases—“on the order of 95 percent”—are settled before trial; and the general predictions of the theoretical models.<sup>80</sup> The use of litigation signals can help bridging this gap between the evidence and the theoretical models.<sup>81</sup>

The litigation signals theory comports with this existing evidence. There are, of course, alternative explanations. Litigants may have independent reasons to adopt one-way fee-shifting and waive procedural rights. Motions can have direct informational value that facilitates settlements, and parties

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<sup>77</sup> See, e.g., Eisenberg & Miller, *supra* note 33, at 354 (documenting the willingness of commercial parties in pre-dispute agreements to opt out from the default procedures concerning jury trials and attorney’s fees).

<sup>78</sup> Christina L. Boyd & David A. Hoffman, *Litigating Toward Settlement*, 29 J. L. ECON. & ORG. 898 (2012). Boyd and Hoffman’s sample comprises corporate veil-piercing cases, which may well involve asymmetric information.

<sup>79</sup> Cf., *id.*, at 904-05 (proposing several theoretical explanations without discussing signaling).

<sup>80</sup> Farmer & Pecorino, *supra* note 28, at 157.

<sup>81</sup> According to Farmer & Pecorino, the theoretical explanation for this discrepancy is the capacity of litigants to voluntarily disclose important pieces of information. *Id.* However, in many situation parties cannot credibly convey information, *supra* note 19, and they have to signal it through other means, as we describe throughout the Article.

may be able to disclose information voluntarily, pre-trial, bridging informational gaps in various ways. However, taken overall, it is plausible to think that the litigation signals theory that we present can explain at least part of these practices.

#### IV. LEGAL IMPLICATIONS

The capacity of litigants to signal the strength of their cases, through multiple channels, has various implications on legal procedure. This part focuses on three issues: litigation signals as a substitute for formal discovery; the freedom of parties to fashion procedures; and the creation of court-sponsored mechanisms to facilitate signaling.

##### A. *Substituting for Discovery*

Our findings challenge the centrality of the asymmetric information assumption. As we show, litigants have a myriad of ways to bridge informational gaps. This perspective directly pertains to current debates on discovery—discovery is considered the major tool to overcome asymmetric information problems, but its scope has been curtailed in recent years. This anti-discovery trend has triggered fierce reactions; absent discovery, the argument goes, the problems that asymmetric information poses are magnified. However, as we argue, litigants can bridge informational gaps through signaling, and this capacity to convey information is a substitute for discovery. Our account suggests, then, that the detrimental effects of the anti-discovery trend may well be smaller than they are perceived to be.

Notwithstanding its informational benefits, discovery is also notorious for the costs it inflicts on the parties. As noted by the Supreme Court, “discovery accounts for as much as 90 percent of litigation costs” where it is employed.<sup>82</sup> This threat of “enormous expense of discovery” raises concerns that it “will push cost-conscious defendants to settle even anemic cases before reaching those proceedings.”<sup>83</sup>

These problems have galvanized policymakers to cut the right to discovery. Two recent developments have particularly marked this sharp anti-discovery trend. First, in the last decade new Supreme Court precedents raised pleading standards. Courts are directed to dismiss—at the outset of litigation and before discovery kicks in—cases that do not present at that stage “enough facts to state a claim to relief that is plausible on its face.”<sup>84</sup> This doctrinal move is motivated by the desire to curb discovery, as plaintiffs

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<sup>82</sup> Bell Atl. Corp. v. Twombly, 550 U.S. 544, 559 (2007) (citation omitted). *See also id.*, at 558-59 (referring to various sources regarding discovery costs, particularly in the context of antitrust litigation).

<sup>83</sup> *Id.*, at 559.

<sup>84</sup> *Id.*, at 570. *See also* Ashcroft v. Iqbal, 556 U.S. 662, 678 (2009).

have to meet a higher burden to proceed to discovery.<sup>85</sup> Indeed, as a response to the heightened pleading standards, critics have called for wider (and earlier) discovery.<sup>86</sup>

Second, on December 1, 2015, several amendments to the Federal Rules of Civil Procedure took effect. The most salient of these amendments constrain the right to discovery in various ways.<sup>87</sup> Consider, for example, the following two important limitations on discovery in the 2015 Amendments. First, the amendments emphasize that discovery proceedings should be “proportional to the needs of the case” in light of relevant factors.<sup>88</sup> The goal is to “restore[] . . . proportionality factors to their original place. . . [and] reinforce[] the . . . obligation of the parties to consider [the proportionality] factors . . . .”<sup>89</sup> Plausibly, this change will place a greater burden “on the party moving to compel to show that its discovery request was proportional.”<sup>90</sup> Second, the amended rules now “include an express recognition” for district courts to “allocate expenses for . . . discovery.”<sup>91</sup> Simply put, this change threatens to shift the expenses of discovery to the requesting party, typically, the uninformed plaintiff.<sup>92</sup>

This anti-discovery trend has direct implications on asymmetric information situations. It has thus roused vigorous responses, which typically stress the detrimental effects of the amendments on uninformed plaintiffs.<sup>93</sup>

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<sup>85</sup> For these tradeoffs between discovery and pleading standards see generally *id.*, at 556-60; Bone, *Pleading Rules*, *supra* note 21.

<sup>86</sup> *E.g.*, Malveaux, *supra* note 20, at 70 (“[T]rial courts can and should consider narrow, targeted discovery to determine plausibility at the pleading stage”); THE 2010 REPORT, at 6 (presenting the view that “encourage[s] . . . rule amendments that would explicitly integrate pleading with limited initial discovery in [asymmetric information] cases.”).

<sup>87</sup> *E.g.*, Robin Effron, *Anti-Plaintiff Bias in the New Federal Rules of Civil Procedure*, JOTWELL (January 5, 2016) (reviewing Patricia W. Hatamyar Moore, *The Anti-Plaintiff Pending Amendments to the Federal Rules of Civil Procedure and the Pro-Defendant Composition of the Federal Rulemaking Committees*, 83 U. CIN. L. REV. 1083 (2015)), <http://courtslaw.jotwell.com/anti-plaintiff-bias-in-the-new-federal-rules-of-civil-procedure/>.

<sup>88</sup> FED. R. CIV. P. 26(b)(1).

<sup>89</sup> FED. R. CIV. P. 26(b)(1), Advisory Committee’s Notes (2015 Amendment).

<sup>90</sup> Moore, *supra* note 87, at 1116.

<sup>91</sup> FED. R. CIV. P. 26(c)(1)(B), Advisory Committee’s Notes (2015 Amendment). The stated goal is to protect against “undue burden or expense.” FED. R. CIV. P. 26(c)(1).

<sup>92</sup> Moore, *supra* note 89, at 1116. In addition to these two limitations on discovery, the 2015 Amendments include other provisions that narrow the scope of discovery. *See generally id.*, at 1106-29.

<sup>93</sup> As the Advisory Committee on Civil Rules acknowledges, the pleading standards debate “focuses on cases in which plaintiffs lack access to information necessary to plead sufficiently because that information is solely in the hands of the defendants.” JUDICIAL CONFERENCE ADVISORY COMM. ON CIVIL RULES & COMM. ON RULES OF PRACTICE & PROCEDURE, REPORT TO THE CHIEF JUSTICE OF THE UNITED STATES ON THE 2010 CONFERENCE ON CIVIL LITIGATION 6 (n.d.) [hereinafter THE 2010 REPORT], *available at*

Indeed, numerous stakeholders have criticized the new pleading standards and suggested policy reforms, particularly with regard to legal areas that suffer from asymmetric information problems.<sup>94</sup> The 2015 Amendments concerning discovery have triggered similar reactions. As “they usually have less access to the relevant information than defendants,” “plaintiffs need discovery far more than defendants.”<sup>95</sup> Accordingly, scores of scholars (literally!) have lamented the “anti-plaintiff” approach that these amendments reflect.<sup>96</sup>

These strong reactions are unsurprising, as discovery is deemed essential

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<http://www.uscourts.gov/file/reporttothechiefjusticepdf>.

<sup>94</sup> See, e.g., Malveaux, *supra* note 20 (arguing that, due to the “informational inequity between the parties,” a civil rights “plaintiff today may find his complaint vulnerable to premature dismissal because of the more rigorous pleading standard,” *id.*, at 126); Arthur R. Miller, *From Conley to Twombly to Iqbal: A Double Play on the Federal Rules of Civil Procedure*, 60 DUKE L.J. 1, 105 (2010) (arguing that as the new Supreme Court precedents “require a plaintiff to have greater knowledge concerning his claim either before instituting an action or immediately thereafter, inequality of information access during those critical time frames poses a significant—if not the most significant—problem for many people seeking affirmative relief”); Howard M. Wasserman, *Iqbal, Procedural Mismatches, and Civil Rights Litigation*, 14 LEWIS & CLARK L. REV. 157, 157 (2010) (“Unfortunately, the greater detail demanded by the new pleading rules may be impossible in many civil rights cases” and predicting “a significant decrease in enforcement and vindication of federal constitutional and civil rights.”); A. Benjamin Spencer, *Plausibility Pleading*, 49 B.C. L. REV. 431, 481 (2008) (criticizing the new precedents, and stating that, in particular, “it is a greater shame that discovery is foreclosed for [plaintiffs] in circumstances where the needed supporting facts lie within the exclusive possession of the defendants”); Bone, *Pleading Rules*, *supra* note 21, at 933–34 (analyzing these problems and proposing a fee-shifting approach coupled with limited pre-dismissal discovery). See also Hubbard, *supra* note \*\*\*, at \*4 (surveying the literature that, in light of the new pleading standards, “expresse[s] concern for civil rights plaintiffs, and especially employment discrimination plaintiffs, who often lack direct evidence of the defendant’s motives at the outset of litigation”).

<sup>95</sup> Moore, *supra* note 87, at 1112.

<sup>96</sup> For this expression see Moore, *supra* note 87, at 1112. Notably, during the rulemaking process, 171 law professors, led by Janet Alexander, Judith Resnik and Stephen C. Yeazell, “urge[d] th[e] Committee [on Rules of Practice and Procedure] to reject the proposed amendments to the Federal Rules of Civil Procedure that would limit the scope of discovery,” to no avail. LETTER OF 171 LAW PROFESSORS URGING REJECTION OF CHANGING FEDERAL RULES TO LIMIT DISCOVERY AND ELIMINATE FORMS (2014), *available at* [http://www.lfcj.com/uploads/3/8/0/5/38050985/frcp\\_171\\_law\\_professors\\_urgin\\_rejection\\_of\\_changing\\_federal\\_rules\\_2.18.14.pdf](http://www.lfcj.com/uploads/3/8/0/5/38050985/frcp_171_law_professors_urgin_rejection_of_changing_federal_rules_2.18.14.pdf). See also Moore, *supra* note 87, at 1112 n.140 (stating that “virtually all of the US law professors who teach Civil Procedure opposed the[proposed] changes [but] [t]he Committee ignored all academic input,” and referring to various sources); Danya Shocair Reda, *The Cost-and-Delay Narrative in Civil Justice Reform: Its Fallacies and Functions*, 90 OR. L. REV. 1085, 1086 (2012) (challenging the rulemaking process and the empirical assumptions behind it); Suja A. Thomas, *Via Duke, Companies Are Shaping Discovery*, LAW360 (November 4, 2015, 2:41 PM), <http://www.law.illinois.edu/news/article/3175> (criticizing the rulemaking process and the ensuing anti-plaintiff amendments).

to bridge informational gaps, especially in the common asymmetric information situations. On the other hand, exactly in these situations it is clear that the informed party is charged with the burden of responding to discovery.<sup>97</sup> No wonder, then, that the anti-discovery trend has incited strong positions from both sides, for and against the right to broad discovery.<sup>98</sup> Eventually, this ongoing debate implicates judgment calls and inevitable tradeoffs regarding the right balance that should be struck.

While we do not aim to argue in favor or against a broader right to discovery, we offer a fresh and novel perspective to enrich this debate. Our discussion challenges the notion that in asymmetric information cases “only formal discovery is able to provide plaintiffs with information necessary to plead adequately.”<sup>99</sup> Hence, we suspect that the predictions regarding the detrimental effects of the anti-discovery trend should be qualified; the capacity of privately-informed litigants to convey information in order to save their future trial costs mitigates these effects. Given the array of signaling techniques that parties have, it is perhaps not “a great[] shame that discovery is foreclosed,” even in asymmetric information situations.<sup>100</sup>

Our argument is theoretical, and future empirical investigations is needed to verify its strength. Some evidence nonetheless corroborates our position. As mentioned before, many cases settle in early stages without the need to conduct discovery; moreover, perhaps surprisingly, the mere filings of motions that seemingly lack direct informational value encourages settlements.<sup>101</sup> These findings fit our predictions. Our logic also comports with other puzzling pieces of evidence, concerning the effect of the new pleading standards. As the heightened standards narrow uninformed plaintiffs’ access to discovery, plaintiffs should be worse off as a result. Nonetheless, “despite a large body of empirical work on [the new standards], the quantitative evidence on the[ir] effects . . . is to date inconclusive,”<sup>102</sup> or at best minimal.<sup>103</sup> These findings can be explained by the ability of parties

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<sup>97</sup> In asymmetric information situations “the burden of responding to discovery lies heavier on the party who has more information.” FED. R. CIV. P. 26(b)(1), Advisory Committee’s Notes (2015 Amendment).

<sup>98</sup> *Cf.*, Moore, *supra* note 89, at 1116: “Plaintiff’s lawyers almost unanimously opposed [the contraction of discovery under the 2015 Amendments], and defendant’s lawyers almost unanimously favored, the changes.”

<sup>99</sup> THE 2010 REPORT, at 6. *See also* Wasserman, at 169 (in asymmetric information situations, the necessary information is “only gained through some court-supervised discovery.”).

<sup>100</sup> Spencer, at 481.

<sup>101</sup> Boyd & Hoffman, *supra* note 78.

<sup>102</sup> Hubbard, at 5.

<sup>103</sup> By examining the evidence to date, David Engstrom concludes that “the more rigorous [quantitative] studies . . . suggest that [the new pleading standards doctrine] has had, at most, a single-digit impact on the observed [behavior of district court judges].” David

to convey information through signaling, in lieu of formal, judge-supervised discovery.<sup>104</sup> We enrich, then, the usual debate on discovery by stressing that signaling mitigates consequences of a limited right to discovery.<sup>105</sup>

### B. Parties' Rulemaking

The litigation signals perspective emphasizes the capacity of parties to convey information through a wide array of voluntary commitments. It follows, then, that the more freedom the parties have to fashion their procedures—what Robert Bone refers to as parties' rulemaking—the easier it would be for them to signal information. The literature has struggled to define the proper scope of parties' rulemaking, laying out various for-and-against arguments.<sup>106</sup> Similarly to the discovery debate, we add a new perspective to the usual discourse, in favor of greater procedural freedom. In addition to this more general argument, the following briefly highlights several concrete procedural instances that can benefit from the litigation signals approach.

*Voluntary signals and mandatory rules.* Litigation signals enable informed parties to indicate their strength by undertaking a commitment—to agree to a one-way fee-shifting provision, to waive a statute of limitations defense, etc. A mandatory requirement, such as a one-way fee-shifting rule against certain wrongdoers, applies to all defendants. It does not allow the “good” defendants to convey their strength by disarming themselves and taking additional obligations. Hence, it cannot serve as an informative signal.<sup>107</sup> Likewise, mandatory rules of procedure cannot serve as litigation signals—parties ought to have the option to waive their rights in order to

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Freeman Engstrom, *The Twiqbal Puzzle and Empirical Study of Civil Procedure*, 65 STAN. L. REV. 1203, 1234 (2013).

<sup>104</sup> Our analysis therefore complements other theoretical work that suggests, for various other reasons, that the new pleading standards cases have only subtle effect on plaintiffs. *E.g.*, Adam N. Steinman, *The Pleading Problem*, 62 STAN. L. REV. 1293, 1314–1327; Hubbard; Bone/Iowa. 879–98.

<sup>105</sup> It should be noted that the argument for litigation signals hinges on the desire of the strong defendants to distinguish themselves from the weak ones—which is fueled by the prospect of litigation expenses that the strong defendants incur should the case proceed. Hence, to the extent defendants can fend off plaintiffs *costlessly*, litigation signals cannot avail those plaintiffs who lack information with regard to the value of their case. In this sense, to the extent the new pleading regime enables defendants to costlessly dismiss cases, litigation signals are not effective in overcoming informational gaps.

<sup>106</sup> Bone, parties' rulemaking; Klement/Kapeliuk.

<sup>107</sup> In this sense, proposals that suggest imposing a mandatory bond requirement, which would be paid to the rival party depending on the outcomes of the lawsuit, do not constitute signaling. *E.g.*, Fabio Arcila, Jr., *Plausibility Pleading As Misprescription*, 80 BROOK. L. REV. 1487, 1534 (2015) (discussing proposals that “impos[e] bond requirements for accessing pre-litigation discovery”); Hoffman, *supra* note 21, at 274 n.164 (noting an actual case that demonstrates a bond requirement).

credibly indicate their merits. While procedural rules are by and large default rules, some procedural policies are mandatory. Subject matter jurisdiction is a notable example—parties cannot agree, explicitly or implicitly, to adjudicate in a court that lacks jurisdiction.<sup>108</sup> There are other, more subtle examples. We noted previously the signaling power of contractual provisions that stipulate over the American rule and create a voluntary one-way fee-shifting regime; these provisions are akin to a multiplier of ~1.3, which can be used unilaterally or cooperatively.<sup>109</sup> However, several states—most notably California—forbid these agreements.<sup>110</sup>

These restrictions on parties' freedom to fashion their procedures have independent policy reasons. Subject matter jurisdiction, for example, is an external limit on the power of courts.<sup>111</sup> Restrictions on one-way fee-shifting agreements seem to be motivated by the desire to prevent powerful parties from drafting disadvantageous provisions.<sup>112</sup> Again, we do not want to doubt the wisdom of these policies. Rather, our goal is to stress that these restrictions narrow the array of signaling options available to informed parties.

*Credible commitments, renegeing, and rigid procedures.* At the core of effective signals lies the “good” party’s promise to take upon itself an obligation that the “bad” defendant is unwilling to offer. If the plaintiff knows that defendants can renege on their commitments, their signal loses its informative value. This simple point intersects with the desired procedural policy. Obviously, to make the signal credible courts should not allow parties to renege on their contractual stipulations. In addition to fully respecting contractual stipulations, there are more subtle ways in which civil procedure rules can encourage credible commitments. In particular, rigid rules avoid the option of late changes of mind and ensure that parties can commit to irreversible choices.<sup>113</sup>

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<sup>108</sup> *E.g.*, Shay Lavie, *Are Judges Tied to the Past? Evidence from Jurisdiction Cases*, 43 HOFSTRA L. REV. 337, 343-46 (2014) (discussing the unique characteristics of subject-matter jurisdiction).

<sup>109</sup> [Refer]

<sup>110</sup> CAL. CIV. CODE § 1717(a). In addition to California, other states with similar restrictions include Oregon, Washington, and New York. Eisenberg & Miller, *supra* note 33, at 329 n.6, 342.

<sup>111</sup> *E.g.*, Lavie, *supra* note 108, at 343-46.

<sup>112</sup> The rule in New York, for example, bars landlords from recovering attorneys' fees from their tenants, but it does not proscribe the reverse option. N.Y. REAL PROP. LAW § 234. See also Harold J. Krent, *Explaining One-Way Fee Shifting*, 79 VA. L. REV. 2039, 2043 n.25 (1993) (stating that “apparently only consumers ever agree to one-way fee shifting schemes against themselves (e.g., with providers of medical and financial services), and the voluntariness of their decisions is open to question.”).

<sup>113</sup> *Cf.*, Rhee, *supra* note 7, at 540 (discussing the capacity of parties to offer a “bond of good faith [by] the assumption of a higher standard of proof” and maintaining that the “bond

To illustrate consider the following. A strong defendant plans to signal her strength through dropping a preliminary, statute-of-limitations claim (along the lines of Hypothetical II above). The Federal Rules of Civil Procedure hold that this defense must be raised by the defendant early on—within her answer to the plaintiff’s complaint.<sup>114</sup> Accordingly, an answer that fails to raise a statute of limitations defense should indicate to the plaintiff that the defendant is willing to forego the defense. However, this strict rule is subject to the general permissive approach the Rules embrace. Rule 15, which governs the issue of amendments to pleadings, allows defendants to tardily raise waived arguments—notwithstanding the rival litigant’s opposition, “[t]he court should freely give leave [to amend] when justice so requires.”<sup>115</sup> Courts have interpreted this rule broadly, to freely permit late amendments.<sup>116</sup> As plaintiffs can anticipate the capacity of defendants to renege and amend their answer, the early signal loses its informative value.

The liberal amendment rules are part of a more general, permissive approach to procedure. Unlike past, strict procedures, modern “[c]ourts are very reluctant . . . to make cases turn on pleading errors, even those that appear to be deliberate and in bad faith.”<sup>117</sup> This liberal approach has merits, as it assigns greater weight to fairness at the expense of strict, technical pleading.<sup>118</sup> The merits of this perspective notwithstanding, the litigation signals approach highlights the overlooked, subtle benefits that strict procedures entail.

Furthermore, the analysis in this Article could affect the interpretation of Rule 15. Currently, courts have interpreted Rule 15 broadly, refusing to grant leave to amend only under extreme circumstance. In particular, courts ask whether the plaintiff “was taken by unfair surprise and prejudiced by the delayed assertion.”<sup>119</sup> However, signaling enables strong defendants to

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is useless if it can be canceled [later]”).

<sup>114</sup> FED. R. CIV. P. 8(c)(1).

<sup>115</sup> FED. R. CIV. P. 15(a)(2). Moreover, in the first 21 days after serving it, a party “may amend its pleading once as a matter of course.” FED. R. CIV. P. 15(a)(1).

<sup>116</sup> *Infra* note 119 and accompanying text.

<sup>117</sup> JACK H. FRIEDENTHAL ET AL., CIVIL PROCEDURE 305 (4th ed. 2005).

<sup>118</sup> RICHARD L. MARCUS ET AL., CIVIL PROCEDURE: A MODERN APPROACH 245 (6th ed. 2013). Accordingly, “[j]ustice is more likely to prevail in a fact-driven system than in one constrained by rigid procedure.” Jonathan T. Molot, *How Changes in the Legal Profession Reflect Changes in Civil Procedure*, 84 VA. L. REV. 955, 985 (1998).

<sup>119</sup> *S. Wallace Edwards & Sons, Inc. v. Cincinnati Ins. Co.*, 353 F.3d 367, 373-4 (4th Cir. 2003). Or, in the words of the Supreme Court:

In the absence of any apparent or declared reason—such as undue delay, bad faith or dilatory motive on the part of the movant, repeated failure to cure deficiencies by amendments previously allowed, undue prejudice to the opposing party by virtue of allowance of the amendment, futility of amendment, etc.—the leave sought should, as the rules require, be ‘freely given.’

distinguish themselves from weak ones; hence, from a litigation signals approach, whether the plaintiff was “taken by unfair surprise and prejudiced” is irrelevant. Delayed amendments are detrimental to credible signaling regardless of these factors.

The perspective illuminated in this Article suggests a more nuanced application of the interests that Rule 15 represents. Courts should be suspicious towards tardy assertions when there are asymmetries of information in the background. Furthermore, as implicit waivers of this kind are unilateral in nature,<sup>120</sup> late amendments are particularly suspicious where the costs are high relative to the stakes.<sup>121</sup>

*Judicial hostility to litigation signals.* More generally, courts and policymakers seem to be hostile to several litigation maneuvers that could be utilized as litigation signals.

The following actual example, *Adams v. United Services Automobile Ass’n*, can illustrate.<sup>122</sup> The plaintiffs in *Adams* brought a class action against their insurer. The case was filed in Arkansas state court—ostensibly, a pro-plaintiff forum. The insurer removed the case to a federal court, a more favorable forum for defendants. Later, after settlement negotiations, the insurer agreed to dismiss the federal proceedings. In the foregoing terminology, the defendant dropped its right to adjudicate the case in the more favorable federal court. Concurrently, the parties went back to Arkansas state court and settled.<sup>123</sup> This description fits a unilateral signal that is based on dropping the claim to federal jurisdiction—resulting in an early settlement that saved the need to conduct costly discovery and trial. Importantly, it seems that the signal—dropping federal jurisdiction—was essential to overcome the obstacles that inhibited settlement.<sup>124</sup>

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Foman v. Davis, 371 U.S. 178, 182 (1962).

<sup>120</sup> If the signal were cooperative, the parties would presumably agree, through an explicit contract, to disregard the statute of limitations claim; in that case, tardy assertions would contradict this agreement.

<sup>121</sup> Recall that a pre-requisite to unilateral signals is that litigation expenses are at least half of the expected judgment. *Supra* Part III.A.2.

<sup>122</sup> W.D. Ark. No. 2:14-cv-02013.

<sup>123</sup> Andrew Samuels, *Arkansas Federal Court to Consider Sanctioning Attorneys for Using Federal Jurisdiction as “Bargaining Chip” in Negotiating State-Court Class Settlement*, CLASS ACTION LAWSUIT DEFENSE (Jan. 27, 2016), available at <http://www.classactionlawsuitdefense.com/2016/01/27/arkansas-federal-court-to-consider-sanctioning-attorneys-for-using-federal-jurisdiction-as-bargaining-chip-in-negotiating-state-court-class-settlement/>.

<sup>124</sup> The reader may wonder whether a similar signal could have been accomplished without removing the case to the federal forum and then dropping it—*e.g.*, a statement of the defendant in which it commits to never remove the case to a federal court. This is, of course, a similar signal, though we suspect that it would not constitute a credible commitment as courts would allow the defendant to renege on such a promise. *Cf.*, the discussion on renegeing

On its face, then, this act of signaling should be embraced—it facilitated early settlement and saved precious resources, for the court as well as the parties. In actuality, it was denounced by the federal judge that presided the case as “abuse of process in using [the federal court] as a bargaining chip in the negotiation” and “inappropriate procedural gamesmanship with no intent to actually litigate claims in good faith before [the federal court].”

The federal judge’s dissatisfaction is understandable—the defendant did use the federal court’s jurisdiction “as a bargaining chip.” But from a litigation signals perspective, this “bargaining chip” is necessary for the defendant to convey information to the plaintiff and achieve an early settlement.<sup>125</sup> While the federal judge may have had other reasons to condemn the behavior of the attorneys,<sup>126</sup> this story demonstrates how the litigation signals approach can illuminate various litigation maneuvers.

Similar notions against “gamesmanship” can hamper litigation signals in other contexts. In particular, the use of simple multipliers on judgments as litigation signals (Hypotheticals III-V) seems to be vulnerable to anti-gambling provisions. Several courts in the U.S. have found that third-party investment in litigation, in exchange for a sum contingent on the outcome (e.g., one third of the judgment), constitutes an unlawful gambling—“a bet by which two parties agree that a certain sum . . . should be paid . . . on the happening . . . of an uncertain event.”<sup>127</sup> This logic also renders multiplier provisions unlawful. And it may be the reason for which outright multipliers, as opposed to other signaling techniques such as dropping claims and one-way fee-shifting clauses, are uncommon. Similarly to other litigation maneuvers that at first blush may seem to be “inappropriate procedural gamesmanship,” the litigation signals approach sheds a different light on these “bets.” It can thus dissipate legal concerns over judgment-contingent multipliers.<sup>128</sup>

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and credible commitments, *supra* notes 113-121 and accompanying text. Be that as it may, the defendant in *Adams* may have changed its inclination to settle after removing the case to a federal court and before agreeing to leave the federal forum.

<sup>125</sup> This does not mean that the attorneys in this case should not be sanctioned for the expenses their move created for the federal court. As the case was pending and required little judicial attention, however, it is plausible to think that these costs are minimal.

<sup>126</sup> Specifically, the federal judge in *Adams* was bothered that the parties attempted to avoid the strict scrutiny of class action settlements in the federal forum, in order to enjoy the more lenient review in the state court. Samuels, *supra* note 123.

<sup>127</sup> *Wilson v. Harris*, 688 So. 2d 265 (Ala. Civ. App. 1996) (internal quotation marks omitted). For a discussion of this case see Anthony J. Sebok, *Betting on Tort Suits After the Event: From Champerty to Insurance*, 60 DEPAUL L. REV. 453, 457-58 (2011), who characterizes the case as “significant because the effect of the holding was to end litigation investment in Alabama.” *Id.*, at 458. See generally *id.* (exploring the argument that third-party investment in litigation constitutes illegal gambling).

<sup>128</sup> *Cf.*, Sebok, *supra* note 127 at 471, who summarizes the equation of third party

### C. Courts Procedures

Parties have a myriad of ways, then, to signal information without formal discovery. Nonetheless, as the foregoing shows, some of these mechanisms are frowned upon by courts. More generally, recent studies suggest that litigants do not fully materialize the benefits of private contracting.<sup>129</sup> This reality indicates that there is a large room for utilizing court-procedures to facilitate bargaining—and signaling—between the parties.<sup>130</sup> In particular, the use of court-procedures can streamline third-party signals.

Third-party litigation signals are promises to pay a certain sum in addition to the judgment to a third-party, conditional on losing the case. Our analysis suggests that third-party signals may be the easiest to implement. Unlike cooperative signals, third-party signals require little cooperation between the parties. Unlike unilateral signals, third party signals are more likely to be triggered by informed litigants, as they entail no direct gain to the rival party.<sup>131</sup> However, third-party signals require the uninformed party, the plaintiff in our examples, to believe that the defendant’s promise to pay to a third party (upon losing the case) is credible.<sup>132</sup> Mere promises to pay third parties can be meaningless, from the plaintiff’s perspective; and obligations that are more trustworthy necessitate more elaborate and costly devices. A simple and effective solution is using courts for this purpose—by allowing the defendant to deposit the additional sum with the clerk-of-court, to be payable to the court should the defendant lose the case.

This simple proposal to utilize courts to facilitate third-party signals relates to current discussions on the proper role of Rule 68 offers. According to this rule of civil procedure, “a party defending against a claim may serve

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investment with gambling:

[O]ne common criticism of [third-party investment in litigation views] it [a]s a form of gambling. This line of attack is not persuasive not because [third-party investment] may not satisfy the definition of wagering, but because . . . the fact that a contract conditions the award of money on the occurrence of an uncertain event tells us nothing about whether . . . the contract serves a socially useful function.

<sup>129</sup> David A. Hoffman, *Whither Bespoke Procedure?*, 2014 U. ILL. L. REV. 389, 429 (“There is precious little evidence that parties are routinely, or even rarely, attempting to tailor [rules of procedure] to their own ends.”).

<sup>130</sup> There is surprisingly little academic and practical interest in this issue beyond the context of Rule 68, which will be discussed below. One exception is Gertner & Miller, *supra* note 19, who envision a process in which the court secretly receives offers from both sides, to encourage parties to make truthful demands and increase settlements rates.

<sup>131</sup> Recall that unilateral signals push the uninformed party, the receiver of the signal, to demand higher settlements that reflect its better position. *Supra* note \*\*\*.

<sup>132</sup> *Cf.*, the similar problem that we identified in the context of commitments to drop claims, *supra* notes 113-121 and accompanying text.

on an opposing party an offer to allow judgment on specified terms,<sup>133</sup> where rejection of this offer entails possible consequences.<sup>134</sup> In January 2016, the Court decided an important Rule 68 case, *Campbell-Ewald Co. v. Gomez*.<sup>135</sup> The defendant in *Gomez*, a class action, argued that an unaccepted Rule 68 promise to pay the named plaintiff renders a putative class action moot. The majority of the Court rejected this logic, refusing to extend the interpretation of Rule 68. While a comprehensive discussion of the doctrinal nuances of *Gomez* is beyond the scope of this Article, it seems that an important factor in the Court's decision was the manner in which the offer was tendered.<sup>136</sup> The majority specifically limited the holding to the circumstances—a mere promise that the defendant made to the plaintiff, as opposed to actually depositing the amount in full.<sup>137</sup> The dissent, per Chief Justice Roberts, stressed, by contrast, that the defendant “is a multimillion dollar company” whereas the settlement offer “is for a few thousand dollars”,<sup>138</sup> hence, the defendant is clearly capable of paying the amount offered and fulfilling its offer.<sup>139</sup> The defendant's financial strength notwithstanding, there seems to be a difference between a mere promise to pay and actually depositing the money. Indeed, one of the dissenting Justices suggested that defendants should, as an alternative, “deposit the money with the district court” or “another trusted intermediary.”<sup>140</sup>

*Gomez* illustrates the practical importance of court-procedures in facilitating settlements. The dissenting Justices in *Gomez* dismissed the different mechanisms to tender Rule 68 offers as mere formalities.<sup>141</sup>

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<sup>133</sup> FED. R. CIV. P. 68(a).

<sup>134</sup> *E.g.*, “[i]f the judgment that the offeree finally obtains is not more favorable than the unaccepted offer, the offeree must pay the costs incurred after the offer was made.” FED. R. CIV. P. 68(d).

<sup>135</sup> *Campbell-Ewald Co. v. Gomez*, No. 14-857.

<sup>136</sup> For a short discussion of the decision see Wylan Ackerman, *Supreme Court Opinion In Campbell-Ewald Co. v. Gomez: Kicking The Can Down The Road*, CLASS ACTIONS INSIDER (Jan. 20, 2016), available at <https://www.classactionsinsider.com/2016/01/supreme-court-opinion-in-campbell-ewald-co-v-gomez-kicking-the-can-down-the-road/>.

<sup>137</sup> See *id.*, at slip op., at 11 (majority opinion p. 11) (“We need not, and do not, now decide whether the result would be different if a defendant deposits the full amount of the plaintiff's individual claim in an account payable to the plaintiff”).

<sup>138</sup> *Id.*, at 5. (Roberts opinion).

<sup>139</sup> “[I]t would be mere pettifoggery to argue that [the defendant here] might not make good on [its] promise.” *Id.* See also Justice Alito's concurrence with the dissent, at p. 1 (“I write separately to emphasize what I see as the linchpin for . . . this case: There is no real dispute that [the defendant] would make good on its promise to pay Gomez the money it offered him if the case were dismissed.” (internal quotation marks omitted)).

<sup>140</sup> *Id.*, at 3.

<sup>141</sup> See Justice Alito concurrence with the dissent, at 3 n.2 (disregarding the “rigid formalities” of common-law tenders in this context); Chief Justice Roberts' comment, *supra*

However, at least in the context of litigation signals, the form in which the promise is made is important—rigid obligations, as opposed to mere promises, allow the uninformed litigant to better trust the message that its rival sends. While we are unaware of court procedures that enable litigants to commit to pay an additional sum, contingent on a judgment against them, this simple mechanism can facilitate the flow of information between the parties.

#### CONCLUSION

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## MATHEMATICAL APPENDIX

The following discusses the benchmark case (no signal beyond the offer itself) and unilateral, third-party, and cooperative litigation signals, providing sketches of proofs for the main propositions.

### A. Benchmark Case

**Set-up.** Consider a standard asymmetric information litigation model. A plaintiff brings a suit against a defendant whose type is private information. With some probability  $\alpha$  the defendant is of a strong type, and the expected judgment if the case goes throughout the adjudication process is  $J_S$ , which is normalized to 1. With the complement probability the defendant is of a weak type, so the expected judgment against her is  $J$ , where  $J > 1$ . The difference  $J - 1$ , and the ratio  $J$ , reflect the dispersion (range and ratio respectively) between the two types of defendants. It is assumed that the litigation costs  $c$  are equal for both types of defendants and the plaintiff. We also assume that  $c < 1$ , such that the plaintiff's litigation costs are lower than the expected judgment of the strong type, i.e., the plaintiff has an incentive to bring suit against both types of defendant.

Before the trial commences and litigation costs incurred, the defendant—who is the informed party—can make a take it or leave it settlement offer  $S$  to the plaintiff. If the plaintiff accepts the settlement offer, players' payoffs are in accordance with the settlement offer, otherwise the case goes to trial and the judgment will be rendered according to the defendant type.

Therefore, if the case goes to trial, the expected costs for the strong-type defendant are equal to  $1 + c$ , and for the weak-type defendant,  $J + c$ . Similarly, if the case goes to trial, the expected benefit for the plaintiff is  $1 - c$  or  $J - c$ , depending on the defendant's type.

The solution concept for the game is Bayesian Perfect Nash Equilibrium (BPNE) including Cho and Kreps' Intuitive Criterion refinement.<sup>142</sup> A BPNE consists of the settlement offer of the defendant,  $S_i$ , which may depend on the defendant's type, a strategy on the part of the plaintiff whether to accept or reject an offer, which may depend on the offer, and a belief system of the plaintiff regarding the type of the defendant who makes an offer such that (1) the strategies of the players are sequentially rational, namely, they maximize players' expected payoffs given the strategies of the other players and the belief system of the plaintiff; (2) the belief system of the plaintiff is consistent given the strategy profile, that is, it is updated using Bayes' rule and therefore realized in equilibrium. Cho and Kreps' intuitive criterion refinement eliminates beliefs that place positive probability to types whose off-

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<sup>142</sup> In-Koo Cho & David M. Kreps, *Signaling Games and Stable Equilibria*, 102 QUARTERLY JOURNAL OF ECONOMICS 179 (1987).

equilibrium signals are equilibrium dominated.<sup>143</sup> The following lemma summarizes the Perfect Bayesian Nash Equilibrium:

**Lemma 1.** In a standard asymmetric information litigation model, the Perfect Bayesian Nash Equilibrium is characterized by (i) the weak-type defendant making a settlement offer  $J - c$  that is always accepted. (ii) the strong-type defendant making a settlement offer  $1 - c$ , and this settlement offer is accepted with probability  $y = \frac{2c}{J-1+2c}$ . (iii) In equilibrium the expected costs for the strong-type defendant are  $E = 1 + c - 2yc$ , and for the weak type defendant,  $J - c$ ; the expected benefit for the plaintiff is  $1 - c$  or  $J - c$ , depending on the defendant's type.

**Explanation and discussion.** If information were perfect, the defendant, depending on her type, strong or weak, would make the offer  $S_S = 1 - c$  or  $S_W = J - c$  respectively, and the plaintiff would always accept, such that the defendant regardless of her type would capture the entire surplus from a settlement, which is equal to the total litigation costs  $2c$ . However, due to asymmetric information, the plaintiff cannot accept the low settlement offer,  $1 - c$ , with certainty, or otherwise weak-type defendants will also make such an offer. To keep weak-type defendants from masking as strong-type ones, the plaintiff should reject some of the low settlement offers and take the defendant making such offers to trial. The rate of acceptance  $y$  should just keep the weak-type defendants indifferent between offering high settlement offers  $S_W$  and low settlement offers  $S_S$ , that is,  $y$  should satisfy:

$$S_W = yS_S + (1 - y)(J + c) \quad (1)$$

Solving for  $y$ , we have:

$$y = \frac{2c}{J-1+2c} \quad (2)$$

To verify that there are no bluffing weak types in equilibrium, consider that in equilibrium the plaintiffs should also be indifferent, between accepting and rejecting low settlement offers. Let  $q$  be the proportion of masking weak types. The plaintiff's indifference equation should satisfy:

$$1 - c = \frac{\alpha(1-c) + q(1-\alpha)(J-c)}{\alpha + q(1-\alpha)} \quad (3)$$

Which is only satisfied where  $q = 0$ .

The equilibrium payoff (cost) of the strong-type defendant is therefore  $E = 1 + c - 2yc$ . This expression has a simple interpretation. This defendant incurs the costs of going to trial,  $1 + c$ , but saves the total litigation costs (the entire surplus from a settlement), given the acceptance rate  $y$ . By contrast, the weak type, who always settles by revealing her type, is capable of extracting the entire surplus from the settlement, expecting to pay  $J - c$ .

Note that the acceptance rate in this standard settlement model,  $y =$

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<sup>143</sup> The application of this refinement leaves a single, "unique" equilibrium in which the weak defendants always reveal their type and strong types offer the lowest possible settlement.

$\frac{2c}{J-1+2c}$ , is affected by the total litigation costs ( $2c$ ) and the dispersion of the expected judgments,  $J - 1 = d$ . Particularly, as the dispersion increases, the acceptance rate decreases, and as litigation costs increase, the acceptance rate rises. Formally,  $\frac{dy}{dd} < 0$  and  $\frac{dy}{dc} > 0$ . In addition, social welfare increases with the acceptance rate, because it reflects the savings in litigation costs (which are the sole source of social costs in this model).

### B. Unilateral Litigation Signals

**Set-up.** This is the simplest form of litigation signals, in which the defendant modifies the standard settlement offer and promises to pay to the plaintiff a multiplier of  $k > 1$  should the plaintiff reject the offer and at trial the court rules against the defendant. Note that now, if the case goes to trial with the multiplier provision, the expected costs for the strong-type defendant are equal to  $k + c$ , and for the weak-type defendant,  $kJ + c$ . Likewise, if the case goes to trial under the multiplier provision, the expected benefit for the plaintiff is  $k - c$  or  $kJ - c$ , depending on the defendant's type. With no multiplier provision the payoffs are similar to those in the previous section.

The following proposition summarizes the unique Perfect Bayesian Nash Equilibrium (using again Cho and Kreps' intuitive Criterion).

**Proposition 1.** In an asymmetric information model where the defendant can make a take it or leave settlement offer to the plaintiff including a judgment multiplier clause: (1). The strong-type defendant will not opt for a multiplier clause if (i) the ratio between the expected judgments  $J$  is less than or equal to 3, or (ii) the costs of litigation  $c$  are equal to or lower than  $\frac{1}{2} \frac{(J-1)}{(J-2)}$ . The equilibrium is then characterized by Lemma 1. (2). If, however,  $J < 3$  and  $c > \frac{1}{2} \frac{(J-1)}{(J-2)}$ , then the strong-type defendant will make a settlement offer including a unilateral multiplier provision, where the optimal multiplier is  $k^* = \frac{\sqrt{2}\sqrt{2c^2+cJ(J-1)}-2c}{J-1}$ .

**Proof and discussion.** Observe first that by promising to pay a judgment multiplier to the plaintiff should the plaintiff reject the settlement offer, not only does the strong type defendant increase her judgment at trial, but she also has to raise her settlement offer. This is because the plaintiff can reject the settlement offer and take the defendant to trial, benefiting from the judgment multiplier promise. Indeed, such a promise, if it is made, increases the settlement offer and the expected judgment by the same absolute amount, namely,  $k - 1$ . As the strong type defendant can always secure an expected costs of  $J - c$  by offering a high settlement offer,  $k$  is necessarily bounded by  $J$ . Observe also that the weak-type defendant is not hurt in anyway from such a settlement offer, because she can always make the higher settlement offer  $J - c$  which will be accepted with certainty, thus capturing the total litigation costs.

The proposed settlement offer, however, affects the acceptance rate

necessary to keep the weak-type defendant from masking herself as strong defendant. Indeed, following the logic of equation (1),  $y(k)$  should satisfy the condition:

$$S_W = y(k)(k - c) + (1 - y(k))(kJ + c) \quad (4)$$

Solving for  $y(k)$ , we have:

$$y(k) = \frac{J(k-1)+2c}{(J-1)k+2c} \quad (5)$$

Note, first, that by the definition of an acceptance rate,  $y(k) < 1$ , hence, as mentioned before,  $k$  has to be lower than  $J$ . Second, the derivative of  $y(k)$  with respect to  $k$  is positive for all  $k$ ,  $y'(k) = \frac{2c+J(J-1)}{(2c+(J-1)k)^2} > 0$ . Therefore, the acceptance rate  $y(k)$  increases with  $k$ , suggesting that it is always *socially* desirable for strong types to offer multiplier provisions.

However, such provisions are typically not *privately* beneficial for the strong defendants. To see this consider the equilibrium costs for the strong-type defendant for a given  $k$ :

$$E(k) = k + c - 2cy(k) \quad (6)$$

Or, where  $y(k)$  is defined in equation (5):

$$E(k) = k + c - 2c \left( \frac{J(k-1)+2c}{(J-1)k+2c} \right)$$

These costs coincide with the equilibrium costs in the standard settlement offer for  $k = 1$ . Therefore, to be privately beneficial for the strong-type defendant to offer a unilateral multiplier provision, the derivative of the equilibrium costs at  $k = 1$  must be negative. The derivative is:

$$E'(k) = - \frac{(J-1)(2c(J-2k)-(J-1)k^2)}{(2c+(J-1)k)^2} \quad (7)$$

And evaluated at  $k = 1$ :

$$E'(k)_{k=1} = \frac{(J-1)(J-1-2c(J-2))}{(2c+(J-1))^2}$$

The derivative is negative if and only if  $J - 1 - 2c(J - 2) < 0$ , which requires that:

$$J > 3 \text{ and } \frac{1}{2} \left( \frac{J-1}{J-2} \right) < c < 1 \quad (8)$$

Indeed, if  $J < 3$  or  $c < \frac{1}{2} \left( \frac{J-1}{J-2} \right)$ , it is never privately beneficial for the strong-type defendant to offer a unilateral multiplier provision.<sup>144</sup> If it is privately beneficial for the strong-type defendant to offer a such a provision, then the optimal multiplier, denoted  $k^*$ , is defined by the first order condition  $E'(k) = 0$ . Solving for  $k$  we obtain:

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<sup>144</sup> More generally, note that by equation (7),  $E'(k)$  is negative if and only if the numerator,  $(J - 1)k^2 - 2c(J - 2k)$ , is negative (the denominator is always positive). The numerator can be re-written as  $(J - 1)k^2 + 4ck - 2cJ$ , which reflects a parabola that obtains its minimum value at the point  $k = \frac{-2c}{J-1} < 1$ . Therefore, if  $E'(k)$  is not negative at  $k = 1$  it will not be negative for  $k > 1$ .

$$k^* = \frac{\sqrt{2}\sqrt{2c^2+cJ(J-1)}-2c}{J-1}$$

To illustrate, consider a situation in which  $J = 3.333$ , e.g., where the strong- and weak-defendant's expected liabilities are 60 and 200. The litigation costs, under these numbers, have to be sufficiently high and greater than 0.875 of the strong type's expected liability—or 52.5—to satisfy equation (8). If the litigation costs are 55,  $k^* \sim 1.013$ , reflecting a modest multiplier. The resulting increase in settlements with this multiplier will be negligible.<sup>145</sup>

### C. Third Party Litigation Signals

**Set-up.** In this variation the defendant promises to the plaintiff that in case he rejects the settlement offer and subsequently pursues adjudication and wins at trial, the defendant will pay a judgment multiplier  $k > 1$ , with the excess,  $(k - 1)$  times the judgment at trial, paid to a third party rather than the plaintiff. We call this a third party judgment multiplier clause.

**Proposition 2.** In an asymmetric information model where the defendant can make a take it or leave settlement offer to the plaintiff including a third party judgment multiplier clause, the strong-type defendant will opt for such a clause if and only if  $c > 1/2$  and then will choose  $k$  as large as possible.

**Proof and discussion.** Observe first that by promising to pay a judgment multiplier to a third party should the plaintiff reject the settlement offer, the strong-party does not affect the settlement offer he should make to the plaintiff. This is because the plaintiff does not benefit from taking the strong-type defendant to trial. Again, the weak-type defendant is not hurt in anyway from such a settlement offer, because she can always make the higher settlement offer  $(J - c)$ —which will be accepted with certainty—and capture all the litigation costs. The proposed settlement offer, however, affects the acceptance rate necessary to keep the weak-type defendant from masking herself as strong-type one. Indeed,  $y^{TP}(k)$  should satisfy the condition:

$$S_W = y^{TP}(k)S_S + (1 - y^{TP}(k))((kJ + c)) \quad (9)$$

Solving for  $y^{TP}(k)$ :

$$y^{TP}(k) = \frac{J(k-1)+2c}{Jk-1+2c} \quad (10)$$

It is easy to verify that—similarly to the unilateral multiplier—the acceptance rate  $y^{TP}(k)$  increases with  $k$ :  $y^{TP'}(k) = \frac{J(J-1)}{(2c+Jk-1)^2} > 0$ .

While we have shown that any third-party multiplier reduces the rate of trial and hence is socially valuable, we must find the conditions under which these provisions are privately beneficial, i.e., when the strong-type defendant would find it worthwhile to make such a settlement offer. For a given  $k$ , the

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<sup>145</sup> With these numbers, in the benchmark equilibrium 44% of the low offers are accepted; with the foregoing multiplier, 44.73% of the low offers are accepted.

equilibrium costs for the strong-type defendant are:

$$E^{TP}(k) = k + c - 2cy^{TP}(k) - y^{TP}(k)(k - 1) \quad (11)$$

One can take the derivative of the equilibrium costs to obtain:

$$E^{TP'}(k) = -\frac{(2c-1)(J-1)^2}{(2c+Jk-1)^2}$$

For all  $k > 1$ , the derivative is negative if and only if  $c > \frac{1}{2}$ . Therefore, third-party multipliers are privately beneficial if and only if  $c > \frac{1}{2}$ . Moreover, whenever it is privately beneficial, it is optimal for the strong types to set  $k$  to the maximum possible level.

#### D. Cooperative Litigation Signals

**Set-up.** In this variation the defendant offers three options to the plaintiff. (1). Accept her offer. (2). Reject the offer and go to trial, as before. (3). Reject the offer and go to trial in which, in exchange for an upfront payment of  $m$ , the defendant will pay to the plaintiff a judgment multiplier  $k > 1$  should the plaintiff win at trial.

**Proposition 3.** In an asymmetric information model where the defendant can make a take it or leave settlement offer to the plaintiff including a multiplier  $k$  on the judgment (in exchange for a specified sum  $m$ ): (1). The strong-type defendant will always opt for that option. (2). The strong defendant will choose  $k$  as large as possible. (3). The strong defendant will chose  $m = k - 1$ .

**Proof and discussion.** First note that, to make multiplier provisions costless to the strong type, the fixed payment  $m$  should be set such that the plaintiff is indifferent between accepting the offer; rejecting; and rejecting and going to trial with a multiplier  $k$  in exchange for a fixed payment  $m$ . Hence the strong type should set  $m$  such that:

$$S_S = 1 - c = k - c - m \quad (12)$$

Hence:

$$m = k - 1 \quad (13)$$

Observe that with  $m = k - 1$  going to trial under the multiplier provision (in exchange for the fixed sum  $m$ ) is costless relative to going to a “naked” trial, with no multiplier. Under the former a strong defendant pays  $k + c - m = k + c - (k - 1) = c + 1$ , the same amount she expects to pay under no multiplier provisions. In contrast, the weak defendant who attempts to mimic as strong type is punished by the multiplier/fixed-payment provisions—the reason is that the fixed payment  $m$  is based on the strong type’s expected liability. Hence, with the cooperative signal provision, the weak defendant expects to pay  $Jk + c - m = Jk + c - k + 1 = k(J - 1) + c + 1$ , higher than the weak-type’s expected costs from going to a naked trial,  $J + c$ . As before, the acceptance rate,  $y^m(k)$  should make in equilibrium the weak type indifferent between revealing her type and mimicking (with the risk of going

to trial under the multiplier/fixed-payment provision<sup>146</sup>:

$$S_W = y^m(k)S_S + (1 - y^m(k))((kJ + c - m)) \quad (14)$$

Where  $m$  is defined according to equation (13). Solving for  $y^m$ :

$$y^m(k) = \frac{(k-1)(J-1)+2c}{k(J-1)+2c} \quad (15)$$

It is easy to see that the acceptance rate  $y^m(k)$  rises with  $k$ :  $y^{m'(k)} = \frac{(J-1)^2}{(2c+(j-1)k)^2} > 0$ . Hence, we have shown that cooperative signals provisions increase settlements, i.e., they are socially beneficial, and higher level of  $k$  would generate more settlements. As the acceptance rate rises with  $k$ , given our definition for  $m$  it is easy to infer that cooperative signals would always be privately beneficial as well, and it would always be worthwhile for the strong-type defendant to offer them. Recall that, with the multiplier  $k$  and the fixed payment  $m$ , the strong defendant expects that her expenses after trial are  $c + 1$ , as if no cooperative signal provision was offered. Hence her costs are:

$$E^m(k) = 1 + c - 2cy^m(k) \quad (16)$$

As we established that  $y^m(k)$  rises with  $k$ , the strong defendant can also minimize her costs through setting a higher  $k$ .

The powerful feature of cooperative litigation signals is that they use the signaling quality of the multiplier and penalize weak types who mimic as strong ones; but at the same time they keep the multiplier costless to strong defendants. In other words, these provisions enable the strong, informed defendants to capture the entire value of revealing their type.

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<sup>146</sup> We assume that under such indifference between the options the plaintiff either (1) settles for  $S_S$ ; or (2) pays the fixed payment  $m$  to enjoy at trial the augmented judgment, with the multiplier  $k$ . But he does not (3) take the defendant to a naked trial, without the multiplier  $k$ . To achieve this result the strong defendant can slightly increase  $S_S$  and decrease  $m$ , such that options (1) and (2) are equally better than option (3) for the plaintiff. Since these required modifications to  $S_S$  and  $m$  are vanishingly small, we ignore them.