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Judicial Detection Skill and Contractual Compliance

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Judicial Detection Skill and Contractual Compliance

by

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Abstract

Mutually beneficial agreements might fail if the parties fear contractual opportunism. Litigation is supposed to be a remedy, but gives scope for another kind of opportunistic behavior which we call litigational opportunism: Even knowing that the opponent has fulfilled his obligations, a party might bring suit. We introduce a new concept, called judicial detection skill, and show that positive judicial detection skill is a prerequisite if the court system is to deter opportunistic suits and simultaneously induce bilateral contractual compliance. The traditional literature on litigation either assumes judges with zero detection skill, or simply neglects that opportunistic suits might be successful. We prove that those models are unable to provide an answer to the question of how to prevent both types of opportunism simultaneously.

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Contents

1. Introduction	3
2. Contracts without litigation	5
3. Contracts with litigation	6
3.1 Judicial detection skill	6
3.2 The extended game	8
3.3 Conditions for contractual compliance	10
3.4 Litigation under the European rule	11
4. Interpretation of our result	12
4.1 Models with zero detection skill	12
4.2 Models with $r > w$ and $w = 0$	13
5. Conclusions	14
References	15

List of Figures

1	Basic contract game Γ in extensive form	5
2	Parameters of judicial detection skill	7
3	Contract game with litigation Γ_a	9

”...we are not surely bound to keep our word because we have given our word to keep it.”
D. HUME, *A Treatise of Human Nature*

1. Introduction

Mutually beneficial agreements are doomed to fail if at least one of the parties fears that the other one is tempted to cheat. Litigation is supposed to prevent this *contractual opportunism*. However, it allows for a second type of opportunistic behavior, which we call *litigational opportunism*: Even if a party knows that her opponent has fulfilled his obligations, she might bring suit. This leads as well to inefficiency. In this paper, we derive the necessary conditions a litigation system has to fulfill in order to avoid both kinds of opportunism and to induce bilateral contractual compliance.

We introduce a new concept called *judicial detection skill*¹. This term refers to the ability of a judge to detect both litigational and contractual opportunism. Judicial detection skill is measured by two conditional probabilities: The probability that a plaintiff wins, given the suit is legitimate, and the probability of prevailing, given the suit is opportunistic. If the probability of winning a legitimate suit is higher than the probability of winning an opportunistic one, then the judge is said to have positive detection skill. If these two probabilities are equal, then the judge is said to have zero detection skill².

In our model, judges are represented by these two conditional probabilities. We show that positive judicial detection skill is a necessary condition for inducing contractual compliance as well as preventing litigational opportunism. Our definition of litigational opportunism requires to distinguish between opportunistic und legitimate suits. Since this distinction depends on the behavior of the parties in the pre-litigation stage, we first introduce the contract game without litigation as a trust game. The equilibrium of this game is Pareto inefficient. Then we add a litigation stage, where one of the parties is given the option to sue. Litigation is called legitimate if the other party has chosen not to comply with the contract. It is called opportunistic if the potential defendant has actually fulfilled her obligation. Thus, the litigation stage consists of two subgames. If the judge has positive detection skill, then the probability that a plaintiff prevails differs in these two subgames.

The contract game with litigation hence contains three parts: the underlying behavior, the opportunistic litigation subgame, and the legitimate litigation subgame. Failure to integrate all of these three parts into one game would have two important drawbacks.

First, neglection of the underlying behavior would make it impossible to analyze how it

¹This approach is based on Ronald Heiner’s theory of imperfect decision-making. For an introduction into this theory, see HEINER (1983), (1985), (1986) and HEINER/SCHMIDTCHEN (1995).

²In this paper, we use the term ”judge” to denote any institution that makes decisions on the merits of a case, e.g. judges, justices, collegial courts or juries.

is influenced by the litigation stage³. Furthermore, according to our concept of judicial detection skill, the notion of positive detection skill requires that the parties have more than one path to enter the litigation stage. The proper way to analyze the relation between potential future interaction and earlier behavior is to solve the complete game for an equilibrium.

Second, not to distinguish expressly between the two different subgames in the litigation stage would imply a unique probability that the plaintiff prevails⁴. Such an approach either assumes zero judicial detection skill or simply neglects that opportunistic cases might be won with positive probability⁵. Note that perfect detection skill, zero detection skill, and the neglect of opportunistic suits can be seen as special cases of our judicial detection skill model.

Even though the assumption of zero judicial detection skill clearly contradicts reality, it has its merits, e.g. for analyzing the decision between settlement and trial, whenever the underlying behavior between the parties can be taken as given. Yet, as we will show, this type of models never allows to derive an answer to the question of how to prevent contractual and litigational opportunism simultaneously. On the other hand, the papers that work with a zero-probability to win an opportunistic suit seem to neglect the maximum fine result⁶. If a potential defendant can expect with certainty that he will not be punished in case he obeys the law, then a maximum fine for non-compliance would be the simplest way to create the desired incentives. Applied to our analysis, if a fee for being sued is greater than the potential gain from non-compliance, this would be sufficient to induce bilateral contractual compliance. In such a setting, there would be no need to charge the potential plaintiff in order to set incentives right. However, the existence of other cost allocation rules, such as the American or the European rule, requires an explanation which can be derived from the fact that the probability of success in opportunistic suits is positive.

This paper is organized as follows:

In section 2 we present the basic contract game without third party enforcement. This game describes the underlying behavior and allows us to define the term contractual opportunism. The inefficiency of this game's equilibrium provides the motivation to introduce litigation as a second stage in the parties' interaction, which opens up the possibility of litigational opportunism.

³E.g., see the literature that only focusses on the decision between settlement and trial; see POSNER (1986), COOTER/RUBINFELD (1989), and the papers on the "selection hypothesis", starting with PRIEST/KLEIN (1984). ROSENBERG/SHAVELL (1985), BEBCHUK (1988), and MICELI (1993), who particularly focus on frivolous suits, disregard the impact the enforcement system might have on potential litigants' behavior. PRIEST/KLEIN (1984), KATZ (1990) and POLINSKY/RUBINFELD (1993) assume an exogenously fixed quota of frivolous plaintiffs. Such an approach would not take into account that a potential plaintiff's decision to bring a frivolous suit depends on his incentives rather than on his exogenously given type.

⁴Among the many see e.g. GOULD (1973), LANDES (1971) and also SHAVELL (1995) for trials of the first instance.

⁵See KATZ (1990) and POLINSKY (1989) as examples for the latter approach.

⁶See BECKER (1968).

Section 3 analyzes the two stage game. The first stage consists of the basic contract game introduced in section 2. In the second stage one party is given the opportunity to sue the other. We describe the theory of judicial detection skill in more detail and prove as a proposition that positive judicial detection skill is a necessary condition for bilateral contractual compliance.

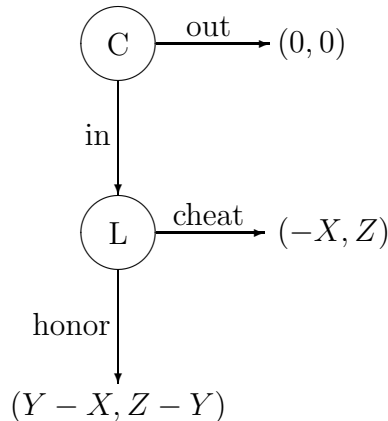
In section 4 we discuss our results in comparison to the literature that models judges with zero detection skill (section 4.1) or neglects the chances of winning an opportunistic suit (section 4.2). Section 5 concludes the paper.

2. Contracts without litigation

In this paper, a contract means an agreement between the players Charlie and Lucy as follows: Charlie promises to work for Lucy, which costs him an effort he values with X . She promises to pay Y in return. Her gross monetary benefit from Charlie's work is Z . We assume that the parties are risk neutral payoff maximizers and that $Z > Y > X > 0$. Hence the parties would mutually benefit if both of the promises were fulfilled. However, this condition is not sufficient to guarantee that the parties will actually act as agreed: The contract is not self-enforcing.

The agreement leads to a one-shot game we denote as Γ . **Figure 1** represents the extensive form of Γ , where Charlie's payoff is the first entry in the brackets, Lucy's payoff is the second. Even though "distrust game" seems to be the more appropriate term, this game is usually called "trust game"⁷.

Figure 1: Basic contract game Γ in extensive form



Lucy is tempted to cheat instead of honor the contract. We call this behavior of Lucy *contractual opportunism*. The unique subgame perfect equilibrium of this game is the strategy combination $\{out; cheat\}$. This equilibrium is pareto-suboptimal: Both parties

⁷See e.g. KREPS (1990) or GÜTH/KLIEMT (1993).

were better off by playing the path $\{in, honor\}$. It is the anticipation of Lucy's contractual opportunism that makes Charlie choose *out*. Hence both parties would agree to employ a device that makes the option *in* the more attractive choice for C, as long as the gain from cooperation $Z - X$ is larger than the costs of this device.

3. Contracts with litigation

In this section we add a litigation stage to the trust game of section 2. In the extended game, C is given the option to sue L for the payment Y , which is the value of the case. To give C the option to sue L may serve as a device against contractual opportunism, but opens up another source of opportunistic behavior: Charlie might bring suit even if Lucy has fulfilled her contractual obligation. In this case, we call the suit *opportunistic*. If, on the other hand, C brings suit after L has cheated, we call the case *legitimate*. Hence the distinction between the two possible types of litigation depends on the parties' behavior in the pre-litigation stage of the game.

In section 3.1, we introduce our concept of judicial detection skill. The trust game with litigation is outlined in section 3.2, where we analyze the impact of the litigation stage on the underlying behavior, and derive a condition for bilateral contractual compliance under the American litigation cost allocation rule. In section 3.3, we show that our result also holds for the European litigation cost allocation rule.

3.1 Judicial detection skill

Even if the parties do not disagree about the value of the case Y , third parties in general have difficulties to determine whether Lucy actually has honored the contract. Therefore it makes sense to assume that potential litigants do not expect the judge to be free of errors. A variety of reasons for judicial errors exists even if judges are seen as benevolent⁸. We only focus on errors about the true facts of the case, but not on errors concerning the interpretation or the choice of legal rules⁹. Let us define r as the conditional probability that a judge decides in favor of the plaintiff, given the suit is actually legitimate, and w as the probability of making this decision, given the suit is opportunistic. The probability that a legitimate plaintiff does not prevail is $1 - r$, whereas the probability that a judge rejects an opportunistic claim is $1 - w$. An overview of these conditional probabilities is given in **figure 2**.

⁸We want to point out that we do not analyze in this paper the judge's decision-making process itself. Therefore the notion of benevolence plays no role in our model. On judicial decision-making see e.g. ANDERSON/SHUGART/TOLLISON (1989), COHEN (1991), POSNER (1990), (1993), RASMUSEN (1994) or MACEY (1994) with a comment by ALEXANDER (1994). SANCHIRICO (1995) explicitly models the utility function of benevolent judges. MICELI/COŞGEL (1994) and RASMUSEN (1994) tried to explain why benevolence might be rational for judges.

⁹This follows the distinction in POSNER (1990, 197, 203). RASMUSEN (1995) focusses on a different kind of judicial error than we do: He analyzes that judges might err in estimating the correct damage. See also TULLOCK (1994)

Figure 2: Parameters of judicial detection skill

Suit is \ Judge's decision	legitimate	opportunistic
in favor of C	r	w
in favor of L	$1 - r$	$1 - w$

As mentioned in the introduction, we use the conditional probabilities r and w to describe judicial detection skill¹⁰. The basic idea of this (r, w) approach is adapted from HEINER (1983), (1985), who refers to the literature in experimental psychology about imperfect detection of signals¹¹. In such experiments a person must decide repeatedly whether a signal is present or not. The judge is in a very similar situation, when he has to decide whether suits are opportunistic or not. Concerning the parameters $r, w \in [0, 1]$ we distinguish four cases:

- If $(r - w) = 1$, the parties expect the judge to decide in favor of the plaintiff only if the case actually is legitimate. In case of opportunistic litigation, they expect the judge to always decide in favor of the defendant. Hence they perceive the judge to have *perfect detection skill*¹², which clearly contradicts reality, since judges are likely to make errors.
- With $(r - w) = 0$, the parties expect the judge to decide no better than by pure chance. The perceived probability of a decision in favor of the plaintiff does not depend on whether the case is legitimate or opportunistic. The parties expect the judge to have *zero detection skill*.
- $(r - w) < 0$ means negative detection skill¹³.

¹⁰Note that this approach substantially differs from the approach in PRIEST/KLEIN (1984) or POLINSKY (1989), who also use two different probabilities. In their models, the two probabilities represent the plaintiffs and the defendants beliefs concerning the chances of the plaintiff's victory. Applying our terminology, the authors distinguish between a plaintiff's r_C and a defendant's r_L , but disregard the w .

¹¹SWETS (1988) gives an introduction to signal detection theory. HEINER (1986) was the first who applied basic insights of signal detection theory to a law and economics problem, when giving an economic rationale for the "stare decisis" doctrine.

¹²As the whole literature on contract theory assumes. See as well the concept of sanction matrices in SCHMIDT-TRENZ (1990, 195).

¹³If a benevolent judge is aware of being of this type, he could improve his performance by consequently sentencing against the opinion he has actually formed.

- In case of $(r - w) \in]0, 1[$, the judge is perceived as having positive detection skill. The parties expect the judge to be able to distinguish between legitimate and opportunistic cases better than by pure chance, but not being free of errors.

The observation that judges acquire many years of training and experience in their profession may induce potential litigants to perceive that judges have positive detection skill. SHAVELL (1995, 394) makes such an assumption - without using our terminology - at least for appeals courts, but the way he models courts of the first instance implies zero detection skill. The judges in KATZ (1990) and POLINSKY (1989) are modelled - if we apply our terminology - with $r > 0$ and under the implicit assumption $w = 0$. POLINSKY/SHAVELL (1989) and POLINSKY/RUBINFELD (1993) assume $r \geq w$. However, the approach chosen by these authors needs to be distinguished from ours. They assume that a legitimate plaintiff can easier produce evidence. Hence in their models frivolous plaintiffs prevail at trial with a lower probability than legitimate ones, whereas in our model this effect is caused by the detection skill of the judge.

3.2 The extended game

The model starts with the contract stage as described by the game Γ , which we call the underlying behavior. In the second stage Charlie, after having chosen the option *in* and observed Lucy's reaction, now has to decide whether to sue Lucy in order to make her honor the contract (i.e. pay Y as they had agreed upon)¹⁴. Hence Y is the value of the case or the value at stake, if litigation takes place. The extensive form of this game with litigation is shown in **Figure 3**, where Charlie's decision nodes are labelled as C_1, C_2 and C_3 . Lucy's node is labelled as L .

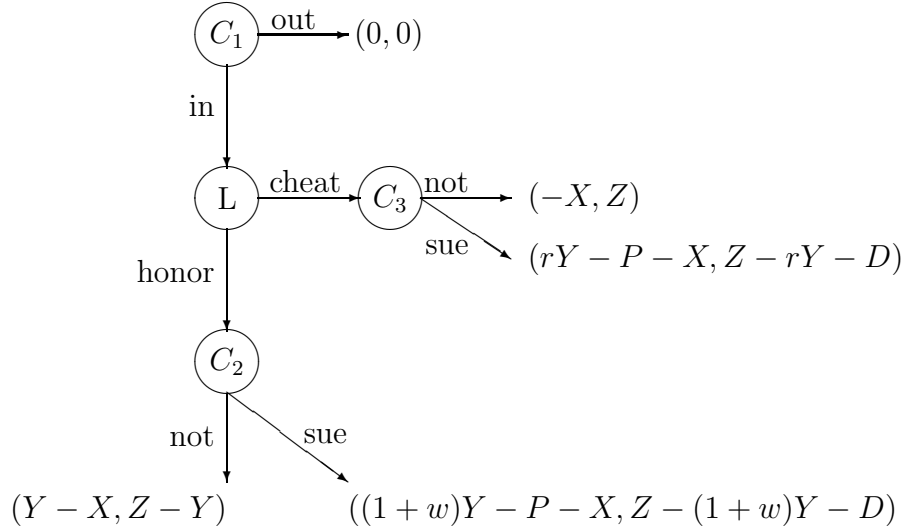
We denote this game form, which is common knowledge among the parties, as Γ_a , where the subscript a indicates that the litigation costs are allocated according to the American rule, i.e. each party has to bear its own costs. The payoffs in Γ_a do not only depend on the contract parameters (X, Y, Z) , but also on the parameters r and w which describe the judge's detection skill, and on the litigation costs. With P , we denote the costs a plaintiff has to bear if litigation takes place, whereas D denotes the defendant's costs.

In general, litigation costs would consist of two parts: First the parties might spend resources in order to influence the expected outcome of the suit. In addition to these expenses, the court might impose fees. In this paper we assume that the parties' investments, e.g. the hiring of lawyers, have no impact on the probability that the plaintiff prevails. Therefore the optimal decision is not to make expenses voluntarily, and the parties' litigation costs are equal to the fees they have to pay according to the litigation cost scheme.

At C_3 , where litigation is legitimate, C would prevail with probability r . The expected

¹⁴For simplicity, we disregard that C might also bring an opportunistic suit after having chosen the option *out* at his first node, since taking this into account would not lead to different insights. For the same reason, we disregard that L also might bring suit.

Figure 3: Contract game with litigation Γ_a



gross gain is rY , whereas the costs are P . Hence the expected net effect for C of bringing suit at this node is $rY - P$. Since he did already invest X to reach this node, his total expected payoff from suing at C_3 is $rY - P - X$. L would have to pay Y with probability r , and to bear her costs D . The expected net effect of litigation to her payoff thus is $-rY - D$. Since she has already received X from C, which provides a value of Z to her, the total expected payoff for her is $Z - rY - D$. If C did not bring suit, the payoffs to the parties are similar to those in the basic contract game Γ .

In the same way we derive the payoffs at the node C_2 , where the probability of prevailing in an opportunistic case is w . The aim of the subsequent analysis is to derive the condition under which *bilateral contractual compliance* occurs between risk-neutral players. Bilateral contractual compliance occurs if the parameters (r, w, P, D) and the cost allocation rule in a contract game with litigation are such that $\{in, honor, not\}$ is the unique subgame perfect equilibrium path. In such an equilibrium, the parties both fulfill their contractual obligations and Charlie does not bring an opportunistic suit. Therefore, neither contractual nor litigational opportunism occurs. To play this path makes the two parties together best off since it provides the maximum common payoff to them: The gain from cooperation, $Z - X$, is being created and litigation fees (P, D) have not to be spent.

3.3 Conditions for contractual compliance

First we define the following expressions:

- The Selection Condition¹⁵, hereafter denoted as SC_a : $w < \frac{P}{Y} < r$
- The Compliance Condition, denoted as CC_a : $r > \frac{Y-D}{Y}$

The subscript a again indicates that these expressions refer to the American cost allocation rule. Using these expressions, we state our first results in the following propositions:

Proposition 1: If the selection condition SC_a holds in the game Γ_a , then C brings suit if, and only if it is legitimate.

Proof: SC_a is equivalent to $wY - P < 0 < rY - P$, which is necessary and sufficient to motivate C not to sue at his node C_2 , but to sue at his node C_3 , where litigation is legitimate: Q.E.D.

Proposition 2: If in game Γ_a the selection condition SC_a holds, then L honors the contract if, and only if, CC_a holds.

Proof: If SC_a holds, then L can expect that C does not bring suit at C_3 , but does so at C_2 . Thus, she expects to receive $Z - Y$ as payoff from choosing the option *honor*, and $Z - rY - D$ from choosing the option *cheat*. To honor the contract is more attractive, if the former payoff is greater than the latter. This condition is equivalent to CC_a : Q.E.D.

If the Selection Condition SC_a and the Compliance Condition CC_a are fulfilled simultaneously, this is necessary and sufficient for bilateral contractual compliance, as stated formally in the following proposition:

Proposition 3: In Γ_a , bilateral contractual compliance is equivalent to $CC_a \wedge SC_a$.

Proof: For convenience we represent the term bilateral contractual compliance by the acronym *bcc*. We have to show $CC_a \wedge SC_a \Leftrightarrow bcc$, which is equivalent to $(CC_a \wedge SC_a \Rightarrow bcc) \wedge (CC_a \wedge SC_a \Leftarrow bcc)$.

$SC_a \wedge CC_a \Rightarrow bcc$ follows from the propositions 1 and 2, if an additional step is made to complete the backward induction solution of Γ_a . If the propositions 1 and 2 hold, C will sue if, and only if it is legitimate, and L will honor the contract. Then C has to choose between his options *in* and *out* at his first node. To choose the option *in* would lead to the path $\{honor, not\}$,

¹⁵The term "selection" must not be confused with the one used in the literature on the "selection hypothesis"; see PRIEST/KLEIN (1984). In SCHMIDTCHEN/KIRSTEIN (1997) we developed the selection effect which judicial detection skill and litigation costs may have on the behavior of potential litigants.

hence to $Y - X$ as the payoff for C. This is greater than zero by assumption. Thus, $CC_a \wedge SC_a$ is sufficient for bcc.

Additionally, $CC_a \wedge SC_a \Leftarrow \text{bcc}$ is to be shown. This is equivalent to $\neg CC_a \vee \neg SC_a \Rightarrow \neg \text{bcc}$. This is equivalent to $(rY \leq Y - D \vee wY \geq p \vee rY \leq P) \Rightarrow \neg \text{bcc}$ by definition.

If, e.g., $rY \leq P$, then C would not be deterred from bringing suit at his node C_3 . In this case, $\{in, honor, not\}$ would not be the unique subgame equilibrium path, as it is required for bcc. Hence, bcc is sufficient for $SC_a \wedge CC_a$ or, equivalently, $SC_a \wedge CC_a$ is necessary for bcc: Q.E.D.

If the parties are risk-neutral and the condition $SC_a \wedge CC_a$ holds, then bilateral contractual compliance occurs¹⁶. Both types of opportunism are prevented, the contractual as well as the litigational opportunism.

The following proposition represents the main result of our paper:

Proposition 4: In Γ_a , positive judicial detection skill is necessary (but not sufficient) for bilateral contractual compliance.

Proof: We have to show $\text{bcc} \Rightarrow r > w$. According to Proposition 3, $\text{bcc} \Leftrightarrow CC_a \wedge SC_a$ holds. Hence bcc implies SC_a . SC_a implies, by definition, $r > w$: Q.E.D.

Without positive judicial detection skill, the court system is unable to motivate the parties to contractual compliance. Positive judicial detection skill is a prerequisite for this motivational impact, but might be still insufficient. If $r > w$, then it is possible to design the parties' litigations costs (P, D) in a way that SC_a and CC_a hold simultaneously and bilateral contractual compliance is induced¹⁷. One can think of other ways to select opportunistic from legitimate suits, such as raising a higher plaintiff's fee for the former ones. However, to find out whether this higher fee applies or not would require positive detection skill as well.

3.4 Litigation under the European rule

According to the European type of litigation cost allocation rules, the loser of a trial has to bear both parties' costs. We denote the total costs as $G = P + D$. Let Γ_e stand for the trust game with litigation, given the European rule. Whereas the sequence of actions

¹⁶If the parties were assumed to have a different risk-attitude, this would require to modify the condition for bilateral contractual compliance. However, this affects our results only quantitatively, but not qualitatively.

¹⁷We derived the set of litigation costs for the American and the European rule that induce bilateral contractual compliance in KIRSTEIN/SCHMIDTCHEN (1996). This set is constrained by the condition $SC_a \wedge CC_a$. It is non-empty, if the judge has positive detection skill.

and the payoffs for the paths without litigation are the same as in Γ_a , the payoffs for the two paths that end with litigation have to be modified.

If C brings an opportunistic suit at his node C_2 , his payoff then is $(1+w)Y - X - (1-w)G$. In addition to the payoff without litigation, which is $Y - X$, he receives Y with probability w , and has to bear the total costs G only in case he loses, i.e. with probability $(1-w)$. L's expected payoff is $Z - Y - w(Y + G)$. If C sues legitimately, at his node C_3 , his expected payoff is $rY - (1-r)G - X$, whereas L expects to receive $Z - r(Y + G)$.

Let us now define the selection condition and the compliance condition for the European rule:

- SC_e is $w < \frac{G}{Y+G} < r$
- CC_e is $r > \frac{Y}{Y+G}$

It is easy to see that the claims we made in the propositions 1 through 4 with respect to the American rule in the previous section do also hold for the European rule: If SC_e holds, then C brings suit if, and only if it is legitimate. If SC_e and CC_e hold, L honors the contract and C chooses his option *in*, hence bilateral contractual compliance occurs. From the definition of SC_e , it is obvious that bilateral contractual compliance implies positive judicial detection skill, $r > w$.

4. Interpretation of our result

Modelling courts by a single probability does not allow for an analysis of the court's influence on litigational or contractual opportunism. A model that represents judges by a single probability either assumes zero detection skill or it neglects that plaintiffs might win opportunistic suits. Let q denote this single probability that a plaintiff prevails. Using our terminology, the former assumption is then equivalent to $q = r = w$, whereas the latter one is equivalent to $q = r$ and $w = 0$.

4.1 Models with zero detection skill

If zero judicial detection skill is assumed, then judges are not able to distinguish better than by pure chance between opportunistic and legitimate suits. The probability that a plaintiff prevails is equal in both cases, or $r = w = q \in]0, 1[$. According to our proposition 4, bilateral contractual compliance cannot occur¹⁸, since the court system does not set incentives to prevent contractual opportunism.

Whether a judge of zero detection skill at least prevents litigational opportunism in Γ_a depends on the value of q . If q is low, then C will choose his option *out*, whereas a high q might motivate him to choose his option *in*, as stated in the following:

¹⁸The same holds true for the European rule.

Proposition 5: If $q > \frac{P+X}{Y}$ holds in Γ_a , then the subgame perfect equilibrium path is $\{in; cheat; sue\}$.

Proof: $q > \frac{P+X}{Y}$ implies $q > \frac{X}{Y}$, which is necessary to make C sue at C_3 and C_2 . If L can expect to be sued whatever she does, she is better off by choosing cheat. $q > \frac{P+X}{Y}$ then is necessary and sufficient to make the path $\{in; cheat; sue\}$ more attractive than $\{out\}$ for C: Q.E.D.

If q is high enough, it is attractive for C to bring suit whatever L does. Thus, litigational opportunism is not prevented. The gain from cooperation will be produced, yet it will not be distributed according to the terms of the contract. In addition to this, that path requires the parties to spend litigation costs. In this equilibrium, the expected payoffs are $(qY - P - X)$ for C and $(Z - rY - D)$ for L.

On the other hand, a $q \leq \frac{P+X}{Y}$ would prevent litigational opportunism¹⁹. Yet in this case the parties do not even have an incentive to produce the gain from cooperation. The equilibrium payoff then is zero for both of them.

A similar result holds for the European cost allocation rule, according to which the loser has to pay both parties costs $G = P + D$. The condition for litigation at C_3 and C_2 is $q > \frac{G}{Y+G}$. To cheat makes L better off. The path $\{in; cheat; sue\}$ is more attractive for C than $\{out\}$ if, and only if, $q < \frac{X+G}{Y+G}$ holds. If this condition holds, then C's and L's expected payoff are $qY - (1-q)G - X$ and $Z - Y - q(Y + G)$ respectively. Otherwise they both receive zero.

The assumption $r = w$ hence makes it impossible to discuss any impact of the court system on contractual opportunism. There might be an impact on litigational opportunism, but only with a sad result: If the probability to prevail is too low, this prevents not only opportunistic suits, but also the creation of the gain from cooperation. If, on the other hand, neither contractual, nor litigational opportunism is prevented, the parties at least can realize this gain, but have to spend litigations costs. Models with $r = w$ might come to interesting insights, but fail to provide any insights on the influence of the court system on the underlying behavior.

4.2 Models with $r > w$ and $w = 0$

We now discuss the case that the single probability $q > 0$ only refers to legitimate suits, whereas the possibility of opportunistic suits is simply excluded. Applying our notation, this means $r = q$ and $w = 0$. Such a judge obviously has positive detection skill. In this case, it never makes sense to sue at the node C_2 in the game Γ_a . The condition for the cooperative equilibrium path in the game Γ_a with $r > 0$ and $w = 0$ is stated in the next proposition:

Proposition 6: If $r > 0$ and $w = 0$ holds in Γ_a , then the subgame perfect equilibrium path is $\{in; honor; not\}$, if $D > (1-r)Y \wedge P < rY$.

¹⁹A high P would have the same effect.

Proof: Due to $w = 0$ and $P > 0$, C will never sue at his node C_2 . At C_3 , he will sue if, and only if, $rY > P$. If this condition did not hold, then L would always choose cheat instead of honor. If the condition holds, then it is better for L to honor instead of cheat if, and only if, $Z - Y > Z - rY - D$ or, equivalently, $D > (1 - r)Y$: Q.E.D.²⁰

Obviously, the case of $w = 0$ and $r > 0$ allows for the design of an extremely simple mechanism to implement bilateral contractual compliance. If the plaintiff's fee P is set to zero and the defendant has to pay high enough a fee only for being sued, this provides an incentive for her not to cheat, but to honor the contract instead. Or, to state it formally, if $w = 0$ and $P = 0$, then any $r > 0$ fulfills the condition for bilateral contractual compliance in Γ_a , as long as $D > (1 - r)Y$. This is in accordance with the maximum fine result of BECKER (1968): If the punishment on cheating, in our model D , is greater than the expected gain $(1 - r)Y$, then cheating is made unattractive.

Of course, this is a trivial result. However, taking this into account, it is quite surprising to see that models with $w = 0$ are used, e.g., to extensively discuss whether the European rule is better or worse than the American rule²¹. If $w = 0$, it would not make much sense to discuss any of these complicated cost allocation rules, since the simple one outlined in the previous paragraph ensures optimal behavior.

In reality, litigation fee schemes do obviously not follow this simple proposal. The existence of these more complicated rules requires an explanation, which can be provided by the assumption that judges are likely to make errors of two types, hence $r < 1$ and $w > 0$. In such a setting, the simple mechanism would not always set the incentives right. To induce efficient behavior, the court system needs to have positive detection skill, and the litigation costs have to be adjusted carefully to provide sufficient incentives. This insight can only be derived by making use of our (r, w) approach.

5. Conclusions

In this paper, we presented a new approach to model the behavior of judges. Our concept of judicial detection skill explicitly takes into account that judges can commit two kinds of errors: opportunistic suits might be successful, legitimate suits might fail. The paper shows that, with positive detection skill and appropriately designed litigation fees, contracting parties can be motivated to comply with their contract and carry out the promises they agreed upon.

The traditional literature on litigation implicitly assumes either zero detection skill or neglects the possibility that opportunistic litigants might prevail. Under these assump-

²⁰It is easy to prove that the equilibrium path is $\{in; cheat; sue\}$, if $r < \frac{Y-D}{Y} \wedge r > \frac{P+X}{Y}$ holds, and that C chooses $\{out\}$ at his first node, if $r < \frac{Y-D}{Y} \wedge r < \frac{P+X}{Y}$ or if $r < \frac{P}{Y}$ holds. Again, for the European rule a similar result can be derived; however, the path $\{in; cheat; sue\}$ will never be an equilibrium path in the game Γ_e .

²¹See, among others, KATZ (1990).

tions, it is impossible to show how contractual and litigational opportunism can be prevented simultaneously.

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