The British and American Rules: an experimental examination of pre-trial bargaining in the shadow of the law.

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Abstract

A commonly held view is that the frequency and value of pre-trial settlements in civil disputes are greatly influenced by the cost allocation regime that is in place if the case goes to trial. There is a large and growing theoretical literature on this subject but almost no empirical evidence. This is due simply to the scarcity of relevant data owing to the confidentiality generally associated with such matters. However, the area is an ideal one to analyse experimentally. In this paper we consider the effect of the British and American rules for cost allocation using such an experimental methodology. We find that the two rules produce no difference in the frequency of pre-trial settlements but that the British rule produces higher settlements (pro-pursuer) if the probability of the pursuer winning is large.

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1. Introduction

It is possible to view much of what takes place in civil courts as dispute resolution. There are very large gains to society from an efficient operation of this process. For those cases that actually go to trial, there is a resolution of a disagreement in a fair and equitable manner. The vast majority of cases (over 90%) that enter the legal system, however, settle out of court. But these settlements are greatly influenced by the procedural framework of the civil justice system. This effect is commonly known as 'bargaining in the shadow of the law' (Mnookin and Kornhauser (1979)).

Different societies choose different procedural frameworks in which to administer civil justice. The 'British' system is one where, in general, the loser of a case pays the costs of both parties. The 'American' system splits the total costs between both parties regardless of the outcome, with each side generally paying their own costs. This is a somewhat stylised view as there are many variations, especially in the USA, but even within a given tradition there occurs periodic questioning of whether the system could be organised more efficiently. The deliberations of the Woolf Committee (1995, 1996) in England and Wales and the Cullen Committee (1995) in Scotland are recent examples of this. Both authorities have made proposals concerning the rules of bargaining in pre-trial negotiation. The aim is to bring about more out-of-court settlements and thus reduce the burden and expense of civil justice.

There has also been an ongoing debate in the USA regarding the relative advantages of each system of cost allocation. Olson and Bernstein (1996) report on the most recent round of policy debate when in 1995 Congress discussed proposals to move to the British loser-pays rule in certain federal court actions, this having been one the clauses in the Republican Party's "Contract with America". Leubsdorf (1984) explains just how the American rule arose more as an arrangement that liberated lawyers in their fee charging[1] than any conscious public policy decision. Equally, Pfenningstorf (1984) makes it clear that the distinction between cost-shifting arrangements in the USA and in Europe is less than clear cut, with European practice varying between countries and between areas of the law. There is generally substantial discretion available to courts in such matters, and in many circumstances the actual extent of cost shifting is conditioned by qualifications and exceptions to the (British) rule arising from considerations as to whether the litigation was unprovoked, whether there existed substantial mutual doubt among the parties regarding the facts or the law, actions among relations, matters not subject to party disposition (e.g., no-fault divorce), and so on. There are also widespread qualifications regarding the determination of reimbursable costs in terms of either defining classes of "necessary costs", or enumerating specific cost items as allowed, or relying on regulated amounts payable for items. In most jurisdictions, the exact line between the American rule and the British rule is a moveable one, and its location is as open to debate in Europe as it is in the USA[2]

[1] There having originally been a practice of setting lawyers fees by statute, as the American Colonies could not justify the complexity of the English system of taxation of chargeable costs by the court.
[2] Pfenningstorf (1984, p. 74-75) recounts a recent such debate in Germany.

One question that arises, in considering which type of cost-shifting rule to implement, is the effects that each type of rule has on the propensity to settle out of court and the level of such settlements. There has been much theoretical work in this area, mostly of a game theoretical nature. This literature has been ambiguous. Empirical studies have been largely non-existent because of confidentiality considerations regarding data release. However, the underlying structure of the problem is clear and easy to specify, making it ripe for experimental work. This line of investigation has only been taken up on a tiny scale to date, an omission this paper sets out to rectify. The paper deals simply with the differences between the American and British Rules with regard to frequency and value of out-of-court settlements and is organised as follows. Section 2 takes a brief look at the literature on the subject. Section 3 outlines, in detail, the theoretical model used, and Section 4 covers the experimental design. Section 5 gives the experimental results and Section 6 concludes. We use the Scottish legal terms of pursuer and defender throughout the paper. These are equivalent to plaintiff and defendant.

2. The existing literature

The original approach to the question of pre-trial negotiation is due to Landes (1971), Posner (1973) and Gould (1973). These authors concentrate on the difference between the likely gain to the pursuer and the likely expense to the defender if a particular case goes to trial. This bargaining range is influenced by the costs associated with going to trial, and these costs, and hence the bargaining range, will vary with the fee-shifting rule that is place. The above authors assume that neither the probability of the pursuer prevailing at trial nor the total costs vary with the fee-shifting rule. The view put forward in these papers, known as the "LPG model", is that it is differences in expected trial outcomes between the defenders and pursuers that leads cases to trial. No attempt is made to determine settlement points, rather the focus is on the settlement range and its effect on the probability of disputes ending up in court.

Shavell (1982) marks the high-point in the theoretical development of this approach. Shavell suggests that the British rule will lower the number of trials, compared with the American rule, if the parties are pessimistic, and the British rule will raise the number of trials, compared with the American rule, if the parties are optimistic. Intuitively, a party who is optimistic will favour going to court under the British rule, as opposed to the American, as success means that the other side will pay all the costs. In other words, optimism narrows the bargaining range under the British rule, compared with the American rule. This has received some empirical support, e.g. Danzon and Lillard (1983) and Hughes and Snyder (1995), discussed in more detail below.

The LPG model can be considered and extended in the spirit of economic models of labour disputes. This is the approach followed by Cooter et al. (1982), Coursey and Stanley (1988) and ourselves. Bargaining under the threat of trial generates a contract zone that encourages (pre-trial) settlement in a similar way to Stevens' (1966) model of the arbitration processes within labour-employer disputes. In addition to the LPG criterion of a difference in perceived probabilities regarding liability and damages in the

trial outcome (directly comparable in the labour case to the arbitrator's award), the contract zone (or bargaining range) is formed by the court costs (cost of arbitration) and the effect of risk aversion. Some degree of risk aversion, on behalf of either party, will mean that there will be some settlement that is preferred with certainty to the prospect of trial (arbitration in the labour context). Thus, in the labour context, changing any of the rules associated with arbitration will result in new patterns of bargaining behaviour (Farber (1980), Farber and Katz (1979)). This approach is directly translatable to bargaining in the shadow of the law.

In a labour economics context, Bloom (1980) points out that the existence of a contract zone does not assure a settlement because strategic behaviour, to persuade one's opponent to take a lower share of the stakes, may result in a failure to settle. The issue of strategic behaviour has also been considered in a legal context. Here the question of strategic behaviour arises in the choice of level of legal expenditure, or in the use of a negotiating strategy calculated to gain more of the available surplus arising from an out-of-court settlement, or in the use of privately held information. Braeutigam et al. (1984) focus on the strategic choice of hours worked by legal representatives. Increasing this choice variable increases the chances of winning the case, but at the same time increases the costs that are faced. The authors find that total costs are likely to be higher under the British rule but cannot draw any other firm conclusions. Most other game-theoretical analysis has focused on the asymmetry of information between the two sides. Salant (1984) and Reinganum and Wilde (1986) focus on asymmetric information regarding the level of damage suffered by the pursuer, whilst Bebchuk (1984) and P'ng (1983) concentrate on asymmetric information regarding the defender's liability.

The strategic bargaining papers discussed above allow a 'one-shot' form of bargaining. Spier (1992), on the other hand, focuses specifically on the dynamics of pre-trial negotiating. Allowing defenders private knowledge, she finds that the probability of settlement is high at first, then falls as negotiation continues only to rise sharply as the date of trial approaches. This theoretical finding is verified experimentally by Roth, et al. (1988) in a general bargaining context and is consistent with the widely recognised proclivity for cases to settle 'at the door of court'. The general literature on bargaining experiments, reviewed by Roth (1995), provides other useful insights to the pre-trial bargaining situation, particularly in games where the stakes diminish with every round of unsuccessful bargaining.

There has been remarkably little empirical work to either support or reject these theoretical conclusions. This is simply due to the difficulty in generating useful data in an area where confidentiality is paramount. Even where data is available, jurisdictional differences are so marked that the usual type of comparative work is fraught with difficulty. An exception can be found in Snyder and Hughes (1990) and Hughes and Snyder (1995) who utilise data from a 'natural' experiment when the Sate of Florida switched from the American rule to the British rule for medical malpractice litigation between July 1980 and September 1985. They conclude that the British rule encourages litigation but leads to more claims being dropped and more settlements being reached as the case approaches trial. Of those cases that reach the courtroom under the British rule, the outcomes tend to be more pro-pursuer in terms of decisions

on both liability and level of damages. This would tend to suggest some form of sorting mechanism.

Given the lack of data it would seem that the area is ideally suited for experimental work. This is an area of economics that has recently enjoyed a marked increase in interest (see Hey (1991)). Although there are well known applications of experimental methods in other areas of Law and Economics (e.g., tests of the Coase Theorem by Hoffman and Spitzer (1982) and Harrison and McKee (1985)), only two papers, to date, attempt to analyse the effect of differing cost allocation rules on pre-trial settlement. Rowe and Vidmar (1988) use a postal questionnaire technique, which is some distance from ideal experimental conditions. Indeed they find no statistically significant differences, neither for frequency of settlement nor for settlement values, and conclude that the participants are not able to distinguish the different rules.

Coursey and Stanley (1988) consider the issue[3] in a laboratory setting. They consider the American rule, the British rule, and defenders' ability to make offers into court (Rule 68 in the USA). Their experimental design takes the form of a 'divide the dollar' game (albeit with a notional $100) between a pair of participants who are unknown to each other. Failure to agree results in an imposed settlement (drawn from either a symmetric or non-symmetric award distribution) and costs being imposed. These 'costs' are $20 each under the American rule or $40 charged to the 'loser' under the British rule. The participants are aware of the settlement distribution to which they are subject. Their experimental results for frequency of settlement support the theoretical prediction (see following section) for risk-averse participants, namely that frequency of settlement will be higher under the British system. Their results for settlement values are also in line with theory, in that settlement values under the British rule are higher if the probability of pursuer victory is greater than a half.

Coursey and Stanley use four pairs of participants per session, over six sessions in total[4], with a total of 10 games in each session. This gives a total of 40 data points per cost allocation rule per award distribution. Although not totally clear, it would appear that different participants are used for each of the sessions. As will be seen below, in this paper we attempt to improve on this experimental design by moving away from the divide-the-dollar scenario to one that more clearly captures the dual hurdle of liability and quantum of damages. More importantly, our experimental design does not, as Coursey and Stanley's does, leave both protagonists facing a prospect of gaining. In our set-up, the defender is unambiguously looking at a loss prospect. Tversky and Khaneman (1986) explain how decisions can be influenced by such prospects. Our reward mechanism for participants is also much more salient than that used by Coursey and Stanley, and a larger number of random pairings is utilised. Our approach was extensively piloted before implementation (see Main (1998)).

[3] Stanley and Coursey (1990) also use experimental methods, but to analyse the case selection hypothesis of Priest and Klein (1984).

[4] One session each of American Rule, British and Rule 68 for each of the two award distributions.

3. Theoretical Framework

We assume that a pursuer, whom we term P, has a claim against a defender, termed D, over some unspecified dispute. The two parties are in negotiation over the settlement of the pursuer's claim. If the dispute is not resolved within a specified time then the case will 'go to trial' and a settlement will be imposed by a third party. This settlement, or the probability of it, is not affected by the litigant's behaviour. We do not consider the effect of different levels of legal expenditure.

We assume that both sides want to finish the case with the maximum possible wealth. The defenders start with a given amount, S_D and hope to minimise the damages (and costs) awarded against them, whilst the pursuers start with a given amount, S_P, and hope to maximise the damages awarded in their favour. We first generate an expression in general terms for the expected return of going to trial for each side. The expected return to the defenders, E[D] is given by:

$$(1) \qquad E[D] = S_D - E[Y_C] - E[C_D]$$

where $E[Y_C]$ is the expected trial award (level of damages) and $E[C_D]$is the expected costs paid by the defender. The expected return to the pursuers, E[P], is given by:

$$(2) \qquad E[P] = S_P + E[Y_C] - E[C_P]$$

where $E[C_P]$is the expected costs paid by the pursuer. The expected level of damages, $E[Y_C]$, is given by the probability, p, of the case being won by the pursuer times the mean level of damages, μ_Y.

$$(3) \qquad E[Y_C] = p\mu_Y$$

An examination of equations (1), (2) and (3) shows that we assume perfect information. Both the defender and pursuer know the true probability of the case being won and the true mean level of damages. Indeed we further assume that each player knows the distribution of damages. Under the American rule (A), total costs, C, are divided equally between each player. Thus the amount paid by each side is simply given by C/2.

Under the British rule (B) the loser pays all the costs. At this stage, we are dealing with expected costs. The expected costs facing the defender are the probability of the defender losing the case, p, times the total costs, C, and the expected costs facing the pursuer are the probability of the pursuer losing the case, (1-p), times the total costs, C. We can now express the expected return to the defender of going to trial under the two cost regimes as:

$$(4)\qquad \begin{array}{ll} (American) & E[D]_A = S_D - p\mu_Y - \frac{C}{2} \\ (British) & E[D]_B = S_D - p\mu_Y - pC = S_D - p(\mu_Y + C) \end{array}$$

And the expected return to the pursuer, can be written as:

$$(5)\qquad \begin{array}{ll} (American) & E[P]_A = S_P + p\mu_Y - \frac{C}{2} \\ (British) & E[P]_B = S_P + p\mu_Y - (1-p)C = S_P + p(\mu_Y + C) - C \end{array}$$

An examination of equations (4) and (5) raises a number of points. Firstly, for each type, the expected return is equal under both cost regimes (American and British) if the probability of the pursuer winning the case, p, is equal to a half. If this is the case the two rules are identical for risk neutral participants. If p is greater than 0.5, then the British rule is less favourable than the American rule to the defender (from equation 4) and the American rule is less favourable than the British rule to the pursuer. If p is smaller than 0.5 then the American rule is less favourable than the British to the defender and the British rule is less favourable than the American to the pursuer. Again this is assuming risk neutrality, deviations from which will be dealt with later in this section. Equation (6) summarises the situation.

$$(6)\qquad \begin{array}{lll} p < 0.5 & E[D]_A < E[D]_B & E[P]_A > E[P]_B \\ p = 0.5 & E[D]_A = E[D]_B & E[P]_A = E[P]_B \\ p > 0.5 & E[D]_A > E[D]_B & E[P]_A < E[P]_B \end{array}$$

If the case settles out of court for a sum, Y, and if we assume that a settlement precludes costs[5], the outcome for the players, regardless of the cost regime is, in the case of the pursuer, their starting allocation plus any settlement, Y, and, in the case of the defender, their starting allocation minus any settlement, Y.

The bargaining range is that range of settlements, Y, over which both sides are better off than their expected outcome if the case goes to trial. Under the American rule each side is liable for half the costs, so the bargaining range (of settlement values) will simply be the expected level of damages awarded, $p\mu_Y$, plus and minus half the costs -- as a settlement anywhere within this range will leave both sides in a better position than their expectation of going to trial.

Under the British rule, the situation is more complicated. The fact that the loser is responsible for all the costs means that the settlement values that comprise the bargaining range will depend on the trial probability, p. The defender will settle for any amount, Y, that is smaller than the expected level of damages plus the probability of losing the case, p, times the costs. The pursuer will settle for any amount, Y, that is larger than the expected level of damages minus the probability of her losing the case (1-p) times the costs. These two bargaining ranges are shown in equation (10).

[5]This is very much a simplification of the real world. In reality as soon as a suit is brought costs will be incurred e.g. lawyer's fees. But it is generally accepted that pre-trial costs are much more modest than the costs that arise once any trial commences.

$$(7)\qquad \begin{array}{ll} \text{Bargaining Range (American Rule)} & \mu_Y - \frac{C}{2} \text{ to } \mu_Y + \frac{C}{2} \\ \text{Bargaining Range (British Rule)} & \mu_Y - (1-p)C \text{ to } \mu_Y + pC \end{array}$$

An examination of equation (7) shows that the span of the bargaining range is equal to the total costs, C, in both cases. As it is the span of the bargaining range that will determine the frequency of settlement, there should be no difference in frequency between the two rules[6]. The difference in the value of settlements depends on the trial probability, p. If p is greater than a half then the value of settlements will be greater (more pro-pursuer) under the British rule, and vice versa.

The above analysis has assumed risk neutrality. If either of the players is risk-averse then the predictions of the theory change. The British rule, because the level of costs faced depends on the probability of the case being won (or lost), is intrinsically more risky than the American rule. Regardless of the probability of winning, risk averse defenders will offer higher settlements than suggested by equation (7) and risk averse pursuers will offer lower settlements. This is due to a willingness to trade off a higher expected return for certainty. In either case, the bargaining range is widened increasing the frequency of settlement.

The effect of risk aversion on differences in settlement values between the two regimes is harder to predict. It depends on the relationship between the level of risk aversion and the trial probability. For example, if p is greater than a half and therefore the value of settlements to the pursuer (under risk neutrality) is greater under the British rule, this difference over the American rule may be negated by strong risk aversion on the part of the pursuer lowering the lower bound to the bargaining range. Of course, equivalently, strong risk aversion on the part of the defender may increase the upper bound of the range leading to upward pressure on the settlement values. The effect is theoretically indeterminate. In practice where defenders are most often repeat players and are able to spread any risk (e.g., insurance companies), then it is usually the single-shot pursuer (e.g., a personal injury victim) who is relatively risk averse[7].

4. Experimental Design

Before going into detail about the design of the experiments, it is useful to clarify the terminology used. We refer to each individual bid passed between players as a round, a particular negotiation exercise as a game, the games played by a group of participants as a session, and an organised number of sessions taken together as the experiment.

The total experiment is divided into two sessions of two hours each with fourteen different participants being present in each session. In each session participants play a mixture of the two cost allocation rules. This set-up is designed with three points in mind. The first is simple practicality (the number of available spaces and other

[6]Again this assumes risk neutrality.

[7] It should be noted that in cases that may set a precedent for future action (for instance suits against tobacco companies) the defender may be extremely risk averse.

logistical considerations). The second is that it due to risk preference considerations it is preferable to have each participant play both cost regimes. Thirdly, this set-up enables us to vary the order in which games of each cost allocation type are played. This allows us to investigate whether starting with a particular cost allocation rule has an impact on the results. There are eight games played in each session and two sessions each of fourteen participants (forming seven pairs in any given game). This gives us a total of 96 data points. The order of play in each session is shown in Table 1 below, where B refers to a British rule game and A to an American.

[Table 1 about here]

The participants are all undergraduate students in the Faculty of Social Sciences at the University of Edinburgh, and within each session there are an equal number of male and female participants. The experimental participants are divided at the beginning of each session into two types - the first represent the defenders (D) and the second represent the pursuers (P). Each participant plays as the same type throughout the session. In each negotiation game the participants are paired anonymously at random. This is to ensure that there is no opportunity for learning or signalling regarding future behaviour.

To avoid income effects as the games progress, the payment mechanism is such that at the end of the session a single game is chosen at random from those played and payments are made based on that game. This payment mechanism is in contrast with Coursey and Stanley (1988) who use a cumulative total of all results (with a correspondingly small metric for conversion from game money to actual money). There are strong suggestions in the literature on experiments in economics that the income or wealth effects that arise from such a payment mechanism may strongly influence the behaviour of the participants (see Davis and Holt, 1993, pp. 449-452). In addition each participant is give a small attendance fee, regardless of their performance.

In comparison with Coursey and Stanley (1988) whose experimental design is basically a ‘dividing the dollar’ game (Binmore (1992)), and ‘going to trial’ is represented by a single probability distribution, we present a more realistic portrayal of the negotiating situation. The trial process is modelled in two stages. There is a certain probability, p, that each case will be won by the pursuer, and for those cases that are successful the level of damages is determined by a probability distribution, F. Although it is possible to represent such a set-up by a single distribution, it was thought to be more intuitive to separate the two processes. The exact nature of p and F and the way in which they are represented to participants is discussed later in this section.

Each of the defenders is given a starting amount for each game (a notional £14000 for defenders and a notional £4000 for pursuers). They are informed that their aim is to keep as much of this amount as possible. This starting amount is equal to the maximum damages that can be awarded plus the maximum costs. This is to ensure that the defenders can not be left with a negative amount within any game and hence at the end of the session. The pursuers goal is to try and maximise the amount they receive from the defenders. However, if the case goes to trial and the pursuers loses then they

are liable for costs. Again to avoid the possibility of a player having a negative return for a single game and perhaps the session, the pursuers are given a starting amount equal to the maximum costs.

The above arrangement represents the most crucial improvement in our design over that of Coursey and Stanley (1988). In their divide-the-dollar type of approach, both participants to the negotiation have a prospect of gaining resources (at worst they get nothing). In civil litigation, of course, the defender has the perspective (or prospect, in the terms of Tversky and Kahneman, 1986) of loss. At best the defender will loose nothing but there is a strong possibility (0.75 in this experiment) that a loss will be sustained and no chance of ending up with more than at the start of the process. On the other hand, the pursuer has, in general, a gains perspective (or prospect). There is a chance (0.25 in this experiment) that the process will leave them out of pocket to the tune of the legal costs of both parties, but there is also a chance that they will make a gain, and the general expectation is one of gain. By ensuring that the participants in the experiment have at the outset of each game the appropriate endowments of money (which they understand translates to cash payments at the end of the experiment, in the ratio of £1000 notional money for £1 in cash) we hope to engender a closer representation of the behaviour of actual litigants.

Both types of players are given full information as to the way the game is to be played, the trial probability, and the settlement distribution. The documentation varies slightly between player type[8], but mainly to give the appropriate perspective of pursuer and defender. The parameters of the experiment, p and F, are chosen for maximum simplicity. The probability of any particular case being won by the pursuer is 0.75 and the settlement distribution, F, is a uniform distribution of £6000, £7000, £8000, £9000 and £10000. The average settlement is thus £8000 but with probability of 0.75 giving an expected level of damages of £6000. As mentioned above, the defenders are given a credit of a notional £14000 and the pursuers a notional £4000 to start each game. This ensures that no negative outcomes can take place. As has been explained above, each notional £1000 translates into £1 in real cash payments.

On a practical level, negotiation takes place via a shared bidding sheet for each pair in each game. Two clerks are employed to pass these sheets between the players. One clerk covers the defenders, collecting sheets and delivering them as appropriate via a central in-out tray. A similar system is employed for the pursuers. Each sheet is labelled with a the defender and pursuer number the identities of which are not known to the participants. Although this system is not perfect it is designed to be a trade-off between anonymity preservation and convenience. Each game lasts five minutes and a countdown of this time is displayed to participants throughout each game. To ensure that participants are familiar with the mechanics of the experiment, in terms of making and receiving bids and so on, two practice games are conducted before the eight on which the results (and participant payments) are based. While participants are aware that they are negotiating under a time constraint, the post-experiment debriefing questionnaire does not reveal any problem with the bidding mechanism[9]. Over the

[8] This documentation is available can be found on the World Wide Web at http://www.ed.ac.uk/~econ/main.html

[9] Save to produce the obvious suggestion that an electronic form of offer exchange would be quicker.

eight games reported, the average number of bids or offers submitted between pairs of negotiators is 6.3 with a range from 1 to 11. For those reaching the time constraint without settling, the average number of bids is 8.3 with a range between 2 and 11. The opportunity to make the first proposal of settlement alternates from game to game between defender and pursuer.

The trial outcome of each game is determined in two stages for those pairs of participants who do not settle[10]. A roulette wheel is spun to determine the judgement. Ignoring the zero, a number between 1 and 9 represents a 'win' for the defender in the sense that the pursuer's case is rejected, and any other number a 'win' for the pursuer. If the pursuer wins, the level of damages is then determined by drawing a ball from a bingo cage containing equal numbers of balls representing each of the five possible damage levels. This is done in front of the participants at the end of each game.

Finally, at the end of the each session the roulette wheel is used to select at random one of the eight games, and the participants receive payment, in cash, based on their outcome for that game (divided by 1000) plus their attendance fee of £5. The possible payments ranged from £5 to £23 per person[11] and the actual payments ranged between £10.50 and £17.50 with an average of £13.07.

The participants are asked to fill out a questionnaire[12] which includes a question of the form:

> ***How much would you be prepared to pay, here and now, for the chance of winning £10 on the toss of a fair coin?***

The purpose of this question is to measure the participants risk preferences as the predictions of the theoretical model are dependant on the view that the participants take over risk. An answer of £5, the price of a 'fair' gamble, would go some way to indicating risk neutrality. An alternative would be to follow Roth and Malouf (1979) and induce risk neutrality by making the payoffs in numbers of lottery tickets, where the number of lottery tickets earned increases the chances of winning a known prize in a later lottery. This was felt to add excessive complication to an already complex situation.

The software for such a procedure is now under development.

[10] Did not settle either because they ran out of time before reaching a settlement or because one or other party chose to 'go to court'.

[11] The figure of £23 refers to the total money available. For such a payment to be made, it would mean that a participant was willing to give away their initial allocation in reaching an out of court settlement. An alternative figure for the maximum payout is £19 which represents the 'best' possible court result to one of the sides.

[12] Available at: http://www.ed.ac.uk/~econ/main.html

5. Results

The theoretical section of this paper clearly shows that the results of any experiment will be dependant on the risk preferences of the participants. It is thus advisable to examine these risk preferences before turning to any results. Table 2 shows the responses to the risk aversion question detailed above. All figures are bid levels in £'s. A bid of £5 indicates risk neutrality. The table is divided by session and player type. There is a discrepancy in reported amounts between each player type and session. However, the validity of the somewhat naive question is in doubt. The bids of £9.00 and £6.50 would seem to indicate extreme risk seeking behaviour or more likely a misunderstanding of the question. The zero bid was complete with a note: 'I don't gamble' and the two 0.01 bids were accompanied by the comment that 'It doesn't matter what you bid - should just bid as low as possible' - which on one interpretation of the question wording is perfectly true. We would very tentatively suggest that there was considerable risk aversion and that it was more pronounced for the players in the second session.

[Table 2 about here]

The basic results are presented in Table 3 which shows the total number of settlements, f, under the two cost allocation rules - the American (f_A) and the British (f_B) and some basic summary statistics on the value of the settlements, Y, again for the two rules. The values of those settlements reached under the two rules are shown in Figure 1. The higher average settlement under the British rule (£8114) as against the American rule (£6912) is clearly visible here. The settlements at £10000 and £11000 under the British rule may reflect the pursuer being able to exploit some bargaining advantage owing to the uncertainty regarding the allocation of the £4000 legal costs. Recall that the expected range of settlement under the American rule is £4000 to £8000 (mean of £6000) and under the British rule is £5000 to £9000 (mean of £7000).

[Table 3 about here]

[Figure 1 about here]

As was detailed in an earlier section, the frequency of settlement under the two cost allocation rules should be the same if the participants are risk neutral. We test the null hypothesis that the frequency of settlements under the American rule (f_A) is equal to the frequency of settlements under the British rule (f_B) using a Fisher Exact Test and a Chi-square test[13]. The results are presented in Table 4. It can be seen here that it is not possible to reject the null hypothesis that the frequency of settlement is the same under the two cost allocation rules. This would seem to suggest that our risk aversion

[13] See Siegal and Castellan (1988), p. 103 and p. 111 for details of these tests. The Fisher Exact test (or, more fully, the Fisher Exact Probability Test) emerges directly as a prob. value. STATA is used throughout.

question has overstated the degree of risk aversion present.

[Table 4 about here]

Turning to the location of the settlement point, under risk neutrality we would expect the value of the settlements reached under the American rule (Y_A) to be smaller than those reached under the British. A cursory glance at Table 3 would seem to confirm this and Table 5 presents Student t and Wilcoxon-Mann-Whitney[14] (ranksum) tests of the null hypothesis that the value of the settlements is the same under each rule against the alternate hypothesis that the value of settlements under the British rule (Y_B) is larger. Table 5 also presents a Kruksal-Wallis[15] test against the alternative hypothesis that the settlements are different. So in all cases we find we reject the null hypothesis that the settlement levels are equal. Considering Tables 4 and 5, it would appear that the experimental results are consistent with those of the theory, with the average settlement under the American rule being £6912 which is within the predicted range of £4000 to £8000, and significantly below the average settlement of £8114 under the British rule, which is itself within the predicted range of £5000 to £9000.

[Table 5 about here]

Taking things further, however, it is hypothesised that the starting player in each game may be able to exert an influence over the eventual result by making a starting bid that 'frames' or 'anchors' the subsequent negotiation in the game. The importance of the opening bid is a recurring theme in the negotiation literature (see Lewicki and Litterer (1985)). The starting player alternates in each game giving a total of 4 games in each cost allocation regime where each type of player starts. It is thus possible to test whether there are differences between the frequency and value of the settlements reached when different types of player have the first bid. The frequency of settlement when player type j (j=D, P) have first bid under cost regime i (i=A, B) is denoted by f_i^j and the settlement values by Y_i^j. Table 6 shows the number of settlements under these cases.

A chi-square test of the null hypothesis, that the number of settlements is invariant with both cost regime and order against the alternative hypothesis that it is, gives a value of 0.7966 (3df) which against a critical value of 7.82, at a significance level of 5%, allows us to safely accept the null. It would thus appear that the frequency of settlement is not affected by who goes first.

[Table 6 about here]

In a similar vein, Table 7 shows the mean settlement levels, Y, for those cases that do settle for each order of play under the two cost regimes. Table 8 shows statistical tests (student t, Mann-Whitney-Wilcoxon and Kruksal-Wallis) of the null hypotheses that the order of play does not make a difference to the settlement values against the alternative hypothesis that order does make a difference.

[14] Siegal and Castellan (1988) p 87

[15] Siegal and Castellan (1988) p. 206

[Tables 7 and 8 about here]

Neither of the null hypotheses is rejected by any of the tests. Thus we have the situation where order of play does not have a significant impact on either the frequency or level of settlement.

The experimental design

The results analysed so far would seem to indicate a successful experimental design in that the outcomes are consistent with theory. However, it is important to check further for the influence of the experimental design on the results. It will be recalled from Section 4, that the order in which the cost allocation rules are played is varied for each session, and in each session three games of one type are followed by three of the other and then by two of the original (see Table 1).

It is possible, therefore, to test whether this change in order of playing the two cost allocation rules has an effect on the results, and whether the experimental process or experience affects behaviour -- are the results for the first three games played in each session equal to the last two (the first three and last two games in each session being the same cost allocation rule)? It must be remembered that dividing the data in this way dramatically reduces our sample sizes and consequently decreases the power of any statistical tests. Table 9 shows the frequency and mean settlements under the two cost allocation rules by session. Figures in brackets show the proportion in each category. The British rule is played first in session one and the American rule first in session two.

[Table 9 about here]

The frequency of settlement in the two sessions is analysed in Table 10 and the null hypothesis that there is no difference is accepted in all cases. Considering risk aversion and assuming our risk aversion results are reliable, there could well be proportionally more British rule settlements in session two. Table 10 shows there is no statistically significant difference between these settlement proportions. The settlement proportions are, to all intents and purposes, identical.

[Table 10 about here]

A cursory examination of Table 9 shows that for both cost allocation rules the settlement values are higher for session one than for session two. The first part of Table 11 tests the null hypothesis that the settlement values under each cost allocation rule in each session are different (Y_A^1 represents the value of settlements made under the American rule in session 1). The lower part of Table 11 tests the null hypothesis that the cost allocation rules produce the same settlement in each session.

[Table 11 about here]

From the top part of Table 11, we are forced to reject the hypothesis that the settlement values, for each cost regime, are equal across the two sessions. However, from the lower part of Table 11, there is still a significant difference between the settlement values under different cost regimes in the two sessions. It must be noted however that this difference is much less marked than when the two sessions were considered together. This is due to the fact that the first session, for which settlement values were higher for both rules, contained more British rule games than the second session (five as opposed to three). The second session, for which settlement values were lower for both rules, contained more American rule games. This distorted the average British rule settlement (over the two sessions) upwards towards the higher average in session one and the average American rule settlement (over the two sessions) downwards towards the lower average in session two[16]. It should be repeated though, that taking the sessions separately, we still find significant differences between the value of settlements under the two cost regimes, and this difference is consistent with the theory outlined in section 3.

Returning to the question of risk aversion, as elicited by our questionnaire, the defenders in session two were the least risk neutral group. However, risk aversion has not seemed to influence any of the previous results. An alternative explanation for this difference between sessions must lie in the order in which the cost allocation rules were played. The participants in each session, although different, were selected at random, assigned to their roles randomly and received the same instructions. An examination of the settlements reached by each player does not show any obvious discrepancies i.e. there was no 'rogue' player in either session who could be held to account for the differences. The first session started with the British rule which, as we have shown, results in higher settlements than the American rule. It must be surmised that this anchored[17] all subsequent negotiation in the session, and that the opposite process took place in the second session. This would give generally higher settlements in the first session and generally lower settlements in the second.

Finally, Tables 12 and 13 tests for 'return to type' effects. As shown in Table 1, the game type (cost regime) played at the start of each session was returned to at the end of the particular session. We test that there is no significant difference between the frequency of settlement, shown in Table 12, and the settlement values, in Table 13, between the first three and last two games in session one (all British rule) and the first three and last two games in session two (all American rule).

[Tables 12 and 13 about here]

An examination of Table 12 indicates that we cannot reject the null hypothesis that the frequency of settlement is the same across these games. Similarly, Table 13 indicates that we cannot reject the null hypothesis that the value of settlements is the same across these games. It would therefore appear that the participants did indeed 'return

[16] A comparison of the relevant sections of tables 3 and 9 shows that the overall mean settlement value for the American rule (6912) is closer to the average in session 2 (6309) than in session 1 (8115) and that the overall mean settlement value for the British Rule (8114) is closer to the average in session 1 (8881) than in session 2 (6964).

[17] See Tversky and Kahneman (1986)

to type' and played the same strategy for the identical games at the beginning and end of each session.

Conclusion

This paper has analysed the effect of the post-trial cost allocation regime, either British (the loser pays) or American (own costs), on the frequency and value of pre-trial settlements. Well established theoretical models suggest that, assuming risk neutrality, there should be no difference in the frequency of settlement between the two regimes but that when settlements do take place and the probability of the pursuer winning is high then the settlement values should be higher under the British rule than the American. This is due to the fact that in the case of the British rule the defender has more to lose (and the pursuer more to gain) than under the American rule. Hence the bargaining range (of potential pre-trial settlements), although of the same magnitude as under the American rule, will span a higher range of value under the British rule.

We find that our experimental results are consistent with the predictions of the theory, assuming rationality and risk neutrality. We also find that the nature of the experimental design has a measurable influence on the results. The set-up used, of the defender-type players starting with a given amount in each game which the pursuer-type players must try to gain, would seem to be a more realistic framework than a 'divide the dollar' game. In our design, the defender starts with an endowment that will be diminished by any settlement or pro-pursuer trial decision. Under the alternative (e.g., as used by Coursey and Stanley, 1988) both players are presented with a gains perspective, and this is not representative of the real world situation and, as Tversky and Kahneman (1986) remind us, may lead to different behaviour.

While theory suggests that the risk preferences of the participants may have a major influence on the outcome, our risk preference measurement does not capture this effect. As measured, we seem to have risk-averse participants but the bulk of our results are consistent with risk neutrality. If we discount this issue, we find that the order in which participants play games within the two cost allocation rules seems to have an impact on the outcome. Participants who begin with the British rule make higher settlements than those who start with the American rule. We hypothesise that this is due to the initial rule that is played leading to anchoring of the remainder of the session. This means that care must be taken with the design of experiments of this type and our approach of using multiple inverse sessions should continue to be implemented, but extended to include an equal number of games of each type per session.

As the Woolf and the Cullen Reports have indicated (and as echoed in the debate that these reports have inspired), there is a perception that civil justice is too slow and too expensive. In order to encourage more out-of-court settlements in disputes, some commentators have looked to the cost-shifting regime. In this light, some jurisdictions (e.g., Florida) have gone as far as changing the cost regime that applied for certain classes of suit. In other areas[18], devices such as Federal Rule 68 and California Rule

[18] For a discussion of these alternative variations, see Anderson (1996).

998 move the cost-shifting regime in the direction of loser pays (the British rule) and away from each party paying their own costs. The experimental evidence presented above suggests that with respect to a choice between the British rule and the American rule, in cases that are enjoined in litigation or dispute, the propensity to settle before trial is not influenced by the adoption of one rule or the other. This is because the settlement range is unaltered. But the level of settlement is affected. Pursuers with high (greater than 0.5) probability of success at trial benefit in terms of achieving a more generous settlement. This result is confirmed by our statistical tests of the results presented above. With a low probability (less than 0.5) of success, the result is reversed.

The results conform well with the Landes-Posner-Gould model of pre-trial negotiation as developed by Shavell (1982). The failure to reach a pre-trial settlement in some 30% of the cases can be seen as a manifestation of strategic bargaining. Such strategic behaviour will assume additional importance when procedural arrangements such as judicial offers (or "tenders") are introduced. Under such arrangements a trial outcome that finds against the defender but where the damages award is less generous than one already tabled by the defender in the pre-trial negotiation leads to costs[19] being awarded against the pursuer (who has "failed to beat the offer"). But this topic is left to a later investigation.

The general conclusion that emerges from the results presented above is a shift from American to British rule produces no discernible impact on the propensity to settle. There is, however, a significant, if empirically modest, shift in bargaining power towards the pursuer under the English rule when the probability of success at trial is high. As with all experimental evidence, it is necessary to interpret these findings with some caution. But the numbers used had relative magnitudes that were dimensionally sensible in terms of the ratio of legal costs to damages, and the participants faced monetary incentives that were reasonably high. If nothing else, these results suggest that policy makers would be wise not to expect too much when changing the basis on which legal costs are allocated after trials.

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[19] To be precise, all taxed costs after the offer was made.

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Table 1 - Cost allocation rule by game number and session

	Game Number							
Session	1	2	3	4	5	6	7	8
1	B	B	B	A	A	A	B	B
2	A	A	A	B	B	B	A	A

Table 2 – Willingness to pay for a £10 gamble (50:50 chance of winning)

	Session 1		Session 2	
Player Number	Defenders	Pursuers	Defenders	Pursuers
1	2.00	1.00	1.00	1.00
2	5.00	5.00	0.01	4.00
3	1.00	5.00	0.01	4.50
4	2.00	3.00	6.50	2.00
5	2.00	9.00	0.00	5.00
6	4.00	1.00	2.00	2.00
7	5.00	3.00	4.00	2.00
Average	3.00	3.86	1.93	2.93
Session Average	3.43		2.43	

Table 3 - Basic Results

	Cost Allocation Mechanism		
	American	British	Total
No. of Settlements (f)	39	35	74
No. of 'Gone to Trial'	17	21	38
Total	56	56	112
Value of settlements (Y)			
Mean (μ)	6912	8114	
Std. Dev.	1207	1461	
Minimum	4500	5400	
Maximum	9500	11000	
Range	5000	5600	

Table 4 - Analysis of frequency of settlement

Hypothesis	Test	Statistic	Critical Value (5%)	Probability	Conclusion
Ho: $f_A=f_B$	Fisher Exact	-	-	0.550	Accept Ho
H_1: $f_A \neq f_B$	Chi-square (df=1)	0.6373	3.84	0.425	Accept Ho

Table 5 - Analysis of settlement points

Hypothesis	Test	Statistic	Critical Value (5%)	Probability	Conclusion
Ho: $Y_A=Y_B$ H_1: $Y_B>Y_A$	Student t	3.87 (72 df)	1.67	0.0002	Reject Ho
Ho: $Y_A=Y_B$ H_1: $Y_B>Y_A$	Wilcoxon-Mann-Whitney	3.41	1.65	0.0003	Reject Ho
Ho: $Y_A=Y_B$ H_1: $Y_B \neq Y_A$	Kruksal-Wallis	11.631 (1df)	3.84	0.0006	Reject Ho

Table 6 - Frequency of settlement by cost rule and order

	Cost allocation rule			
	American		British	
	Defender first f_A^D	Pursuer first f_A^P	Defender first f_B^D	Pursuer first f_B^P
No of Settlements (f)	20	19	18	17
No of 'Gone to Trial'	8	9	10	11

Table 7 - Settlement summary statistics by cost rule and order

	Cost allocation rule			
	American		British	
	Defender first	Pursuer first	Defender first	Pursuer first
	Y_A^D	Y_A^P	Y_B^D	Y_B^P
Mean settlement	6693	7142	8308	7909
Std. Dev.	966	1408	1455	1484

Table 8 - Tests of equality of settlements by cost regime and order.

Hypothesis	Test	Statistic	Critical Value (5%)	Probability	Conclusion
Ho: $Y_A^D=Y_A^P$ H_1: $Y_A^D\neq Y_A^P$	Student t	1.17 (37 df)	1.96	0.2502	Accept Ho
	Wilcoxon-Mann-Whitney	1.08	1.96	0.2794	Accept Ho
	Kruksal-Wallis	1.170 (1df)	3.84	0.2794	Accept Ho
Ho: $Y_B^D=Y_B^P$ H_1: $Y_B^D\neq Y_B^P$	Student t	0.80 (33 df)	2.04	0.4271	Accept Ho
	Wilcoxon-Mann-Whitney	0.86	1.96	0.3908	Accept Ho
	Kruksal-Wallis	0.736 (1df)	3.84	0.3908	Accept Ho

Table 9 - Settlement summary statistics by cost rule and session

	Cost allocation rule			
	American		British	
	Session 1	Session 2	Session 1	Session 2
	Y_A^1	Y_A^2	Y_B^1	Y_B^2
No. of Settlements (f)	13 (62%)	26 (74%)	21 (60%)	14 (67%)
No. of 'Gone to Trial'	8 (28%)	9 (26%)	14 (40%)	7 (33%)
Total	21 (100%)	35 (100%)	35 (100%)	21
Mean settlement	8115	6309	8881	6964
Std. Dev.	820	872	1244	911

Table 10 - Analysis of frequency of settlement by session

Hypothesis	Test	Statistic	Critical Value (5%)	Probability	Conclusion
Ho: $f_A^1=f_A^2$	Fisher Exact	-	-	0.378	Accept Ho
H_1: $f_A^1\neq f_A^2$	Chi-square (df=1)	0.9516	3.84	0.329	Accept Ho
Ho: $f_B^1=f_B^2$	Fisher Exact	-	-	0.777	Accept Ho
H_1: $f_B^1\neq f_B^2$	Chi-square (df=1)	0.2489	3.84	0.618	Accept Ho

Table 11 - Tests of equality of settlements by cost regime and session.

Hypothesis	Test	Statistic	Critical Value (5%)	Probability	Conclusion
Ho: $Y_A^1=Y_A^2$ H_1: $Y_A^1\neq Y_A^2$	Student t	6.21 (37 df)	1.96	0.0000	Reject Ho
	Wilcoxon-Mann-Whitney	4.41	1.96	0.0001	Reject Ho
	Kruksal-Wallis	19.441 (1df)	3.84	0.0001	Reject Ho
Ho: $Y_B^1=Y_B^2$ H_1: $Y_B^1\neq Y_B^2$	Student t	4.94 (33 df)	2.04	0.0000	Reject Ho
	Wilcoxon-Mann-Whitney	3.94	1.96	0.0001	Reject Ho
	Kruksal-Wallis	15.520 (1df)	3.84	0.0001	Reject Ho
Ho: $Y_A^1=Y_B^1$ H_1: $Y_A^1\neq Y_B^1$	Student t	1.96 (32 df)	1.96	0.0582	Accept Ho
	Wilcoxon-Mann-Whitney	2.02	1.96	0.0434	Reject Ho
	Kruksal-Wallis	4.080 (1df)	3.84	0.0434	Reject Ho
Ho: $Y_A^2=Y_B^2$ H_1: $Y_A^2\neq Y_B^2$	Student t	2.23 (33 df)	2.04	0.0318	Reject Ho
	Wilcoxon-Mann-Whitney	2.11	1.96	0.0346	Reject Ho
	Kruksal-Wallis	4.463 (1df)	3.84	0.0346	Reject Ho

Table 12 - Analysis of return to type effect on frequency of settlement

Hypothesis	Test	Statistic	Critical Value (5%)	Probability	Conclusion
Ho: $f_{B1,2,3}{}^{1} = f_{B7,8}{}^{1}$	Fisher Exact	-	-	1.00	Accept Ho
H_1: $f_{B1,2,3}{}^{1} \neq f_{B7,8}{}^{1}$	Chi-square (df=1)	0.0794	3.84	0.778	Accept Ho
Ho: $f_{A1,2,3}{}^{1} = f_{A7,8}{}^{1}$	Fisher Exact	-	-	0.712	Accept Ho
H_1: $f_{A1,2,3}{}^{1} \neq f_{A7,8}{}^{1}$	Chi-square (df=1)	0.2489	3.84	0.636	Accept Ho

Table 13 - Analysis of return to type effect on value of settlements

Hypothesis	Test	Statistic	Critical Value (5%)	Probability	Conclusion
Ho: $Y_{B1,2,3}{}^{1} = Y_{B7,8}{}^{1}$	Student t	0.34 (19 df)	1.96	0.7408	Accept Ho
H_1: $Y_{B1,2,3}{}^{1} \neq Y_{B7,8}{}^{1}$	Wilcoxon-Mann-Whitney	0.11	1.96	0.9135	Accept Ho
	Kruksal-Wallis	19.012 (1df)	3.84	0.9185	Accept Ho
Ho: $Y_{A1,2,3}{}^{1} = Y_{A7,8}{}^{1}$	Student t	1.19 (24 df)	2.04	0.2456	Accept Ho
H_1: $Y_{A1,2,3}{}^{1} \neq Y_{A7,8}{}^{1}$	Wilcoxon-Mann-Whitney	1.19	1.96	0.2326	Accept Ho
	Kruksal-Wallis	1.425 (1df)	3.84	0.2326	Accept Ho