Disregarding the Attorney's Advice

ABSTRACT

We study the contract between a plaintiff and an attorney. In our model, the plaintiff hires the attorney to investigate the profitability of trial versus accepting a defendant's settlement offer. Because the attorney's investigation is costly and remains unverified if the plaintiff accepts settlement, the attorney has an incentive to suggest settlement without investigating the case. We show that the plaintiff may proceed with trial even when the attorney advises that settlement is more profitable, and in spite of the fact that she knows that the attorney's advice is correct. Pursuing trial enables the plaintiff to verify the attorney's advice, which in turn motivates the attorney to investigate the case. Thus, unprofitable trials occur in the optimal contract. Moreover, when the plaintiff cannot in the contract commit to pursue trial versus opt for settlement, more trials may occur against the attorney's advice than when such commitment is possible.

1. Introduction

Discussions of frivolous, non-meritorious, or negative expected value lawsuits typically rely on a better-informed plaintiff's ability to extract a settlement from an ignorant defendant. This assumption ignores a key problem in attorney-plaintiff relationships: inducing the attorney to investigate the lawsuit. Before trying the case, a plaintiff will assign his[1] attorney the task of researching the case and investigating the potential value of proceeding with trial versus accepting a settlement offer. In this process, however, a plaintiff often faces an agency problem as attorneys can control their clients based on the attorneys' agenda. The plaintiff must rely on the advice his attorney provides without knowing whether the information is accurate or not, or whether the attorney has even investigated the case. It is this agency problem between the plaintiff and her attorney that can have an impact on the incentive for the plaintiff to reject settlement and proceed with trial.

We find that it may be in a plaintiff's interest in some cases to disregard his attorney's advice to accept settlement and see the case through to an unprofitable trial.[2] Verifying the attorney's advice is only possible when settlement is rejected and the case proceeds to trial, and this strategy provides the plaintiff with additional opportunities to confirm the advice of his attorney. The plaintiff relies less on costly, high-powered incentives in the form of varying contingency fees and more on the direct confirmation of the attorney's advice through trial. While the outcome from trial in some cases is lower than the settlement offer, the plaintiff makes up for this loss through the lower cost of inducing investigation by the attorney.

We describe a model of a plaintiff that contracts with an attorney to investigate the profitability of going to trial.[3] Investigation reveals (privately to the attorney) the payoff from trial. The attorney then uses this information to advise the plaintiff on whether to accept or reject the settlement offer. If the attorney's effort for investigation is not verified through trial,

[1] For convenience, the masculine pronoun stands for the plaintiff and the feminine for the attorney.
[2] According to Jones (2007), plaintiffs are often biased such that when they are told that a case is worth $20,000 to $50,000, they often focus on $50,000.
[3] We implicitly assume that the cost of investigation is prohibitively higher for the plaintiff, and thus focusing on cases where the plaintiff wants to hire a lawyer.

the attorney may have an incentive to shirk on the costly investigation and convince the plaintiff to accept settlement.

The plaintiff has two mechanisms by which to induce his attorney to investigate the suit. The first is to offer the attorney a larger share of the trial winnings as compared to settlement. In doing so, the attorney has a greater opportunity cost of shirking on investigation and pushing for settlement. A second option for the plaintiff, which is the primary contribution of this paper, is to proceed with trial with a strictly positive probability when the attorney reports settlement is more profitable – in other words, to retain the authority to reject settlement and disregard the attorney's advice. This strategy forces the attorney to bear a greater cost of ignorance, and provides an alternative mechanism for the plaintiff to induce investigation. We show that unprofitable trials occur even though the plaintiff knows the attorney's advice is accurate.

We also consider the case in which the plaintiff's litigation strategy is not specifiable in the contract; he is unable to commit in advance to pursuing trial or accepting settlement. Rather, the plaintiff makes this decision after the attorney provides advice as to the profitability of trial and settlement. We find that unprofitable lawsuits are still brought to trial against the attorney's advice even though the attorney truthfully reports the benefit of settlement and the plaintiff believes that this report is accurate. Moreover, this lack of commitment to a litigation strategy may result in a greater frequency of trials than when such commitment is possible.

Much of the previous literature on frivolous or strike suits has focused on the asymmetric information between the plaintiff and defendant.[4] Simply, a plaintiff with superior information on the profitability of trial can extract a significant settlement from a defendant, even if the plaintiff knows trial to be unprofitable. The incentive to extract a settlement induces plaintiffs to file unprofitable suits, but not pursue such cases to trial.

Models that rely on the ignorance of the defendant do not explain why unprofitable suits might still reach trial. Rather, other motives are typically attached to the plaintiff's incentive to

[4] See Bebchuk (1984, 1988), Nalebuff (1987), and Katz (1990) on how asymmetric information leads to the filing of frivolous suits. In this context, frivolous suits refer to suits filed solely to extract settlement offers, but not to pursue in trial. Daughety and Reinganum (1993) generalize the timing of such models. For a survey of different interpretations of nuisance suits, see Rasmussen (1998).

file suit not captured by the monetary payoff. Our model diverges from the previous discussion of frivolous suits, which are useful for explaining the filing (to extract settlement) but not the trying of unprofitable suits.[5] Rather, we consider the incentive to reject a settlement offer and pursue a less profitable trial as a means of inducing attorney effort. When accounting for moral hazard and asymmetric information problems between the plaintiff and attorney, we are able to show why an unprofitable suit may still proceed to trail, even though at the time of filing it is shared knowledge that the suit is less profitable than settlement. Specifically, the threat to take unprofitable suits to trial is an enforcement mechanism by which the plaintiff induces his attorney to gather information and reveal that information accurately before trial rather than a result of the relationship between the defendant and plaintiff.

Other authors have approached the agency problem arising between lawyers and clients including Dana and Spier (1993), Rubinfeld and Scotchmer (1993), and more recently Polinsky and Rubinfeld (2002, 2003).[6] Polinsky and Rubinfeld (2002) in contrast to our over-litigation result argue that settlement may occur more often because of the lawyer provides too little effort in trial. Choi (2003) models the delegation of authority to accept or reject settlement. Our paper shows the benefits of retaining the authority in contrast. While these papers address the moral hazard surrounding the attorney's effort, we do not model the lawyer's effort in trial. Instead, our model focuses on the accurate transmission of information by the attorney.

The current paper is also related to studies of information acquisition in principal-agent relationships. Lewis and Sappington (1991, 1993) and Sobel (1993) consider situations in which information is productive[7] as in the current paper. In their paper, however, whether the agent is informed or not is exogenously given. Studies by Lewis and Sappington (1997) and Cremér, Khalil and Rochet (1998) are the first to consider optimal contracts that induce information

[5] Black's Law Dictionary (1999) defines a frivolous suit as: "a lawsuit having no legal basis, often filed to harass or extort money from the defendant". Economists more often define it as a suit that a plaintiff will not see through to trial, or having a negative expected return from trial.

[6] See also two papers by Hay (1996,1997) on the use of contingency fees. Chen and Wang (2006) look at the attorney-plaintiff agency problem under different fee shifting regimes.

[7] By "productive information," we mean that information is "useful" to the principal. See Cremér and Khalil (1992) for a study in which information gathering is purely strategic.

acquisition by the agent.[8] Levitt and Snyder (1997) similarly show that the principal may choose to implement a project even after receiving negative advice on the project from the agent. In their model, unlike ours, the agent's effort is not for information gathering. Instead, the agent's effort increases the likelihood that the project is a profitable one. The principal can update the agent's effort level by implementing the project, which in turn motivates the agent ex ante.[9] None of the studies above consider non-commitment issues.

In an adverse selection model, Khalil (1997) and Finkle and Shin (2007) study optimal contracts with auditing when the audit policy cannot be committed (non-contractible). The authors show that an audit occurs more frequently without commitment. In Finkle and Shin (2007), for example, higher frequency occurs because the principal decreases accuracy, thereby increasing the incentive to audit ex post. Rather, in this paper the higher trial frequency appears because the plaintiff alters the contingent fees to provide himself incentive for trial ex post, but must also proceed with higher frequency to induce investigation by the attorney.

The remainder of the paper is organized as follows. We present the model in the following section. In section 3, we discuss our main results, showing that the plaintiff disregards the attorney's advice with a strictly positive probability in the optimal contract. Section 4 considers the case when the plaintiff cannot commit to his litigation strategy, i.e., the choice of litigation is not contractible. We gather our conclusions in section 5. All proofs are in the Appendix.

2. The Model

We consider a risk-neutral plaintiff who hires a risk-neutral attorney to file a lawsuit. Once the parties sign a contract, the attorney can become privately informed about the outcome of the trial by "investigating" the case. For simplicity, we will assume that investigation reveals the payoff

[8] Shin (2007) extends this line of research by showing that the principal may choose a project with a lower payoff when there are better alternatives. In his study, unlike the current paper, information rent is the source of the incentive for the agent to acquire information, whereas in our paper, verification of the potential outcome is the source of incentive provision.

[9] Information gathering is also a focus in Cremér, Khalil and Rochet (1998) and Lewis and Sappington (1997). Both utilize a principal-agent framework to demonstrate the rent-efficiency tradeoff from inducing an agent to gather information on the cost of performing a task.

from proceeding with trial without error – if investigation occurs, the attorney learns the award from trial with certainty. Investigation is the process by which the attorney determines the legal merits of the case. For example, the attorney may seek out potential witnesses or experts that can verify or dispute the plaintiff's claim in court. She may also consider how well precedents from past trials apply to the case at hand. Generally speaking, information includes anything that provides the attorney with knowledge as to the payoff from trial.

Investigation costs the attorney an amount c. If investigation does not occur, then the attorney does not learn the outcome of trial in advance. While investigation is costly in our model, it does not affect the outcome of trial, but rather simply provides information on the result of a potential trial.[10] We assume that c is small enough so that the plaintiff wants the attorney to engage in investigation. The plaintiff does not observe investigation by the attorney, although the cost of investigation c is common knowledge. If trial occurs after the attorney investigates the case, the attorney bears a trial cost T. If the attorney has not investigated the case and the plaintiff pursues trial, the attorney bears a greater cost from trial.[11] The total cost of trial when *not* investigated is $T + \Delta T \geq T$. The difference in trial cost (ΔT) reflects the fact that investigation is likely to provide the attorney with information useful to pursuing trial, such as the gathering of evidence or finding past precedents to support the case. The plaintiff does not observe whether the attorney bears the added trial cost ΔT as he is unable to observe whether investigation occurs. To ensure our main results, we assume that c is sufficiently larger than ΔT. Essentially, the investigation task is not entirely duplicative of preparing and conducting trial and therefore the costs of investigation then trial are sufficiently greater than the cost of simply proceeding to trial without investigation.[12]

The plaintiff's gross payoff from the trial can be high (H) or Low (L), associated with an award to the plaintiff V_H or V_L with $V_H > V_L$,. Denote ϕ_i as the probability that the outcome

[10] It is reasonable to suppose that the process of investigation serves a second function of better preparing the attorney for trial, thereby increasing the potential for success. In this model, we assume this is not the case to focus purely on the investigation aspect of the task.

[11] Though the size of T and ΔT. are common knowledge, when trial occurs the plaintiff does not observe whether the attorney bears T or $T + \Delta T$.

[12] We will specifically assume that $\phi_L c \geq \Delta T$.

from the trial is V_i, $i \in \{H, L\}$, where $\phi_H + \phi_L = 1$. This probability distribution is common knowledge to the plaintiff and attorney. After the investigation stage, the attorney provides the plaintiff with a verifiable message or "advice", $m \in \{H, L\}$. The plaintiff then decides whether to proceed with trial or accept a settlement offer, S.[13] The settlement offer is determined by a bargaining process between and uninformed defendant and the plaintiff. To avoid unnecessary complications, we simply model the settlement as a Nash bargaining solution. If the settlement offer is too low, the plaintiff will reject the settlement with certainty and proceed to trial. To find the minimum acceptable settlement offer, S_{min}, we consider the equality:

$$\phi_L V_L + \phi_H V_H - T - \Delta T = \phi_L S_{min} + \phi_H (V_H - T) - c.$$

This equality shows the plaintiff's payoff from pursuing trail equals the payoff from accepting settlement of low-valued suits after investigation. This yields the minimum acceptable settlement, i.e. the plaintiff's settlement threat value:

$$S_{min} = V_L - T + (c - \Delta T)/\phi_L.$$

The defendant also bears a cost of trial and so the defendant's threat value which lies somewhere above V_L according to the defendant's trial cost. So that we observe settlement and litigation in equilibrium, we assume the range of settlement values is limited to the following range:

$$S_{min} < S < V_H - T.$$[14]

We assume that the parameters are such that the maximum potential gains from investigation are positive – alternatively, the contract to induce no investigation is trivial.[15]

[13] We assume that the value of S is common knowledge at the time the contract is made. In reality, it is more reasonable to suppose that the settlement offer is *not* known until after a contract is accepted. However, the contract could be made contingent on the precise settlement offer (i.e. transfers and strategies dependent on the observed S) without any change in the results. To simplify the notation, we assume that the settlement amount is known prior to contracting.

[14] This assumption rules out cases in which the defendant prefers to settle all cases, which would arise if the trial costs were large relative to the difference in trial awards. Similarly, if S is below the plaintiff's threat value, the plaintiff will reject all settlement offers and not investigate before proceeding to trial.

[15] We provide an example of parametric values later.

After receiving the attorney's advice $m \in \{H, L\}$, the plaintiff proceeds to trial with the probability τ_m, and accept the settlement offer with $1 - \tau_m$. The attorney's advice is verified only when the plaintiff proceeds to trial. Otherwise, the plaintiff accepts settlement and the outcome from trial is not observed. We interpret $m = H$ to mean that the attorney is advising the plaintiff to go to trial, and $m = L$ that the attorney is advising to accept the settlement offer.

The following figure illustrates the timing of the game:[16]

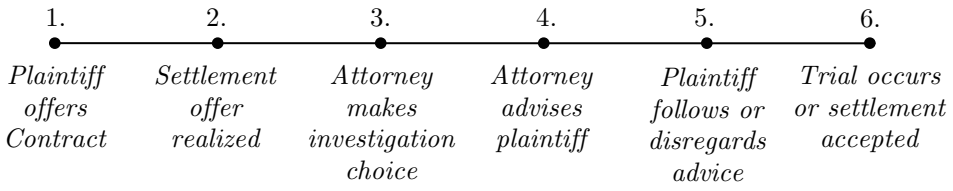

Figure 1: Attorney-Plaintiff Game Timeline

The contract offered to the attorney specifies payments to the attorney contingent on (*i*) the advice from the attorney, (*ii*) the plaintiff's choice of trial or settlement, and (*iii*) and the outcome of the suit. If trial occurs, the plaintiff provides a transfer to the attorney given by $t_{i|m}$, where $i \in \{H, L\}$ denotes the realized outcome from trial. If the plaintiff chooses to settle, the transfer to the attorney is $t_{S|m}$. For example, when the attorney announces a low outcome from trial (m=L) and trial occurs resulting in the high payoff (V_H), the transfer provided is $t_{H|L}$ (if the plaintiff chooses to settle, then the transfer is $t_{S|L}$).

In reality, message contingent transfers may not explicitly arise either due to the complexity of the contract or social norms. While our model assumes that transfers are made contingent on trial or settlement outcome as well as the advice of the attorney, we can relax this assumption to be that the plaintiff can reduce the payment by some amount for wrong advice. For example, he may require a guarantee by the attorney that any advice provided is accurate so that the attorney receives a reduced payment when trial reveals advice to be incorrect. Also, many states

[16] The timing of the settlement offer may occur before or after the contracting stage without any meaningful change in the model. The contract can either be made contingent on possible settlement offers, or based on a single, observed settlement offer.

such as California and New York have Model Rules of conduct that allow plaintiff's to seek disciplinary action on the attorney for providing knowingly incorrect advice.[17] Thus, these message contingent transfers can be seen as formal or informal agreements between the attorney and plaintiff.

We assume that the contract must satisfy basic limited liability constraints such that the attorney is guaranteed a non-negative payoff if his attorney's advice is consistent with the outcome of the trial or settlement occurs. The transfer must cover the investigation cost c and, if trial occurs, the trial costs.[18] If trial occurs and the attorney's advice is not consistent with the trial outcome the transfer must simply cover the trial cost T.[19] Furthermore, the plaintiff is wealth constrained such that the transfer cannot exceed the net payoff from the resulting trial or settlement.[20] Finally, we assume that the payoff from trial is sufficiently large as compared to the costs of investigation and trial as to allow for compensation to occur for the attorney.

As a benchmark, consider the optimal contract under *full information* (the first-best contract). Under *full information*, because $V_H - T > S > V_L - T$, the plaintiff proceeds with trial if and only if investigation reveals trial will result in the high payoff ($\tau_H = 1$). Otherwise, she will choose to accept settlement ($\tau_L = 0$). Regardless, the plaintiff provides the attorney with the minimum allowable transfer, c, in trial and settlement.

3. The Plaintiff's Optimization Problem

In this section, we analyze the case where the plaintiff cannot observe the attorney's investigating effort. The plaintiff's optimization problem is:

[17] For example, a number of state Bar associations have adopted some form of a Model Code of Conduct which practicing attorneys must adhere to or face penalizing action. Civil suits are also permitted in a number of circumstances where the attorney knowingly provides false information.
[18] This requirement implicitly requires that $c + T \leq V_L$, so that the plaintiff can cover the investigation expense even when trial results in the low payoff.
[19] The limited liability may be greater than the trial cost (e.g. covering ΔT) or zero without changing the essential results of the model.
[20] This assumption allows us to bypass a trivial solution to a moral-hazard problem with risk neutrality in which the plaintiff sells the case to the attorney.

$$\underset{\tau,t}{Max} \sum_{i=H,L} \phi_i \left[\tau_i (V_i - t_{i|i}) + (1-\tau_i)(S - t_{S|i}) \right],$$

subject to,

$$\sum_{i=H,L} \phi_i \left[\tau_i (t_{i|i} - T) + (1-\tau_i) t_{S|i} \right] - c \geq 0, \qquad (PC)$$

$$\sum_{i=H,L} \phi_i \left[\tau_i (t_{i|i} - T) + (1-\tau_i) t_{S|i} \right] - c \geq \max \left\{ \begin{array}{l} \sum_{i=H,L} \phi_i \left[\tau_H (t_{i|H} - T - \Delta T) + (1-\tau_H) t_{S|H} \right], \\ \sum_{i=H,L} \phi_i \left[\tau_L (t_{i|L} - T - \Delta T) + (1-\tau_L) t_{S|L} \right] \end{array} \right\}, \qquad (IV)$$

$$\tau_m (t_{i|m} - T) + (1 - \tau_m)\ t_{S|m} \geq \tau_j (t_{i|j} - T) + (1 - \tau_j)\ t_{S|j},\ \forall i,m \in \{H, L\},\ \forall j \in \{H, L\},\ i \neq j \quad (IC)$$

$$t_{i|i} - T - c \geq 0,\ t_{S|i} - c \geq 0,\ t_{i|j} \geq T, \quad \forall i, j \in \{H, L\},\ i \neq j, \qquad (LL)$$

$$t_{i|j} \leq V_i,\ t_{S|i} \leq S, \quad \forall i, j \in \{H, L\}. \qquad (WC)$$

Applying the revelation principle, we focus on those contracts that induce truthful advice. Thus, $m = i$ and the plaintiff proceeds with trial or settles with probabilities τ_i and $1 - \tau_i$. The (PC) constraint assures that the attorney receives a non-negative expected payoff from participation in the contract. By the (IV) constraints, the attorney receives a higher payoff from investigation than strategically announcing the state as H or L without investigating. The LHS of the (IV) constraints is the attorney's expected payoff if she investigates the case at cost c. The RHS of the (IV) have two potential payoffs without investigation, depending on the attorney's announcement (advice to the plaintiff) – the upper part is the attorney's payoff with announcing L (thus advising to accept the settlement) without investigation, while the lower part is his payoff with announcing H (thus advising to go for trial). The (IC) constraints guarantee that the attorney's return from giving truthful advice after investigation is higher than that from giving false advice. Finally, (LL) contains the limited liability for the attorney and (WC) the plaintiff's wealth constraints. Because ΔT is incurred only when the attorney shirks on investigation, the plaintiff does not consider ΔT in the (LL) constraints. Notice the (LL) constraints automatically imply the transfers satisfy the (PC) constraint. The maximum punishment principle applies,[21] and thus when false advice is verified: $t_{L|H} = t_{H|L} = T$. To simplify the notation, we denote $t_i \equiv t_{i|i}$.

[21] See Baron and Besanko (1984) for a formal analysis on this issue.

Lemma 1. *When the plaintiff induces investigation, $\tau_H = 1$ in the optimal contract.*

Proof. See Appendix.

The plaintiff will always follow the attorney's advice to proceed with trial. We can use Lemma 1, to simplify the notation to $t_{S|L} \equiv t_S$ and $\tau_L \equiv \tau$. Without loss of generality, the contract specifies transfers t_L, t_H and t_S, litigation-settlement probability τ when attorney reports $m = L$. Below, we distinguish between the two types of contracts that induce investigation: the FA (Follow Advice) contract where $\tau = 0$, and the DA (Disregard Advice) contract where $\tau > 0$.

3.1 The Following the Attorney's Advice (FA) Contract

First, consider the litigation-settlement strategy in which $\tau = 0$. We call this strategy "Follow Advice (FA)" since it prescribes settlement if and only if the attorney sends the message that trial has a low payoff. As a result, the plaintiff will proceed with trial if an only if the attorney (truthfully) advises to do so. In effect, the plaintiff is acting in accordance with the attorney's advice on the outcome of trial naively. With $\tau = 0$, the maximization problem becomes:

$$Max \;\; \Phi^{FA}(t_H, t_S) \equiv \phi_H(V_H - t_H) + \phi_L(S - t_S),$$

subject to

$$\phi_H(t_H - T) + \phi_L t_S - c \geq \phi_H(t_H - T) - \Delta T, \qquad (IV_1^{FA})$$

$$\phi_H(t_H - T) + \phi_L t_S - c \geq t_S. \qquad (IV_2^{FA})$$

along with the limited liability and wealth constraints discussed above. As mentioned before (PC) are satisfied by the (LL) constraints and are ignored. Also, it can be easily verified that the (IC) constraints are satisfied by the (IV) and (LL) constraints. The (IV) constraints are rewritten as two separate constraints: (IV_1^{FA}) and (IV_2^{FA}). The RHS of (IV_1^{FA}) and (IV_2^{FA}) are the attorney's expected payoff by announcing H and L respectively without investigation.

Proposition 1. *The optimal FA contract* ($\tau = 0$) *entails the following outcome*:

When $\phi_H c \geq \Delta T$,

$$t_S^{FA} = \frac{c - \Delta T}{\phi_L} \text{ and } t_H^{FA} = \frac{c - \phi_H \Delta T}{\phi_H \phi_L} + T,$$

with the expected payoff: $\Phi^{FA} = \phi_H V_H + \phi_L S - c - \phi_H T - \frac{c - \phi_H \Delta T}{\phi_L} + \Delta T$.

When $\phi_H c < \Delta T$,

$$t_S^{FA} = c \text{ and } t_H^{FA} = c + \frac{c}{\phi_H} + T,$$

with the expected payoff: $\Phi^{FA} = \phi_H V_H + \phi_L S - 2c - \phi_H T$.

Proof. See Appendix.

From Proposition 1 we can see that the plaintiff implements the first-best litigation-settlement strategy ($\tau = 0$) but the attorney is paid more than the cost of investigation and trial together. This is because the cost of investigation c is greater than ΔT. Thus, we have shown that the attorney earns rent due to the moral hazard in the investigating task. Thus, from the plaintiff's expected payoffs, it is apparent that there is a strategic cost of inducing investigation. As we will show in the next section, the plaintiff can under certain parameter values reduce this rent by designing a contract that results in low-valued lawsuits reaching the trial stage.

The optimal transfers and payoffs depend on the size of ΔT. The reason for this is straightforward. If the attorney were to not investigate and advise trial, the plaintiff would with positive probability determine this advice is incorrect. Then, the attorney will bear the added cost of trial ΔT. Although this event does not occur in equilibrium, the plaintiff can use this to reduce the transfer in the case of settlement, thereby making (potentially incorrect) settlement advice less attractive to the attorney. When ΔT is sufficiently high, however, the plaintiff can no longer continue to lower the settlement transfer as the limited liability constraint for the settlement transfer binds.

The contract when following the attorney's advice (FA) allows the plaintiff to delegate the settlement decision to the attorney.

3.2 The Disregard Advice (DA) Strategy

We now consider contracts where $\tau > 0$. We call such a contract a "Disregard Advice (DA)" contract because with such a contract, the plaintiff disregards the attorney's advice to accept settlement with a strictly positive probability (and therefore a trial can take place even when accepting settlement is more profitable).

The plaintiff's problem is:

$$Max \;\; \Phi^{DA}(t_H,\, t_L,\, t_S,\, \tau) \equiv \phi_H(\, V_H - t_H) \,+\, \phi_L[\tau\,(\, V_L - t_L) \,+\, (1 - \tau)(S - t_S)],$$

subject to

$$\phi_H\,(t_H - T) \,+\, \phi_L[\tau(t_L - T) \,+\, (1 - \tau)t_S\,] - c \geq \phi_H\,(t_H - T) \,-\, \Delta T, \qquad (IV_1{}^{DA})$$

$$\phi_H\,(t_H - T) \,+\, \phi_L[\tau(t_L - T) \,+\, (1 - \tau)t_S\,] - c \geq \;\; \phi_L\tau\,(t_L - T) + (1 - \tau)t_S - \tau\Delta T. \qquad (IV_2{}^{DA})$$

as well as the limited liability and wealth constraints from before. Again, (PC) and (IC) are automatically satisfied by (IV) and (LL). As in the case of the FA contract, we have separated the (IV) constraint into two constraints, ($IV_1{}^{DA}$) and ($IV_2{}^{DA}$), and the right-hand side of the constraints are the attorney's expected payoff by reporting H or L respectively without investigation. Notice that with $\tau = 0$, the plaintiff's problem above is identical to the case of FA. By allowing for $\tau > 0$, we obtain the following proposition.

Proposition 2. *The optimal DA contract* ($\tau > 0$) *entails the following outcome*:

$$t_S{}^{DA} = c, \;\; t_L{}^{DA} = V_L, \;\; \textit{and} \;\; t_H^{DA} = T + (1 - \tau^{DA})c - \frac{\tau^{DA}\Delta T}{\phi_H},$$

where $\tau^{DA} = \dfrac{c - \Delta T}{\phi_L(V_L - T - c)}$. *The expected payoff from the DA contract is*

$$\Phi^{DA} = \phi_H\left[V_H - T - (1 - \tau^{DA})c + \tau^{DA}\frac{\Delta T}{\phi_H}\right] + \phi_L(1 - \tau^{DA})(S - c),$$

and there exist parameters such that the plaintiff optimally implements the DA contract.

Proof. See Appendix.

Again, the attorney has an incentive to advise for settlement without investigation to save on the investigation cost c. The DA contract demonstrates that one way to motivate the attorney to investigate the case is to go for trial against the attorney's advise with a small but strictly positive probability and reward the attorney if his advise was correct ($t_L = V_L$).

Regarding the optimality of the DA contract, recall that the FA contract induces investigation through a transfer structure that rewards the attorney when trial occurs, but only leads to trial when trial has a high payoff. The DA contract implements investigation with a reward from trial, but utilizes a lower t_H (smaller carrot) by proceeding to trial more often. This takes place through the trying of a portion of low-payoff trials. Intuitively, if the settlement is small and the payoff from a low-valued trial is high, the DA strategy is optimal because of the greater probability of low-valued trials over settlement.

Unlike in the FA contract, the plaintiff requires the attorney to pursue trial with positive probability despite that the attorney (and plaintiff) would strictly prefer the settlement and receive the transfer from settlement. The optimal contract is designed such that the attorney is induced to investigate and report information truthfully. After receiving advice, the plaintiff's incentive is to in fact follow that advice. We can see that the plaintiff's net payoff exceeds that of a low-valued trial. However, the plaintiff *ex ante* finds this contract to be optimal because it puts pressure on the attorney to investigate, thereby lowering the power of the transfers to induce diligence. Thus we say that the plaintiff is pursuing trial against the attorney's advice despite believing this information to be accurate.[22] If the plaintiff cannot commit to a strategy of disregarding his attorney's advice, the contract described in this section will not be feasible because the ex post incentive is to follow advice. In the next section, we evaluate the possibility of disregarding advice when commitment is not available.

[22] Similar results arise with audits. A principal will still need to conduct audits with a positive probability to benefit from them. Otherwise, the threat of audit will not be credible.

From a delegation perspective, the plaintiff does not delegate the authority to accept or reject settlement to the attorney as a means of increasing the attorney's cost of shirking.[23]

4. Without Commitment to Pursue Trial

Until now, we assumed that the plaintiff can commit to his litigation strategy by specifying τ in the contract, i.e., litigation strategy ex ante is enforced ex post. Such commitment, however, may seem unrealistic. With the *DA* contract, in particular, investigation by the attorney takes place, and therefore there is an ex post inefficiency from the plaintiff's point of view. In other words, with commitment to his litigation strategy, the plaintiff goes for trial with a strictly positive probability ($\tau > 0$) knowing that trial will result in a lower payoff than settlement.

In this section, we relax the assumption that the plaintiff is able to commit to the litigation strategy in the contract. Rather, the plaintiff must consider his own ex post incentive to proceed with trial after receiving the attorney's report. Again, we suppose that the plaintiff wants to induce investigation by the attorney. Since there is no ex post inefficiency issue in the *FA* contract, here we will now focus on the contract with $\tau > 0$ in the absence of commitment, "Disregarding Advice with Non-Commitment" (*DN*).[24]

Without commitment to litigation strategy, τ is not included in the contract and is chosen ex post (after the attorney's report). Thus, we solve the two-stage game. We first characterize the plaintiff's litigation strategy in the second stage (after the attorney's report). In the second stage, the principal goes for a trial occurs only if he has an incentive to do so at that point.

Again, once investigation occurs, there is no misreporting incentive in our model. Therefore, given that the attorney announced L (advice is to settle),[25] the plaintiff's maximization problem with respect to τ in the second stage is:

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[23] In contrast, Choi (2003) demonstrates the optimality of delegating authority as a means of improving bargaining position against a defendant.

[24] The plaintiff can trivially implement the *FA* contract without prior commitment to the litigation strategy by simply increasing t_L, thereby eliminating any incentive to pursue trial when the attorney announces L.

[25] There is no commitment issue associated with $\tau_H = 1$ (Lemma 1).

$\tau \in \text{argmax}_{\tau'}\ \tau'(V_L - t_L) + (1 - \tau')(S - t_S)$.

The first-order condition for an interior solution for τ is:

$$V_L - t_L = S - t_S. \qquad (PI)$$

The plaintiff's constraint, (PI), is intuitive. A well-known principle in the contract theory literature is that a principal's expected payoff with commitment is always higher than that without commitment.[26] Thus, by using t_L and t_S in the contracting stage, the plaintiff provides himself an incentive to go to trial in the second stage. In the optimum, the plaintiff is indifferent between pursuing trial and paying the attorney t_L versus accepting settlement and providing the attorney the corresponding transfer t_S in the second stage. If $V_L - t_L > S - t_S$, then $\tau = 1$, and the choice of t_S does not affect the plaintiff's payoff because settlement never occurs. Thus, we can simply apply the (PI) constraint without loss of generality to the plaintiff's optimization problem. Combining (PI) with (IV_1^{DA}) and (IV_2^{DA}) yields the following three (binding) constraints:

$$t_S = \frac{c - \Delta T}{\phi_L} + \tau(S - V_L + T),$$

$$t_L = \frac{c - \Delta T}{\phi_L} - (1 - \tau)(S - V_L) + \tau T, \text{ and}$$

$$t_H = \frac{c - \tau\Delta T}{\phi_H} + (1 - \tau)\left[\frac{c - \Delta T}{\phi_L} + \tau(S - V_L + T)\right] + T.$$

Clearly, without commitment it can be that $t_S > c$ in contrast to the commitment case where $t_S = c$. There, the plaintiff increases the transfer from settlement in order to make settlement less attractive ex post. The plaintiff's optimization problem without commitment then becomes:

$$Max\ \Phi^{DN} = \phi_H\left[V_H - \frac{c - \tau\Delta T}{\phi_H} - (1 - \tau)\left(\frac{c - \Delta T}{\phi_L} + \tau(S - V_L + T)\right) + T\right] + \phi_L\left[\tau(V_L - T) + (1 - \tau)S - \frac{c - \Delta T}{\phi_L}\right]$$

subject to the same wealth and limited liability constraints as before. As implied by the (PI) constraint, $V_L - t_L = S - t_S$, (with t_S and t_L characterized above), the plaintiff is indifferent to τ in

[26] See Salanié (1998, p146).

the second stage. In the first stage, however, the plaintiff is not indifferent to τ (although τ is not chosen in the first stage). Differentiating the objective function with respect to τ yields the solution:

$$\tau^{DN} = \frac{1}{2\phi_H} - \frac{\phi_H c - (\phi_H - \phi_L)\Delta T}{2\phi_H \phi_L (S - V_L + T)}.$$

This is the value of τ that the plaintiff chooses in the first stage, and because of the (PI) constraint the plaintiff is able to credibly adhere to this strategy even though commitment is not available. With c small enough, $\tau^{DN} > 0$. By comparing the plaintiff's choice of going for trial (τ) with and without commitment, we have the following result:

Proposition 3. *If c is sufficiently small, the plaintiff pursues trial against the attorney's advice more often without commitment than with commitment.*

Proof. See Appendix.

This is a seemingly counter-intuitive result as the plaintiff pursues a low-payoff trial more often when he cannot commit to the strategy.[27] Here we can see that trial against the attorney's advice is more likely as the settlement offer rises. The plaintiff, unable to commit to τ, will increase t_S in response to a higher settlement in order to maintain his (ex post) indifference towards trial. From (IV), the plaintiff must increase the chance of trial in order to assure that the attorney engage in investigation.

Indeed, the DN (and DA) contract dominates the FA contract for a range of parameter values. The table below summarizes the contracts under different regimes with parameter values $V_H = 30{,}000$, $S = 21{,}000$, $V_L = 20{,}000$, $\phi_L = 0.4$, $c = 1{,}000$, $T = 2{,}500$, and $\Delta T = 900$.. When the plaintiff's litigation strategy τ is contractible (DA), the plaintiff disregards the attorney's advice with very small probability (1.52%), but pays a very high transfer ($t_L = V_L = 20{,}000$). When τ is non-contractible (DN), the transfers to the attorney are less variable, but the plaintiff disregards the attorney's advice far more frequently. The payoff from all three contract regimes

[27] In Khalil (1997) and Finkle and Shin (2007) a similar result arises with auditing strategies.

exceeds the payoff from accepting settlement without investigation (earning 21,000) or pursuing trial without investigation (earning 22,600).

	FA Contract	*DA* Contract	*DN* Contract
t_H	5,167	3,462	4,247
t_S	1,000	1,000	2,292
t_L	NA	20,000	1,292
τ	0	1.5%	58.3%
Φ	22,900	23,802	22,935

Table 1. Contracts and the plaintiff's payoffs for specific parameter values

5. Conclusion

In this paper, we have shown an alternative means of inducing a lawyer's investigation to the standard means of a high-powered transfer scheme. Because the plaintiff cannot tell whether or not the attorney's advice is sincere when settlement occurs, he can increase the probability of going for trial while reducing the reward for detecting an accurate report by the attorney. While this can result in a low-profit suits reaching trial, it also allows the plaintiff to reduce the attorney's reward for investigation. Interestingly, the plaintiff pursues trial despite knowing that settlement is more profitable. We have also shown that this contract is optimal under a range of reasonable parameter values. Next, knowing that he cannot commit to litigation strategy, the plaintiff adjusts the committed variables (i.e. the transfers to the attorney) so that he has an ex post incentive to go for trial. We find that the plaintiff will possibly pursue trial with an even higher probability than when the trial strategy is committed.

There can be several directions to extend the current model. For example, the probability of winning trial may be correlated with the attorney's effort during investigation which will add to the incentive to induce investigation. Similarly, the size of the reward in winning trial, V_H may

also depend on the attorney's investigation effort. Finally, one can introduce a second attorney for the plaintiff to provide a "second opinion", verifying the primary attorney's advice. We leave these considerations for potential future research.

Appendix

Proof of Lemma 1.

With $t_{L|H} = t_{H|L} = T$, the (IV) constraint when the agent chooses $m = H$ becomes:

$$\sum_{i=H,L} \phi_i \left[\tau_i \left(t_{i|i} - T \right) + (1-\tau_i) t_{S|i} \right] - c \geq \tau_H \left[\phi_H \left(t_H - T - \Delta T \right) - \phi_L \Delta T \right] + (1-\tau_H) t_{S|H}$$

Rearranging this we have the following:

$$\phi_L \left[\tau_L \left(t_L - T \right) + (1-\tau_L) t_{S|L} \right] \geq -\tau_H \Delta T + (1-\tau_H) \phi_L t_{S|H}$$

Because we assume that investigation is optimal, in equilibrium $V_H - t_H > S - t_{S|H}$ must hold. Since τ_H does not enter in the RHS of any other constraints, by setting $\tau_H = 1$, the plaintiff can minimize the right-hand side of the incentive constraint above while increasing his payoff. ■

Proof of Proposition 1.

We solve the plaintiff's problem without (LL) and (WC) and check later that they are satisfied by the solution without them. We will first disregard the liability and wealth constraints and then check that the solution satisfies them. From (IV_2), $t_H - t_S \geq c/\phi_H + T > 0$. This constraint shows that the plaintiff will lower t_H and t_S to the point where both constraints bind in order to increase his payoff. Solving the constraints together yields the transfers. To see if t_S satisfies limited liability, consider the following expression:

$$t_S - c = (\phi_H c - \Delta T)/\phi_L.$$

If the right-hand side is positive ($\phi_H c \geq \Delta T$), the transfers follow directly from the binding constraints. Alternatively, if the difference is negative ($\phi_H c < \Delta T$), the limited liability constraint

must bind and $t_S = c$. Then, t_H follows from the binding (IV_2^{FA}). The wealth constraints are satisfied by V_H being sufficiently larger than c so that t_H lies below the plaintiff's award from trial. The plaintiff's expected payoffs for each case are obtained by replacing the transfers with their values in the objective function. ■

Proof of Proposition 2.

We begin by assuming the limited liability constraints are satisfied by the optimal contract and later verify. Both (IV_1^{DA}) and (IV_2^{DA}) are binding in the optimal contract and after simple rearrangements, we can respectively rewrite (IV_1^{DA}) and (IV_2^{DA}) as follows:

$$\phi_L \tau (t_L - T) + \phi_L (1 - \tau) t_S = c - \Delta T, \tag{A1}$$

$$\phi_H (t_H - T) = c - \tau \Delta T + \phi_H (1 - \tau) t_S \tag{A2}$$

From (A2), the plaintiff can reduce t_H by increasing τ and thus making shirking on investigation less attractive. The following expressions are obtained from (A1) and (A2):

$$t_L = \frac{1}{\tau}\left[\frac{c - \Delta T}{\phi_L} - (1 - \tau) t_S\right] + T\ , \tag{A3}$$

$$t_H = \frac{c - \tau \Delta T}{\phi_H} + (1 - \tau) t_S + T\ . \tag{A4}$$

The plaintiff's problem can be written as simply:

$$Max\ \Phi^{DA} = \phi_H \left[V_H - \frac{c - \tau \Delta T}{\phi_H} - (1 - \tau) t_S - T\right] + \phi_L \left(\tau (V_L - T) - \frac{c - \Delta T}{\phi_L} + (1 - \tau) S\right).$$

By differentiating the above objective function with respect to t_S, we have: $-\phi_H(1 - \tau) < 0$. This implies that t_S will be the minimum value, i.e., $t_S = c$.

Differentiating Φ^{DA} with respect to τ and using the fact that $t_S = c$ yields:

$$\frac{\partial \Phi^{DA}}{\partial \tau} = \Delta T + \phi_H c - \phi_L \left(S + T - V_L\right)$$

Begin by supposing that the parameters are such that $\partial \Phi^{DA} / \partial \tau < 0$. With $t_S = c$, ($A3$) and ($A4$), the wealth constraints give the following conditions:

$$t_L = \frac{1}{\tau}\left[\frac{c - \Delta T}{\phi_L} - (1-\tau)c\right] + T \le V_L\,, \tag{A5}$$

$$t_H = \frac{c - \tau\Delta T}{\phi_H} + (1-\tau)c + T \le V_H\,. \tag{A6}$$

When $\Phi_\tau^{DA} < 0$, then the plaintiff's incentive is to make τ as small as possible. From (A5), however, $\tau = 0$ violates the wealth constraint for the plaintiff. Therefore, when $\Phi_\tau^{DA} < 0$, τ is determined by the equation:

$$\frac{1}{\tau}\left[\frac{c - \Delta T}{\phi_L} - (1-\tau)c\right] + T = V_L\,. \tag{A7}$$

After a simple arrangement, we have the expression for τ in Proposition 2. A solution for t_H follows from (A4) and the solution for τ. The wealth constraint for t_H is satisfied by the assumption that the parameters are such that investigation is optimal. For V_H sufficiently large, this will be the case. Alternatively, if $t_H = V_H$ from the binding wealth constraint, the plaintiff will not pursue investigation of the suit. To see the liability constraint for t_H is satisfied, substitute $\tau = 1$ into (A6), which says that a sufficient condition is that $\phi_L c \ge \Delta T$.

If the parameters are such that $\partial\Phi^{DA}/\partial\tau > 0$, then the plaintiff will set τ as large as possible. If this occurs, the *DA* contract cannot be optimal because $\tau = 1$ is worse for the plaintiff than the bypassing investigation. Thus, we can disregard this case.

To show the optimality of the *DA* contract, we first present the payoff from each contract When $\phi_H c \ge \Delta T$:

$$\Phi^{DA} - \Phi^{FA} = \tau^{DA}\left[c - \phi_L S + \Delta T\right] + \frac{c - \Delta T}{\phi_L}\,.$$

From (A7), this difference becomes:

$$\Phi^{DA} - \Phi^{FA} = \tau^{DA}\left[\Delta T + V_L - \phi_L S\right] + c\,.$$

When $\phi_H c < \Delta T$:

$$\Phi^{DA} - \Phi^{FA} = \tau^{DA}\left[\Delta T + c - \phi_L S\right] + c\,.$$

Thus we have derived the range of parameters where *DA* is optimal.

Lastly, the implementation of *DA* contract requires that with the solutions above, it must be that $0 < \tau^{DA} < 1$, which is satisfied if and only if:

$$c < \frac{\phi_L(V_L - T) + \Delta T}{\phi_H}.$$

We can verify that there exist values of parameters such that the *DA* contract is implemented and dominates the *FA* contract.■

Proof of Proposition 3 We prove the proposition by showing that $\tau^{DN} - \tau^{DA} > 0$ under the conditions stated in the proposition. Taking the difference in probabilities:

$$\tau^{DN} - \tau^{DA} = \frac{\Delta T}{\phi_L(V_L - T - c)} + \frac{1}{2\phi_H} + \frac{\phi_H \Delta T}{2\phi_H\phi_L(S - V_L + T)} - \frac{\phi_L \Delta T + \phi_H c}{2\phi_H\phi_L(S - V_L + T)} - \frac{c}{\phi_L(V_L - T - c)}.$$

It is clear that when c is sufficiently small, the difference is positive. ■

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