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Abstract

We analyse the relationship between a public figure's incentives to sue for defamation, and her incentives to do wrong in the first place and the media's incentives to expose this wrongdoing. If evidence on wrongdoing is noisy, a journalist's decision of whether to publish a story based on this evidence is largely driven by his anticipation of the public figure's litigation decision, rather than by the question of whether the evidence is actually correct. In a repeated setting, this induces a public figure to bring negative-value defamation suits in order to appear litigious to journalists in the future. As a consequence, the public figure's incentives to sue for defamation will not only depend on her own direct costs and benefits of doing so, but also on journalists' costs and benefits from litigation and publications. This result makes the case for also taking these latter factors into account in the debate on potential legal reform aiming at litigation incentives.

1 Introduction

During the 2016 US presidential election campaign, the notoriously litigious Donald Trump suggested he would 'open up' US libel laws to enable public figures to sue media organisations more easily.[1] He is not the only one calling for this kind of reform: A potential defamation victim's incentives to take a media outlet to court take centre stage in many contemporary political and legal discussions. Society would like to encourage genuine victims to sue for defamation in order to deter media from publishing false and libellous claims. On the other hand, if defamation suits are too attractive for plaintiffs, wrongdoers exposed by true media stories may sue, thus deterring even truthful publications. Ironically, towards the end of the aforementioned election campaign, Trump was involved in a slightly bizarre story when the American Bar Association refused to publish a report concluding that Trump was a 'libel bully' because of concern about the possibility that Trump would sue for libel.[2] This deterrence of legitimate publications is commonly referred to as the 'chilling effect' (Schauer, 1978) and prevents media from fulfilling their function in holding public figures accountable for their actions, so that wrongdoing goes unexposed and, therefore, undeterred.

However, incentives to sue for libel and how they are interrelated with wrongdoing and the veracity of media stories in equilibrium are far from obvious. In particular, if journalists can only observe noisy evidence of a public figure's wrongdoing, which can neither be perfectly verified nor falsified even in court, this lack of observability makes it impossible for defamation law to implement the desirable outcome that stories are published if and only if they are true. Rather, the journalist's decision to publish a story based on that evidence will largely depend on what each player anticipates the other player to do in equilibrium, i.e., the journalist will publish if he believes that the public figure will not sue in equilibrium, rather than if he believes the story is true.

Furthermore, a public figure's incentives to sue for libel does not only depend on the expected costs and direct benefits of the lawsuit in terms of potential damages or retraction of the story. As there may be other journalists in the future who also observe evidence of some other wrongdoing, the public figure's reaction to previous allegations gives a hint of how likely she is to sue in subsequent cases. As we have just argued that journalists' publication decisions are heavily influenced by their expectations of whether they will get sued, a public figure may anticipate this and sue for libel even if the costs of a lawsuit exceed the direct benefits, just in order to discourage future publications.

[1] Hadas Gold, 'Donald Trump: We're Going to "Open Up" Libel Laws' (Politico, 26 February 2016).

[2] Mark Joseph Stern, 'American Bar Association Produces Report Calling Trump a Libel Bully, Censors It Because He's a Libel Bully' (Slate, 25 October 2016).

The aim of this paper is to present an economic model that accommodates these intuitive ideas and to derive avenues for legal reform to address these issues. In particular, we are interested in the incentives to sue for defamation and how it relates to wrongdoing and the chilling effect. We consider a public figure that may do wrong in each of two periods. In each period, there is a journalist who may find evidence of the public figure's wrongdoing. However, this evidence is noisy: Evidence is produced with certainty if the public figure has done wrong, but also with some probability if she has not. If the journalist publishes a story based on this evidence claiming that wrongdoing has occurred, the public figure may sue for defamation. Both litigants' net payoffs from this lawsuit depend on whether the story is true. Furthermore, the public figure may be a litigious type, who always benefits from litigation, or a low-benefit type who does not. The public figure's type is her private information.

In the main version of the model, we will assume that the second-period journalist can observe first-period publication and litigation decisions and use this to make inferences about the public figure's type. This, in turn, will create incentives for the low-litigation benefit type to imitate the litigious type in the first period. However, as a byproduct, our analysis will also deliver results for a version of the model in which the second-period journalist cannot observe the first-period publication and litigation decisions. Therefore, we will be able to compare the results of both versions of the model to learn more about the specific impact of reputational concerns on equilibrium.

Our main results are that, *ceteris paribus*, litigation incentives are higher when public figures' litigation histories are known to journalists, as plaintiffs bring negative-value suits in order to appear litigious. Furthermore, the benefit of such a reputation will depend on how likely future journalists are to publish a story, so that the litigation incentives will depend on journalists' costs and benefits of publishing and litigation, which are effects that do not exist in a model where plaintiffs' litigation histories are unobservable. These effects may be important when designing legal reform aimed at libel litigation: First, they increase the set of potential ways of influencing litigation incentives. Second, they need to be taken into account when assessing current suggestions for reform. For instance, attempting to discourage some libel litigation by increasing litigation costs in general may backfire as this also increases a public figure's benefit from being known to be litigious.

The most closely related paper is Garoupa (1999a), who also analyses the impact of libel law on wrongdoing and publication incentives, but assumes that a public figure automatically sues for defamation if a story is published, and does not consider the public figure to act repeatedly. Other economic models of libel law discuss the media's incentives to invest in the accuracy of the evidence that their story is based on (Bar-Gill and Hamdani (2003) and Dalvi and Refalo (2008)), anonymous sources' incentives to leak stories to journalists under different burdens of proof for the journalist (Baum, Feess, and Wohlschlegel (2009)), and voters' reactions to corrupt politicians exposed by the media (Gratton (2015)). None of these papers studies litigation incentives and their relation to wrongdoing and publication incentives, or the impact of the observability of a public figure's litigation history on these issues.[3]

In general, any discussion of libel law is related to tort law in general. For instance, the main driving force in Bar-Gill and Hamdani (2003) is the trade-off between promoting care and activity levels which can be readily applied to other areas of tort law, as in Feess, Muehlheusser, and Wohlschlegel (2009), for instance. However, we focus on the unique feature of defamation cases that the media's aim of delivering stories of public interest means that these stories specifically target public figures who are in a spotlight for a longer period of time. Our paper, thus, deviates from the notion of anonymous encounters usually assumed in accident models. The only other area that we are aware of in which the reputation for being litigious has been analysed is that of patent litigation in Hovenkamp (2013).[4]

Our model builds on two concepts from the legal literature. First, we have already mentioned the chilling effect above, according to which defamation suits may not only deter publication of false but also of true stories, and which has influenced judgments in the highest courts of many countries.[5] The idea that defamation law has some influence on the medias publishing decisions, and that laws unfavourable to journalists may have a chilling effect on their speech, is well-established in the academic legal literature: see, for instance, Barendt, Lustgarten, Norrie, and Stephenson (1997), Anderson (1975), or Weaver, Kenyon, Partlett, and Walker (2006). In particular, the central importance of the high cost of defending libel actions, on which our model is partly based, is also well-recognised: see Schauer (1978), or Mullis and Scott (2009). The legal literature mainly focuses on the chilling effect of defence costs on the output of institutional media, for instance Dent and Kenyon (2004), but Townend (2014) suggests that similar effects operate on some small online publishers as well.

[3]Garoupa (1999b) does analyse litigation incentives, but in a model in which the public figure's wrongdoing is perfectly observable to the journalist.

[4]Miceli (1993) analyses repeat defendants' incentives to reject settlement, and Farmer and Pecorino (1998) analyse repeat attorneys' incentives to proceed to court, in the context of nuisance suits. While taking a negative-value action is just one of many plausible equilibria in these papers, our signaling model naturally provides a rational justification of why future journalists believe a public figure to be litigious, and imitation of litigious types occurs as the unique equilibrium in the relevant parameter range.

[5]For instance, *New York Times Co v Sullivan* (1964) in the US, *Derbyshire County Council v Times Newspapers Ltd* (1993) in the UK, *Theophanus v Herald & Weekly Times Ltd* (1994) in Australia, *Grant v Torstar Corp* (2009) in Canada, or *Mosley v UK* (2012) in the supranational European Court of Human Rights.

Second, our model assumes that a public figure's litigiousness is considered in the media's publication decisions. While there is little direct evidence to support this, indirect and anecdotal evidence suggest that this is the case, such as Barendt, Lustgarten, Norrie, and Stephenson (1997), Weaver (2012) for the UK or Kenyon and Marjoribanks (2008) for Australia. One of the most commonly-mentioned high-profile figures perceived as abusing libel laws to stifle criticism of their activities is Robert Maxwell, the former proprietor of the Mirror Group press company. As Hooper (2000) notes, Maxwell's success rate in court was poor, but he was successful at silencing critical media, as his crimes were not exposed until after his death.[6]

The remainder of the paper is organised as follows: We start by setting out the model assumptions. We then analyse equilibrium play in the second period for some exogenously given beliefs that the second-period journalist has about the public figure's type. The results of this section can be readily applied to a version of the model in which later journalists do not observe a public figure's litigation history. Section 4 analyses the full game and derives the paper's main results, and Section 5 concludes.

2 Model

Players and Timing. The main purpose of the model is to analyse a journalist's optimal reaction to evidence of wrongdoing and how the alleged wrongdoer has previously been observed to behave in a similar situation, and a potential wrongdoer's optimal choice anticipating the journalist's strategy. To this end, we consider a two-period game with three players: A public figure P chooses, in each period, whether to do some wrong. In each period, there is a different journalist, denoted J_1 in period 1 and J_2 in period 2, who receives a noisy signal ('evidence') of whether P has done wrong and may, depending on this signal, publish a story to allege this wrongdoing.

In reality, media stories are not usually just made up out of thin air but rather based on some evidence. We acknowledge this in our model by assuming that journalist J_t cannot publish a story if the evidence in period t indicates that P did not do wrong. If, however, the evidence indicates that P has done wrong, this period's journalist may choose whether or not to publish a news story thereon.

If a news story has been published, P suffers a loss r of reputation, and P may decide whether to sue the journalist for libel, anticipating her expected payoff from such a lawsuit which depends on whether the journalist's allegation is true, and on some personal characteristics of P. The latter impact of P's characteristics may be, for instance, due to differences in the benefit from restoring reputation should the court order the story

[6]See Vick and Macpherson (1995).

to be withdrawn, in the access to high-quality legal advice, or in the personal disutility from being involved in lawsuits.

In order to capture the notion of journalists using P's observed previous decisions to assess how P is probably deciding in this round, we assume that these personal characteristics of P that determine P's expected payoff are P's private information. We use the simplest version of such an assumption in which there are two types of public figures, where type H's payoff from a libel lawsuit is larger than type L's independent of whether the allegation of wrongdoing is true. As a consequence, it will depend on a journalist's beliefs regarding P's type whether he thinks P will sue him for defamation upon publication of the story, and even whether the evidence for wrongdoing is likely to be correct, as a high expected payoff from libel litigation makes wrongdoing more attractive for P, ceteris paribus.

In summary, the timeline is as follows:

0 Nature determines potential wrongdoer P's type $i \in \{L, H\}$, which is private information to P. The ex-ante probability that $i = H$ is g.

Period $t \in \{1, 2\}$:

t(i) P decides on whether to do wrong $w_t \in \{0, 1\}$ in Period t. We denote the case of wrongdoing by $w_t = 1$.

t(ii) Noisy signal $s_t \in \{0, 1\}$ sent to Period-t journalist J_t on whether P has done wrong in step t(i). If P has done wrong in step t(i), then $s_t = 1$ with certainty, whereas if P has not done wrong, $s_t = 1$ with probability σ and $s_t = 0$ with probability $1 - \sigma$.

t(iii) If $s_t = 1$, J_t decides whether to publish news story $n_t \in \{0, 1\}$, where $n_t = 1$ denotes publication of a news story in period t.

t(iv) If J_t has published, P decides whether to sue J_t for libel, $\gamma_t \in \{0, 1\}$, where $\gamma_t = 1$ means that P sues J_t in period t.

t(v) Payoffs are realised depending on the players' actions.

In Period 0, the potential wrongdoer's type is determined for the entire game. Each of the subsequent Periods $t \in \{1, 2\}$ are subdivided in five steps $t(i) - t(v)$. We assume that all publication and litigation decisions are publicly observable, whereas the wrongdoing decisions and the nature move in stage 0 are only known to the public figure.

Payoffs. In each period $t \in \{1, 2\}$, a type-i potential wrongdoer's expected payoff in period t is defined as

$$\Pi_t^i = w_t b - n_t r + \gamma_t \ell_{w_t}^i. \quad (1)$$

If P does wrong ($w_t = 1$), she acquires the benefit from wrongdoing b. However, if journalist J_t publishes a news story ($n_t = 1$), P suffers reputational harm r. If P sues J_t for libel, her expected net benefit from this lawsuit is, depending on whether she had actually done wrong, $\ell_{w_t}^i$, which includes the expected benefit from the story being withdrawn, expected damages and expected legal expenses. In particular, we make the following assumptions regarding the public figure's payoffs:

Assumption 1 $\ell_1^L \leq \ell_0^L < 0 < \sigma\ell_0^H < \ell_1^H \leq \ell_0^H < r$ *and* $b < (1-\sigma)r$.

For a public figure who has indeed done wrong, a lawsuit cannot be more profitable than if she had not done wrong. Furthermore, as stated above, a type L's (H's) net benefit from a libel lawsuit is always negative (positive). The condition $b < (1-\sigma)r$ reflects the intuitive notion that wrongdoing does not pay off for type L if she anticipates that J_t publishes with certainty. In other words, this condition assumes that well-functioning media are an effective deterrent against wrongdoing.

As we will see, the condition $\sigma\ell_0^H < \ell_1^H$ also ensures that type H always wants to do wrong, independent of what any other player does in equilibrium. This simplifies the analysis by ruling out uninteresting case decisions. Last, we assume that even a non-wrongdoing type H's reputation cannot be fully restored in court ($\ell_0^H < r$). An advantage of this last assumption is that we avoid the counter-intuitive situation in which type H wants to imitate type L in order to tempt J_t into publishing a news story just to be able to sue him.

Similarly, journalist J_t's expected payoff is

$$\Pi_t^J = n_t p + \gamma_t \ell_{w_t}^J. \quad (2)$$

If journalist J_t publishes a news story ($n_t = 1$), he obtains benefit p. However, if the public figure sues him subsequently ($\gamma_t = 1$), J_t's expected net benefit $\ell_{w_t}^J$ from the litigation game, which includes the expected cost of withdrawing the story, expected damages and expected legal expenses, is added. We make the following assumptions regarding the journalists' payoffs:

Assumption 2 *Being taken to court harms the journalist in expectation, no matter whether the story is true or false, and the expected costs of being taken to court with certainty outweigh the benefits from publication:* $p < -\ell_1^J \leq -\ell_0^J$.

Strategies and Beliefs. Let ω_t^i, $t = 1, 2$, $i \in \{L, H\}$ be the probability with which type i does wrong in period t, η_t, $t = 1, 2$ be the probability with which a journalist in period t publishes a story upon receiving wrongdoing signal, λ_w^i the probability with which type i sues for defamation after having done wrong ($w = 1$) or not having done wrong ($w = 0$), and μ_t be the probability with which a period-t journalist believes the alleged wrongdoer to be of type H.[7] Note that, while the first-period journalist J_1 has only one occasion to update his beliefs (from g to μ_1 upon observing $s_1 = 1$), there are multiple occasions at which the second-period journalist J_2 does so: Observing whether or not J_1 publishes, whether or not the public figure sues J_1 after he has published, and observing $s_2 = 1$ all reveal information about the public figure's type. We must, therefore, be more specific about which point in time beliefs μ_2 refer to: We define μ_2 as J_2's beliefs just before observing s_2.

The first-period journalist's beliefs, μ_1 are just a function of this period's signal s_1 on wrongdoing, as it would be the case in a one-period model. However, beliefs in the second period, $\mu_2 = \mu_2(n_1, \gamma_1)$, are a function of the entire signal and litigation history up to that point in time.[8] This inference that journalists in the later period make from observing a potential wrongdoer's earlier decisions is the driving force for the result that it might pay off to file a negative-value lawsuit just in order to appear litigious.

3 Second Period

Our analysis starts with the choices in period 2 that can occur in a Perfect Bayesian equilibrium depending on μ_2, J_2's beliefs based on observing all publicly observable outcomes in period 1, but before observing the period-2 signal s_2. Let us start with analyzing P's decision to sue for defamation in period 2. Recall that this is an option only if the period-2 journalist J_2 has published a story claiming P's wrongdoing, which in turn requires that the period-2 signal $s_2 = 1$. In this case, P prefers suing for defamation if and only if $\ell_{w_2}^i > 0$.

In the case where $\ell_1^L < 0$, P prefers suing for defamation if and only if she is type H. This condition already represents the main driving force of this paper's argument: Absent any reputational considerations, the high-type public figure will sue for defamation, whereas the low type will not. Hence, if the journalist knew the public figure's type, for

[7]Note that there is a decision for J_t to make only if $s_t = 1$, which is why μ_t is only defined in this case.

[8]n_1 must be an argument of $\mu_2(.)$, because the alleged wrongdoer can sue J_1 for libel only if a news story has been published. Hence, $\gamma_1 = 0$ can serve as a signal for the alleged wrongdoer being type L only if $n_1 = 1$.

instance, by inference from the public figure's earlier decisions, he would publish a story about her wrongdoing if and only he believes that she is the low type. However, as a type L public figure who knows that she has been exposed as such has no incentive to do wrong, the libel system seems to promote a publication strategy that goes contrary to the journalist's belief of whether the story is true. The following analysis of the model will further illustrate this argument.

Consider now J_2's decision to publish upon observing $s_2 = 1$. J_2's payoff when not publishing is zero. His expected payoff from publishing depends on his initial beliefs μ_2 before observing the signal and on how he updates these beliefs using both types of public figure's equilibrium strategies ω_2^H and ω_2^L: He will publish if and only if

$$p + Prob(i = H \wedge w_2 = 1 \mid s_2 = 1)\ell_1^J + Prob(i = H \wedge w_2 = 0 \mid s_2 = 1)\ell_0^J \geq 0. \quad (3)$$

With Bayes' rule, this is equivalent to

$$p + \frac{\mu_2 \omega_2^H \ell_1^J + \mu_2(1-\omega_2^H)\sigma \ell_0^J}{\mu_2[\omega_2^H + (1-\omega_2^H)\sigma] + (1-\mu_2)[\omega_2^L + (1-\omega_2^L)\sigma]} \geq 0. \quad (4)$$

The fraction on the left-hand side of (4) weights the journalist's expected payoffs from the libel lawsuit, depending on whether the story is true, with the joint probabilities of the story being true or false, P's type being H and evidence being observed. (4) implies that J_2 is more likely to publish if his initial beliefs μ_2 are low, as this makes P less likely to be type H and, thus, to sue for libel; if ω_2^H is high, as this makes the story more likely to be true, in which case J_2's expected payoff from the lawsuit is higher; or if ω_2^L is high, as this makes P less likely to be type H conditional on observing the signal $s_2 = 1$.

Next, consider P's decision of whether to do wrong in period 2. Each type's expected payoff from wrongdoing will depend on the probability η_2 of J_2 publishing upon observing $s_2 = 1$. In particular, (1) implies that the public figure prefers will do wrong if and only if

$$\text{Type } H: \quad b - \eta_2\left(r - \ell_1^H\right) \geq -\sigma\eta_2\left(r - \ell_0^H\right) \quad (5)$$

$$\text{Type } L: \quad b - \eta_2 r \geq -\sigma\eta_2 r. \quad (6)$$

Each type needs to take into account that not doing wrong does not necessarily prevent J_2 from publishing: With probability σ, signal $s_2 = 1$ will be observed although P has not done wrong, in which case J_2 publishes with probability η_2. Note that our assumption $\ell_1^H - \sigma\ell_0^H > (1-\sigma)r - b$ implies that H does wrong irrespective of J_2's strategy, so that 4 becomes

$$p + \frac{\mu_2 \ell_1^J}{\mu_2 + (1-\mu_2)[\omega_2^L + (1-\omega_2^L)\sigma]} \geq 0. \quad (7)$$

The following Lemma states type L's equilibrium wrongdoing and J_2's equilibrium publication choices:

Lemma 1 *The following second-period strategies are consistent with a given initial second-period belief μ_2:*

(i) $\mu_2 < \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$*: Type L does not do wrong and* J_2 *publishes.*

(ii) $\mu_2 = \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$*: Type L does not do wrong, and* J_2 *publishes with probability* $\eta_2 \in \left[\frac{b}{r(1-\sigma)}, 1\right]$.

(iii) $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p} < \mu_2 < \frac{p}{-\ell_1^J}$*: L randomises between doing wrong and not doing wrong, and* J_2 *publishes with probability* $\eta_2 = \frac{b}{r(1-\sigma)}$.

(iv) $\mu_2 = \frac{p}{-\ell_1^J}$*: Type L does wrong, and* J_2 *publishes with probability* $\eta_2 \in \left[0, \frac{b}{r(1-\sigma)}\right]$.

(v) $\mu_2 > \frac{p}{-\ell_1^J}$*: Type L does wrong, and* J_2 *does not publish.*

Proof. A mixed strategy equilibrium in which a type L public figure randomises between doing wrong and not doing wrong requires that (6) holds with equality for some $\eta_2 \in [0, 1]$, i.e. that it is satisfied for $\eta_2 = 0$ (which is true by assumption) but violated for $\eta_2 = 1$. For (6) to hold with equality, $\eta_2 \in (0, 1)$ typically is required, which in turn requires that J_2 is indifferent between publishing and not publishing. This is possible only if (4) is satisfied for $\omega_2^L = 1$ but violated for $\omega_2^L = 0$. Summing up, the conditions for this equilibrium are

$$b \leq (1-\sigma)r, \tag{8}$$

which is already implied by Assumption 1, and

$$\frac{\sigma p}{-\ell_1^J-(1-\sigma)p} \leq \mu_2 \leq \frac{p}{-\ell_1^J}. \tag{9}$$

On the edges of the range defined by the latter condition, J_2 being indifferent between publishing and not publishing is supported by a pure strategy of type L, i.e. $\omega_2^L = 0$ if $\mu_2 = \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$, and $\omega_2^L = 1$ if $\mu_2 = \frac{p}{-\ell_1^J}$.

A pure strategy equilibrium in which both types of public figure do wrong with certainty requires that J_2 does not publish, for L would do wrong despite J_2 publishing only if $b > (1-\sigma)r$, which is ruled out by assumption. Given that both types of P do wrong with certainty, J_2 publishes if and only if

$$\mu_2 \geq \frac{p}{-\ell_1^J}. \tag{10}$$

A pure strategy equilibrium in which type L does not do wrong requires that J_2 publishes, as otherwise type L would want to do wrong. Given that J_2 publishes, type L prefers not doing wrong if

$$b \leq (1-\sigma)r, \tag{11}$$

which we had assumed in Assumption 1. Given these strategies of P, J_2 prefers to publish if and only if

$$\mu_2 \leq \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}. \tag{12}$$

A pure strategy equilibrium in which neither type does wrong requires that J_2 publishes. Given that J_2 publishes, type L prefers not to do wrong due to Assumption 1. Given that P never does wrong, J_2 prefers publishing if and only if

$$\mu_2 \leq \frac{p}{-\ell_0^J}. \tag{13}$$

■

Lemma 1 confirms our intuition explained in the Introduction that a journalist is more inclined to publish if he thinks the public figure is less likely to be the litigious type H. In other words, his publication decision is driven by his expectation of the public figure's litigation decision rather than the veracity of the story: To the contrary, the range where J_2 publishes with certainty is even larger if the journalist's evidence is less accurate (σ high), as this means that the public figure is more likely to be type L if that type does not do wrong in equilibrium. Furthermore, wrongdoing is less and publication more likely if the journalist's benefit p from publishing is higher and the cost from being dragged into a lawsuit $-\ell_1^J$ are lower.

On the one hand, Lemma 1 is a necessary exercise to prepare the analysis of the full game. On the other hand, however, this result is important in its own right, as it can be interpreted as the equilibrium of a one-period version of our game, or a version in which public figures are not recognisable by later journalists, when substituting for $\mu_2 = g$:

Corollary 1 *If journalists do not observe previous actions of the public figure, type L is less likely to do wrong and the journalist is more likely to publish if g, p and σ are high and $-\ell_1^J$ is low.*

As for the public figure's incentives to sue, we have ruled out by assumption the case where type L would ever sue for defamation in the second period. However, it is easy to anticipate these incentives when relaxing this assumption: In the general case, type L sues if and only if $\ell_0^L \geq 0$ after not having done wrong, and $\ell_1^L \geq 0$ after having done wrong. In other words, all that matters for the public figure's litigation decisions are the direct costs and benefits of going to court in terms of legal costs, expected damages and expected other provisions by the court such as retraction of the story.

4 First Period

In the first period, the public figure anticipates that the second-period journalist J_2 will use the observable decisions of the first-period journalist to publish and of the public figure to sue in order to update his beliefs μ_2. Intuitively, the type H public figure strictly benefits from a lawsuit, so that she will sue with certainty, and due to that benefit of litigation, be undeterred from doing wrong. Therefore, if J_2 observes a story to be published in the first period (which is only possible after $s_1 = 1$), and the public figure to sue J_1, J_2 will adjust his beliefs more towards $\mu_2 = 1$.

Recall that ω_1^i is the probability that type i does wrong in the first period, η_1 the probability that the first-period journalist publishes upon observing $s_1 = 1$, and λ_k^i the probability that type i sues upon publication, depending on whether she had done wrong ($k = 1$) or not ($k = 0$). Using Bayes' Rule, the second-period journalist's belief before the second round starts (i.e., before observing signal s_2) is

$$\mu_2 = \mu_2^S := \frac{g}{g + (1-g)(\omega_1^L \lambda_1^L + (1-\omega_1^L)\sigma\lambda_0^L)} \tag{14}$$

if a story was published in the first period and the first-period journalist was sued,

$$\mu_2 = \mu_2^{NP} := \frac{g(1-\eta_1)}{g(1-\eta_1) + (1-g)[1-\eta_1(\omega_1^L + (1-\omega_1^L)\sigma)]} \tag{15}$$

if no story was published in the first period, and $\mu_2 = 0$ otherwise, provided that all of these cases are on the equilibrium path.[9] Intuitively, the denominators in these expressions are the probability that a story is published and the public figure sues (for μ_2^S) or that no story is published (for μ_2^{NP}). The numerators are the probabilities of these events and that, at the same time, the public figure is type H.

We can now use Lemma 1 to analyse how these second-period beliefs translate into second-period payoffs for type L, which are given by

$$\pi_2(\mu_2) = \begin{cases} -\sigma r, & \text{if } \mu_2 < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}; \\ -\sigma \overline{\eta}_2 r, & \text{if } \mu_2 = \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}; \\ -\frac{b\sigma}{1-\sigma}, & \text{if } \frac{\sigma p}{-\ell_1^J - (1-\sigma)p} < \mu_2 < -\frac{p}{-\ell_1^J}; \\ b - \underline{\eta}_2 r, & \text{if } \mu_2 = -\frac{p}{-\ell_1^J}; \\ b, & \text{if } \mu_2 > -\frac{p}{-\ell_1^J}, \end{cases} \tag{16}$$

where $\overline{\eta}_2 \in \left[\frac{b}{(1-\sigma)r}, 1\right]$ and $\underline{\eta}_2 \in \left[0, \frac{b}{(1-\sigma)r}\right]$ are the probabilities with which the second-period journalist publishes upon observing the signal in the situations in which he is

[9] Recall that beliefs off the equilibrium path cannot be obtained using Bayes' Rule as the probability of reaching these nodes, which is the expression in the denominator of the Bayes' rule formula, is zero in equilibrium.

indifferent between publishing and not publishing, so that $\pi_2(\mu_2) \in \left[-\sigma r, -\frac{b\sigma}{1-\sigma}\right]$ if $\mu_2 = \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$, and $\pi_2(\mu_2) \in \left[-\frac{b\sigma}{1-\sigma}, b\right]$ if $\mu_2 = \frac{p}{-\ell_1^J}$.

When deciding whether to sue in the first period after doing wrong ($k = 1$) or not doing wrong ($k = 0$), type L anticipates that her additional payoff from suing is $\ell_k^L + \pi_2(\mu_2^S)$, and that of not suing is $\pi_2(0) = -\sigma r$. That is to say, type L may trade off first-period litigation loss with potentially higher second-period payoff by imitiating type H, who is known to sue for libel with certainty. By contrast, not suing would immediately identify her as type L. Consider, for instance, an equilibrium where type L does not do wrong with certainty and does not sue for defamation if J_1 has observed a false signal $s_1 = 1$ and published. If type L unilaterally deviates by suing after a publication, the second-period journalist J_2's beliefs are $\mu_2 = 1$, as suing in the first period in this equilibrium identifies the public figure as type H. Therefore, not suing with certainty can only be an equilibrium if $\ell_0^L + \pi_2(1) < \pi_2(0)$, which is equivalent to $-\ell_0^L > b + \sigma r$.

L anticipates her equilibrium litigation decision when deciding whether to do wrong. She prefers doing wrong if and only if

$$\begin{aligned} b + \eta_1(-r + \lambda_1^L(\ell_1^L + \pi_2(\mu_2^S)) + (1-\lambda_1^L)(-\sigma r)) + (1-\eta_1)\pi_2(\mu_2^{NP}) \\ \geq \sigma\eta_1(-r + \lambda_0^L(\ell_0^L + \pi_2(\mu_2^S)) + (1-\lambda_0^L)(-\sigma r)) + (1-\sigma\eta_1)\pi_2(\mu_2^{NP}) \end{aligned} \tag{17}$$

Expected payoff of doing wrong on the left-hand side is the direct benefit b from doing wrong less expected cost of being exposed by the media with probability η_1 and potentially litigating, taking into account the consequences that a published story with and without subsequent litigation, and no story being published, have on equilibrium in the second period. Similarly, expected payoff of not doing wrong on the right-hand side takes into account the possibility that evidence is produced nevertheless with probability σ, which similar potential consequences regarding publication, litigation and second-period equilibrium. Note that, as $\ell_1^L < \ell_0^L$, type L is more willing to sue after not having done wrong than after having done wrong which implies that, in equilibrium, $\lambda_1^L \leq \lambda_0^L$.

The first-period journalist will also take into account how type H, type L after doing wrong, and type L after not doing wrong react differently to a publication. His payoff when publishing is, therefore, similar to J_2's on the left-hand side of (4), but extended to cover the possibility that type L sues:

$$L_1(\omega_1^L, \lambda_0^L, \lambda_1^L) = p + \frac{(g + (1-g)\omega_1^L\lambda_1^L)\ell_1^J + (1-g)(1-\omega_1^L)\sigma\lambda_0^L\ell_0^J}{g + (1-g)(\omega_1^L + (1-\omega_1^L)\sigma)} \tag{18}$$

The first summand in the numerator is the probability that the public figure does wrong, which is 1 for type H and ω_1^L for type L, and sues upon publication, which is 1 for type H and λ_1^L for type L after doing wrong, times the journalist's net litigation payoff if the story is true. Similarly, the second summand is the probability that the public figure is type L, does not wrong and sues, times the journalist's net litigation payoff if the story is false. The denominator is the probability that the journalist observes evidence $s_1 = 1$ (correct or false).

For instance, let us revisit the equilibrium briefly discussed above, where type L does not sue with certainty in the first period, for which we derived the necessary condition that $-\ell_0^L > b + \sigma r$. The numerator on the right-hand side of (18) is equal to $g\ell_1^J$, as the only scenario in which the first-period journalist may incur litigation costs is that where the public figure is type H, the probability for which is g. The probability of observing $s_1 = 1$ in the denominator on the right-hand side of (18) depends on type L's wrongdoing strategy. If L does not do wrong with certainty, (18) becomes $L_1(0,0,0) = p + \frac{g\ell_1^J}{g+(1-g)\sigma}$, which is positive if and only if $g < \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$. At the same time, not doing wrong is only optimal for L if she anticipates J_1 to publish, as implied by (17). Hence, $g < \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$ is the condition for the equilibrium where L does not do wrong, J_1 publishes, and L does not sue in the first period. Similarly, if L does wrong with certainty, $s_1 = 1$ will be observed with probability 1, so that (18) becomes $L_1(1,0,0) = p + g\ell_1^J$, which is negative if and only if $g > \frac{p}{-\ell_1^J}$. As doing wrong is only optimal for L if she anticipates J_1 not to publish, the condition for this equilibrium is, therefore, $g > \frac{p}{-\ell_1^J}$. The following Proposition summarises this discussion:

Proposition 1 *If $-\ell_0^L > b + \sigma r$, type L does not sue for defamation with certainty.*

(i) If $g < \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$, L does not do wrong in the first period, and J_1 publishes whenever $s_1 = 1$.

(ii) If $g > \frac{p}{-\ell_1^J}$, J_1 does not publish and L does wrong in the first period with certainty.

(iii) If $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p} \leq g \leq \frac{p}{-\ell_1^J}$, J_1 randomises between publishing and not publishing, and L randomises between doing wrong and not doing wrong in the first period.

In contrast to the one-shot game discussed in Corollary 1, where L refrains from suing for defamation whenever the litigation loss $-\ell_0^L$ is positive, this happens in the two-period game only if that loss is sufficiently large. If that loss is positive but below the threshold identified in Proposition 1, type L will sue for defamation with some probability in order to avoid revealing herself as type L to the second-period journalist J_2. In the equilibrium discussed in Proposition 1, type L had no incentive to sue for defamation in the first period, because type L's litigation loss is too large for the gain in second period payoff when imitating type H to make up for it. Furthermore, in the latter case discussed in the preceding paragraph, the share of type H public figures is so large that neither journalist would dare publish anyway. As a consequence, type L will never be in the situation of having to decide whether to sue, and, anticipating both journalists to refrain from publication, would do wrong with certainty.

In general, however, the only way for type L to avoid being identified as such is to sue for defamation. Consider the most extreme case where L sues for defamation with certainty whenever a story is published. As the journalist's cost of being sued with certainty exceed the benefit p from publishing, he will refrain from doing so: Substituting for $\omega_1^L = 1$ and $\lambda_1^L = 1$ in (18) yields $L_1(1,1,1) = p + \ell_1^J$, which is negative. Anticipating J_1 to not publish, type L is undeterred from doing wrong.

However, type L's litigation threat might not be credible. If J_1 deviates from the above strategy profile by publishing, L sues if and only if the expected gain in terms of second-period equilibrium payoff exceeds the direct net cost of litigation $-\ell_1^L$. Type L's gain from suing is due to the second-period journalist J_2's beliefs μ_2, who will believe with certainty that the public figure is type L if she has not sued in period 1 despite a story being published ($\mu_2 = 0$), whereas both types are indistinguishable in a situation where both types do wrong and sue with certainty, so that $\mu_2 = g$ in this case. Hence, type L will sue if and only if

$$-\ell_1^L \leq \pi_2(g) - \pi_2(0). \tag{19}$$

If $g > \frac{p}{-\ell_1^J}$, condition (19) becomes $-\ell_1^L \leq b + \sigma r$, but both types would have done wrong in this case even absent reputation concerns, as the fraction g of type H public figures is so large as to deter journalists from ever publishing. A more interesting case is that where J_2 publishes with some probability even though he cannot distinguish both types of public figure, which is the case for $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p} < g < -\frac{p}{-\ell_1^J}$: In this case, condition (19) for type L preferring to sue in the first period becomes $-\ell_1^L \leq \pi_2(g) - \pi_2(0) = -\frac{b\sigma}{1-\sigma} + \sigma r = \frac{\sigma}{1-\sigma}[(1-\sigma)r - b]$. In summary, if type L's litigation loss is sufficiently small and the fraction of type H public figures in the total population at intermediate values, type L will sue for defamation in the first period with certainty in order to induce J_2 to refrain from publishing with some probability, whereas not suing for defamation would unambiguously reveal her type and induce J_2 to publish with certainty. The following proposition summarises this case:

Proposition 2 *Suppose that* $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p} < g < -\frac{p}{-\ell_1^J}$ *and* $-\ell_1^L \leq \frac{\sigma}{1-\sigma}[(1-\sigma)r - b]$. *The unique sequential equilibrium is that L does wrong in the first period,* J_1 *does not publish, L would sue in the first period if* J_1 *did publish, L randomises between doing and not doing wrong in the second period, and* J_2 *randomises between publishing and not publishing.*

In the case discussed in Proposition 2, type L credibly threatens to sue for defamation in the first period with certainty, although her litigation loss $-\ell_1^L$ is strictly positive. By contrast, in the one-shot version of the model discussed in Corollary 1, L would never sue in this case, and would randomise between doing wrong and not doing wrong in each period.

It is important to note that type L's imitation strategy cannot be condemned as greed, as behaving otherwise would expose her to the risk of J_2 taking advantage of her: If L behaves myopically by not entering the negative-value lawsuit, this will reveal her type to J_2 with certainty. As a consequence, J_2 will publish whenever observing $s_2 = 1$. Even if L anticipates this and does not do wrong in the second period, evidence may still be produced due to the noisiness of the signal. In this case, J_2 will still publish with certainty, although he can infer from the fact that the public figure is type L that her optimal decision was not to do wrong. In other words, J_2's incentives to publish are inversely related to his beliefs that the story is true.

The cases discussed in Propositions 1 and 2 exhibit strong incentives for type L to not sue for defamation or to sue for defamation in the first period. In the parameter ranges not covered by these Propositions, a completely pure-strategy equilibrium concerning L's first-period litigation strategy does not exist. That is to say, in these parameter ranges, type L will randomise between suing and not suing for defamation at some nodes on the equilibrium path.

Intuitively, if $-\ell_1^L > \frac{\sigma}{1-\sigma}[(1-\sigma)r-b]$, the case where J_2 randomises between publishing and not publishing is not sufficiently attractive for L to make up for the litigation loss, so that she no longer strictly prefers to sue for defamation. On the other hand, as long as $-\ell_0^L \leq b + \sigma r$, there is some temptation to imitate type H if J_2 is known to believe that only type H would ever sue for defamation in the first period. Hence, in these cases with intermediate litigation losses for type L, L does wrong in the first period and randomises between suing and not suing, or L randomises between doing and not doing wrong and between suing and not suing for defamation after either having or not having done wrong.

If, on the other hand, it is g that falls below the threshold $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$ in Proposition 2, J_2 would publish with certainty if he believed that L and H behave identically in the first period. However, this cannot be an equilibrium, as L has no incentive to imitate H if she anticipates J_2 to publish with certainty anyway. Hence, L will, in equilibrium, randomise between suing and not suing for defamation, which will raise J_2's beliefs μ_2 upon observing a lawsuit in the first period to the threshold $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$, at which he is indifferent between publishing and not publishing. A complete characterisation of the equilibrium is presented in the Appendix.

It is worth analysing the condition $g > \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$ for L to sue for defamation in the first period with certainty in more detail. Whether this condition is met depends on the journalist's litigation loss $-\ell_1^J$ and benefit p of publishing a story, as well as the accuracy σ of the evidence found by journalists, and the fraction g of type-H public figures in the total population of public figures. This is in stark contrast to the standard one-shot model, where the public figure's litigation incentives only depend on her own expected benefits and costs of a lawsuit. Furthermore, note that both threshold values in Proposition 2 depend only on litigation costs conditional on the public figure having done wrong. In other words, the plausible intuition that a more accurate court, in which the expected litigation outcome depends more strongly on who is 'right', is not true in this case, as the comparisons between ℓ_1^i and ℓ_0^i are irrelevant for the case discussed in Proposition 2 to occur. The following Proposition summarises these comparative statics with respect to this threshold for the case discussed in Proposition 2.

Proposition 3 *The case where, in equilibrium, type L sues for defamation in the first period with certainty is more likely to occur if the fraction of litigious public figures g and the journalists' cost of being sued $-\ell_1^J$ are large, and the journalists' benefit from publishing p and the type-L public figure's litigation cost $-\ell_1^L$ are small.*

Intuitively, increasing the frequency of litigious public figures and the journalists' costs of being sued, and reducing their benefit from publishing, all make the second-period journalist less likely to publish in equilibrium and, therefore, increase type L's second-period payoff if she is indistinguishable from type H. As type L's second-period payoff after being recognised as type L is constant in these parameters, all these effects increase type L's incentives to imitate type H by suing in the first period.

The full characterisation of equilibria in the Appendix permits the same comparative statics analysis for the thresholds of all cases, and it turns out that the same results are true for all lower thresholds of these cases. That is to say, it is a general result that equilibria with higher probabilities of type L to sue become more likely if g and ℓ_1^J are high and p is low.[10] Furthermore, the analysis in the Appendix also shows that in cases with less litigation by type L, type L is typically also less likely to do wrong in the first period, but J_2 is more likely to publish although the story is less likely to be true in equilibrium in these cases.

5 Conclusion

We have analysed a two-stage model of defamation law with endogenous wrongdoing, publishing and litigation decisions, taking into account the fact that it becomes public

[10] This monotonicity cannot generally be shown for the probabilities of type L's mixed strategies, so that this is *not* a global comparative statics result for the litigation probability.

knowledge among journalists over time which public figures are more or less likely to sue for defamation when exposed for alleged wrongdoing by the media. We assume that there are two types of public figures, one of which benefits, in expectations, from suing for defamation, whereas the other type incurs a net cost from a defamation lawsuit. In equilibrium, the latter type will imitate the litigious type in the first period with some probability as long as her litigation loss is not too high. This also makes the first-period journalist less likely to publish and, therefore, the non-litigious type of public figure more likely to do wrong in the first period in equilibrium. Thus, our model exhibits libel bullying – defamation lawsuits only brought in order to discourage future media stories. The model also shows the problem that publication decisions are mainly based on the media's beliefs of how likely a public figure is to sue, although less litigious public figures also have less incentive to do wrong in the first place, which makes a journalist's evidence less likely to be true.

This paper's main contribution is to show how a public figure's litigation incentives depend on the media's characteristics such as the cost of being taken to court or their benefit from publishing a story. The higher the media's cost of being taken to court, and the lower the media's benefit from publishing a story, the less likely is a future journalist to publish a story when he is not sure about the public figure's type, which makes imitating a litigious type more beneficial for a public figure. This insight widens the set of potential instruments for legal reform aimed, for instance, at discouraging libel bullying. In addition to increasing the direct cost for a public figure to sue for defamation, a similar effect could also be achieved by reducing the media's litigation costs or increasing the media's benefit of publishing.

Hence, our results highlight some downsides to legal reform that increases a public figure's litigation cost in an attempt to discourage libel bullying. For a given level of accuracy of the legal system, such a legal reform also discourages legitimate lawsuits against false allegations in the media. Furthermore, if the increase in litigation cost is not just targeted to the plaintiff but also increases the defendant's litigation costs, such a reform may backfire, as the latter effect increases the public figure's incentives to engage in libel bullying. By contrast, reducing the long-term returns to libel bullying by making publishing more attractive for the media tackles libel bullying while at the same time encouraging the media to publish true stories and, thereby, mitigating the chilling effect. On the other hand, the media's incentives to publish stories that they believe are false because the public figure has been identified as non-litigious are unaffected by a reduction of the litigation cost, as the media do not expect to be sued by such a public figure anyway.

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Appendix: Full Characterisation of Equilibrium

Case 1. If $-\ell_0^L < -\ell_1^L \leq \frac{\sigma}{1-\sigma}[(1-\sigma)r - b]$, then the equilibrium is:

(1a) $g \leq \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \ell_0^J \frac{-\ell_1^J - p}{\sigma p}}$: L does not do wrong in either period, J_1 publishes, L randomises between suing and not suing, and J_2 randomises between publishing and not publishing.

(1b) $\frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \ell_0^J \frac{-\ell_1^J - p}{\sigma p}} < g \leq \frac{\sigma^2 p}{-\ell_1^J - (1-\sigma)p - \sigma \ell_0^J \frac{-\ell_1^J - p}{p} + \sigma(1-\sigma)\ell_1^J}$: L randomises between doing wrong and not doing wrong in the first period, J_1 randomises between publishing and not publishing, L randomises between suing and not suing after not having done wrong, but does not sue after having done wrong, L does not do wrong in the second period, and J_2 randomises between publishing and not publishing.

(1c) $\frac{\sigma^2 p}{-\ell_1^J - (1-\sigma)p - \sigma \ell_0^J \frac{-\ell_1^J - p}{p} + \sigma(1-\sigma)\ell_1^J} < g < \frac{p}{-\ell_1^J} \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$: L randomises between doing wrong and not doing wrong in the first period, J_1 randomises between publishing and not publishing, L sues after not having done wrong and randomises between suing and not suing after having done wrong, L does not do wrong in the second period, and J_2 randomises between publishing and not publishing.

(1d) $\frac{p}{-\ell_1^J} \frac{\sigma p}{-\ell_1^J - (1-\sigma)p} \leq g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$: L does wrong in the first period, J_1 does not publish, L sues after not having done wrong and randomises between suing and not suing after having done wrong, L does not do wrong in the second period, and J_2 randomises between publishing and not publishing.

(1e) $\frac{\sigma p}{-\ell_1^J - (1-\sigma)p} \leq g < \frac{p}{-\ell_1^J}$: L does wrong in the first period, J_1 does not publish, L would sue in the first period, L randomises between doing and not doing wrong in the second period, and J_2 randomises between publishing and not publishing.

(1f) $g \geq \frac{p}{-\ell_1^J}$: L does wrong in both periods, neither journalist publishes, and L would sue in the first period if J_1 published.

Case 2. If $-\ell_0^L \leq \frac{\sigma}{1-\sigma}[(1-\sigma)r - b] < -\ell_1^L < b + \sigma r$, then the equilibrium is:

(2a) identical to (1a).

(2b) identical to (1b).

(2c) $\frac{\sigma^2 p}{-\ell_1^J - (1-\sigma)p - \sigma \ell_0^J \frac{-\ell_1^J - p}{p} + \sigma(1-\sigma)\ell_1^J} < g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \sigma \ell_0^J \frac{-\ell_1^J - p}{p}}$: L randomises between doing and not doing wrong in both periods, both journalists randomise between publishing and not publishing, and L sues in the first period after not having done wrong but not after having done wrong.

(2d) $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}} \leq g < \left(\frac{p}{-\ell_1^J}\right)^2$: L randomises between doing and not doing wrong in the first period, J_1 randomises between publishing and not publishing, L sues after not having done wrong and randomises between suing and not suing after having done wrong, L does wrong in the second period, and J_2 randomises between publishing and not publishing.

(2e) $\left(\frac{p}{-\ell_1^J}\right)^2 \leq g < \frac{p}{-\ell_1^J}$: L does wrong in the first period, J_1 does not publish, L randomises between suing and not suing, L does wrong in the second period, and J_2 randomises between publishing and not publishing.

(2f) identical to (1f).

Case 3. If $\frac{\sigma}{1-\sigma}[(1-\sigma)r-b] < -\ell_0^L < -\ell_1^L < b+\sigma r$, then the equilibrium is:

(3a) $g < \frac{\sigma p}{-\ell_1^J-(1-\sigma)p-\ell_0^J\frac{-\ell_1^J-p}{p}}$: L does not do wrong in the first period, J_1 publishes, L randomises between suing and not suing, L does wrong in the second period, and J_2 randomises between publishing and not publishing.

(3b) $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p-\ell_0^J\frac{-\ell_1^J-p}{p}} \leq g < \frac{\sigma p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}}$: L randomises between doing and not doing wrong in the first period, J_1 randomises between publishing and not publishing, L randomises between suing and not suing after not having done wrong but does not sue after having done wrong, L does wrong in the second period, and J_2 randomises between publishing and not publishing.

(3c) identical to (2d).

(3d) identical to (2e).

(3e) identical to (1f).

Case 4. If $-\ell_0^L < \frac{\sigma}{1-\sigma}[(1-\sigma)r-b] < b+\sigma r < -\ell_1^L$, then the equilibrium is:

(4a) identical to (1a).

(4b) identical to (1b).

(4c) identical to (2c).

(4d) $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}} \leq g < \frac{p}{-\ell_1^J}$: L randomises between doing and not doing wrong in the first period, J_1 randomises between publishing and not publishing, L sues in the first period after not having done wrong but not after having done wrong, L does wrong in the second period, and J_2 does not publish.

(4e) $g \geq \frac{p}{-\ell_1^J}$: L does wrong in both periods, neither J_1 nor J_2 publish, L would sue after not having done wrong but not after having done wrong.

Case 5. If $\frac{\sigma}{1-\sigma}[(1-\sigma)r - b] < -\ell_0^L < b + \sigma r < -\ell_1^L$, then the equilibrium is:

(5a) identical to (3a).

(5b) identical to (3b).

(5c) identical to (4d).

(5d) identical to (4e).

Case 6. If $b + \sigma r < -\ell_0^L < -\ell_1^L$, then the equilibrium is:

(6a) $g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$: L does not wrong in either period, both journalists publish, L does not sue.

(6b) $\frac{\sigma p}{-\ell_1^J - (1-\sigma)p} < g < \frac{p}{-\ell_1^J}$: L randomises between doing and not doing wrong in both periods, both journalists randomise between publishing and not publishing, and L does not sue in either period.

(6c) identical to (4e).

Proof

A L always sues

In terms of our notation, this case means that $\lambda_1^L = \lambda_0^L = 1$. It can occur if type L wants to sue even after having done wrong, i.e. if $\ell_1^L + \pi_2(\mu_2^S) \geq -\sigma r$. If publication in the first period is on the equilibrium path, we get

$$\mu_2^S = \frac{g}{g + (1-g)(\omega_1^L + (1-\omega_1^L)\sigma)} \tag{20}$$

and

$$L_1(\omega_1^L, 1, 1) = p + \frac{(g + (1-g)\omega_1^L)\ell_1^J + (1-g)(1-\omega_1^L)\sigma\ell_0^J}{g + (1-g)(\omega_1^L + (1-\omega_1^L)\sigma)} < p + \ell_1^J, \tag{21}$$

which is negative by assumption. Hence, the first-period journalist will never publish in this type of equilibrium, i.e. $\eta_1 = 0$.

On the equilibrium path, there is, therefore, no publication in the first period, which implies that it is optimal for both types to do wrong in the first period, i.e. $\omega_1^H = \omega_1^L = 1$.

Hence, the second-period journalist's belief at the beginning of the second period are $\mu_2 = \mu_2^{NP} = g$.

If, off equilibrium, the first-period journalist publishes nevertheless, L sues even after having done wrong if and only if $\ell_1^L + \pi_2(\mu_2) \geq -\sigma r$. As $\pi_2(\mu_2) < b$, we can find some beliefs for which this is satisfied if and only if $-\ell_1^L \leq b + \sigma r$. In a sequential equilibrium, $\mu_2 = g$, in which case we have the following result:

(a) This case can never be an equilibrium if $g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$.

(b) If $\frac{\sigma p}{-\ell_1^J - (1-\sigma)p} \leq g \leq \frac{p}{-\ell_1^J}$, the condition for an equilibrium is $-\ell_1^L \leq \frac{\sigma}{1-\sigma}[(1-\sigma)r - b]$.

(c) If $g > \frac{p}{-\ell_1^J}$, the condition for an equilibrium is $-\ell_1^L \leq b + \sigma r$.

B L sues after not having done wrong and randomises after having done wrong

L randomises between suing and not suing in the first period after having done wrong if and only if $\ell_1^L + \pi_2(\mu_2^S) = -\sigma r$. Unless by fluke, this condition can only be satisfied if J_2 randomises between publishing and not publishing, which may happen in two cases, if $\mu_2^S = \frac{p}{-\ell_1^J}$, in which case L does wrong with certainty in the second period, or if $\mu_2^S = \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$, in which case L does not wrong in the second period.

In either case, the first-period journalist prefers publishing if and only if $L_1(\omega_1^L, 1, \lambda_1^L) \geq 0$ as given by (18). Type L anticipates that she will be indifferent between suing and not suing after having done wrong, so that $\pi_2(\mu_2^S) = -\ell_1^L - \sigma r$. Hence, her condition (17) that she prefers doing wrong in the first period becomes

$$b - r\eta_1(1+\sigma) + (1-\eta_1)\pi_2(\mu_2^{NP}) \geq \sigma\eta_1(-r(1+\sigma) + \ell_0^L - \ell_1^L) + (1-\sigma\eta_1)\pi_2(\mu_2^{NP}),$$

which is equivalent to

$$b \geq \eta_1 \left[\sigma(\ell_0^L - \ell_1^L) + (1-\sigma)\left(\pi_2(\mu_2^{NP}) + r(1+\sigma)\right)\right]. \tag{22}$$

B.1 L does wrong in the second period.

For the second-period journalist to randomise between publishing and not publishing after observing a first-period lawsuit and the second-period signal, it needs to be the case that

$$\frac{g}{g + (1-g)(\omega_1^L\lambda_1^L + (1-\omega_1^L)\sigma)} = \frac{p}{-\ell_1^J} \tag{23}$$

whenever $\eta_1 > 0$, i.e., the node where L decides whether to sue is on the equilibrium path.

If (23) is satisfied, the second-period journalist's equilibrium probability of publishing is given by $\ell_1^L + b - \eta_2 r = -\sigma r$, which implies

$$\eta_2 = \sigma + \frac{\ell_1^L + b}{r}. \tag{24}$$

L prefers doing wrong in the second period if $\eta_2 < \frac{b}{(1-\sigma)r}$. There is such a probability $\eta_2 \in \left[0, \frac{b}{(1-\sigma)r}\right)$ if and only if $\frac{\sigma}{1-\sigma}[(1-\sigma)r - b] < -\ell_1^L < b + \sigma r$.

We will now analyse under which conditions an equilibrium exists in which the first-period journalist publishes, does not publish, or randomises between publishing and not publishing.

J_1 **publishes** In this case $\eta_1 = 1$, in which case (22) can hold with equality only by fluke, i.e. generically $\omega_1^L \in \{0, 1\}$. Let us first suppose that $\omega_1^L = 0$. In this case, the first-period journalist anticipates that he will always be sued upon publication, so that he will never publish: $L_1(0, 1, \lambda_1^L) = p + \frac{g\ell_1^J + (1-g)\sigma\ell_0^J}{g + (1-g)\sigma} < p + \ell_1^J < 0$, a contradiction to the definition of this case.

Let us now turn to the case where $\omega_1^L = 1$. We have $L_1(1, 1, \lambda_1^L) = p + (g + (1-g)\lambda_1^L)\ell_1^J$. The equilibrium λ_1^L is given by the requirement (23) that the second-period journalist is indifferent between publishing and not publishing:

$$\lambda_1^L = \frac{g}{1-g}\frac{-\ell_1^J - p}{p},$$

which is smaller than 1 if and only if $g < \frac{p}{-\ell_1^J}$, and implies that $L_1(1, 1, \lambda_1^L) = p - g\frac{(-\ell_1^J)^2}{p} \geq 0$ if and only if $g \leq \left(\frac{p}{-\ell_1^J}\right)^2$. Furthermore, $\eta_1 = 1$ implies $\mu_2^{NP} = 0$, so that $\pi_2(\mu_2^{NP}) = -\sigma r$. Hence, the right-hand side of (22) is $\sigma(\ell_0^L - \ell_1^L) + (1-\sigma)r$, which is larger than $(1-\sigma)r$ and, therefore, than b. Hence, L strictly prefers not doing wrong in the first period, a contradiction to the definition of this case.

J_1 **does not publish** This means that $\eta_1 = 0$, so that (22) is satisfied, i.e. type L strictly prefers doing wrong and $\omega_1^L = 1$. Again, $L_1(1, 1, \lambda_1^L) = p + (g + (1-g)\lambda_1^L)\ell_1^J$ and $\lambda_1^L = \frac{g}{1-g}\frac{-\ell_1^J - p}{p}$ together imply $L_1(1, 1, \lambda_1^L) = p - g\frac{(-\ell_1^J)^2}{p}$, which is less or equal zero if and only if $g \geq \left(\frac{p}{-\ell_1^J}\right)^2$. Together with the requirement that $\lambda_1^L < 1$, which is equivalent to $g < \frac{p}{-\ell_1^J}$, we conclude that this equilibrium exists if and only if

$$\left(\frac{p}{-\ell_1^J}\right)^2 \leq g < \frac{p}{-\ell_1^J}.$$

J_1 **randomises** Note that each journalist's payoff is independent of the other period's journalist's strategy. Hence, for J_1 to be indifferent between publishing and not publishing, while at the same time ensuring that J_2 is indifferent, the public figure must use mixed strategies both for doing wrong and for suing in the first period. The probabilities ω_1^L and λ_1^L must solve the system of equations (23) and $L_1(\omega_1^L, 1, \lambda_1^L) = 0$. Rearranging yields

$$\begin{aligned} -g\ell_1^J &= gp + (1-g)p(\omega_1^L\lambda_1^L + (1-\omega_1^L)\sigma) \quad (25) \\ -(1-g)(\omega_1^L\lambda_1^L\ell_1^J + (1-\omega_1^L)\sigma\ell_0^J) - g\ell_1^J &= gp + (1-g)p(\omega_1^L + (1-\omega_1^L)\sigma). \quad (26) \end{aligned}$$

Solving (25) for λ_1^L, substituting in (26) and solving (26) for $1-\omega_1^L$ yields

$$1 - \omega_1^L = \frac{p - g\frac{(-\ell_1^J)^2}{p}}{(1-g)[(1-\sigma)p + \sigma(\ell_1^J - \ell_0^J)]}, \tag{27}$$

which is positive if and only if $g < \left(\frac{p}{-\ell_1^J}\right)^2$. Substituting for $1-\omega_1^L$ on the right-hand side of (25), we find that λ_1^L is positive if and only if $g > \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J - p}{p}}$. In summary, the condition for this case is

$$\frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J-p}{p}} < g < \left(\frac{p}{-\ell_1^J}\right)^2.$$

Note that the lower bound of this case is smaller than $\frac{\sigma p}{-\ell_1^J - p(1-\sigma)}$ if and only if $\ell_1^J - \ell_0^J > p(1-p+\ell_1^J)$, a sufficient condition for which is $-\ell_1^J > 1-p$.

Finally, as $\pi_2(\mu_2^{NP})$ is at least $-\sigma r$ and continuous in η_1, it is straightforward to check in (22) that there is some $\eta_1 \in (0,1)$ such that L is indifferent between doing wrong and not doing wrong.

In summary, this equilibrium exists if and only if $\frac{\sigma}{1-\sigma}[(1-\sigma)r - b] < -\ell_1^L < b + \sigma r$ and

$$\frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J-p}{p}} < g < \frac{p}{-\ell_1^J}.$$

B.2 L does not do wrong in the second period.

For the second-period journalist to randomise between publishing and not publishing after observing a first-period lawsuit and the second-period signal, it needs to be the case that

$$\frac{g}{g + (1-g)(\omega_1^L\lambda_1^L + (1-\omega_1^L)\sigma)} = \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}. \tag{28}$$

If (28) is satisfied, the second-period journalist's equilibrium probability of publishing is given by $\ell_1^L - \sigma\overline{\eta}_2 r = -\sigma r$, which implies

$$\overline{\eta}_2 = 1 + \frac{\ell_1^L}{\sigma r}. \tag{29}$$

L prefers not doing wrong in the second period if $\overline{\eta}_2 > \frac{b}{(1-\sigma)r}$. There is such a probability $\overline{\eta}_2 \in \left(\frac{b}{(1-\sigma)r}, 1\right]$ if and only if $-\ell_1^L < \frac{\sigma}{1-\sigma}[r(1-\sigma)-b]$.

J_1 publishes In this case $\eta_1 = 1$, in which case (22) can hold with equality only by fluke, i.e. generically $\omega_1^L \in \{0,1\}$. Let us first suppose that $\omega_1^L = 0$. In this case, the first-period journalist anticipates that he will always be sued upon publication, so that he will never publish: $L_1(0,1,\lambda_1^L) = p + \frac{g\ell_1^J + (1-g)\sigma\ell_0^J}{g+(1-g)\sigma} < p + \ell_1^J < 0$, a contradiction to the definition of this case.

Let us now turn to the case where $\omega_1^L = 1$. We have $L_1(1,1,\lambda_1^L) = p + (g + (1-g)\lambda_1^L)\ell_1^J$. The equilibrium λ_1^L is given by the requirement (28) that the second-period journalist is indifferent between publishing and not publishing:

$$\lambda_1^L = \frac{g}{1-g}\frac{-\ell_1^J - p}{\sigma p},$$

which is smaller than 1 if and only if $g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$, and implies that $L_1(1,1,\lambda_1^L) = p + g\ell_1^J\left(1 + \frac{-\ell_1^J - p}{\sigma p}\right) \geq 0$ if and only if $g \leq \frac{p}{-\ell_1^J}\frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$. Furthermore, $\eta_1 = 1$ implies $\mu_2^{NP} = 0$, so that $\pi_2(\mu_2^{NP}) = -\sigma r$. Hence, the right-hand side of (22) is $\sigma(\ell_0^L - \ell_1^L) + (1-\sigma)r$, which is larger than $(1-\sigma)r$ and, therefore, than b. Hence, L strictly prefers not doing wrong in the first period, a contradiction to the definition of this case.

J_1 does not publish This means that $\eta_1 = 0$, so that (22) is satisfied, i.e. type L strictly prefers doing wrong and $\omega_1^L = 1$. Again, $L_1(1,1,\lambda_1^L) = p + (g + (1-g)\lambda_1^L)\ell_1^J$ and $\lambda_1^L = \frac{g}{1-g}\frac{-\ell_1^J - p}{\sigma p}$ together imply $L_1(1,1,\lambda_1^L) = p + g\ell_1^J\left(1 + \frac{-\ell_1^J - p}{\sigma p}\right)$, which is less or equal zero if and only if $g \geq \frac{p}{-\ell_1^J}\frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$. Together with the requirement that $\lambda_1^L < 1$, which is equivalent to $g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}$, we conclude that this equilibrium exists if and only if

$$\frac{p}{-\ell_1^J}\frac{\sigma p}{-\ell_1^J - (1-\sigma)p} \leq g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p}.$$

J_1 randomises Note that each journalist's payoff is independent of the other period's journalist's strategy. Hence, for J_1 to be indifferent between publishing and not publishing, while at the same time ensuring that J_2 is indifferent, the public figure must use mixed strategies both for doing wrong and for suing in the first period. The probabilities ω_1^L and λ_1^L must solve the system of equations (23) and $L_1(\omega_1^L, 1, \lambda_1^L) = 0$. Rearranging yields

$$-g\ell_1^J = gp + (1-g)\sigma p(\omega_1^L\lambda_1^L + (1-\omega_1^L)\sigma) \quad (30)$$

$$-(1-g)(\omega_1^L\lambda_1^L\ell_1^J + (1-\omega_1^L)\sigma\ell_0^J) - g\ell_1^J = gp + (1-g)p(\omega_1^L + (1-\omega_1^L)\sigma). \quad (31)$$

Solving (30) for λ_1^L and substituting in (30), and solving the resulting equation for $1-\omega_1^L$, yields

$$\begin{aligned}
1-\omega_1^L &= \frac{p + g\ell_1^J\frac{-\ell_1^J - p(1-\sigma)}{\sigma p}}{(1-g)(p(1-\sigma)+\sigma(\ell_1^J-\ell_0^J))},\\
\omega_1^L &= \frac{(1-g)\sigma\left(-p+\frac{\ell_1^J-\ell_0^J}{p}\right)+g(-\ell_1^J-p)\left(1-\frac{\ell_1^J}{\sigma p}\right)}{(1-g)(p(1-\sigma)+\sigma(\ell_1^J-\ell_0^J))}
\end{aligned}$$

which is positive if and only if $g < \frac{p}{-\ell_1^J}\frac{\sigma p}{-\ell_1^J-(1-\sigma)p}$, and smaller than 1 if and only if $g > \frac{\sigma(p-\ell_1^J+\ell_0^J)}{-\ell_1^J-p(1-\sigma)-\sigma(\ell_1^J-\ell_0^J)-\ell_1^J\frac{-\ell_1^J-p}{\sigma p}}$. Substituting $1-\omega_1^L$ and ω_1^L in (30) and solving for λ_1^L shows that λ_1^L is positive if and only if $g > \frac{\sigma^2 p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}+\sigma(1-\sigma)\ell_1^J}$. Hence, the condition for this case is for g to be larger than the maximum of these threshold, which is $\frac{\sigma^2 p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}+\sigma(1-\sigma)\ell_1^J}$: $\frac{\sigma(p-\ell_1^J+\ell_0^J)}{-\ell_1^J-p(1-\sigma)-\sigma(\ell_1^J-\ell_0^J)-\ell_1^J\frac{-\ell_1^J-p}{\sigma p}} < \frac{\sigma^2 p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}+\sigma(1-\sigma)\ell_1^J}$ is equivalent to:

$$\begin{aligned}
\sigma p(-\ell_1^J-p)+\sigma^2p^2-\sigma^2\ell_0^J(-\ell_1^J-p)+\sigma^2(1-\sigma)p\ell_1^J &< \sigma^2 p(-\ell_1^J-p)+\sigma^3p^2-\sigma\ell_1^J(-\ell_1^J-p)\\
&\quad+\sigma(\ell_1^J-\ell_0^J)(-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}+\sigma(1-\sigma)\ell_1^J-\sigma^2 p)
\end{aligned}$$

which is equivalent to

$$\begin{aligned}
&(-\ell_1^J-p)\left[\sigma p(1-\sigma)+\sigma\ell_1^J-\sigma^2\ell_0^J\right]+\sigma^2p^2(1-\sigma)+\sigma^2(1-\sigma)p\ell_1^J <\\
&\qquad \sigma(\ell_1^J-\ell_0^J)\left[(-\ell_1^J-p)\left(1-\frac{\sigma\ell_0^J}{p}\right)+\sigma(1-\sigma)p+\sigma(1-\sigma)\ell_1^J\right]
\end{aligned}$$

which is equivalent to

$$(-\ell_1^J-p)\left[\sigma p(1-\sigma)^2+\sigma\ell_1^J-\sigma^2\ell_0^J\right] < \sigma(\ell_1^J-\ell_0^J)(-\ell_1^J-p)\left[1-\frac{\sigma\ell_0^J}{p}-\sigma(1-\sigma)\right]$$

$$-\sigma(1-\sigma)(-\ell_1^J-p(1-\sigma)) < \sigma(\ell_1^J-\ell_0^J)\left[(1-\sigma)^2-\frac{\sigma\ell_0^J}{p}\right]$$

the left-hand side of which is negative and the right-hand side positive, so that this statement is true.

Finally, as $\pi_2(\mu_2^{NP})$ is at least $-\sigma r$ and continuous in η_1, it is straightforward to check in (22) that there is some $\eta_1 \in (0,1)$ such that L is indifferent between doing wrong and not doing wrong.

In summary, this equilibrium exists if and only if $-\ell_1^L < \frac{\sigma}{1-\sigma}[r(1-\sigma)-b]$ and

$$\frac{\sigma^2 p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}+\sigma(1-\sigma)\ell_1^J} < g < \frac{\sigma p}{-\ell_1^J-(1-\sigma)p}.$$

C L sues after not having done wrong but not after having done wrong

L chooses this litigation strategy if and only if

$$-\ell_0^L < \pi_2(\mu_2^S) + \sigma r < -\ell_1^L. \tag{32}$$

We are structuring the discussion of this case according to whether L does wrong in the first period:

L does wrong in first period. Substituting for $\omega_1^L = \lambda_0^L = 1$ and $\lambda_1^L = 0$ in (14) and (18) yields $\mu_2^S = 1$, which implies $\pi_2(\mu_2^S) = b$, so that the condition (32) becomes $-\ell_0^L < b + \sigma r < -\ell_1^L$, and $L_1 = p + g\ell_1^J$, which implies that J_1 will publish if and only if $g \leq \frac{p}{-\ell_1^J}$.

Consider first the case where $g \leq \frac{p}{-\ell_1^J}$. With (17), L_1 prefers doing wrong if and only if

$$b - r - \sigma r > \sigma(-r + \ell_0^L + b) + (1-\sigma)\pi(\mu_2^{NP}). \tag{33}$$

As $\eta_1 = 1$, μ_2^{NP} is an off-equilibrium belief. Noting that, under our assumptions, only L's wrongdoing decision depends on whether J_1 publishes, the Intuitive Criterion requires that $\mu_2^{NP} = 0$, so that $\pi_2(\mu_2^{NP}) = -\sigma r$. Substituting in (33) and rearranging yields the condition $-\ell_0^L > r + \frac{1-\sigma}{\sigma}(r(1-\sigma) - b)$, which is larger than $b + \sigma r$, which is a contradiction to $\lambda_0^L = 1$. Hence, this cannot be an equilibrium in this case.

If $g > \frac{p}{-\ell_1^J}$, J_1 never publishes no matter whether L is anticipated to sue. Hence, L will do wrong in the first period, and J_2's equilibrium beliefs are $\mu_2^{NP} = g > \frac{p}{-\ell_1^J}$, so that L will also do wrong and J_2 not publish in the second period.

L does not wrong in the first period. The definition of the case discussed in this Section means that the J_1 will always be sued upon publication, so that he will prefer not to publish: $L_1(0,1,0) = p + \frac{g\ell_1^J + (1-g)\sigma\ell_0^J}{g + (1-g)\sigma} < p + \ell_1^J < 0$. However, if J_1 does not publish, L prefers doing wrong, a contradiction.

L randomises between doing and not doing wrong in the first period. As L can only be indifferent between doing wrong and not doing wrong in the first period by fluke if both journalists play pure strategies, and both journalists' strategies are independent of each others', exactly one journalist must play mixed strategies. Let us first discuss the case where J_1 randomises between publishing and not publishing. There is some η_1 such that L wants to randomise between doing wrong and not doing wrong in the first period if she strictly prefers doing wrong if $\eta_1 = 0$, i.e., if $b + \pi_2(\mu_2^{NP}) > \pi_2(\mu_2^{NP})$, which is true, and if she strictly prefers not doing wrong if $\eta_1 = 1$. Note that in this latter case, $\mu_2^{NP} = 0$, so that $\pi_2(\mu_2^{NP}) = -\sigma r$. Hence, in the following discussion, all we need to check is whether

$$b - r - \sigma r < \sigma(-r + \ell_0^L + \pi_2(\mu_2^S)) - (1-\sigma)\sigma r \tag{34}$$

J_1 is indifferent if and only if $L_1(\omega_1^L, 1, 0) = p + \frac{g\ell_1^L + (1-g)(1-\omega_1^L)\sigma\ell_0^L}{g+(1-g)(\omega_1^L + (1-\omega_1^L)\sigma} = 0$. Solving for ω_1^L yields

$$\omega_1^L = \frac{g(-\ell_1^J - p) + (1-g)\sigma(-\ell_0^J - p)}{(1-g)(p(1-\sigma) - \sigma\ell_0^J)}, \tag{35}$$

which is strictly positive under our assumptions. Furthermore, ω_1^L is strictly smaller than one if and only if $g < \frac{p}{-\ell_1^J}$.

Substituting for ω_1^L in (14) yields J_2's beliefs

$$\mu_2^S = \frac{g}{g + (1-g)(1-\omega_1^L)\sigma} = \frac{g}{g + \sigma\frac{p + g\ell_1^J}{p(1-\sigma) - \sigma\ell_0^J}}.$$

The second-period equilibrium and, thus, L's payoff from not doing wrong in the first period depends on these beliefs. Let us first consider the case where $\mu_2^S > \frac{p}{-\ell_1^J}$, which is equivalent to $g > \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J - p}{p}}$. In this case, $\pi_2(\mu_2^S) = b$. With (34), L prefers not doing wrong if $b - r - \sigma r < \sigma(-r + \ell_0^L + b) - (1-\sigma)\sigma r$, which is equivalent to $-\ell_0^L < r + \frac{1-\sigma}{\sigma}(r(1-\sigma) - b)$, which is larger than $b + \sigma r$. Hence, the condition (32) is binding.

Next, J_2's beliefs are larger than $\frac{\sigma p}{-\ell_1^J - p(1-\sigma)}$ if and only if $g > \frac{\sigma^2 p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J - p}{p} + \sigma(1-\sigma)\ell_1^J}$. If, at the same time, $g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J - p}{p}}$, $\pi_2(\mu_2^S) = -\frac{b\sigma}{1-\sigma}$. With (34), L prefers not doing wrong for $\eta_1 = 1$ if $-\ell_0^L < \frac{1-\sigma+\sigma^2}{\sigma(1-\sigma)}(r(1-\sigma) - b)$. Furthermore, substituting for $\pi_2(\mu_2^S) = -\frac{b\sigma}{1-\sigma}$ in (32) yields $-\ell_0^L < \frac{\sigma}{1-\sigma}(r(1-\sigma) - b) < -\ell_1^L$, which is stricter than the above condition that L prefers not doing wrong for $\eta_1 = 1$.

Last, J_2's beliefs are below $\frac{\sigma p}{-\ell_1^J - p(1-\sigma)}$ if and only if $g < \frac{\sigma^2 p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J - p}{p} + \sigma(1-\sigma)\ell_1^J}$. In this case, $\pi_2(\mu_2^S) = -\sigma r$, so that L would never want to sue in the first period. Hence, this cannot be an equilibrium in this case.

Consider now the case where J_2 randomises between publishing and not publishing. This requires that

$$\mu_2^S = \frac{g}{g + (1-g)(1-\omega_1^L)\sigma} = \frac{p}{-\ell_1^J}. \tag{36}$$

For L's second-period payoff, this means that $\pi_2(\mu_2^S) \in \left(-\frac{b\sigma}{1-\sigma}, b\right)$. If J_1 publishes, which implies that $\pi_2(\mu_2^{NP}) = -\sigma r$, L is indifferent between doing wrong and not doing wrong in the first period if and only if

$$b - r = \sigma(\ell_0^L + \pi_2(\mu_2^S)) - (1-\sigma)\sigma r,$$

which is equivalent to $-\ell_0^L = \pi_2(\mu_2^S) + \sigma r + \frac{r(1-\sigma)-b}{\sigma}$, a contradiction to (32). If, on the other hand, J_1 does not publish, L is indifferent if and only if $b + \pi_2(\mu_2^{NP}) = \pi_2(\mu_2^{NP})$, which cannot be satisfied. Hence, there is no such equilibrium.

To summarise this Section, we have an equilibrium of this kind in the following cases:

1. If $g \geq \frac{p}{-\ell_1^J}$, both journalists do not publish, and both types of public figures do wrong in both periods. In fact, for these levels of g, this is always an equilibrium no matter what L's litigation strategy is.

2. If $\frac{\sigma p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}} < g < \frac{p}{-\ell_1^J}$ and $-\ell_0^L < b + \sigma r < -\ell_1^L$, J_1 randomises and J_2 does not publish at all. L randomises between doing wrong and not doing wrong in the first period, and does wrong with certainty in the second period.

3. If $\frac{\sigma^2 p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}+\sigma(1-\sigma)\ell_1^J} \leq g \leq \frac{\sigma p}{-\ell_1^J-(1-\sigma)p-\sigma\ell_0^J\frac{-\ell_1^J-p}{p}}$ and $-\ell_0^L < \frac{\sigma}{1-\sigma}(r(1-\sigma) - b) < -\ell_1^L$, both journalists randomise, and type L randomises between doing wrong and not doing wrong in both periods.

Note that even the upper bound of that last case is still below $\frac{\sigma p}{-\ell_1^J-p(1-\sigma)}$.

D L randomises after not having done wrong but does not sue after having done wrong

Unless by fluke, L can only be indifferent between suing and not suing if J_2 randomises between publishing and not publishing, which is the case if

$$\mu_2^S = \frac{g}{g + (1-g)(1-\omega_1^L)\sigma\lambda_0^L} \in \left\{ \frac{p}{-\ell_1^J}, \frac{\sigma p}{-\ell_1^J - p(1-\sigma)} \right\}. \tag{37}$$

(37) immediately implies that L doing wrong with certainty in the first period cannot be an equilibrium in this case, as this would imply that $\mu_2^S = 1$. Hence, in the following we will analyse the remaining two cases where L does not wrong in the first period and where L randomises between doing wrong and not doing wrong in the first period, and we will do so for each of the possible values for μ_2^S identified in (37).

D.1 L does wrong in the second period

In this case, $\mu_2^S = \frac{p}{-\ell_1^J}$, so that $\pi_2(\mu_2^S) = b - \eta_2 r$. There is an $\eta_2 \in \left(0, \frac{b}{(1-\sigma)r}\right)$ so that L wants to randomise after not having done wrong and to not sue after having done wrong if and only if

$$\frac{\sigma}{1-\sigma}(r(1-\sigma) - b) \leq -\ell_0^L < b + \sigma r. \tag{38}$$

L does not do wrong in the first period. $\omega_1^L = 0$ implies that (37) is satisfied if and only if

$$\lambda_0^L = \frac{g}{(1-g)\sigma}\frac{-\ell_1^J - p}{p},$$

which is below 1 if and only if $g < \frac{\sigma p}{-\ell_1^J - p(1-\sigma)}$. Substituting for λ_0^L (and $\omega_1^l = \lambda_1^L = 0$) in (18) yields

$$L_1(0, \lambda_0^L, 0) = p + g\frac{\ell_1^J + \frac{-\ell_1^J - p}{p}\ell_0^J}{g + (1-g)\sigma},$$

which is non-negative if and only if $g \leq \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \ell_0^J\frac{-\ell_1^J - p}{p}}$, which is smaller than the above threshold for $\lambda_0^L < 1$, $\frac{\sigma p}{-\ell_1^J - p(1-\sigma)}$. Hence, in this case, J_1 publishes with certainty, which induces L indeed to prefer not to do wrong. If $g > \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \ell_0^J\frac{-\ell_1^J - p}{p}}$, J_1 does not publish, which induces L to prefer to do wrong, a contradiction.

L randomises between doing wrong and not doing wrong in the first period. In order to make L indifferent between doing wrong and not doing wrong in the first period, J_1 must randomise between publishing and not publishing. (37) implies that

$$\lambda_0^L(1-\omega_1^L) = \frac{g}{(1-g)\sigma}\frac{-\ell_1^J - p}{p},$$

Substituting in (18) yields

$$L_1(0, \lambda_0^L, 0) = p + g\frac{\ell_1^J + \frac{-\ell_1^J - p}{p}\ell_0^J}{g + (1-g)(\omega_1^L + (1-\omega_1^L)\sigma},$$

which is equal to zero if and only if

$$\omega_1^L = \frac{-\sigma p + g\left[-(\ell_1^J - \ell_0^J) + \frac{\ell_1^J\ell_0^J}{p} - p(1-\sigma)\right]}{p(1-g)(1-\sigma)},$$

which is strictly between 0 and 1 if and only if

$$\frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \ell_0^J\frac{-\ell_1^J - p}{p}} < g < \frac{p}{-(\ell_1^J - \ell_0^J) + \frac{\ell_1^J\ell_0^J}{p}}.$$

L is indifferent between doing wrong and not doing wrong for some $\eta_1 \in (0,1)$ if and only if she prefers doing wrong for $\eta_1 = 0$, which is readily checked, and if she prefers not doing wrong for $\eta_1 = 1$, which requires

$$\begin{aligned} b - r - \sigma r &< \sigma\left(-r + \frac{g}{1-g}\frac{-\ell_1^J - p}{(1-\omega_1^L)p}(\ell_0^L + \pi_2(\mu_2^S) + \sigma r) - \sigma r\right) + (1-\sigma)\pi_2(\mu_2^{NP}) \\ &= -2\sigma r + \frac{(1-\sigma)g(-\ell_1^J - p)}{p(1-g) - g\frac{-\ell_1^J - p}{p}(p - \ell_0^J)}(\ell_0^L + \pi_2(\mu_2^S) + \sigma r) \end{aligned}$$

As $\ell_0^L + \pi_2(\mu_2^S) = -\sigma r$ in order to make L indifferent between suing and not suing after not doing wrong in the first period, this requirement is also met.

It remains to check whether $\lambda_0^L = \frac{g}{(1-g)\sigma}\frac{-\ell_1^J - p}{p(1-\omega_1^L)}$ as defined above is smaller than 1. Substituting for ω_1^L and rearranging yields $(1-\sigma)g(-\ell_1^J - p) < p(1-g) - g\frac{-\ell_1^J - p}{p}(p - \ell_0^J)$, which is equivalent to $g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \sigma \ell_0^J \frac{-\ell_1^J - p}{p}}$.

In summary, an equilibrium in this Section exists if and only if $g < \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \sigma \ell_0^J \frac{-\ell_1^J - p}{p}}$ and $\frac{\sigma}{1-\sigma}(r(1-\sigma) - b) \leq -\ell_0^L < b + \sigma r$.

D.2 L does not do wrong in the second period

In this case, $\mu_2^S = \frac{\sigma p}{-\ell_1^J - p(1-\sigma)}$, so that $\pi_2(\mu_2^S) = b - \overline{\eta}_2 r$. There is an $\eta_2 \in \left(\frac{b}{(1-\sigma)r}, 1\right)$ so that L wants to randomise after not having done wrong and to not sue after having done wrong if and only if

$$-\ell_0^L < \frac{\sigma}{1-\sigma}(r(1-\sigma) - b). \tag{39}$$

***L* does not do wrong in the first period.** $\omega_1^L = 0$ implies that (37) is satisfied if and only if

$$\lambda_0^L = \frac{g}{(1-g)\sigma^2}\frac{-\ell_1^J - p}{p},$$

which is below 1 if and only if $g < \frac{\sigma^2 p}{-\ell_1^J - p(1-\sigma)(1+\sigma)}$. Substituting for λ_0^L (and $\omega_1^l = \lambda_1^L = 0$) in (18) yields

$$L_1(0, \lambda_0^L, 0) = p + g\frac{\ell_1^J + \frac{-\ell_1^J - p}{\sigma p}\ell_0^J}{g + (1-g)\sigma},$$

which is non-negative if and only if $g \leq \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \ell_0^J \frac{-\ell_1^J - p}{\sigma p}}$, which is smaller than the above threshold for $\lambda_0^L < 1$, $\frac{\sigma^2 p}{-\ell_1^J - p(1-\sigma)(1+\sigma)}$ (due to our assumption that $p < \ell_0^J$). Hence, in this case, J_1 publishes with certainty, which induces L indeed to prefer not to do wrong. If $g > \frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \ell_0^J \frac{-\ell_1^J - p}{\sigma p}}$, J_1 does not publish, which induces L to prefer to do wrong, a contradiction.

***L* randomises between doing wrong and not doing wrong in the first period.** In order to make L indifferent between doing wrong and not doing wrong in the first period, J_1 must randomise between publishing and not publishing. (37) implies that

$$\lambda_0^L(1 - \omega_1^L) = \frac{g}{(1-g)\sigma^2}\frac{-\ell_1^J - p}{p},$$

Substituting in (18) yields

$$L_1(0,\lambda_0^L,0) = p + g\frac{\ell_1^J + \frac{-\ell_1^J - p}{\sigma p}\ell_0^J}{g + (1-g)(\omega_1^L + (1-\omega_1^L)\sigma},$$

which is equal to zero if and only if

$$\omega_1^L = \frac{-\sigma p + g\left[-\left(\ell_1^J - \frac{\ell_0^J}{\sigma}\right) + \frac{\ell_1^J\ell_0^J}{\sigma p} - p(1-\sigma)\right]}{p(1-g)(1-\sigma)},$$

which is strictly between 0 and 1 if and only if

$$\frac{\sigma p}{-\ell_1^J - (1-\sigma)p - \ell_0^J\frac{-\ell_1^J - p}{\sigma p}} < g < \frac{p}{-(\ell_1^J - \ell_0^J) + \frac{\ell_1^J\ell_0^J}{\sigma p}}.$$

L is indifferent between doing wrong and not doing wrong for some $\eta_1 \in (0,1)$ if and only if she prefers doing wrong for $\eta_1 = 0$, which is readily checked, and if she prefers not doing wrong for $\eta_1 = 1$, which requires

$$b - r - \sigma r < \sigma\left(-r - \sigma r\right) + (1-\sigma)\pi_2(\mu_2^{NP})$$

where we have used $\ell_0^L + \pi_2(\mu_2^S) = -\sigma r$ in order to make L indifferent between suing and not suing after not doing wrong in the first period, and $\pi_2(\mu_2^{NP}) = -\sigma p$.

It remains to check whether $\lambda_0^L = \frac{g}{(1-g)\sigma}\frac{-\ell_1^J - p}{p(1-\omega_1^L)}$ as defined above is smaller than 1. Substituting for ω_1^L and rearranging yields $g < \frac{\sigma^2 p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J - p}{p} + \sigma(1-\sigma)\ell_1^J}$.

In summary, an equilibrium in this Section exists if and only if $g < \frac{\sigma^2 p}{-\ell_1^J - (1-\sigma)p - \sigma\ell_0^J\frac{-\ell_1^J - p}{p} + \sigma(1-\sigma)\ell_1^J}$ and $-\ell_0^L < \frac{\sigma}{1-\sigma}(r(1-\sigma) - b)$.

E L never sues

In this case, a lawsuit in the first period can only originate from type H, so that $\mu_2^S = 1$. Hence, $\pi_2(\mu_2^S) = b$. The condition for L to never sue is, therefore, $-\ell_0^L > b + \sigma r$. As no new information is conveyed in the first period, the equilibrium decisions in both periods are identical: If $g \leq \frac{\sigma p}{-\ell_1^J - p(1-\sigma)}$, L does not wrong in either period, and both journalists publish with certainty; if $\frac{\sigma p}{-\ell_1^J - p(1-\sigma)} < g < \frac{p}{-\ell_1^J}$, L randomises between doing wrong and not doing wrong in each period, and both journalists randomise between publishing and not publishing; and if $g \geq \frac{p}{-\ell_1^J}$, L does wrong in both periods, and both journalist do not publish.