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« Legal Advertising and Frivolous Lawsuits »

Auteurs

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Legal Advertising and Frivolous Lawsuits*

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Abstract

Following a recent wave of deregulation, lawyers now use a large variety of media to advertise their services. A common argument against this increasing reliance on advertising is that it might stir-up frivolous lawsuits. In this article, we investigate the theoretical relevance of this argument by developing an asymmetric information game of litigation where the likelihood of accident and the number of lawsuits are endogenous. The main result shows that this stirring-up effect does not necessarily occur in equilibrium since the impact of advertising on meritless claims results from complex strategic effects arising in the litigation game. In the same way, the welfare analysis highlights that advertising may increase or decrease the social cost of accidents. These results imply that the recent trend toward liberalization of legal advertising should not necessarily be considered as a threat to the efficiency of the tort system.

Keywords: Litigation, Advertising, Deterrence, Frivolous lawsuits.

JEL codes: K13, K41, M37.

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1. INTRODUCTION

Advertising is now widely used by lawyers as a way to promote their services, through various media such as press, television, radio, the yellow pages and the internet. Indeed, following a recent wave of deregulation, restrictions on lawyer advertising have been broadly relaxed in several jurisdictions, implying an increasing reliance on advertisement by legal profession. For instance, in the U.S., advertising expenditures grew sharply over the first decade of the 21st century: law firm advertising generated \$575 million in TV revenues in 2006, and TV advertising expenditures increased from \$236 million in 2000 to \$493 million in 2009 (Stone and Miceli, 2012; Tuil and Visscher, 2010), knowing that a similar trend is observed regarding press and radio/internet. In the same way, in France, lawyers may advertise since 2005 but some restrictions have been removed by the law adopted in March 2014.¹ In England and Wales, solicitations are also permitted with few limitations, including a prohibition of comparative advertisement.²

Overall, the most standard type of legal advertisements are those by tort lawyers, whose field of law includes personal injury, medical malpractice, and product liability cases, all of them involving compensation for damages. In this regard, a common argument against the increasing use of advertising is that it might stir-up frivolous lawsuits. A frivolous suit may be defined as a lawsuit that lacks merit and is filed by the plaintiff only in the hope of extracting a settlement offer to the defendant (Bebchuk, 1988). This question of whether advertising is conducive to meritless claims is important since frivolous litigation is frequently cited as a major cause of the civil judicial system's most serious ills (*e.g.* caseload of public courts, judicial costs). This is notably the case in the U.S. where the number of nuisance lawsuits has been an often-voiced concern for many years. For example, in a reported survey of American jurors in cases in which businesses or corporations were defendants, 83% of the jurors indicated that they "agree/strongly agree" with the statement according to which "there are far too many frivolous lawsuits today" (Polinsky and Rubinfeld, 1993). In the same way, the general public's perceptions of the tort system are often influenced by anecdotes of specious claims, such as the Mc Donald's

¹Décret no. 2014-344, dating from 17th March 2014, over consumption.

²See Stone and Miceli (2012) for a wide and interesting description of the present regulatory frames existing in different jurisdictions around the world.

1 coffee case.³ In this context, the issue of frivolous litigation – as a major waste of
2 resources – has inspired some of the most significant procedural developments in
3 the U.S. over the last decades. In 1983, for instance, the Advisory Committee on
4 Civil Rules overhauled Rule 11 of the Federal Rules of Civil Procedure to strengthen
5 sanctions on individuals who present in court a “pleading, written motion, or other
6 paper” that is deemed to be frivolous. Furthermore, Willging (1988) reports that
7 over half of cases under 1983 Rule 11 involved the filing of an unjustified complaint.
8 More recently, the Private Securities Litigation Reform Act that was entertained by
9 the American Congress in 1995 contains a number of provisions designed to reduce
10 frivolous class actions (Bone, 1997; Choi, 2007). In the same perspective, scholars
11 and policymakers recognize that the introduction of the so-called English fee-shifting
12 rule in Europe aimed indirectly at deterring meritless suits. Indeed, this rule implies
13 fee-shifting in favor of the winning litigant and, hence, should deter low-probability-
14 of-success lawsuits by making non-indigent plaintiffs more risk-adverse (Carbonara
15 *et al.*, 2015).

16 In this regard, the aim of our paper is to analyze – from a theoretical standpoint –
17 whether attorney advertising promotes frivolous litigation, and is detrimental to so-
18 cial welfare in a broader way. We investigate this issue by developing an asymmetric
19 information game of litigation and settlement *à la* Katz (1990), where defendants
20 cannot observe the real loss suffered by victims, which explains that meritless suits
21 may both arise and succeed in reaching settlements. However, we go beyond this
22 paper both by making the probability of accident endogenous and by incorporating
23 the possibility of advertising: before the settlement-trial decisions, a representative
24 lawyer may advertise to a set of potential clients, some of them will be injured in an
25 accident arising with a probability determined by the injurer’s level of care. With
26 this framework in place, we show that the stirring-up effect of advertising does not
27 necessarily occur in equilibrium. Indeed, for any given accident rate, legal adver-
28 tising has a direct increasing effect on the audience of potential clients (whether
29 injured or not). However, in the same time, this positive impact of advertising on
30 the population of possible frivolous plaintiffs may discourage some of them to sue in
31 equilibrium since the defendant’s decision to offer settlement is based on his estimate
32 that the claim is valid. This first strategic effect is interesting since it highlights that

³See *Liebeck v. McDonald’s Restaurants*, Docket No. D-202 CV-93-02419, 1995 WL360309 (Bernalillo County, N.M. Dist. Ct. August 18, 1994).

1 advertising may lessen the individual incentives to file meritless claims, which arises
2 because of the asymmetric information setup. Furthermore, our results show that
3 advertising may also reduce the expected number of frivolous suits by encouraging
4 the injurer to be more careful in order to reduce the likelihood of accident and lit-
5 igation. Following this second strategic effect, it would be misleading to evaluate
6 the potential stirring-up effect of advertising by considering an exogenously given
7 accident rate. To summarize, the overall impact of advertising on frivolous suits is
8 ambiguous and may be counterintuitive on an *a priori* basis, since it results both
9 from a direct effect on the expected number of potential plaintiffs and from strate-
10 gic effects due to the interactions arising in the game played by the parties. This
11 ambiguity translates in the welfare analysis which highlights that advertising may
12 increase or decrease the social cost of accidents. Therefore, from a policy perspec-
13 tive, the prohibition of advertising which is still in effect in some countries (*e.g.*
14 Croatia, Romania) cannot be optimal in a general sense, and the recent trend to-
15 ward liberalization of legal advertising should not necessarily be assessed as a threat
16 to the efficiency of the tort system.

17 The potential influence of lawyer advertising on frivolous litigation has been over-
18 looked in the literature, which essentially evaluates the effect of advertising on the
19 price and quality of legal services from an empirical viewpoint. Following the seminal
20 paper by Stigler (1961), several analyses conclude that the deregulation of adver-
21 tising enhances competition and, hence, is welfare improving (see, *e.g.*, Schroeter
22 *et al.*, 1987). Indeed, according to Stigler’s argument, advertising provides infor-
23 mation and, thus, reduces consumers’ search costs, implying that it should have
24 pro-competitive consequences. More specifically, an extensive empirical literature
25 highlights that restrictions on advertising increase the fees charged for the profes-
26 sion’s services, which may damage the reputation of lawyers (Stephen and Love,
27 1996). However, from a theoretical perspective, our analysis is deeply connected to
28 the articles by Stone and Miceli (2012) and Miceli and Stone (2014). To summarize,
29 the latter paper examines whether frivolous litigation may enhance deterrence by
30 encouraging potential injurers to increase their level of care (but it does not incor-
31 porate the possibility of advertisement on legal services), while the former analyzes
32 the efficiency of lawyer advertising in terms of litigation costs and deterrence (but it
33 rules out the existence of frivolous lawsuits). Our paper complements these studies
34 by addressing the effect of advertising on frivolous litigation, through its impact on
35 care decisions.

1 The remainder of the paper is organized as follows. Section 2 lays down the formal
2 structure of the model. Section 3 presents the results regarding the equilibrium
3 strategies and welfare analysis. Section 4 investigates some extensions of the basic
4 framework, and Section 5 concludes by suggesting some possible extensions.

5 2. THEORETICAL FRAMEWORK

6 This section develops a model of the influence of lawyer advertising on the litigation
7 process and the operation of the tort system, in which the sequence of events is as
8 follows (and summarized in the appendix).

9 At date 1, a representative lawyer may advertise to a set of potential victims who,
10 with some probability, will be injured in an accident. The number of potential
11 victims is normalized to one, without loss of generality, and the advertising intensity,
12 a , implies a cost for the lawyer that is equal to $h(a)$, where $h' > 0$ and $h'' > 0$.

13 At date 2, given the decision previously made, the potential injurer chooses his level
14 of care, x , which determines the probability of accident $p(x)$, where $p' < 0$ and
15 $p'' > 0$. The level of care, x , induces a cost $k(x)$ for the injurer, with $k' > 0$ and
16 $k'' > 0$. The game ends if no accident arises.

17 At date 3, the accident victim is actually injured with some probability $\beta \in (0, 1)$.
18 We consider an incomplete information setup where the potential plaintiff knows
19 whether or not she suffered harm, while the defendant cannot know the plaintiff's
20 genuineness *ex-ante*.⁴ This setup may be illustrated by considering the following
21 simple hypothetical situation (Katz, 1990): one day while shopping at a retail store,
22 a customer falls on a floor that the store negligently failed to keep dry. The customer
23 knows with certainty whether she sustained some injury, but the store only knows
24 that such falls result in injury some proportion of the time.

25 At date 4, the accident victim – whether injured or not – makes a decision about
26 filing a suit, at cost f , depending on whether she has been exposed to the lawyer's
27 advertising. The amount f includes the cost of preparing a complaint and making
28 the defendant aware of the lawsuit. We assume that the population of accident
29 victims is composed of two types: the first type (*i.e.* type 1) is well-informed and
30 hence aware that a lawsuit is possible if she has been injured, while the second one

⁴We use 'she' to refer to the accident victim/plaintiff and 'he' to refer both to the defendant and the plaintiff's attorney.

1 (*i.e.* type 2) is uninformed and does not know how to find a lawyer, whenever she
 2 has been injured or not. Let τ (resp. $1 - \tau$) represent the fraction of type-1 (type-2)
 3 plaintiffs, with $\tau \in (0, 1)$. In this context, we consider that a truly injured victim
 4 of type 1 is not responsive to advertisement since she knows how to find a lawyer,
 5 while a genuine victim of type 2 can decide to file a suit if and only if she has
 6 been previously exposed to advertisement. In contrast, we assume that a frivolous
 7 plaintiff always needs advertisement to get the services of a lawyer. Indeed, from a
 8 behavioral perspective, we consider that a genuine victim can be aware on her own
 9 (*i.e.* without advertising) that a lawsuit is possible, provided that she is informed,
 10 while a frivolous victim cannot have this possibility in mind – since she has not been
 11 injured – and hence needs an advertisement to be legally represented. Furthermore,
 12 the probability that a potential plaintiff – whether injured or not – has been exposed
 13 to advertising is denoted $\alpha(a)$, where $\alpha(0) = 0$, $\alpha(a) \in (0, 1)$, $\alpha' > 0$ and $\alpha'' < 0$.
 14 Therefore, following the arguments mentioned above, the overall fractions of injured
 15 and frivolous plaintiffs who are aware that a lawyer is available and, then, a lawsuit
 16 is possible are respectively:

$$\phi(a) := \tau + (1 - \tau)\alpha(a) \quad \text{and} \quad \psi(a) := \alpha(a) \quad (1)$$

17 Notice that the rate of advertising exposure (*i.e.* $\alpha(\cdot)$) is the same regardless of the
 18 plaintiff's claim (*viz.* frivolous or valid). Indeed, we consider that the representative
 19 lawyer is a Stackelberg leader who advertises an audience of possible clients *ex-*
 20 *ante* (*viz.* before a potential accident occurs), which implies that the likelihood of
 21 exposure cannot depend on the merits of the plaintiff's case.

22 This framework is consistent with the *informative* view of advertising – which is
 23 adopted by Stone and Miceli (2012) – and implies that advertising is regarded as a
 24 ‘barrier to entry’ for uninformed people into the litigation process.⁵ However, the
 25 functions in (1) may also be consistent with an alternative view of advertising consid-
 26 ering that advertisements may have both an *informative* and a *persuasive/suggestive*

⁵This framework could also capture the intuitive idea that a well-informed victim is more likely to be injured (given that $\tau > 0$). Indeed, we could consider for example that an informed person would be less prone to take care in order to lessen the likelihood of accident – than an uninformed person – anticipating that she would easily access to legal representation if an accident occurs. In such a context, the expected probability to be injured would be higher for aware people. However, this story would be tackled more accurately by assuming that the potential victim as well as the injurer might influence the probability of accident by their levels of care (see, *e.g.*, Shavell, 1980). This issue could be addressed in an extension of the current framework.

1 role, depending on whether the victim has been truly injured or not.⁶ Following this
2 view, advertising would be purely informative in case of injury, which would lead
3 to the function $\phi(a)$ stated in (1). Indeed, it seems reasonable to consider that,
4 when a victim has been genuinely injured, the only impediment for her to be legally
5 represented by a lawyer is a lack of information (since a genuine victim does not
6 need, a priori, to be persuaded to hire a lawyer). In this case, the only role of adver-
7 tising is to alert uninformed people of the availability of the representative lawyer’s
8 services, while advertisement is not useful for informed victims. In contrast, we
9 could consider that an uninjured victim would need to be persuaded – regardless of
10 the information she holds – notably because she does not have the technical skills
11 required to understand the litigation process (and hence to believe that a frivolous
12 claim may succeed in reaching a settlement). These arguments would imply that
13 $\psi(a) := [\tau + (1 - \tau)]\alpha(a)$ and we would get the function $\psi(a)$ stated in (1). Overall,
14 following this approach, advertising would be only informative for genuine victims,
15 but both informative and suggestive for uninjured ones. Assuming this suggestive
16 nature of advertisement seems relevant since it is in line with empirical studies in
17 marketing science analyzing the consumers’ behavioral responsiveness to legal ad-
18 vertisements. Following a study involving advertisements from a fictitious attorney,
19 Lang and Marks (1980) show notably that advertising makes the consumers’ aware-
20 ness of their need for legal services increasing (see also Smith and Meyer, 1980;
21 Millen, 1992; Johnson *et al.*, 1993). From an economic perspective, this effect may
22 be considered as a typical *supply-induced demand* phenomenon due to the fact that
23 the lawyer may act as an expert who can encourage a potential client – possibly
24 *via* advertising – to file a suit even when her case is meritless. This phenomenon
25 is supported by some empirical evidence (see, *e.g.*, Ginsburg and Hoetker, 2006;
26 Buonanno and Galizzi, 2014; Mora-Sanguinetti and Garoupa, 2015), and is used by
27 opponents of legal advertising who consider that such a behavior may tarnish the
28 reputation of the profession (Calvani *et al.*, 1988).
29 Following these interpretations, we believe that our framework – even simple and
30 restrictive – is interesting by being able to encompass different ways to conceive and
31 understand the role of legal advertising, and potentially extends the approach by
32 Stone and Miceli (2012) who ignore its suggestive nature.

⁶See Bagwell (2007) for a broad discussion on the different roles of advertising in an economic perspective.

1 At date 5, the defendant chooses whether to make a single take-it-or-leave-it settle-
2 ment offer S , based on his updated belief of the probability that the plaintiff has
3 been truly injured given her previous decision to file suit. The plaintiff's attorney
4 is paid a flat fee f_s for this settlement stage and incurs a time cost c_s , whether or
5 not a settlement is reached.⁷

6 At date 6, if a settlement is not reached, the plaintiff chooses to drop the case or
7 to proceed to trial. At trial, the plaintiff's information is revealed and damages
8 are awarded if and only if the plaintiff is actually injured. Assuming a rule of strict
9 liability, the award matches the loss l suffered by the accident victim. The plaintiff's
10 attorney receives a fee f_t and incurs a cost c_t at this stage. Overall, following Farmer
11 and Pecorino (1998), we consider that the plaintiff incurs no litigation cost other
12 than the filing cost and the legal fees, while her lawyer bears settlement and trial
13 costs. Furthermore, the American legal cost allocation rule applies here, implying
14 that the settlement/trial fees received by the plaintiff's attorney are not transferable
15 to the defendant, whose trial cost equals c . The defendant is assumed to incur no
16 settlement cost, but this simplification is made to alleviate notations and does not
17 affect our insights. Moreover, we extend our framework in Section 4 by considering
18 the use of negligence instead of strict liability, and investigating the impact of the
19 English fee-shifting rule.

20 Before analyzing the parties' strategies in this game, several comments on the frame-
21 work and its restrictive assumptions are in order. First, by considering the repre-
22 sentative lawyer as a Stackelberg player, the timing of the game excludes the case
23 of 'ambulance chasing' (or *barratry*) which refers to an attorney soliciting clients at
24 the scene of accidents. This feature is restrictive but consistent with legal practice:
25 ambulance chasing is, for example, prohibited in the U.S. since it violates Rule 7.3
26 of the American Bar Association Rules of Professional Conduct (Bernstein, 2008).
27 Second, we consider a very simple bargaining procedure (*viz.* a take-it-or-leave-it
28 offer by the uninformed party), which has been deliberately chosen to develop our
29 main insights in a more tractable manner. The information regarding the plaintiff's
30 genuineness is then conveyed only by the decision whether to file suit and not by the

⁷Following a standard assumption in literature, we consider a competitive market for legal services, implying that our results are not affected by the fee arrangement in place. Considering the US-style contingent fees in which the lawyer gets a share of the judgment in case of winning, competition would drive the contingency rate to the point where the lawyer's expected profit is zero in equilibrium. The market forces would operate the same way under UK-conditional fees.

1 amount of the settlement offer. The analysis would be significantly more complex
2 in a model where the informed plaintiff would make a settlement demand, serving
3 as a signal for the defendant to infer the validity of the claim. Furthermore, as
4 mentioned by Katz (1990), the most relevant way to incorporate asymmetric in-
5 formation in a theoretical analysis of litigation depends on the legal context, the
6 type of claim and the area of substantive law. Finally, we consider that the plaintiff
7 decides alone whether to accept the settlement offer, to refuse and drop the case or
8 to refuse and go to trial. This view corresponds to the *client-controlled* litigation
9 perspective which implicitly assumes that the client is able to control the lawyer's
10 behavior perfectly (Hyde, 2006). This assumption enables us to abstract from the
11 possible conflict of interest between the plaintiff and her attorney, given that the
12 issue of lawyer control and related agency problems is analyzed in several articles
13 and is beyond the scope of our paper (see, *e.g.*, Emons, 2007; Emons and Garoupa,
14 2006).

15 3. EQUILIBRIUM STRATEGIES AND WELFARE ANALYSIS

16 Following our framework, although the expected return from trial is negative for
17 frivolous plaintiffs, it may be profitable for them to file suit in the hope of extracting
18 a settlement. Our objective is then to determine how the opportunity of advertising
19 affects the injurer's level of care and, thus, the number of frivolous suits being
20 filed. In order to analyze this main question of interest, we have to characterize the
21 sequential equilibria of the game using the backward induction procedure.

22 **3.1. Settlement-trial outcome.** Given arbitrary previous choices, we begin with
23 the stage where the plaintiff must choose between accepting the defendant's offer S ,
24 dropping the suit, and going to trial. A frivolous plaintiff could obtain $S - f_s - f$ by
25 accepting the offer, $-(f + f_s + f_t)$ by going to trial, and $-(f + f_s)$ by dropping. She
26 would therefore accept any positive offer, and would drop the lawsuit when facing
27 a nonpositive one. In contrast, an injured plaintiff would get $l - (f + f_s + f_t) > 0$

1 by going to trial.⁸ She would then accept the offer S if and only if:

$$S \geq l - f_t \quad (2)$$

2 Notice that this threshold is independent of the plaintiff's filing cost and of the
3 lawyer's settlement fee because these costs are sunk at this stage.

4 A defendant facing a lawsuit that is potentially frivolous will then do one of two
5 things. He has the choice between offering $l - f_t$ that all plaintiffs will accept,
6 and proposing no settlement and going to trial against only injured plaintiffs, since
7 uninjured ones will drop their suits. Indeed, the defendant would never be well
8 advised to propose $S \in (0, l - f_t)$ because such an offer would be accepted by
9 frivolous plaintiffs and refused by injured ones. Since proceeding to trial costs to
10 the defendant an amount $l + c$, he strictly prefers to settle if:

$$l - f_t < \hat{\beta}(l + c) \Leftrightarrow \hat{\beta} > \frac{l - f_t}{l + c} \quad (3)$$

11 where $\hat{\beta}$ is the posterior probability that the plaintiff is truly injured conditional
12 on the fact that suit has been brought. Using the Bayes' rule, this probability is
13 defined by:

$$\hat{\beta} := \frac{\beta\phi(a)}{\beta\phi(a) + (1 - \beta)\psi(a)\lambda} \quad (4)$$

14 where λ is the probability that a frivolous plaintiff files suit and $\beta\phi(a) + (1 - \beta)\psi(a)\lambda$
15 is the overall expected probability of filing, given the lawyer's prior choice of adver-
16 tising intensity.⁹ Intuitively, the defendant's inference about the plaintiff's genuineness
17 is related to a – which will be defined endogenously in the model – because the
18 screening effect of advertising depends on the merits of the case (*i.e.* $\phi(\cdot) \neq \psi(\cdot)$).
19 Following (3), the defendant will settle if and only if his updated belief on the
20 validity of the plaintiff's claim is high enough. His optimal strategy can be then
21 described by a variable θ which denotes the probability that he settles, while the
22 uninjured plaintiff's optimal strategy may be characterized by the variable λ which

⁸Assuming that $l - (f + f_s + f_t)$ is positive is essential to the formulation of the problem. Otherwise, neither frivolous nor injured plaintiffs file suit given that the expected return from trial is negative for both of them.

⁹In fact, λ is the probability that an informed/persuaded frivolous plaintiff files suit since uninformed people cannot enter into the litigation process. This terminology is not used systematically hereafter, therefore it is important to keep in mind this screening role of advertising *ex-ante*.

1 is the probability that she files suit.¹⁰ Overall, the behavior of uninjured plaintiffs
2 depends on their expectation of the settlement offer proposed by defendants, while
3 the strategy of defendants depends on what they expect frivolous plaintiffs to do at
4 the filing stage. It turns out that the equilibrium, which is defined by the strategy
5 profile (θ, λ) , may be of two types.

6 The first type is a pure-strategy equilibrium and arises if:

$$\hat{\beta}|_{\lambda=1} := \frac{\beta\phi(a)}{\beta\phi(a) + (1-\beta)\psi(a)} > \frac{l-f_t}{l+c} \Leftrightarrow \beta > \frac{\psi(a)(l-f_t)}{\phi(a)(f_t+c) + \psi(a)(l-f_t)} \quad (5)$$

7 In this case, $\hat{\beta} > (l-f_t)/(l+c)$ (since $\hat{\beta} > \hat{\beta}|_{\lambda=1}$, following (4)), which implies
8 that $\theta^* = 1$ and $\lambda^* = 1$. Intuitively, if the proportion of truly injured plaintiffs
9 among all suits is large enough, then the defendant intends to settle with all suitors
10 in order to avoid going to trial against injured plaintiffs (*i.e.* $\theta^* = 1$). It follows
11 that filing a frivolous suit is profitable, since $l - (f + f_s + f_t) > 0$, and hence all
12 uninjured plaintiffs file suit (*i.e.* $\lambda^* = 1$). Overall, when (5) holds, the equilibrium
13 of the litigation game involves $\theta^* = \lambda^* = 1$, with all cases settling. This equilibrium
14 will not be discussed further, essentially for two reasons. First, this outcome is a
15 corner solution which does not characterize a realistic situation. Second, the most
16 serious problem implied by this equilibrium is not the waste of litigation costs, but
17 the occurrence of unjustified wealth transfers (since all frivolous plaintiffs file suit
18 and all cases settle). Following Bone (1997), wealth transfers are unjustified when
19 a payment is made to a party who is not entitled to it, which occurs here when a
20 frivolous plaintiff obtains the settlement intended for a legitimate suit. Analyzing
21 the potential distributive consequences of advertising might be interesting but is
22 beyond the scope of our paper where the aim is to focus on efficiency considerations,
23 following the perspective adopted in a large part of the economics literature on
24 litigation.

25 The second type of equilibrium arises when:

$$\hat{\beta}|_{\lambda=1} < \frac{l-f_t}{l+c} \quad (6)$$

26 In this case, we get a mixed-strategy equilibrium in which the defendant settles with

¹⁰Recall that, since $l - (f + f_s + f_t) > 0$, an injured plaintiff always files suit if she is aware of her rights.

1 some plaintiffs and proceeds to trial with others, while some uninjured plaintiffs file
 2 suit and others do not.

Lemma 1. *If the proportion of truly injured plaintiffs is below a threshold level, the unique equilibrium of the litigation game, for an arbitrary value of a , is such that the likelihood of settlement and the probability that a frivolous plaintiff files suit are respectively:*

$$\theta^* = \frac{f_s + f}{l - f_t} \quad \text{and} \quad \lambda^* = \frac{\beta\phi(a)(f_t + c)}{(1 - \beta)\psi(a)(l - f_t)}$$

3 *Proof.* First, let us determine the values of θ and λ such that the defendant is
 4 indifferent between settling and going to trial, and uninjured plaintiffs are indifferent
 5 between filing and not filing. These values are denoted θ^* and λ^* respectively.

A frivolous plaintiff is indifferent between filing and not filing when:

$$\theta(l - f_t - f_s - f) + (1 - \theta)(-f_s - f) = 0 \Leftrightarrow \theta^* = \frac{f_s + f}{l - f_t}$$

The defendant is indifferent between settling and going to trial when:

$$l - f_t = \hat{\beta}(l + c) \Leftrightarrow \lambda^* = \frac{\beta\phi(a)(f_t + c)}{(1 - \beta)\psi(a)(l - f_t)}, \text{ given (4)}$$

6 Second, let us show that the strategy profile $(\theta = \theta^*, \lambda = \lambda^*)$ is the unique equilib-
 7 rium when $\hat{\beta}|_{\lambda=1} < (l - f_t)/(l + c)$. Suppose that $\theta > \theta^*$. Then a frivolous plaintiff's
 8 benefit from a lawsuit is positive, so that her best response is $\lambda = 1$. But then the
 9 defendant's best response is $\theta = 0$ (because $\hat{\beta}|_{\lambda=1} < (l - f_t)/(l + c)$), which contra-
 10 dicts the assumption. Conversely, suppose that $\theta < \theta^*$. Then a frivolous plaintiff's
 11 payoff from a suit is negative, so that her best response is $\lambda = 0$. But then the
 12 defendant's best response is $\theta = 1$ (because $\hat{\beta}|_{\lambda=0} := 1 > (l - f_t)/(l + c)$), which
 13 contradicts the assumption again. A similar argument shows that $\lambda \neq \lambda^*$ cannot
 14 be an equilibrium. Therefore, there is no pure-strategy equilibrium, and $\theta = \theta^*$ and
 15 $\lambda = \lambda^*$ are best responses to each other.

16 Finally, to complete the derivation of the equilibrium, we need to verify that $(\theta^*, \lambda^*) \in$
 17 $(0, 1) \times (0, 1)$. Following *supra* note 8 (page 10), we know that $l - (f_t + f_s + f) > 0$
 18 by assumption, inducing $\theta^* \in (0, 1)$ and $\lambda^* > 0$. Furthermore, the fact that $\lambda^* < 1$
 19 is implied by the mixed-strategy equilibrium condition in (6). \square

20 Using (1) and Lemma 1, we obtain the following result.

Proposition 1. *The equilibrium probability that a frivolous plaintiff files suit is a decreasing function of the advertising intensity:*

$$\frac{d\lambda^*}{da} := \frac{\beta(1-\beta)(f_t+c)(l-f_t)[\phi'(a)\psi(a) - \phi(a)\psi'(a)]}{[(1-\beta)(l-f_t)\psi(a)]^2} < 0 \Leftrightarrow \tau > 0$$

1 This result reflects a deterrent effect of advertising on the frivolous plaintiffs' incen-
 2 tives to enter into litigation. Indeed, following (1), the presence of well-informed
 3 people (*i.e.* type 1) – who are not responsive to advertisements in case of injury – in
 4 the overall population of potential plaintiffs implies that advertising has a stronger
 5 marginal attractive impact on the set of uninjured accident victims than on the
 6 group of harmed individuals (*i.e.* $\tau > 0 \Rightarrow \psi'(a) > \phi'(a)$). Therefore, when adver-
 7 tising intensity increases, the defendant is aware of this marginal effect and revises
 8 downwards the probability to face a truly injured plaintiff, which lessens the frivolous
 9 plaintiff's incentives to file suit in equilibrium (*i.e.* λ^* decreases). This – *bayesian* –
 10 negative effect of advertising arises as soon as $\tau > 0$.

11 Having characterized the outcome of the litigation game, we now turn to the analysis
 12 of the injurer's choice of care.

13 **3.2. Care choice.** At date 2, the expected number of legitimate (resp. frivolous)
 14 suits filed is $\beta p(x)\phi(a)$ (resp. $(1-\beta)p(x)\psi(a)\lambda^*$). Furthermore, a fraction θ^* of the
 15 legitimate (resp. frivolous) suits settle and the remaining ones go to trial (resp. are
 16 dropped). The injurer's overall expected cost is thus:

$$k(x) + p(x) [\beta\phi(a)(\theta^*(l-f_t) + (1-\theta^*)(l+c)) + (1-\beta)\psi(a)\lambda^*\theta^*(l-f_t)] \quad (7)$$

17 After substituting for the values of θ^* and λ^* stated in Proposition 1, this expected
 18 cost simplifies to:

$$k(x) + \beta p(x)\phi(a)(l+c) \quad (8)$$

19 In other words, the cost incurred by the injurer equals exactly the amount that would
 20 be spent if only legitimate claims were brought and if all suits went to trial. Indeed,
 21 rent-seeking by strike suitors completely dissipates all the gains from settlement
 22 bargaining.

23 The injurer's cost-minimizing care level, x^* , is then the unique solution to the fol-

1 lowering first-order condition:

$$-\beta p'(x)\phi(a)(l+c) = k'(x) \quad (9)$$

2 The left-hand of (9) is the injurer's marginal benefit from an increase in care, which
 3 comes from the reduction in the number of legitimate suits, while the right-hand side
 4 captures his marginal cost. Furthermore, by totally differentiating this first-order
 5 condition with respect to x^* and a , we get the following result.

Lemma 2. *The equilibrium level of care is an increasing function of the advertising intensity:*

$$\frac{dx^*}{da} := -\frac{\beta p'(x^*)\phi'(a)(l+c)}{\beta p''(x^*)\phi(a)(l+c) + k''(x^*)} > 0$$

6 The intuition behind this result is straightforward. As highlighted above, in the
 7 mixed-strategy equilibrium, the litigation process unfolds as if only valid claims
 8 were brought. Moreover, an increase in lawyer advertising has a marginal attractive
 9 impact, captured by ϕ' , on the set of injured accident victims. The only way to
 10 lessen this effect for the injurer is to increase his level of care in order to reduce
 11 the likelihood of accident. From a social perspective, this deterrent effect makes
 12 advertising desirable as a mechanism of prevention by encouraging potential injurers
 13 to internalize the risk of accident more efficiently. However, notice that an increase
 14 in the share of well-informed plaintiffs (*i.e.* τ) would undermine this deterrent effect:
 15 *ceteris paribus*, dx^*/da remains positive but decreases when τ increases (since $\phi'(\cdot)$
 16 is lower and $\phi(\cdot)$ is higher). Indeed, this type of injured victims does not need an
 17 advertisement to hire a lawyer and file a suit. Therefore, the marginal attractive
 18 impact of advertising is lower when this type is more prevalent in the population,
 19 which makes its positive effect on the care level less strong.

20 Using previous results and defining $\Omega(a)$ as the equilibrium number of frivolous suits
 21 for a given value of a (*i.e.* $\Omega(a) := (1-\beta)p(x^*)\psi(a)\lambda^*$), we get the following insight.

Proposition 2. *The advertising intensity has an ambiguous impact on the equilibrium number of frivolous suits:*

$$\frac{\partial \Omega}{\partial a} := \underbrace{(1-\beta)p(x^*)\psi'(a)\lambda^*}_{(i,+)} + \underbrace{(1-\beta)\psi(a) \left[p'(x^*)\frac{dx^*}{da}\lambda^* + p(x^*)\frac{d\lambda^*}{da} \right]}_{(ii,-)} \begin{matrix} \geq \\ \leq \end{matrix} 0$$

1 Notice that ‘+’ (resp. ‘-’) stands for the case where the term is positive (resp.
2 negative). Indeed, following (i), advertising intensity increases the expected number
3 of frivolous suits by attracting new clients (*i.e.* $\psi'(a) > 0$). However, as shown by
4 (ii), advertisement also reduces the likelihood of frivolous claims both through its
5 positive impact on the level of care (*i.e.* $dx^*/da > 0$) – which lessens the probability
6 of accident – and *via* its deterrent effect on the uninjured plaintiffs’ incentives to
7 litigate (*i.e.* $d\lambda^*/da < 0$). Furthermore, following the arguments mentioned above,
8 the fraction of type-1 plaintiffs (*i.e.* τ) may affect the sign of $\partial\Omega/\partial a$ since an increase
9 in the number of aware people would mitigate the positive impact of advertising on
10 x^* (see Lemma 2).

11 Overall, this proposition mitigates the arguments exposed by Stone and Miceli
12 (2012) when discussing informally the potential impact of advertisement on frivolous
13 lawsuits.¹¹ Indeed, the authors consider that advertising should increase the number
14 of filed cases – whether legitimate or not – and neglect the strategic effects mentioned
15 above. From this perspective, we consider our result as interesting by highlighting
16 that a deregulation of advertising might lead – paradoxically – to a decrease in the
17 number of frivolous cases. Given its central relevance, it seems important to discuss
18 further the circumstances in which this result would be likely to arise, namely the
19 conditions under which we would get:

$$\frac{\partial\Omega}{\partial a} < 0 \Leftrightarrow \underbrace{p(x^*)\psi'(a)\lambda^*}_{(i)} < -\psi(a) \left[\underbrace{p'(x^*)\frac{dx^*}{da}\lambda^*}_{(ii)} + \underbrace{p(x^*)\frac{d\lambda^*}{da}}_{(iii)} \right] \quad (10)$$

20 Given this equation, advertising lessens the rate of frivolous cases if its direct attrac-
21 tive impact on the pool of potential clients, which is captured by (i), is more than
22 offset by the decrease in the number of accidents and in the equilibrium probability
23 of frivolous suit, as highlighted by (ii) and (iii) respectively. Following the argu-
24 ments exposed in Section 2, the direct attractive effect may rely on the suggestive
25 power of advertising: if accident victims turn to be highly responsive to advertise-
26 ments, this effect is likely to be important, since $\psi'(\cdot)$ will be high for a given value
27 of a . As underlined by some studies, this capacity of persuasion may depend on
28 the population structure: Engstrom (2011) shows that low-income/least educated

¹¹See Section 4.2 on pp.335-36 of their paper.

1 people are more inclined to be influenced by advertising. Therefore, following the
2 categorization by Hadfield (2000), we conjecture that the left-hand side of (10) is
3 lower for *corporate* clients, implying that advertising is more likely – *ceteris paribus*
4 – to reduce frivolous suits in this segment of the market for lawyers.¹² The empirical
5 relevance of the indirect effects – highlighted in the right-hand side of (10) – is more
6 difficult to evaluate because these effects depend on strategic/behavioral responses
7 of injurers/defendants. Indeed, in our setup, decisions are part of a sequential equi-
8 librium which arises only if players are sufficiently sophisticated decision-makers
9 (*viz.* capable of complex game-theoretic reasoning): the level of care will be boosted
10 by advertisements (*i.e.* $dx^*/da > 0$) only if injurers are aware of the causality be-
11 tween advertising and litigiousness in the judicial system ; the *bayesian* effect (*i.e.*
12 $d\lambda^*/da < 0$) arises only if defendants both understand the victims' incentives to file
13 suit and are able to revise their prior belief of facing an injured plaintiff accordingly.
14 It is obviously difficult to anticipate behavior in the field on the sole basis of a purely
15 theoretical analysis and some empirical investigations, using for example laboratory
16 experiments, should be helpful.

17 Moving backwards to date 1, we now determine the lawyer's choice of advertising
18 intensity.

19 **3.3. Advertising decision.** At date 1, the attorney chooses the level of adver-
20 tisement, taking the equilibrium level of care as given. The lawyer's expected profit
21 is given by the following expression:

$$p(x^*) [\beta\phi(a) ((f_s - c_s) + (1 - \theta^*)(f_t - c_t)) + (1 - \beta)\psi(a)\lambda^*(f_s - c_s)] - h(a) \quad (11)$$

Assuming a competitive market for legal services, we consider that the lawyer
chooses his level of advertising to maximize his expected profit, while both the
settlement and trial fees (*i.e.* f_s and f_t resp.) adjust until this return is zero. The
attorney's profit-maximizing advertising intensity, a^* , is then the unique solution to

¹²Hadfield (2000) considers that the market for lawyers in the U.S. is stratified following two
segments, depending on the character of the clients served. The *corporate* segment is character-
ized by business clients and repeat purchasers, while the *personal* sphere consists in individual
clients. Notice that Kritzer (1990) provide some data regarding major differences between these
two segments.

the following first-order solution:

$$\underbrace{p(x^*) [\beta\phi'(a)\eta + (1 - \beta)\psi'(a)\lambda^*\gamma]}_{(i)} = - \underbrace{p'(x^*) \frac{dx^*}{da} [\beta\phi(a)\eta + (1 - \beta)\psi(a)\lambda^*\gamma]}_{(ii)} - \underbrace{(1 - \beta)p(x^*)\psi(a) \frac{d\lambda^*}{da} \gamma}_{(iii)} + \underbrace{h'(a)}_{(iv)} \quad (12)$$

1 where η is the lawyer's expected payoff when the client's claim is legitimate (*i.e.*
2 $\eta := f_s - c_s + (1 - \theta^*)(f_t - c_t)$), while γ stands for his payoff if the suit is frivolous
3 (*i.e.* $\gamma := f_s - c_s$). Overall, following a standard interpretation, the left-hand side of
4 (12) is the lawyer's marginal return from an increase in advertising intensity, while
5 the right-hand side represents the corresponding marginal cost. The term (i) is the
6 marginal increase in profit resulting from the attractive effect of advertisement on
7 the set of potential clients (whether injured or not). The expression (ii) reflects
8 the marginal indirect and negative impact of advertising on the attorney's profit,
9 *via* its effect on the injurer's care level: advertisement increases the level of care
10 and, hence, lowers the likelihood of accident which, in turn, decreases the number
11 of potential clients, entailing an opportunity cost η (resp. γ) per injured (resp.
12 frivolous) plaintiff. The term (iii) represents the marginal influence of a on the
13 equilibrium probability that a frivolous plaintiff files suit (*i.e.* λ^*), which induces
14 a loss of γ . Finally, the last term (iv) is simply the marginal cost of advertising
15 incurred by the lawyer.

16 We now turn to the welfare analysis by evaluating the impact of advertising on the
17 social cost of accidents.

18 **3.4. Welfare analysis.** The social cost is given by the sum of the cost of care, the
19 expected loss suffered by the victim, the expected litigation costs and the advertising
20 expenditures. Therefore, by denoting the number of suits filed as Σ_1 and the number
21 of cases going to trial as Σ_2 , the social cost is given by:

$$L = k(x^*) + p(x^*)\beta l + \Sigma_1(f + c_s) + \Sigma_2(c_t + c) + h(a) \quad (13)$$

22 where:

$$\Sigma_1 := p(x^*) [\beta\phi(a) + (1 - \beta)\psi(a)\lambda^*] \quad \text{and} \quad \Sigma_2 := \beta p(x^*)\phi(a)(1 - \theta^*) \quad (14)$$

1 Following the arguments exposed below, we can show that extending the level of
 2 advertising has an ambiguous effect on the social welfare.

First, using (14), we get:

$$\frac{\partial \Sigma_1}{\partial a} := \overbrace{p(x^*) [\beta \phi'(a) + (1 - \beta) \psi'(a) \lambda^*]}^{(i,+)} + \overbrace{p'(x^*) \frac{dx^*}{da} [\beta \phi(a) + (1 - \beta) \psi(a) \lambda^*]}^{(ii,-)} + \underbrace{p(x^*) (1 - \beta) \psi(a) \frac{d\lambda^*}{da}}_{(iii,-)} \underset{\leq}{\overset{\geq}}{=} 0 \quad (15)$$

3 Following term (i), advertisement raises the number of suits filed by attracting
 4 potential clients (*i.e.* $\phi'(a) > 0$ and $\psi'(a) > 0$). However, as captured by (ii) and
 5 (iii), advertising also reduces the number of lawsuits because of its positive impact
 6 on the injurer's level of care (*i.e.* $dx^*/da > 0$), and its deterrent effect on the
 7 uninjured plaintiffs' incentives to sue (*i.e.* $d\lambda^*/da < 0$).

8 Second, regarding the effect of advertising on the number of trials, we obtain:

$$\frac{\partial \Sigma_2}{\partial a} := \overbrace{\beta p(x^*) \phi'(a) (1 - \theta^*)}^{(i,+)} + \overbrace{\beta p'(x^*) \frac{dx^*}{da} \phi(a) (1 - \theta^*)}^{(ii,-)} \underset{\leq}{\overset{\geq}}{=} 0 \quad (16)$$

9 This effect is also ambiguous since the number of potential clients is increasing in
 10 a (*i.e.* $\phi'(a) > 0$), while advertising reduces the number of accident victims *via*
 11 its positive effect on the equilibrium level of care (*i.e.* $dx^*/da > 0$). However, this
 12 deterrent effect is welfare-improving also through another channel since the expected
 13 damages decreases with the level of advertising (*i.e.* $p'(x^*) (dx^*/da) \beta l < 0$).

14 Finally, an increase in advertising intensity has two negative effects on the social
 15 welfare through its marginal effect on the cost incurred by the lawyer in terms
 16 of advertising expenditures (*i.e.* $h'(a) > 0$), and by the injurer in terms of care
 17 spending (*i.e.* $dk/da := k'(x^*) (dx^*/da) > 0$).

18 The next proposition follows.

Proposition 3. *The impact of advertising intensity on the social cost of accidents is ambiguous:*

$$\frac{\partial L}{\partial a} \underset{\leq}{\overset{\geq}}{=} 0$$

19 Therefore, a prohibition of lawyer advertising, as adopted in some countries, cannot
 20 be optimal in a general sense. Indeed, the trade-offs underlined above imply that

1 we might identify some cases where the optimal value of a is strictly positive –
2 depending on the different offsetting effects – and promoting advertisement might
3 thus be desirable from a social perspective.

4 Some additional and interesting comments can be done regarding this welfare anal-
5 ysis. First, comparing (11)-(12) with (13)-(16), it appears a divergence between the
6 equilibrium and socially optimal levels of advertising. This divergence is due to the
7 behavior of the lawyer, who internalizes at equilibrium the settlement/trial fees per-
8 ceived and the settlement/trial costs incurred (while legal fees are just wealth trans-
9 fers), but ignores the litigation costs borne both by the plaintiff and the defendant
10 (while these costs are wasteful resources from a social perspective). Accordingly,
11 the offsetting effects depend on the values of the corresponding parameters (*i.e.* f ,
12 f_s , f_t , c , c_s and c_t). Second, we can show that frivolous litigation cannot be socially
13 desirable in our model: the occurrence of meritless claims – as captured by λ^* – in-
14 creases the social cost of accidents (by enhancing the number of suits filed), without
15 encouraging the injurer to take care *ex-ante*. Indeed, following (9), the considered
16 mixed-strategy equilibrium implies that the litigation process unfolds as if only le-
17 gitimate claims were brought. The injurer’s expected cost is then not impacted by
18 the potential presence of frivolous plaintiffs. This insight is in stark contrast with
19 Miceli and Stone (2014) who highlight that frivolous litigation may improve wel-
20 fare precisely by increasing deterrence. The authors get this result by considering
21 an exogenous probability of frivolous suit and analyzing the pure-strategy equilib-
22 rium that we chose to rule out. Their conclusion is however interesting since it is
23 counter-intuitive and mitigates the well-known arguments against frivolous suits.

24 4. FURTHER CONSIDERATIONS

25 In this section, we address two extensions of the basic model by considering how
26 the results would change under negligence, rather than strict liability, and English
27 fee-shifting, instead of American rule of cost allocation.

28 **4.1. Negligence.** In the previous framework, we assume strict liability, which
29 implies that any legitimate plaintiffs who file suit win their trials with certainty.
30 In contrast, with the negligence rule, plaintiffs will only win if the injurer fails to
31 comply with the due standard of care. For simplicity, we abstract from situations

1 where the rule cannot function perfectly, due for example to legal error (Hylton,
2 1990) or injurer's insolvency (Summers, 1983; Shavell, 1986).

3 As a benchmark, we consider the first-best level of care, denoted x^{FB} , which is the
4 solution to the following equation (given the expression of the social cost defined in
5 (13)):

$$- \left[p'(x)\beta l + \frac{\partial \Sigma_1}{\partial x}(f + c_s) + \frac{\partial \Sigma_2}{\partial x}(c_t + c) \right] = k'(x) \quad (17)$$

6 Using (9), it is straightforward to show that the equilibrium level of care is subopti-
7 mal under strict liability (*i.e.* $x^* < x^{FB}$), where x^* minimizes $k(x) + \beta p(x)\phi(a)(l + c)$.
8 This result highlights that the rule of strict liability under-deters when litigation is
9 costly, which is a well-known issue and arises in our framework for two reasons. First,
10 when choosing his care level, the injurer ignores the plaintiff's filing fee and her at-
11 torney's litigation costs. Second, when a settlement occurs, the injurer is brought
12 to pay an amount which is lower than the victim's actual loss (*i.e.* $S := l - f_t < l$).
13 In this context, under negligence, the injurer will comply with the due standard \tilde{x}
14 if and only if:

$$k(\tilde{x}) \leq k(x^*) + \beta p(x^*)\phi(a)(l + c) \quad (18)$$

15 where x^* is defined above. Therefore, if the due standard is set at the first-best
16 value (*i.e.* $\tilde{x} = x^{FB} > x^*$), this condition may or may not be satisfied, implying that
17 the injurer may or may not find optimal to comply. If he does, then the efficient
18 level of care is achieved, while, if he does not, then the negligence standard should
19 be adjusted downward to the point where (18) holds, inducing a suboptimal level of
20 care (equals to x^*).

21 Overall, under a perfectly working negligence rule, the injurer will meet the due
22 standard of care to avoid liability, and no suits – either legitimate or meritless – will
23 be filed. Indeed, the plaintiff would lose with certainty at trial and, hence, could not
24 expect an agreement to occur at the settlement stage. Anticipating such a situation,
25 the lawyer will not advertise in equilibrium (*i.e.* $a^* = 0$) since advertising is costly
26 and would be useless: the attorney would not be able to attract any clients since
27 the plaintiffs' expected value of filing a suit is negative.

28 **Proposition 4.** *Under a well-functioning negligence rule, (i) the injurer complies*
29 *with the due standard and no plaintiff – either injured or not – files suit; (ii) the*
30 *injurer takes efficient or too little care; (iii) the lawyer does not invest in advertising,*
31 *given the absence of any litigation.*

1 In this context, the social cost under negligence is then defined as $k(\tilde{x}) + p(\tilde{x})\beta l$. It
 2 implies that the negligence rule should be better-off than strict liability when the due
 3 standard is set at x^* , while the result is ambiguous when $\tilde{x} = x^{FB}$, as summarized
 4 in the following proposition.

5 **Proposition 5.** *Switching from strict liability to negligence may improve welfare,*
 6 *depending on the standard of care which is implemented.*

Proof. Following (13), the social cost under strict liability is given by:

$$L = k(x^*) + p(x^*)\beta l + \Sigma_1(f + c_s) + \Sigma_2(c_t + c) + h(a)$$

7 where x^* is defined by (9) and Σ_i is stated in (14).

Therefore, when $\tilde{x} = x^*$, the social cost under strict liability is higher than the social
 cost under negligence:

$$L > k(\tilde{x}) + p(\tilde{x})\beta l \text{ with } \tilde{x} = x^*$$

However, this is not necessarily the case when $\tilde{x} = x^{FB}$:

$$L < k(x^{FB}) + p(x^{FB})\beta l$$

$$\Leftrightarrow k(x^{FB}) - k(x^*) > [p(x^*) - p(x^{FB})] \beta l + \Sigma_1(f + c_s) + \Sigma_2(c_t + c) + h(a)$$

8 □

9 The intuition behind this result is as follows. Setting $\tilde{x} = x^*$ means that the in-
 10 jurer complies with the due standard and chooses the level of care which would be
 11 implemented under strict liability. In this case, a switch to the negligence rule is
 12 welfare-improving since no litigation or advertising expenditures are incurred, while
 13 the cost of care remains unchanged as compared to strict liability. Alternatively,
 14 setting $\tilde{x} = x^{FB}$ implies compliance to a greater care (since $x^{FB} > x^*$). Therefore,
 15 the increase in the cost of care due to this higher value of x might more than offset
 16 the decrease in the victim's expected loss and the removal of litigation/advertising
 17 expenditures, implying that the rule of strict liability would be better-off.

18 We now turn to another issue which is not addressed in our basic model, that is the
 19 possibility of fee-shifting in favor of the winning party.

1 **4.2. English fee-shifting.** The English rule of litigation costs allocation is a pri-
2 mary principle in European systems of civil procedure.¹³ As mentioned in Introduc-
3 tion, this issue is important to investigate since it is often argued that the so-called
4 ‘loser-pays rule’ should deter frivolous suits. Indeed, this rule allows the victorious
5 litigant to collect his/her litigation costs from the losing party, and should therefore
6 increase the expected cost incurred by uninjured plaintiffs in the lawsuit. In our
7 case, we consider unlimited fee-shifting by assuming full reimbursement of expendi-
8 tures by the losing party: the plaintiff can recover $f + f_s + f_t$ in case of winning at
9 trial.¹⁴ This assumption is not consistent with practice, since courts often impose a
10 limit on recoverable costs (Hyde and Williams, 2002; Carbonara *et al.*, 2015), but
11 it is made for simplicity and could be relaxed without altering the gist of our argu-
12 ments. Furthermore, we restrict the analysis to the case of strict liability in order
13 to avoid too complex combinations of legal regimes.

14 Under these assumptions, the English rule makes the injured plaintiff more demand-
15 ing during the settlement stage since, if a trial occurs, she would incur no costs and
16 her sunk filing/settlement fees would be reimbursed. Indeed, following (2), the min-
17 imum settlement offer that this plaintiff would accept is $l - f_t$ under the American
18 rule, while it would be $l + f_s + f$ under fee-shifting. The next result follows imme-
19 diately.

Proposition 6. *Switching from the English to the American rule lessens both the likelihood of settlement and the probability that an informed frivolous plaintiff files suit:*

$$\theta^{UK} := \frac{f_s + f}{l + f_s + f} < \theta^* \quad \text{and} \quad \lambda^{UK} := \frac{\beta\phi(a)(f_t + c)}{(1 - \beta)\psi(a)(l + f_s + f)} < \lambda^*$$

20 where UK refers to the English rule, and θ^* and λ^* are defined in Lemma 1.

21 *Proof.* Considering that the injured plaintiff’s settlement threshold is $l + f_s + f$
22 (instead of $l - f_t$), the proof is similar to the one stated in Lemma 1, and hence
23 omitted. □

¹³See Bungard (2006) for a survey of the incarnations of this rule in the civil codes of different European countries, such as Belgium, France, Germany, Italy or Sweden.

¹⁴Notice that the defendant cannot recover his litigation cost c in case of trial since, in our story, a truly injured plaintiff would win with certainty, while a frivolous claim would be dropped at the settlement stage.

1 The intuition behind this proposition is straightforward: the fact that the plaintiff
 2 is less prone to settle makes the occurrence of an agreement less likely, which in turn
 3 undermines the frivolous plaintiff's incentives to file suit in equilibrium. This result
 4 is induced by the transfer of litigation costs to the defendant, allowed by the English
 5 rule, which should also distort the level of care that is chosen *ex-ante*. Indeed, it is
 6 easy to show that the equilibrium level of care is higher under fee-shifting since the
 7 losing injurer bears greater costs at trial and, hence, is encouraged to take more care
 8 in order to reduce the probability of accident. In other words, the injurer's marginal
 9 benefit from an increase in care is higher under the English rule, than under the
 10 American one, while his marginal cost is unchanged.

11 **Proposition 7.** *Switching from the English to the American rule enhances the equi-*
 12 *librium level of care.*

Proof. Following (9), the equilibrium level of care under the American rule, x^* , is given by:

$$-\beta p'(x)\phi(a)(l+c) = k'(x)$$

Under the English rule, the injurer's expected cost is:

$$k(x) + \beta p(x)\phi(a)(l+C)$$

13 where C is the total cost that he would incur at trial (*i.e.* $C := c + f + f_s + f_t$).
 The injurer's cost-minimizing level of care, x^{UK} , is then the unique solution to the
 following first-order condition:

$$-\beta p'(x)\phi(a)(l+C) = k'(x)$$

14 It follows immediately that $x^{UK} > x^*$, since $C > c$. □

15 Finally, we can conclude that the overall welfare effect of a switch from the American
 16 to the English rule is ambiguous.

17 **Proposition 8.** *Switching from the English to the American rule has an ambiguous*
 18 *effect on the social welfare.*

19 This result arises for different reasons. First, it is possible to perceive – without
 20 introducing technical details – that the level of advertisement may be positively (or
 21 negatively) impacted by a switch to the English rule: as highlighted above, this

1 rule lessens both the probability of accident and the likelihood of frivolous suits
 2 (which pulls down the lawyer's benefit from advertising), but it also decreases the
 3 probability of settlement (which provides an opportunity for the lawyer to earn
 4 money at trial and, thus, encourages him to advertise). In such a context, both the
 5 number of suits filed (*i.e.* Σ_1 in (13)) and the number of cases going to trial (*i.e.*
 6 Σ_2) may increase (or decrease) when fee-shifting is implemented. The value of Σ_i is
 7 indeed deeply impacted by some changes in the advertising intensity, probability of
 8 accident, willingness to settle and proportion of meritless claims. However, there is
 9 no qualitative impact of fee-shifting on the different marginal effects of advertising,
 10 in the extent to which the results stated in Proposition 1, Lemma 2, and Proposition
 11 2 are robust (*viz.* $d\lambda^*/da < 0$, $dx^*/da > 0$ and $\partial\Omega/\partial a \stackrel{\geq}{\leq} 0$ when the English rule is
 12 introduced).

13 5. CONCLUSION

14 In this paper, we analyze whether the recent trend toward liberalization of legal
 15 advertising might be detrimental to social welfare, by studying how the permissibil-
 16 ity of solicitations may shape both the defendant's care decisions and the frivolous
 17 plaintiff's incentives to file suit. This issue is investigated by considering an asym-
 18 metric information setup where the defendant does not know whether the plaintiff's
 19 claim is genuine or meritless. Our results suggest that one should be cautious in
 20 applying 'common sense' to evaluate the effect of advertising on frivolous lawsuits
 21 since we cannot conclude that an increasing reliance on advertisement should nec-
 22 essarily stir-up frivolous litigation. This finding is important since the rent-seeking
 23 occasioned by meritless cases is frequently estimated as a major waste of resources
 24 by policymakers. From this perspective, we consider that our approach – based
 25 on game-theoretic reasoning – may be helpful to understand the strategic implica-
 26 tions of advertisement in litigation, and then contributes to the debate on the social
 27 desirability of advertising.

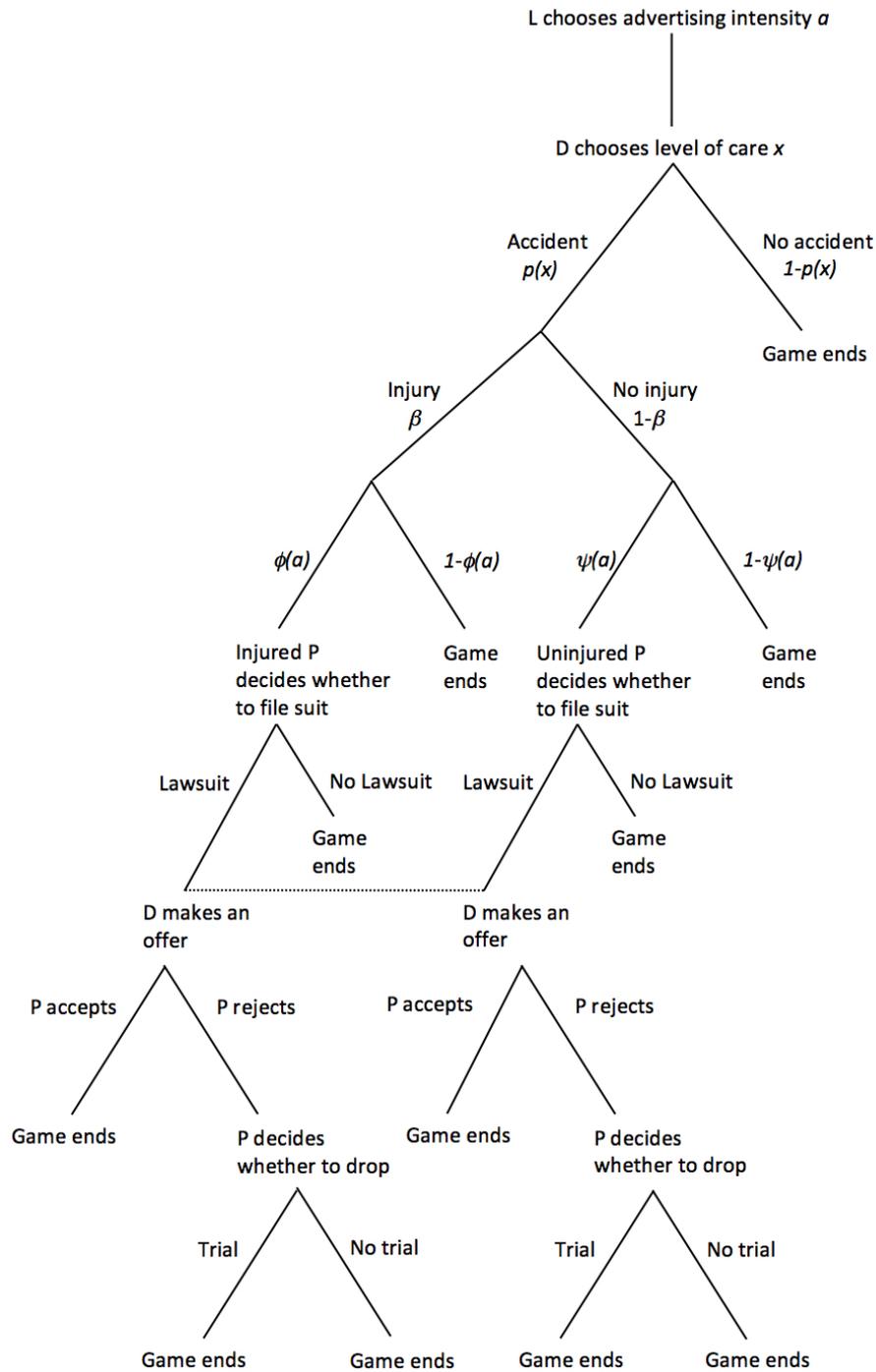
28 However, this simple analysis has only just scratched the surface of the various mat-
 29 ters that impinge on this issue, and much more work needs to be done to get a
 30 clear picture of the influence of advertising on litigation. In this context, some ex-
 31 tensions and generalizations suggest themselves. First, a simplifying but somewhat
 32 restrictive assumption is that we develop a screening model in which the uninformed
 33 defendant makes a take-it-or-leave-it offer to an informed plaintiff. An interesting

1 extension should be to address situations where the plaintiff rather than the defen-
2 dant makes the settlement offer, such that this offer can serve as a signal for the
3 defendant to infer the validity of the claim. Such a signalling game has been devel-
4 oped, for example, by Reinganum and Wilde (1986) in a different litigation context.
5 Second, a further step would be to extend the present framework by considering a
6 situation where the defendant has substantive information bearing on the case and
7 knows whether the suit is meritless (while the plaintiff is ignorant). For example, we
8 can consider some medical malpractice lawsuits in which the patient/plaintiff has
9 no direct knowledge of what the doctor/defendant did, inducing that the defendant
10 is presumed to know more about the legitimacy of the suit than the plaintiff her-
11 self (Bone, 1997). Third, another relevant extension would be to analyze the case
12 of ‘ambulance chasing’, implying that the lawyer would not target an audience of
13 potential victims but would solicit for clients directly at an accident site. Although
14 this restriction is consistent with practice, since ambulance chasing is prohibited in
15 many countries (*e.g.* Australia, France), this does not mean it will never be allowed
16 in any jurisdiction at any time. From this standpoint, it would be interesting to
17 extend the analysis – by incorporating ambulance chasers – in order to check for the
18 robustness of our results under an alternative timing of the game.
19 Finally, from a more general perspective, we might consider that advertising could
20 enhance court congestion, by increasing potentially the number of suits filed, while
21 this overcrowding effect is not captured in our social cost function. To the best
22 of our knowledge, there is no empirical study that links explicitly advertising and
23 delays in public courts. However, as mentioned in Introduction, several papers
24 demonstrate a causality relationship between litigation rates – which is a proxy for
25 court congestion – and the number of lawyers, and we argue that this causality may
26 partially go through the attractive impact of advertisements. Indeed, lawyers may
27 respond to tougher competition – due to a higher offer of legal services – by increasing
28 advertising, which will attract clients and thus favor litigiousness in the legal system.
29 This positive correlation may be illustrated in the U.S. by the decades following the
30 *Bates* decision, for which we observed both a proliferation of advertisements for
31 legal services and a significant increase in civil lawsuits (Engstrom, 2011).¹⁵ The
32 likely overcrowding effect of advertising is an important issue from a public policy

¹⁵In the U.S., advertising is allowed since the Supreme Court’s ruling in *Bates v. Arizona State Bar* 433 U.S. 350, 376 (1977).

1 perspective since court delays may adversely affect the efficiency of the judicial
2 system in many ways. Its negative implications may indeed include the plaintiffs
3 welfare loss due to waiting for compensation, the deterioration of evidence, and a
4 reduced time allotted to the scrutiny of settlements by judges whose aim would
5 be to reduce their workload (Helland and Klick, 2007; Shamir and Shamir, 2012).
6 Following this idea and the seminal paper by Gravelle (1990), it would be interesting
7 to modify our model by introducing the possibility for delay, analyzing the behavioral
8 response from litigants, and investigating the welfare implications of advertising in
9 this context. Such an analysis would fill a gap in the literature which considers
10 that court delays are mainly due to inefficiencies of the litigation process and the
11 prevalent cultural norms of the legal environment.

APPENDIX. SEQUENCE OF EVENTS IN THE GAME



¹⁶The dotted line indicates imperfect information: it connects two nodes of the game between which the defendant cannot distinguish.

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