The Agent-Selection Dilemma in Distributive Bargaining

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Abstract

Principals often bargain through agents, and past work suggests that such bargaining too often ends in costly impasse. We present experimental evidence that the agent-selection process which precedes bargaining can be a significant driver of failures to reach agreement. We find that principals select overly aggressive agents, such that those sent to the bargaining table are more polarized in their views than are potential agents in general. Agent-selection makes parties worse off than if they were assigned an agent at random and, conditional on engaging in agent-selection, both parties could improve their outcome by selecting a less aggressive agent.

Keywords: bargaining, principal-agent problem, confirmation bias

Word count: 6,476

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Introduction

Bargaining is a common aspect of contracting, economic exchange, and dispute resolution, with a rich history in both theoretical and experimental research (Güth, Schmittberger, & Schwarze, 1982; Nash, 1950). Experiments have largely characterized and tested the behavior of people engaging in negotiations and ultimatum games on their own behalf. In practice, however, bargaining is frequently conducted through agents rather than by the principals themselves (Mnookin & Susskind, 1999; Schotter, Zheng, & Snyder, 2000). The principal-agent relationship creates a well-studied challenge, which is that the interests and incentives of the agent may not be aligned with those of the principal whom he or she represents (Ross, 1973). In this paper, we examine the consequences of a distinct, important, and thus far under-explored, feature of the principal-agent relationship: the process of selecting an agent for representation from a set of possible agents.

The step of agent-selection precedes any task that is conducted through intermediaries. In the simplest case, principals may use the first agent they encounter or the only agent available to them. However, in many cases, particularly those involving high stakes, principals may be motivated to seek out and interact with multiple agents prior to selecting one. These prospective agents will typically exhibit variance in their beliefs about the outcome they can achieve on the principal's behalf. For example, personal injury lawyers may differ in the settlement amount they claim can be achieved if they are retained. Having courted the set of potential agents who vary in their beliefs and claims, and perhaps considering other criteria, principals then must select one of these agents to represent them.

We hypothesize that principals select overly aggressive agents to their own detriment when engaging in this agent-selection process. Specifically, we posit that the principal tends to select an agent who holds beliefs about fair and achievable bargaining outcomes that are skewed in favor of the principal's position, and more so than the pool of possible agents in

general. As a consequence, the selected agents who ultimately meet at the bargaining table are particularly polarized in what they believe a fair resolution would be. With both opposing agents then believing that their walkaway option is more favorable than what the other party is offering, negotiations are more likely to end in impasse, imposing costly consequences on both parties.

In a large, multi-role, pre-registered experiment, we find evidence of these agent-selection dynamics and show how they can negatively affect bargaining outcomes by inflating impasse rates. Further, we find that both parties would be better off if they selected the first agent that they arbitrarily saw, rather than engaging in this deliberative (but biased), agent-selection process, which raises the question of why people may nonetheless engage in such agent-selection in the real world. In ex-post equilibrium analysis, we find that the strategic incentives mirror that of a prisoner's dilemma: while both parties would be better off choosing the first agent that they arbitrarily see ("cooperating"), the sole Nash equilibrium is to engage in deliberate agent-selection ("defecting"). This result is consistent with evidence from the field, where retaining lawyers often leads to worse outcomes for both parties than not retaining lawyers—but where a single party doing so greatly benefits at the others' expense (Ashenfelter, Bloom, & Dahl, 2013). Finally, we show that the problem with agent-selection is that principals on both sides choose agents who are too aggressive. That is, conditional on engaging in agent-selection, principals choose someone who makes claims and offers that are more "favorable" to their position than does the ex-post optimal agent. In our study, the best outcome for both parties is achieved if they engaged in agent-selection but then select less aggressive agents—irrespective of what the other party chooses to do.

Costly impasse has been widely documented across a wide-variety of managerial domains, including contractual negotiations, collective bargaining agreements, and malpractice disputes (Ashenfelter & Currie, 1990; Card, 1990; Kennan & Wilson, 1990). Some impasses lead to foregone gains, as mutually beneficial exchanges fail to materialize,

and others lead to costly, ongoing disputes. In 2016, Plaintiffs and Defendants in tort claims alone paid $135 billion in legal fees, amounting to approximately a third of the total cost of torts (U.S. Chamber Institute for Legal Reform, 2018). In this paper, we present evidence that the agent-selection process may contribute to the high incidence rate of such costly impasse.

Related Literature

The behavioral and strategic dynamics of bargaining have long been of interest to management science (Gächter & Riedl, 2005; Harsanyi & Selten, 1972; Nagarajan & Bassok, 2005; Rangaswamy & Shell, 1997; Samuelson, 1980; Shachat & Swarthout, 2013; Shachat & Tan, 2014; Tang, Bearden, & Tsetlin, 2009). More recent work has focused on how bargaining affects supply chain coordination and efficiency (Davis & Hyndman, 2019, 2020; Haruvy, Katok, & Pavlov, 2020; Leider & Lovejoy, 2016). In this paper, we complement past research by examining a novel aspect of agency and how it relates to distributive bargaining.

The theoretical literature on principal-agent relationships has emphasized the challenge of aligning interests through incentives (Grossman & Hart, 1983; Ross, 1973). The experimental study of principal-agent problems, however, has taken a different direction. Rather than exploring the extent to which a more informed agent can be incentivized to act in the principal's interest, studies in the laboratory have tested the social and psychological effects of agency itself. For example, researchers have found that when representing the interests of another person (as opposed to representing their own interests), women anticipate and face less social "backlash" (i.e., dislike) for exhibiting assertiveness (Amanatullah & Morris, 2010; Amanatullah & Tinsley, 2013). In the setting of a dictator game, research has found that agents implement more selfish decisions on behalf of the principal than do the principals themselves (Hamman, Loewenstein, & Weber, 2010). Principals benefit further because third parties tend to punish the agent who implemented the selfish choice rather than the principal who benefited from it (Bartling & Fischbacher,

2012). Selfish actions are punished less—and generous actions are rewarded less—if implemented through an intermediary rather than by the principal directly (Coffman, 2011). Even when the principal acts on their own behalf, merely receiving nonbinding advice to implement a selfish option reduces third party perception of their selfishness and culpability (Coffman & Gotthard-Real, 2019).

In past research on the ultimatum game, agents acting on behalf of ultimatum senders made more generous offers than the senders themselves, and ultimatum receivers were more likely to accept them (Fershtman & Gneezy, 2001). When agents competed to be hired as representatives in an ultimatum game, they strategically communicated lower offers than they implemented after being hired (Choy, Hamman, King, & Weber, 2016). The same study, notably, also found that the hired agents' offers were more generous than what the principals implemented on their own. Contrary to our hypothesis, this might suggest that agents reduce impasse rates. However, in the context of a distributive bargaining game, agents negotiating on behalf of principals have been found to be less likely to reach agreement than principals negotiating with each other directly (Schotter, Zheng, & Snyder, 2000). This finding held irrespective of whether agents received a share of the realized surplus or a fixed payment for reaching an agreement. Moreover, merely being placed into the role of an agent does not reduce bias (Melnikoff & Strohminger, 2020), suggesting that agents may be just as susceptible as principals to self-serving interpretations of information and fairness (Babcock, Loewenstein, Issacharoff, & Camerer, 1995). Indeed, delegating a task to an agent may increase bias (Burson, Faro, & Rottenstreich, 2010 for such a demonstration outside of the context of bargaining). However, these comparisons are without consideration of the selection of agents and its potential consequences for competitive and cooperative interactions, which we study here.

When agents compete to be hired, it can lead to a market with agents who simply present information that confirms the principal's priors, thereby delivering the news she most

wishes to receive (see Cummins & Nyman, 2013 for a theoretical approach). Evidence from the laboratory indeed suggests that some principals prefer to hire agents who withhold information about the negative externalities of the choices the principals make (Shalvi, Soraperra, van der Weele, & Villeval, 2019). Reliance on an agent may thus serve as a strategy to avoid information that the principal would prefer not to have (Golman, Hagmann, & Loewenstein, 2017). This desire for good news may also affect the selection of agents on the basis of what they project they can achieve on the principal's behalf.

Taken together, previous work illustrates how behavior and the perceptions of behavior shift as a function of whether a principal acts on her own behalf or whether she is represented by an agent. However, a notable gap in this discussion is the fact that agents in the real world are endogenously selected from a pool of contenders and little is known about how such agent selection affects bargaining. While some studies have involved the choice of agents (Hamman, Loewenstein, & Weber, 2010), none have examined the role that agent selection may play in inflating impasse rates and undermining bargaining performance.

This paper contributes to the literature in three ways. First, it provides an important step towards understanding a fundamental aspect of bargaining through agents, namely, that the agents are selected from a pool of possible agents, which may have repercussions for bargaining performance and outcomes. Second, it provides a new methodological approach for examining multi-role, multi-stage bargaining processes that enables researchers to examine counterfactual outcomes. Third, it raises important questions of whether the seemingly inflated impasse rates observed in the real-world may be at least partially explained by whom principals are choosing to represent them.

Study Overview

We present results from a large, preregistered experiment (n = 896) in which participants read material from a real personal injury lawsuit (Babcock, Loewenstein,

Issacharoff, & Camerer, 1995). Participants are randomly assigned in a $2x2$ experiment to one of two parties (Plaintiff or Defendant) and one of two roles (Principal or Agent). All parties read identical case materials and learn that they will participate in an ultimatum settlement negotiation. Principals observe non-binding signals from five prospective agents about the outcome the agents think they can achieve if they are hired, and choose one as their representative. Prospective Agents, prior to learning whether they had been selected, submit an ultimatum offer and rejection threshold for a settlement offer. Only selected Agents are matched with each other and if the offer is rejected, the decision of a neutral third party (a real-world retired judge) will be implemented, along with a symmetric penalty representing the cost of delay and litigation.

A key feature of our design is that it allows us to simulate what the bargaining outcome would have been, had the Principal selected a different Agent. We can then compare the realized outcomes, where both parties engage in agent-selection, against the counterfactuals of when one or both Principals instead select the first agent they arbitraily see (which we will refer to as random agent selection). This counterfactual analysis helps us identify the consequences of two-sided agent-selection in our bargaining study. Our results show a prisoner's dilemma: both parties would be better off if they could 'coordinate' on randomly selecting an agent, but each party has an incentive to 'defect' and engage in deliberate agent selection.

Our experiment further allows us to calculate whether, conditional on agent selection, principals are choosing the ex-post optimal agent. We predict and find that principals on both sides tend to choose an agent who is more favorable to their position than the agent who would have maximized their expected earnings. Unlike the decision of whether to engage in agent selection in the first place, Principals could deviate unilaterally and improve their earnings.

We show that Agents who achieve the optimal outcome predict the judge's ruling

accurately on average. In contrast, Agents overall form polarized beliefs, with those aiming to represent the Plaintiffs forecasting a higher verdict than those aiming to represent the Defendant. Moreover, the Agents who get selected by the Principals hold even more polarized beliefs than either the Agents overall or the Principals whom they represent. This agent polarization through selection has the detrimental effect of greatly increasing the rate of reaching costly impasse.

Open Science Statement

We report all data exclusions, all manipulations, and all measures in the studies. Screen captures of the experimental materials are available in the Supplementary Materials. The complete data as well as the code to reproduce all statistical analyses and figures in the manuscript are available via OSF.[1] The preregistration report is available via AsPredicted.[2]

Experimental Design

We recruited participants via an online labor market (Amazon Mechanical Turk) in two stages. In the first stage, we recruited participants for the role of Agents (lawyers) and randomly assigned them to represent the Plaintiff or the Defendant. In the second stage, we recruited new participants for the role of Principals and randomly assigned them to be Plaintiffs or Defendants. Principals observed decisions made by Agents and we therefore conducted these two stages sequentially. The study took place on two consecutive days in November of 2019. Each participant received a fixed payment of $1, a fixed incentive of $1 for passing a comprehension check and advancing to the main part of the study, plus any additional earnings from the experiment. The median completion time was approximately 30 minutes and participants who passed the comprehension check and completed the full study earned an average of $4.69.

[1] https://osf.io/s6kaz/?view_only=b98edbd7c87a4029b5c5ee8a38163602
[2] http://aspredicted.org/blind.php?x=r95qv5

Agents. Participants in the first stage were randomly assigned to the side of the Plaintiff or the Defendant and learned that they were competing with four other participants to be hired as an attorney. If they were hired, they would receive an additional $1 bonus and would be matched with an Agent for the opposing party who was selected via the same process, making them eligible for additional earnings. The hiring decision would be made by new participants in the role of either Plaintiff or Defendant. Prospective Agents could send one (non-binding) signal to the Principals: the outcome of a distributive bargaining game they believe they could achieve on the principal's behalf.

Participants then read materials related to a personal injury lawsuit, taken from Babcock, Loewenstein, Issacharoff, and Camerer (1995).[3] The case materials consisted of 10 documents containing a rich set of information: the Plaintiff's initial claim, the Defendant's response, both of their court testimonies, the testimonies of experts and witnesses, and their respective driving records. After reading all materials, participants answered five comprehension check questions about the content, which were identical across the roles. Participants who did not answer all five questions correctly on either the first or second attempt were excluded from the study and we did not collect further information from them.

Next, participants sent to the Principal the outcome they believe they could achieve if they were hired as their Agent (*agents' signals*). Specifically, they submitted an amount between $0 and $100,000. They were reminded that this information would be communicated to a Principal who would choose one of five Agents based only this information.

After submitting the signal, without forewarning, they received an additional bonus opportunity to estimate the ruling of a real, neutral judge on this court case (*beliefs about fair outcome*). Participants could earn an additional 50 cents if they were within $5,000 of what the judge had ruled after reviewing the same case materials.

[3]We are grateful to the authors for sharing with us the case materials.

Finally, we introduced participants to the ultimatum negotiation game. They were reminded that, if they were hired by a Principal, they would be matched with another participant who had been hired as an Agent for the opposing side. Either they or the other Agent would then get to make a settlement offer to the other party, who got to decide whether to accept or reject the offer. If the offer is accepted, the case is considered "settled" and the earnings for both parties will be a function of the offered settlement. If the offer is rejected, the case would go to the judge who's ruling they had just estimated. The judge's ruling would determine the outcome, but both parties would further incur a 30% penalty to represent the cost of litigation. The payoffs for the two Agents were as follows:

$$\pi_{\text{Settlement}} = \begin{cases} \frac{\text{Settlement Amount}}{20{,}000}, & \text{for Plaintiff} \\ 4 - \frac{\text{Settlement Amount}}{20{,}000}, & \text{for Defendant} \end{cases}$$

$$\pi_{\text{Impasse}} = \begin{cases} \frac{\text{Judge's Ruling}}{20{,}000} \times 0.7, & \text{for Plaintiff} \\ \left(4 - \frac{\text{Judge's Ruling}}{20{,}000}\right) \times 0.7, & \text{for Defendant} \end{cases}$$

Only later would it be randomly determined which party would be the ultimatum giver and which the ultimatum receiver. Therefore, participants had to make two *bargaining decisions*: (1) They proposed a settlement amount in case they were selected to make the ultimatum offer, and (2) they selected a rejection threshold representing the lowest (Plaintiff) or highest (Defendant) amount they would accept in a settlement offer from the other side. The judge's decision was $30,560 (as reported in Babcock, Loewenstein, Issacharoff, & Camerer, 1995), which was not revealed to participants until the very end of the study. The experiment then concluded with basic demographic questions (gender, age, ethnicity, and education).

Principals. Participants in the roles of Principals were randomly assigned to the side of Plaintiff or Defendant. They were informed about their role and that they would get to hire an Agent from among five previous participants who had read the identical case materials they will be reading and passed the same comprehension check on these instructions as they will see. Moreover, participants were informed about the prospective Agents' incentives, that is a fixed $1 bonus from the experimenter for getting hired and identical earnings from the negotiation as the principals who hire them. We then presented participants with the materials from the case and excluded those who did not answer the five-item comprehension check correctly on either the first or the second attempt.

Participants then received information about the nature of the ultimatum negotiation game, along with the signals sent by five participants from the previous stage. We ordered them from the lowest to the highest proposed outcome and referred to them as "Lawyer A" through "Lawyer E." Note that for Plaintiffs, Lawyer E provided the estimate that was most favorable to their side (the highest outcome), while for Defendants, the most favorable estimate came from Lawyer A (the lowest outcome). To ensure participants observed a representative sample of Agents, we partitioned the prospective Agents into five quintiles on the basis of the signal they had sent to the Principal and selected one Agent at random from each quintile.[4]

After the principals had selected an Agent, there was a final bonus opportunity, without forewarning: they could earn a 50 cent bonus for estimating the judge's ruling within $5,000. This provided us with an estimate of what they believe a "fair" outcome would be, after observing the signals from prospective Agents. The survey concluded with the same basic demographic questions we asked of the prospective Agents.

Matching. We randomly paired selected Agents and further randomly picked one of them to be the ultimatum giver and the other to be the ultimatum taker. Selected Agents

[4]We show the ranges covered by each quintile for the respective parties in the Supplementary Information, Figure A1.

were paid based on the outcome and the Principals whom they represented received identical earnings. Because these pairings are done at random, we can reduce the noise in our measurement for the purpose of analysis by calculating the expected earnings for each Agent, rather than the earnings from the realized pairing. All our analysis are based on these expected earnings.

Results

We recruited 511 participants for the role of Agents. Of those, 39 did not pass the comprehension check and 50 provided an inconsistent offer in the ultimatum negotiation game.[5] As preregistered, these participants were excluded, leaving us with 422 Agents. The following day, we recruited 504 new participants for the role of Principals. Of those, 30 failed the comprehension check, leaving us with a final sample size of 474 Principals.

Negotiation Outcomes. To estimate the effect of the agent selection process on negotiation outcomes, we compare the average earnings for Plaintiffs and Defendants under two scenarios. First, we consider an outcome in which all possible Agents were selected exactly once. This is equivalent to a participant retaining an Agent at random or the real-world equivalent of retaining the first Agent she encounters. We pair every Agent for the Plaintiff against every Agent for the Defendant twice, once using their decision as the ultimatum giver and once using their decision as the ultimatum taker. We then average the earnings across all these pairs, providing us with the expected earnings for each Agent, conditional on neither party engaging in agent selection. Although the Principals in our experiment did not have the option to forgo the agent-selection process, this random pairing allows us to establish an benchmark for evaluating their performance with deliberate choice.

Second, we repeat the process above for the universe of *selected Agents*. Agents were selected for display with replacement and therefore, an agent could have been selected by

[5] An inconsistent offer is one in which the rejection threshold is such that they would reject the offer they themselves have made. The Agent for the Plaintiff, for example, might have offered a settlement of $40,000, but said she would reject any offer less than $50,000.

more than one Principal. Agents who were never selected by a Principal receive no weight in this analysis, whereas Agents who were selected by multiple Principals are included the respective number of times. This provides us with expected earnings conditional on both parties engaging in agent selection.[6]

We show the average earnings for all Agents as well as for selected Agents in the top panel of Figure 1 (we return to optimal Agents in a later section). The left two bars show the average earnings for the Plaintiffs when neither party engages in agent selection (blue bar) and when both parties do (orange). Agent selection decreases earnings for the Plaintiff by 5%, from \$1.24, to \$1.18 ($t(448) = 6.74$, $p < .001$). The same finding holds for Defendants, whose earnings also decline by 5% with agent selection, from \$1.97 to \$1.87 ($t(400) = 5.38$, $p < .001$). The agent selection process makes both parties worse off than if had they retained an Agent at random. This result is driven by a higher rate of impasse among selected agents (79%) than agents overall (65%).

Beliefs About Fair Outcome. We next look at what may be driving the worse outcomes among the selected Agents: polarized beliefs about what the judge in the case would decide. The bottom panel of Figure 1 shows the average private (and separately incentivized) estimate of the judge's ruling. We show the judge's ruling of \$30,560 with a dotted line. Comparing the two blue bars, we see that agents overall hold polarized beliefs. Agents for the Plaintiff estimate a decision by the judge that is more favorable to the Plaintiff (higher) than do Agents for the Defendant (\$32,652 versus \$25,343, $t(420) = 3.55$, $p < .001$). The judge's ruling is moreover lower than the estimate of the Agents for the Plaintiffs, though not significantly so ($t(224) = 1.46$, $p = .147$), and higher than the estimate of the Defendant's agents ($t(196) = -3.56$, $p < .001$).

[6]Consistent with our preregistered exclusion criterion for the analysis of all Agents, we exclude the 44 observations where Principals selected an Agent who exhibited misunderstanding of the ultimatum game in their ultimatum offer and rejection threshold. Since Principals did not observe the Agents' bargaining decisions, they could not have inferred this error. All our results are robust to including these inconsistent Agents and the Principals who chose them.

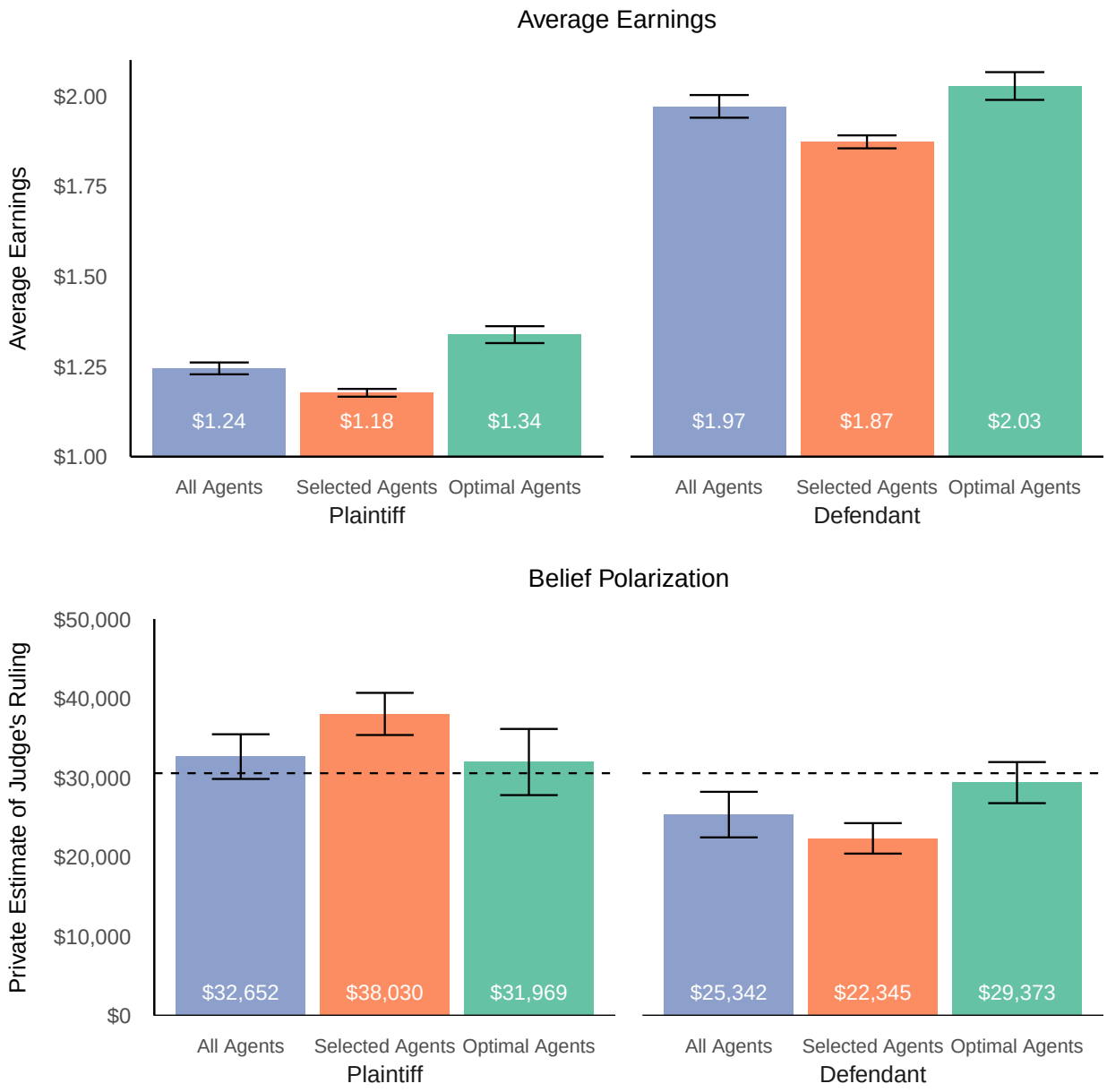

Figure 1. Both Plaintiffs and Defendants do worse with selected Agents than with Agents selected at random. Agent selection could improve outcomes if people selected optimally (Top Panel). Worse outcomes correspond with increasingly polarized beliefs about what a fair outcome would be (i.e., their estimate of the judge's decision). Selected Agents from each side hold more polarized beliefs than do Agents from each side overall, while optimally selected Agents from each side hold beliefs that do not differ from one another (Bottom Panel). The dashed line shows the judge's decision.

Notably, there is no significant interaction between the role of Plaintiff and Defendant and the role of Principal and Agent: that is, Agents overall are just as polarized as the Principals they seek to represent ($b = 2,556.32$, 95% CI $[-2,589.00, 7,701.64]$, $t(892) = 0.98$, $p = .330$). However, belief polarization is larger among *selected* Agents. The Plaintiff-Defendant belief gap is significantly larger among the selected Agents than among all potential Agents ($b = 8,375.30$, 95% CI $[3,143.47, 13,607.12]$, $t(848) = 3.14$, $p = .002$) and even among the Principals themselves ($b = 5,818.98$, 95% CI $[1,146.06, 10,491.89]$, $t(900) = 2.44$, $p = .015$). Therefore, the agent-selection process indeed leads to Agents with more polarized beliefs sitting across the bargaining table from one another.

Agents' Signals. When principals selected their Agent, they did so on the basis of a non-binding signal, without knowing how the Agent would act in the negotiation. This signal does not commit the Agent to any specific decision in the ultimatum game, which raises the question of whether Agents send informative signals, or whether they engage in cheap talk in the interest of being hired, only to act differently after being selected.

We find that the signals are indeed informative: both the ultimatum offer and the rejection threshold are higher for Agents who sent a higher signal (i.e. communicated a higher expected outcome) to the Principals (Table 1). The signal remains informative even when controlling for the private estimate of the judge's ruling. These results suggest that Principals are in fact selecting Agents who genuinely believe that they can achieve more favorable outcomes than others, causing them to subsequently make overly aggressive ultimatum offers and rejection thresholds.

Table 1

The non-binding signal prospective Agents send to the Principal correlates with their decisions in the ultimatum bargaining task. This holds also after controlling for the private and separately incentivized belief about what the judge would decide.

	Plaintiffs				Defendants			
	Ultimatum Offer		Rejection Threshold		Ultimatum Offer		Rejection Threshold	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Signal to Client	0.568	0.367	0.473	0.267	0.651	0.281	0.798	0.269
	(0.031)	(0.037)	(0.027)	(0.029)	(0.035)	(0.056)	(0.057)	(0.095)
Estimate of Judge's Ruling		0.398		0.407		0.425		0.607
		(0.048)		(0.038)		(0.054)		(0.091)
Constant	17141.803	12983.775	9099.883	4841.596	8144.555	4842.749	15617.668	10897.028
	(1637.289)	(1516.825)	(1395.377)	(1199.672)	(991.393)	(962.541)	(1610.994)	(1619.281)
Num.Obs.	225	225	225	225	197	197	197	197
R2	0.595	0.692	0.584	0.727	0.638	0.725	0.501	0.594
F	327.819	248.867	313.413	295.921	343.146	255.771	195.430	141.795

Parentheses show corresponding standard errors.

Ex-Post Optimal Strategy for Principals. Recall that Principals observed a representative set of five Agents from their respective side, with one Agent drawn from each of the signal quintiles. We now derive the empirical optimal quintile for the Principals, using the distribution of negotiation behavior by the Agents. Our design allows us to construct a payoff table with the expected earnings from selecting each quintile, given the quintile selected by the opposing Principal. We hypothesized systematic deviation from this rational expectations benchmark (Aumann, 1976; Muth, 1961), making a preregistered prediction that participants would choose from a quintile that is more favorable to their side than the ex-post optimal choice.

Because each side in the dispute can select from one of five quintiles, there are 25 possible quintile pairings that can meet at the negotiation table. Each of those pairings will have an expected payoff for the Plaintiff and the Defendant. Figure 2 shows the earnings for all the possible pairings. Along the x-axis, we vary which quintile the Plaintiff selects from, where a higher quintile corresponds to a higher signal, which is more favorable to the Plaintiff. Along the y-axis, we vary the quintile selected by the Defendant. A higher quintile similarly corresponds to a higher signal, but that is less favorable to the Defendant. Each cell contains four numbers. On the top is the expected earnings for the Defendant (row player), followed by the expected earnings for the Plaintiff (column player). Thus, the top-left cell shows that if the Defendant chooses the Agent from the least favorable quintile (5) and the Plaintiff chooses the Agent from the least favorable quintile (1), then the Defendant earns on average $2.35 and the Plaintiff earns on average $1.05. The numbers in parentheses below show the corresponding standard deviations. The shaded regions show the strategies that are strictly dominated for the two parties. Solving this game results in a unique, pure-strategy Nash Equilibrium, where the Defendant selects the 4th quintile (a less favorable Agent than the median) and the Plaintiff selects the 3rd quintile (the median Agent), shown in purple. This result provides a benchmark of "optimality" for quintile agent selection. We do not expect participants to have perfectly anticipated the decisions of others,

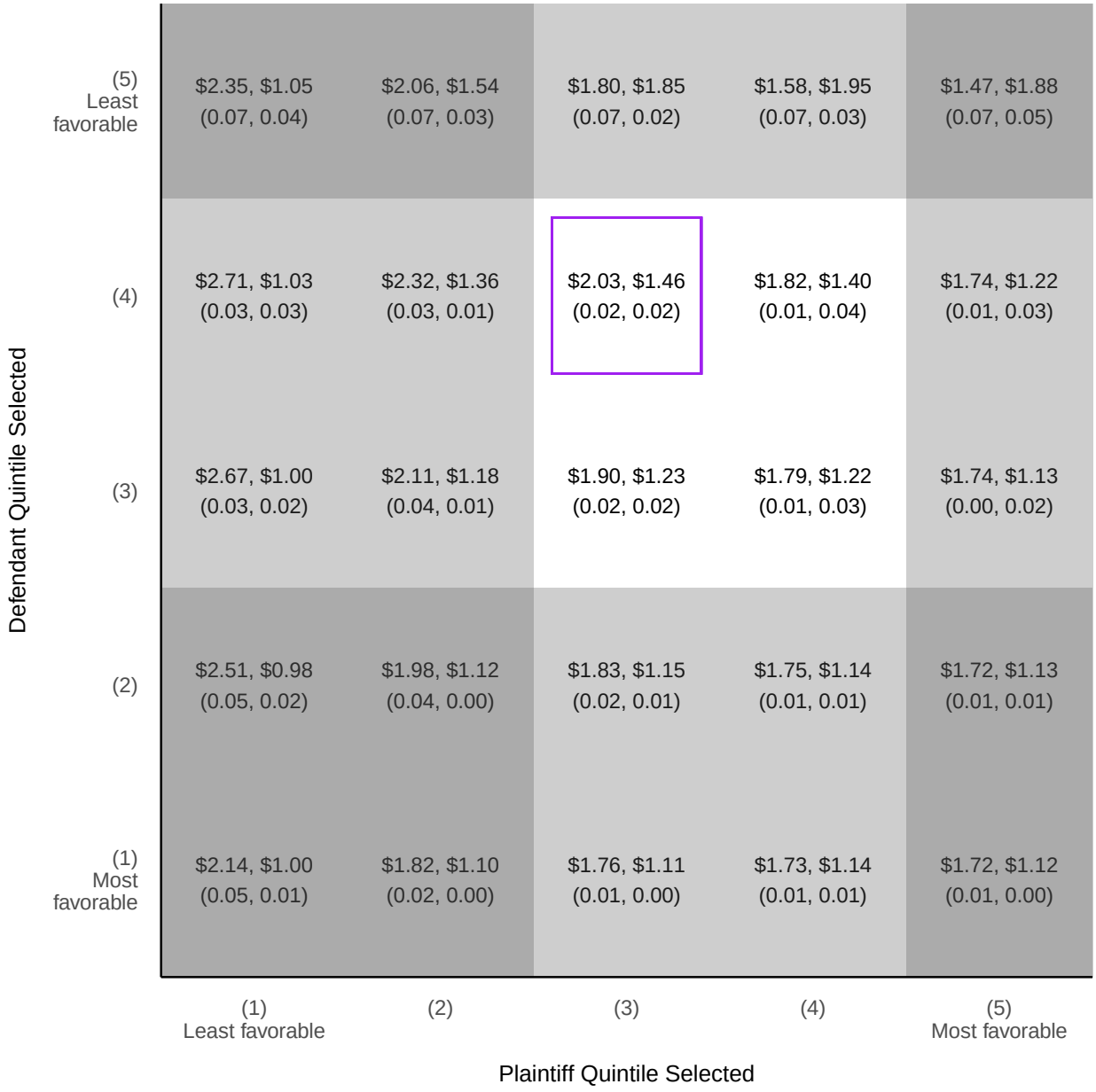

Figure 2. Expected payoffs for the Plaintiff and the Defendant when choosing an agent from each quintile, given each quintile the other party could have selected from. The first number in each cell shows the earnings for the Defendant (row player), the second shows earnings for the Plaintiff (column player). The numbers in parentheses below show the corresponding standard deviations. This empirical payoff table allows us to determine the unique pure strategy Nash Equilibrium: Plaintiffs should choose an agent from the third quintile and Defendants should choose an agent from the fourth quintile. Strictly dominated options are shaded in grey and the Nash Equilibrium is highlighted in purple.

thereby deciphering these exact equilibrium dynamics. Rather, we compare the observed behavior to this benchmark because it provides useful insight with respect to how participant decisions are affecting bargaining outcomes.

Principal's Choice of Agent. We now look at the choice the Principals made. As predicted, Plaintiffs generally preferred an Agent who provided them with a high forecast: 48% selected an Agent who was among the two most favorable Agents (quintile 4 or 5). Indeed, the average Agent chosen comes from a quintile that is significantly higher than the ex-post optimal choice of 3 ($t(238) = 6.56$, $p < .001$). Defendants' decision mirrored that of the Plaintiffs: 71% of clients chose a lawyer who provided an estimate that was more favorable than the 4th quintile ex-post optimal choice – that is from either quintiles 1, 2, or 3 ($t(234) = -15.66$, $p < .001$). As predicted, we see that Principals on both sides choose an Agent who is more favorable to them than the ex-post optimal strategy suggests.[7]

Returning to our earlier Figure 1, we can now look at the subset of Agents who are in the ex-post optimal quintiles (Optimal Agents, green bars). As should be the case, we observe that both parties would achieve higher earnings if they selected from this quintile than their actual choice (top panel). More interestingly, we see in the beliefs about the judge's ruling (bottom panel) that those of the optimal Agents are much less polarized than any of the other comparisons, and in fact do not differ significantly from one another ($31,969 for Plaintiffs and $29,373 for Defendants, $t(79) = 1.00$, $p = .318$).

The Agent-Selection Dilemma. So far, we have shown that Principals could increase their earnings if they *both* refrained from engaging in agent selection and that, conditional on selecting Agents, they tend to choose an Agent who makes grander claims of the outcome they can achieve than the ex-post optimal choice. In this section, we show one potential reason for why people may nonetheless choose to engage in agent selection. In particular, we propose that agent selection may be the result of a prisoner's dilemma, where

[7] We show the distribution of choices for Plaintiffs and Defendants in the Supplementary Information, Figure A2.

random selection (i.e., hiring the first Agent one meets) represents a choice of cooperation and agent selection represents a choice of defection. We construct a $2x2$ payoff table for a game in which each party decides whether to select an Agent at random from their set of five, or whether to engage in the (biased) agent-selection process.

In this game, we observe a prisoner's dilemma-like pressure away from random selection towards agent selection. The payoff table is shown in Figure 3. Specifically, the random-random pairing (top left) maximizes joint earnings, but both parties have an incentive to engage in agent selection on the margin. Therefore, choosing an Agent is advantageous when the other party selects at random (or hires the first Agent they see). This incentive to defect yields an equilibrium outcome of both parties engaging in agent selection (purple).

What if there were a third alternative to play in this game: employing the Agent from the aforementioned optimal (more moderate) quintile? We find that this strategy strictly dominates the behaviorally observed agent selection, as well as random agent selection, for both parties. Even when one party chooses randomly, the other party is not better off trying to take advantage of them by selecting an even more aggressive Agent than the empirically optimal quintile indicates. Therefore, selecting such aggressive Agents truly appears to be a mistake.

Conclusion

Many negotiations involve agents bargaining on behalf of others. While considerable research has studied agency problems — whether the interests of the agent are aligned with the interests of the principal they represent — the role that agent selection plays in determining bargaining outcomes has received little scholarly attention. In this paper, we examined whom principals choose to represent them in a pre-registered distributive bargaining experiment and found that they systematically select overly aggressive agents.

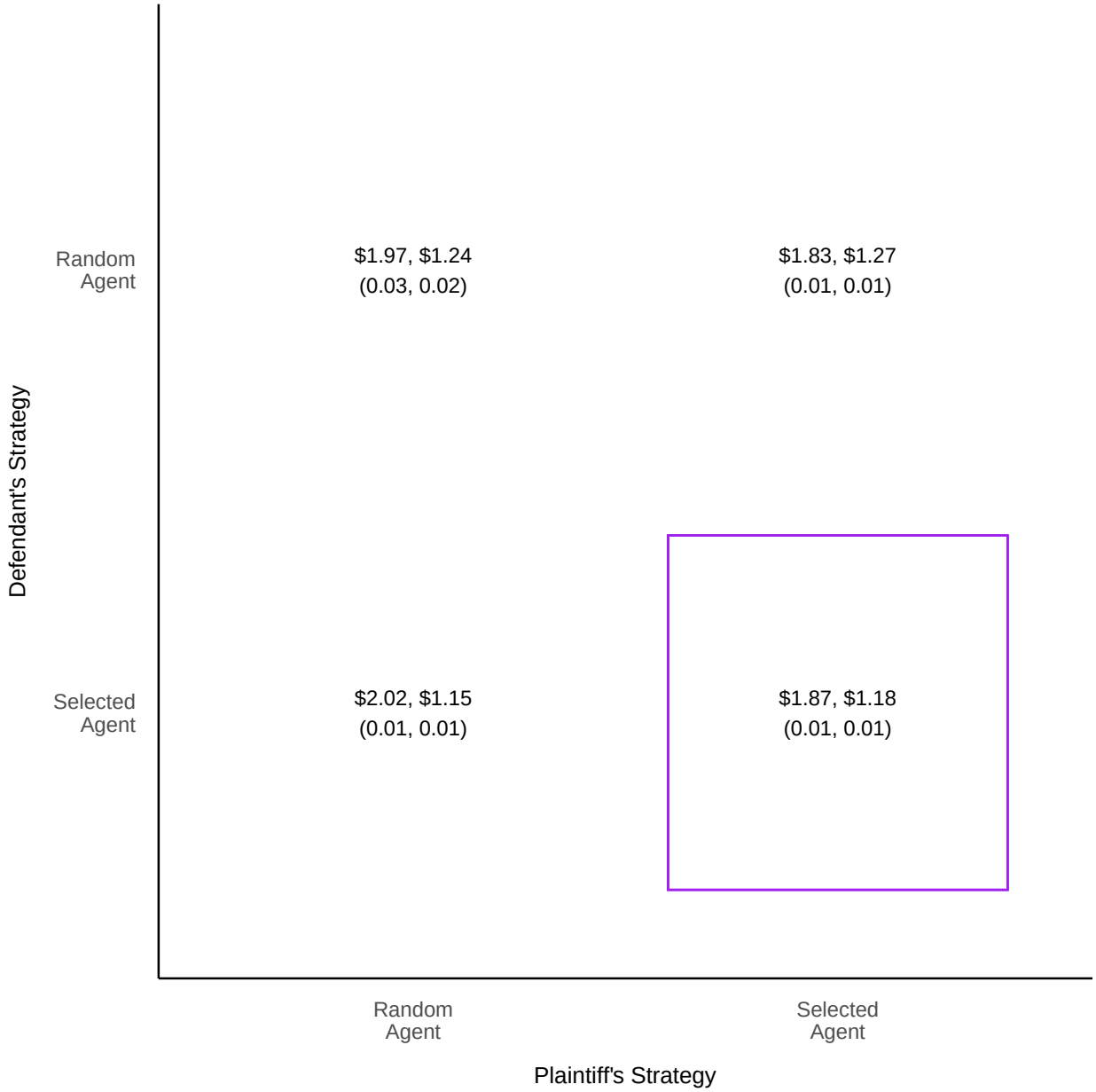

Figure 3. In a game of choosing at random or selecting an Agent given our observed distribution, the pure strategy Nash equilibrium is to engage in agent selection.

Leveraging a novel design that allows us to calculate the counterfactual outcomes if different agents had been selected, we show that principals choose agents who provide them with a forecasted outcome that is more favorable to their position than does the ex-post optimal agent. The agents who are selected hold more polarized beliefs about what a fair outcome would be than do agents overall. As a result, the impasse rate increases and earnings for both parties decline compared to the ex-post optimal choice.

We also compared actual agent selection against a strategy in which the principal hires the first agent she arbitrarily meets (which we refer to as random agent selection), revealing a prisoner's dilemma. Surprisingly, in our data both parties would benefit from both implementing random agent selection ("cooperate, cooperate") relative to both engaging in deliberate agent selection ("defect, defect"). But, conditional on their opposition implementing random agent selection, both parties can increase their earnings by engaging in deliberate agent selection. This may explain why agent selection is common in real world settings, despite evidence that both parties are worse off when both retain bargaining agents (Ashenfelter, Bloom, & Dahl, 2013).

Our findings complement past work on bargaining in management science by isolating a fundamental, but thus far unexplored, aspect of bargaining through agents: agent selection. In practice, agents are often selected from a pool of possible agents and we show that this dynamic can have downstream effects on bargaining performance and outcomes. We further introduce a methodology for examining counterfactual outcomes in multi-role, multi-stage bargaining. This leverages the strengths of a laboratory experiment, as such counterfactuals are unobservable in the real world. Finally, our results shed light on when and how principals' agent-selection decisions may backfire by increasing the incidence of costly impasse. This work raises important questions of whether the high rates of impasse observed in the real-world may be at least partially explained by whom principals are choosing to represent them, namely, overly aggressive agents.

Our work also connects with and contributes to an ongoing stream of research on how advisor confidence affects advisee judgment and decision-making. Advisors who express more confidence are more likely to be listened to (Sniezek & Van Swol, 2001) and advice delivered with confidence is less likely to be checked for accuracy (Sah, Moore, & MacCoun, 2013). Advisees tend to assume that a more confident advisor makes more categorically correct judgments and is more knowledgeable (Price & Stone, 2004). Advisors may, therefore, express excessive confidence in the interest of being listening to, chosen, or held in high esteem (Radzevick & Moore, 2011; Van Zant, 2021). However, this miscalibration can cause overconfident advisors to lose credibility (Tenney, Spellman, & MacCoun, 2008), but this repercussion manifests only if there is feedback and information such that this advisor-miscalibration is clearly discernable from the perspective of the advisee (Sah, Moore, & MacCoun, 2013). In our paper, overconfidence emerges in the belief extremity of selected agents, akin to the type of overconfidence dubbed as overestimation by Moore and Healy (2008). We build on this past work by considering advisors in the form of agents, showing how a two-sided selection process, with natural variation in agent beliefs, is sufficient to generate situations in which the agents at a bargaining table overestimate their respective positions, which may cause negotiations to be overly contentious.

In this paper, we have focused on a simple setting with common information, aligned incentives, and an ultimatum bargaining task to isolate a particular dynamic. This approach may be conservative in examining the dynamics and repercussions of bargaining polarization through agent selection. For example, in richer settings principals might reason that agents with more optimistic beliefs have more accurate private information or are better experienced negotiators, even as this need not be true. Further, our setting allowed little in the way of salesmanship by potential agents. In the real world, potential agents may engage in a rich set of behaviors to convey their confidence and optimism regarding the outcomes that a principal can expect. Past work has suggests that individuals who are able to engage in self-delusion may be more likely to convince others (Schwardmann & van der Weele, 2019),

and competitive environments may further select for such individuals (Schwardmann, Tripodi, & van der Weele, 2019). On the other hand, for bargaining that plays out over longer time horizons and with richer avenues for communication, one might observe agents that use misleading initial expectations to get selected and then, post-selection, use subsequent communication to temper the expectations of the principal. However, in our view, these effects would exist in addition to the agent-selection dynamic that we studied here, as we found that the selected agents in our study genuinely held biased, polarized beliefs about what a fair outcome would be.

While our study took place in a particular context, the insight that the agent-selection process can increase the likelihood of downstream impasse is general. Organizational and group processes may involve the implicit or explicit selection of a leader or spokesperson who holds a more extreme view than the average member of the group, in the interest of seeking strong advocacy. This dynamic may lead to excessive conflict when needing to coordinate across groups, within or between firms. Similarly, in the political domain, voters elect representatives on the basis of their claims of what they can achieve in office. Much like how our selected agents hold more polarized beliefs about the judge's ruling in the legal setting, elected officials and other elites may be more polarized in their policy attitudes than the pool of potential candidates in general. Such polarization may then drive legislative gridlock (Hetherington & Rudolph, 2015).

Selecting agents to act on our behalf is at the core of many high-stakes decisions across a variety of managerial and consumer settings. For good reason, then, the principal-agent incentive misalignment problem has been established as a fundamental topic across the fields of management and economics. Our aim here was to show that the process of agent *selection* may be similarly fundamental in shaping the outcomes that end up materializing on the principals' behalf. While aligning incentives between principals and agents is amenable to intervention by deliberate policymakers (e.g. requiring disclosure of conflicts of interest or

outright prohibiting activity that may result therein Lo & Field, 2009), the agent-selection process may be ripe with motivated reasoning and other established behavioral phenomena that may require new interventions to address. Given the substantial real-world costs resulting from unnecessary impasse, mitigating the agent-selection dilemma could substantially reduce deadweight loss and improve outcomes for all parties.

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Appendix A

Supplementary Information

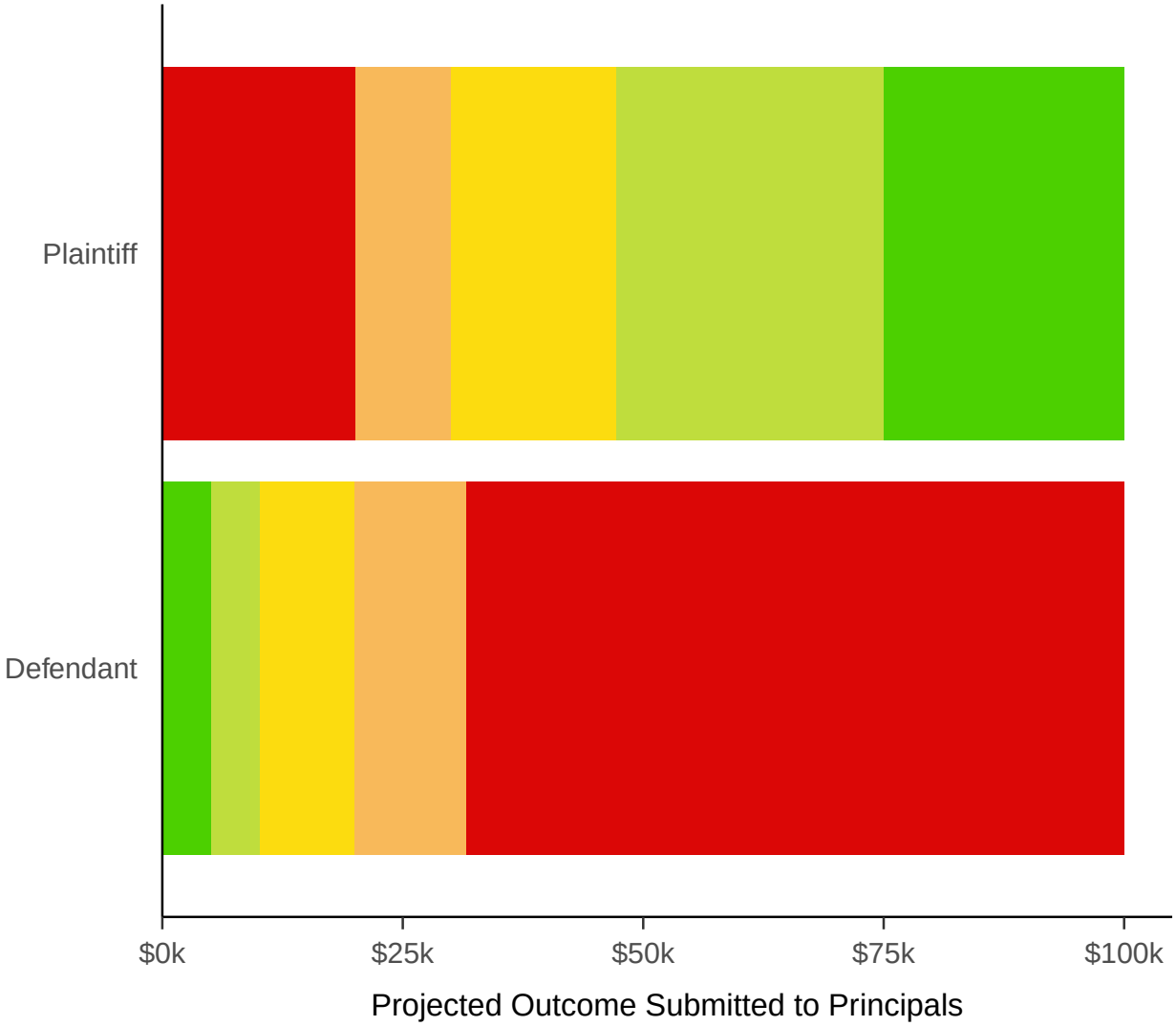

Figure A1. Prospective Agents were split into five quintiles based on the outcome they submitted to the Principal. The least favorable quintile for Plaintiffs (lower amounts are worse) covered a range of projected outcomes approximately equivalent to the three most favorable quintiles for the Defendant (lower is better). Thus, the signals observed by the Plaintiffs and the Defendants differed substantially.

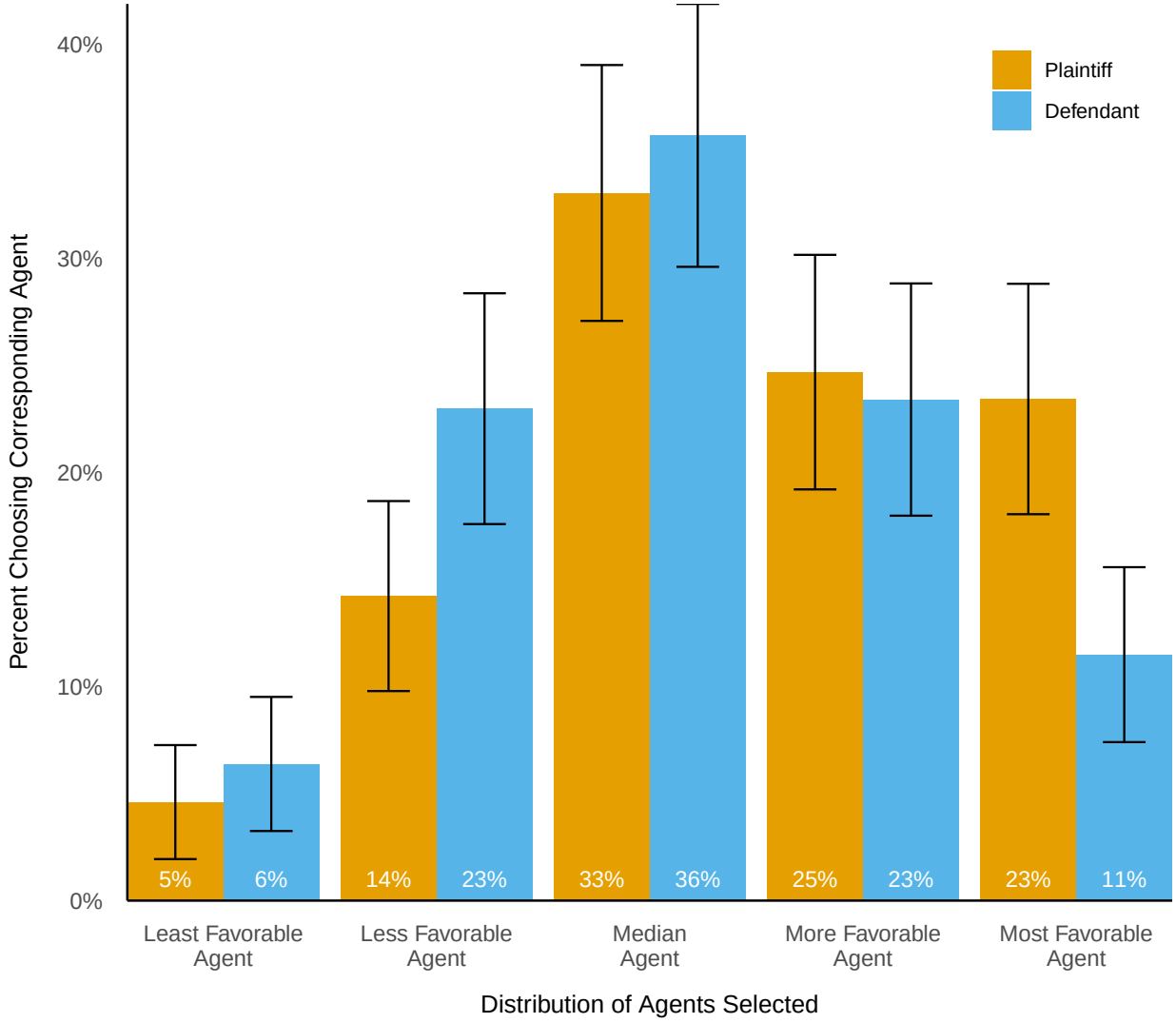

Figure A2. Principals could select one of five agents, ranging from least favorable (Quintile 1 for Plaintiff, Quintile 5 for Defendant) to most favorable (Quintile 5 for Plaintiff, Quintile 1 for Defendant). The ex-post optimal choice is the Median Agent for the Plaintiff and the Less Favorable Agent for the Defendnat.

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AS PREDICTED

The Agent-Selection Problem (#30491)

Created: 11/05/2019 10:18 AM (PT)
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A non-anonymized version (containing author names) will become publicly available only if an author makes it public. Until that happens the contents of this pre-registration are confidential.

1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
We hypothesize for agents (Stage 1): (1) agents for the plaintiffs submit projected outcomes of a lawsuit to their clients that are higher than do agents for the defendants; (2) agents for the plaintiffs predict that a neutral judge would issue a higher ruling than do agents for the defendants; (3) more aggressive proposals (higher amounts for plaintiffs' agents, lower amounts for defendants' agents) to clients also lead to higher (lower) rejection thresholds and ultimatum offers for Plaintiff's (Defendant's) agents.

For clients (Stage 2), we hypothesize: (4) clients are more likely to choose an agent who propose outcomes that are more favorable to them (higher for Plaintiffs, lower for Defendants) when presented with one agent from each quintile of the distribution; (5) clients choose an agent who made a more favorable estimate than the ex-post optimal agent; (6) the choice of the more favorable agent leads to higher impasse rate; and that, like the agents, (7) clients also predict more favorable rulings by the neutral judge (higher for the Plaintiff, lower for the Defendant).

3) Describe the key dependent variable(s) specifying how they will be measured.
(1, 2, and 7) For each hypothesis, there is a single continuous response from $0 to $100,000. (3) Rejection thresholds and offers are both continuous measures from $0 to $100,000, reported and analyzed separately. (4) is an integer from 1 to 5 representing the quintile from which the agent is chosen, where "1" is the least favorable quintile (lowest projected outcome for the plaintiff's agent; highest projected outcome for the defendant's agent) and "5" is the most favorable quintile. (5) is an integer from -4 to +4 representing the difference between the chosen quintile and the optimal quintile, such that "+2" means that someone chose quintile 5 (the most favorable) when it would have been optimal for them to choose quintile 3. (6) The impasse rate is the percentage of times a selected agent would have failed to settle against the universe of lawyers who were selected by clients of the other side. Agents who were selected by multiple clients receive weight in proportion to how frequently they were chosen.

4) How many and which conditions will participants be assigned to?
Participants in Stage 1 are randomly assigned to the roles of potential agents for the Plaintiff and potential agents for the Defendant. Participants in Stage 2 are randomly assigned to the roles of Plaintiff and Defendant.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
We test hypotheses (1, 2, 7) using a t-test, comparing the means between (agents for) the Plaintiff and the Defendant. We test hypotheses (3)a and (3)b using with repeated measures correlations tests. We test hypothesis (4) using OLS where the RHS variable is an indicator for the quintile the agent was drawn from (continuous 1-5) and the LHS variable is an indicator that is "1" if the agent was chosen and "0" otherwise. We cluster standard errors for each agent. We test (5) with a t-test comparing the difference to the optimal quintile, such that rejecting zero and a positive coefficient implies an error of choosing a more favorable agent. Finally, we test (6) by comparing the probability of settlement given the chosen agent, compared to the optimal agent.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
We include an identical 5-item comprehension check on the materials related to the lawsuit in both stages of the experiment. We exclude all participants who do not answer all questions correctly on either the first or the second try and do not collect any further responses from them. Moreover, for agents only, we exclude agents for the Plaintiff (Defendant) who report an acceptance threshold in the ultimatum offer that is higher (lower) than the offer they are willing to make – that is, they indicate rejecting an offer that is at least as good as the offer they themselves are making.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
We recruit 500 participants for Stage 1 and 500 participants for Stage 2 via Amazon Mechanical Turk. If more than 100 participants are excluded in any one stage, we will recruit an additional 50 participants at a time until we have at least 400 participants in that stage.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
Stage 1 (Agents) and Stage 2 (Clients) will take place sequentially. We conclude the survey with basic demographic questions for descriptive purposes but register no hypotheses regarding these questions.

Appendix B

Experimental Materials

Agents

The following figures show the materials for the role of an agent for the Plaintiff. Defendants observed nearly identical materials, except that the text refers to their role as Defendant.

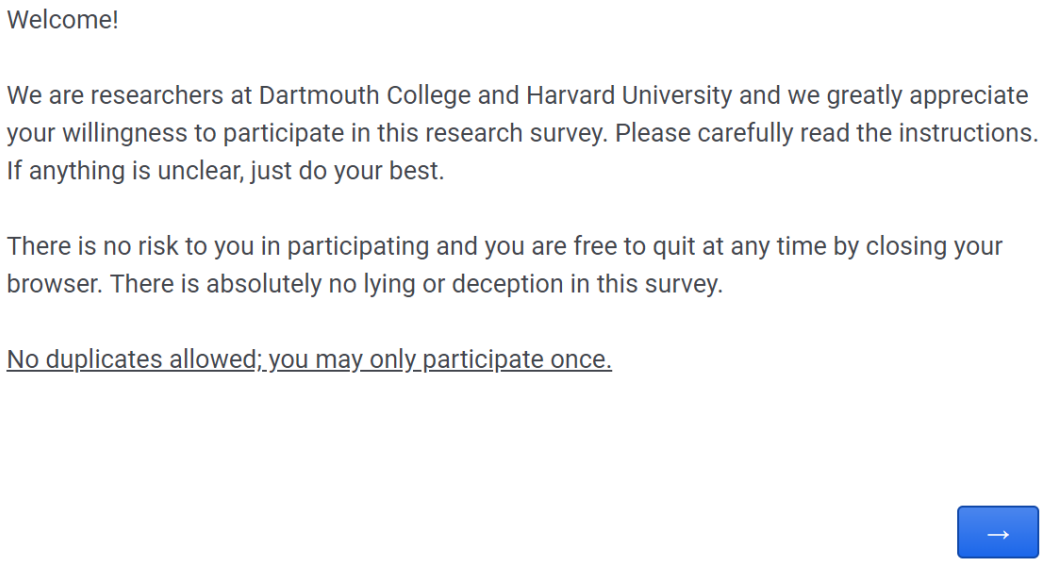


Figure B1. Introduction to the survey for agents.

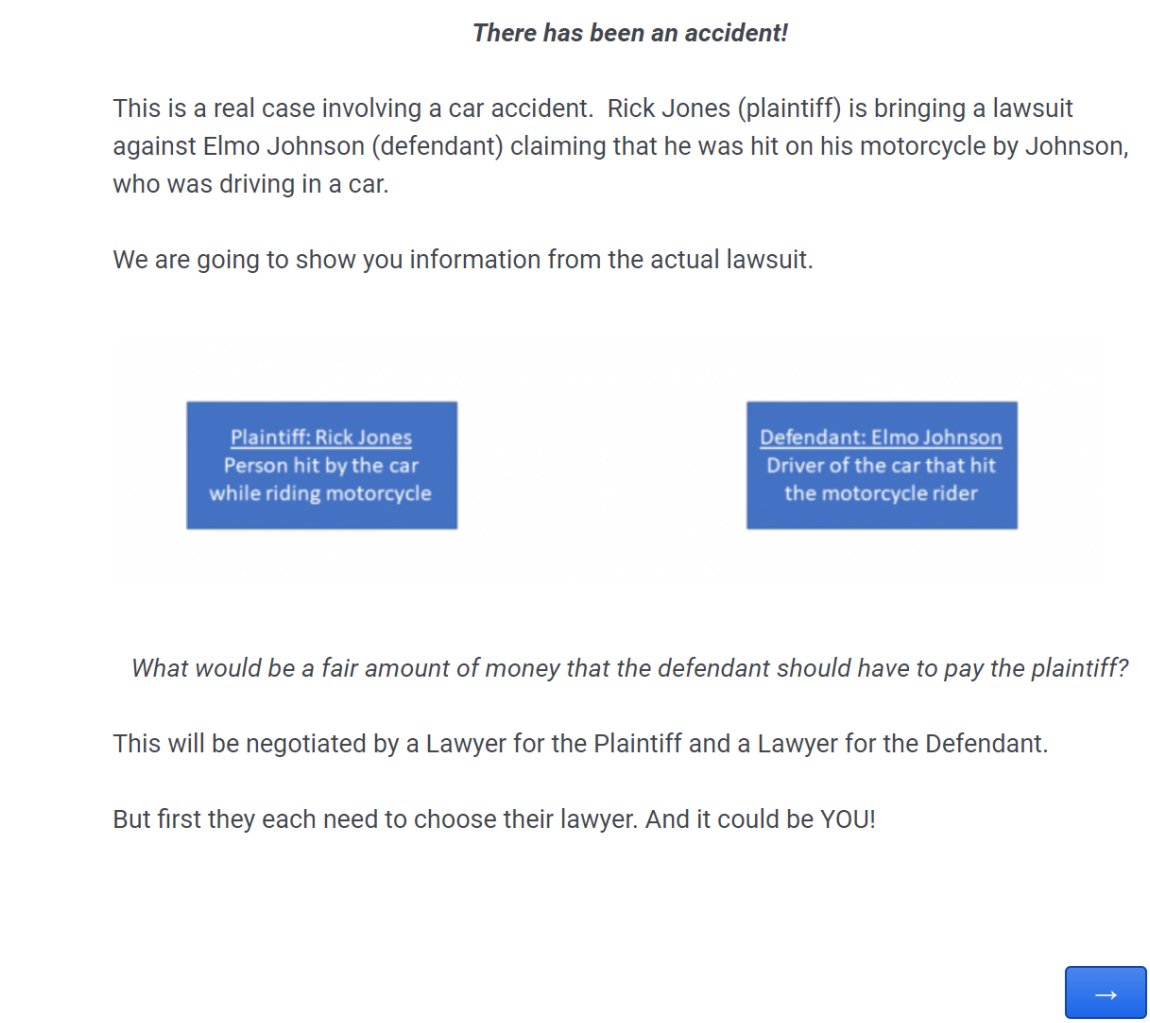


Figure B2. Agents learn about the setting.

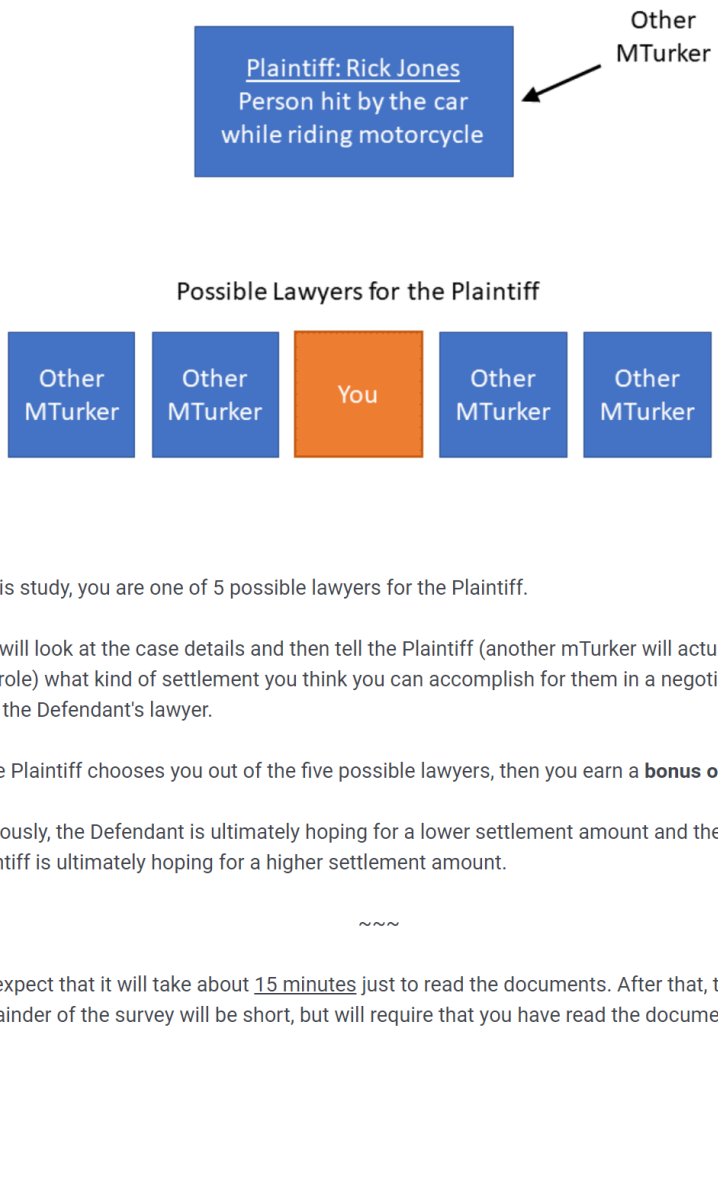


Figure B3. Agents learn about the structure of the experiment.

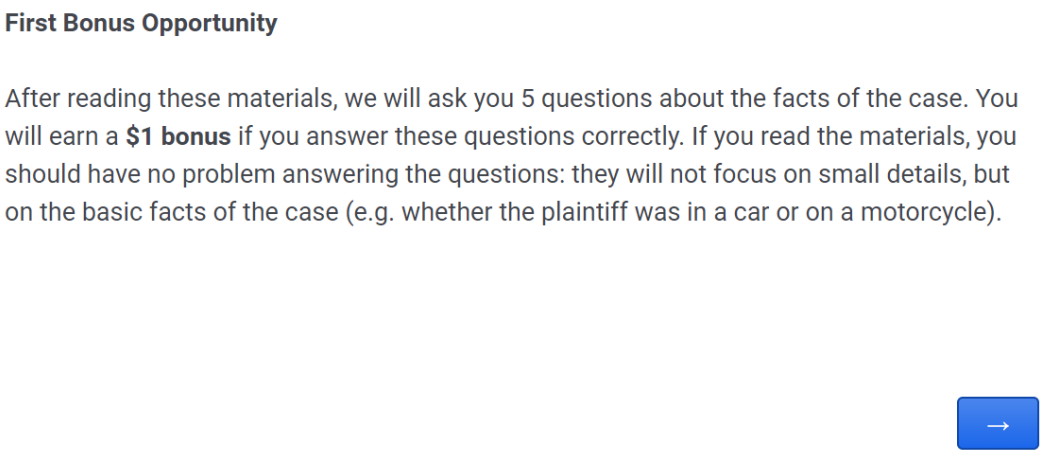


Figure B4. Information about the incentive for reading comprehension.

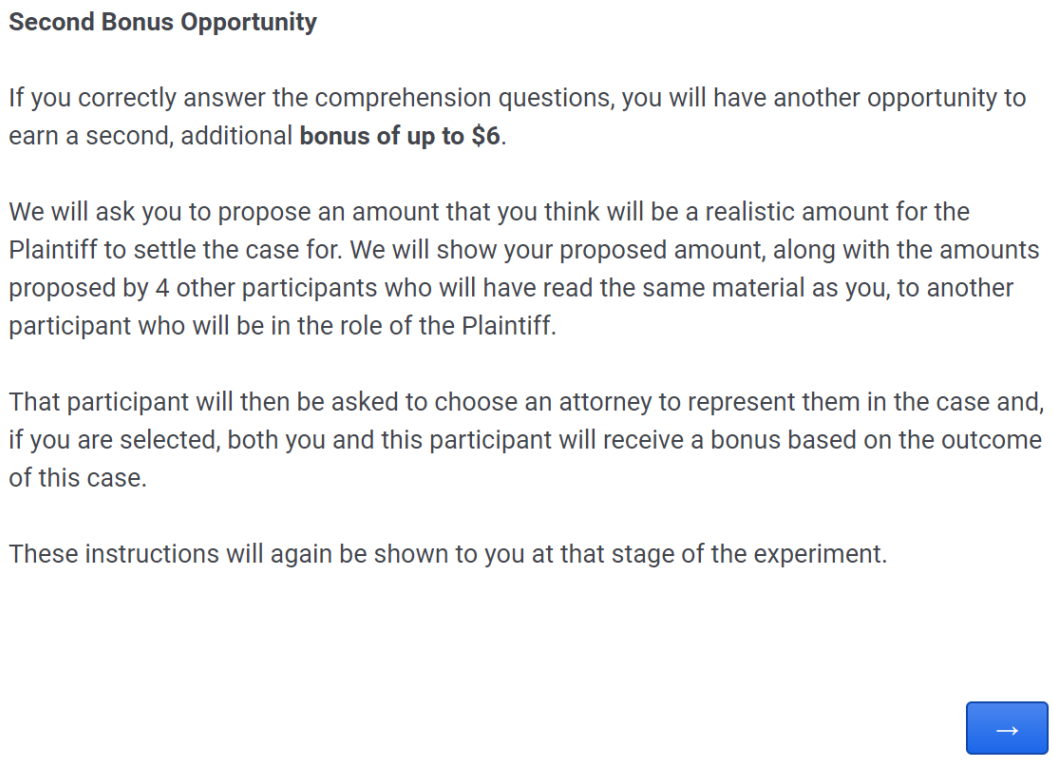


Figure B5. Information about the incentive for the negotiation.

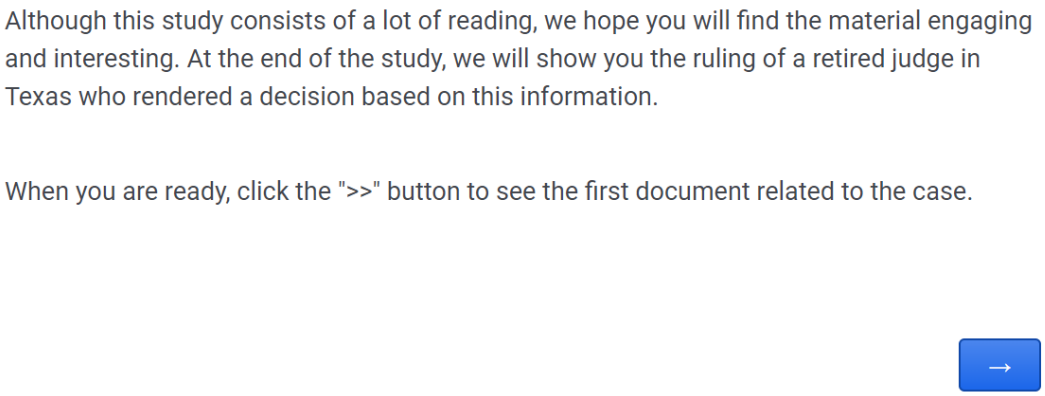
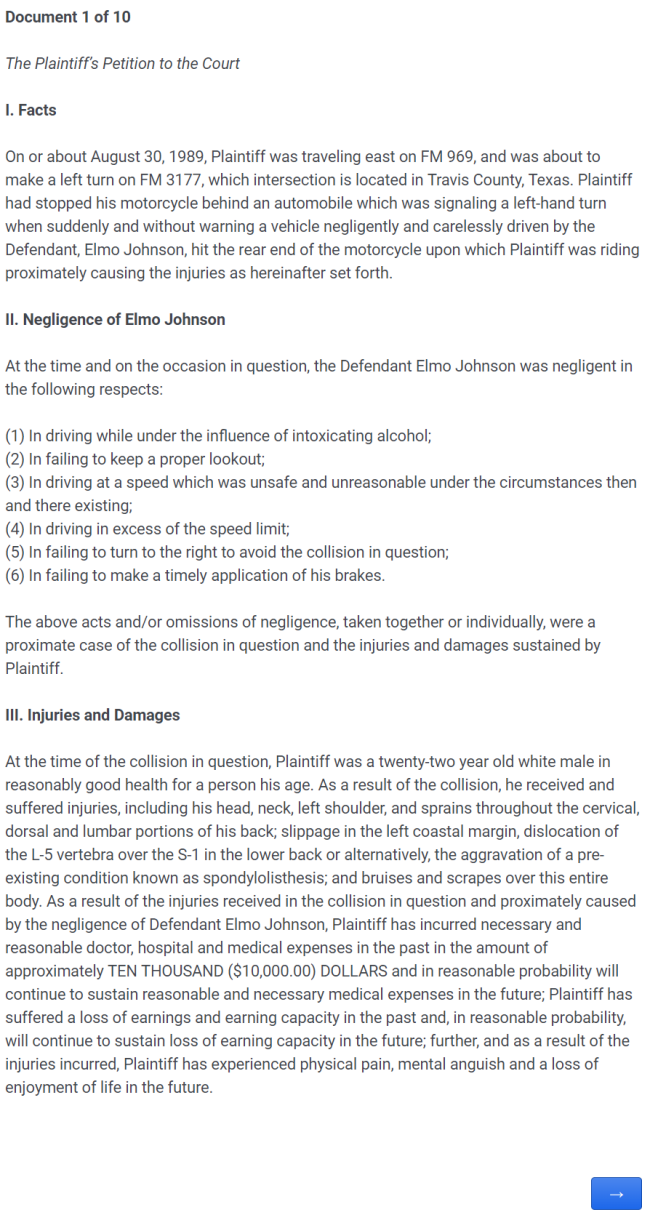


Figure B6. Introduction to case materials.



Document 1 of 10

The Plaintiff's Petition to the Court

I. Facts

On or about August 30, 1989, Plaintiff was traveling east on FM 969, and was about to make a left turn on FM 3177, which intersection is located in Travis County, Texas. Plaintiff had stopped his motorcycle behind an automobile which was signaling a left-hand turn when suddenly and without warning a vehicle negligently and carelessly driven by the Defendant, Elmo Johnson, hit the rear end of the motorcycle upon which Plaintiff was riding proximately causing the injuries as hereinafter set forth.

II. Negligence of Elmo Johnson

At the time and on the occasion in question, the Defendant Elmo Johnson was negligent in the following respects:

(1) In driving while under the influence of intoxicating alcohol;
(2) In failing to keep a proper lookout;
(3) In driving at a speed which was unsafe and unreasonable under the circumstances then and there existing;
(4) In driving in excess of the speed limit;
(5) In failing to turn to the right to avoid the collision in question;
(6) In failing to make a timely application of his brakes.

The above acts and/or omissions of negligence, taken together or individually, were a proximate case of the collision in question and the injuries and damages sustained by Plaintiff.

III. Injuries and Damages

At the time of the collision in question, Plaintiff was a twenty-two year old white male in reasonably good health for a person his age. As a result of the collision, he received and suffered injuries, including his head, neck, left shoulder, and sprains throughout the cervical, dorsal and lumbar portions of his back; slippage in the left coastal margin, dislocation of the L-5 vertebra over the S-1 in the lower back or alternatively, the aggravation of a pre-existing condition known as spondylolisthesis; and bruises and scrapes over this entire body. As a result of the injuries received in the collision in question and proximately caused by the negligence of Defendant Elmo Johnson, Plaintiff has incurred necessary and reasonable doctor, hospital and medical expenses in the past in the amount of approximately TEN THOUSAND ($10,000.00) DOLLARS and in reasonable probability will continue to sustain reasonable and necessary medical expenses in the future; Plaintiff has suffered a loss of earnings and earning capacity in the past and, in reasonable probability, will continue to sustain loss of earning capacity in the future; further, and as a result of the injuries incurred, Plaintiff has experienced physical pain, mental anguish and a loss of enjoyment of life in the future.

→

Figure B7. Case materials: Document 1 of 10.

Document 2 of 10
Answer of Defendant Elmo Johnson

I. General Denial

In accordance with the provisions of Rule 92 of the Texas Rules of Civil Procedure, the defendant Elmo Johnson hereby generally denies, all the singular, the allegations contained in Plaintiff's Petition and hereby exercises his legal right to require the plaintiff to prove all such allegations by a preponderance of the evidence.

II. Affirmative Defenses

Defendant Elmo Johnson says that at the time and on the occasion in question, the accident made the basis of this lawsuit was proximately caused by one or more of the following acts of negligence on the part of plaintiff Rick Sheldon Jones:

1. The plaintiff failed to keep a proper lookout at the time and on the occasion in question.
2. The plaintiff failed to yield the right way to this defendant.

Wherefore, premises considered, defendant Elmo Johnson prays that plaintiff take nothing in this cause as against this defendant.

→

Figure B8. Case materials: Document 2 of 10.

Document 3 of 10

Oral Deposition of Rick Jones (Plaintiff)
Examination by Defendant's Attorney

Q: Mr Jones, were you in the process of making a left turn when the accident occurred?
A: No.

Q: What were you doing?
A: I was stopped in the road behind a car.

Q: What was that car doing?
A: It was stopped with its turn signal on making a left turn.

Q: All right. Did you see the automobile that struck your motorcycle before it happened?
A: Yes.

Q: How did you happen to see it?
A: Out of the corner of my eye.

Q: Which eye?
A: Left.

Q: How far back from you was the other – the automobile when you first saw it?
A: I don't know.

Q: Was it close behind you?
A: I never – I saw it as I got onto the road, I didn't see it before it hit me.

Q: Where you came out of the school, to where the accident occurred – what is the distance?
A: Less than a block.

Q: Was there anything unusual about the way the automobile was being driven at the time you first saw it?
A: I got the impression it was going fast.

Q: Was it close enough to be a danger to you at that time?
A: No.

Q: All right. So you went on and I guess you made what, a right turn?
A: Yes.

Q: And went on down and stopped behind another automobile?
A: Correct.

Q: What happened to you on the motorcycle when the motorcycle was struck?
A: I went into the air.

Q: Then what?
A: I hit the ground.

Q: Did you or the motorcycle strike the car in front of you?
A: The motorcycle did.

Figure B9. Case materials: Document 3 of 10.

Q: Which direction did you go?
A: Up.

Q: Then what?
A: Down.

Q: Did you end up right at the same spot where you were hit?
A: No.

Q: Where did you end up?
A: A certain number of feet down the road.

Q: Did you land on the pavement?
A: Yes.

Q: Were you rendered unconscious or anything of the sort?
A: I couldn't see.

Q: For how long?
A: I don't know.

Q: When is the next time you recollect being able to see?
A: I was laying on the ground looking up and I could hear people talking.

Q: And in what way were you injured?
A: The only visible sign was my elbow.

Q: Which elbow?
A: I had a scrape on my left elbow.

Q: Was that the only place that hurt?
A: No.

Q: Where else were you hurting?
A: All over.

Q: From head to toe?
A: Correct.

Q: Were you taken from the scene by an ambulance?
A: No.

Q: How did you depart?
A: My supervisor's pickup truck.

Q: Where were you taken?
A: Brackenridge.

Q: Do you know who you saw down there in the way of a doctor?
A: No.

Q: Were you admitted to the hospital?
A: No.

Figure B10. Case materials: Document 3 of 10 (continued).

Q: Did they take x-rays that night?
A: No.

Q: What day of the week was August 30, 1989?
A: Thursday.

Q: Did you go to work the next day?
A: No.

Q: When did you go back to work?
A: The following Wednesday.

Q: Did you continue to work steady?
A: Yes.

Q: Have you missed any more time from work than that Friday and Monday and Tuesday at all since the accident?
A: Various doctors' appointments.

Q: Just the times you had to leave to go see the doctors?
A: I would take the afternoon off or morning or whatever.

Q: Did you get paid?
A: Compensation time.

Q: What is your yearly income?
A: $20,000 before taxes.

Figure B11. Case materials: Document 3 of 10 (continued)

Document 4 of 10

Oral Deposition of Elmo Johnson
Examination by Plaintiff's Attorney

Q: Mr. Johnson, I would like to go back, if we could, to on or about the 30th day of August in 1989, when the wreck occurred between the car you were driving and a motorcycle. Were you working at that time?
A: Yes.

Q: All right, sir. Were you off work at the time this happened?
A: Yes.

Q: And whose car were you driving?
A: Brumley Buick.

Q: How did you happen to be driving their car?
A: I asked then could I test drive it and take it out to my house and let my wife see it.

Q: And did the salesman agree to let you do that?
A: Yes.

Q: At the time you took the car out there from Brumley, did they ask you if you had any kind of bad driving record or had a bunch of tickets or anything?
A: I don't remember.

Q: How long of a conversation with the man there at Brumley did you have before you took the car out?
A: Five or ten minutes.

Q: Was he reluctant to let you take the car at all?
A: I don't remember.

Q: And did he tell you, now don't stop anywhere and drink anything or anything like that?
A: I don't recall.

Q: Did you stop and drink anything after you left there?
A: I don't recall stopping at all.

Q: Had you worked that day?
A: The night previous to that day.

Q: Were you going to go to work that day?
A: I don't remember if I had to work that day.

Q: Before you went down to Brumley and got the car, how much had you had to drink?
A: I had drank some beer. I don't know how much.

Q: Where did you drink the beer?
A: I might have drank some at home. Wait a minute. I probably drank it at a store. I don't remember.

Q: What time was the first time you had any beer that day?
A: I don't remember.

Figure B12. Case materials: Document 4 of 10.

Q: Would it have been after lunch?
A: Yes, maybe around 1:00 o'clock.

Q: Did you have your first beer or so at home?
A: Yes.

Q: Do you have any idea how many you would have had at home?
A: One.

Q: Could it have been more?
A: No.

Q: Or do you remember exactly?
A: No. I don't remember exactly.

Q: And then there was the next place you think, at a store or at your friend's house?
A: A store.

Q: Would you have bought a six-pack?
A: No.

Q: There wouldn't have been more than two or three?
A: A couple.

Q: Pardon?
A: Two or three.

Q: When you got down to Brumley's, did the man – I guess it was a man you talked to, wasn't it?
A: Yes.

Q: Did he ask you about having had any beer?
A: Not that I recall.

Q: Was he close enough to you that if you had beer on your breath, he could have smelled it?
A: He was sitting behind a desk and I was standing in front of the desk. I don't know if that's close enough or not.

Q: Did he walk out to the car with you?
A: No.

Q: When you drove out 19th Street, that becomes Webberville Road, too, don't they call it?
A: Yes.

Q: And were you testing the car in any way? Did you test the brakes on the car to see if they were good?
A: Yes, I did.

Q: That's what you were doing with the car, I take it.
A: Yes.

Figure B13. Case materials: Document 4 of 10 (continued).

Q: On Webberville Road out there in front of Travis State School, how many lanes of traffic are there out there?
A: Two going in each direction.

Q: And had it been that way most all the way out there?
A: Yes. That's my recollection. Yes…

Q: Was the traffic heavy?
A: I don't recall.

Q: Do you recall whether there were any cars, just before you got to Travis State School, any cars to your right or in front of you?
A: The only one I remember seeing in front was the blue car that was stopped in the left lane had a signal to turn left.

Q: And did you see the motorcycle behind it?
A: No. I seen the motorcycle coming out after I got from behind the blue car, which I know now – later it was a lady driving it. And I was driving in the right lane. And this is when I see then motorcycle coming out.

Q: As you were coming – approaching Travis State School, what lane were you in, the inside our the outside lane?
A: The left lane, going east, inside.

Q: Where did the motorcycle come from?
A: When I seen the signal light on the car going left, I dropped down to get around on the other side of it, and the motorcycle came out of the exit entrance from the Travis State School.

Q: All right. How far away were you from the motorcycle when you first saw it?
A: Maybe 40 or 50 – I don't know. To be exact, I don't remember.

Q: All right. And you saw it come out from which – from your left or your right, would it have been?
A: From my right.

Q: And did it pull up behind that blue car and stop?
A: My recollection is it didn't ever make it behind the blue car that was in front of me because I hit the back wheel of the left side of the motorcycle.

Q: What direction was the motorcycle going in when you hit it? Was it coming across the road?
A: Coming across at an angle.

Q: And did it have any signal lights on?
A: I didn't see any lights.

Q: And is it your testimony that the motorcycle was not stopped when you hit it?
A: I don't remember.

Q: All right. Would it be your testimony that it was not sitting directly behind the blue car?
A: Yes.

Figure B14. Case materials: Document 4 of 10 (continued).

Q: What part of the car you were driving hit the motorcycle?
A: The front, more to the left, the left front.

Q: Would it have been anywhere near the middle?
A: No, around the headlight.

Q: Did it do any damage to the car?
A: It bent the front, from the headlights, in that middle section between the center and the headlight, on the left side.

Q: Where had the car you were driving hit the motorcycle?
A: The back wheel.

Q: How long did it take you to stop your car after you hit him?
A: Instantly, I think.

Q: Do you deny, Mr. Johnson, that you were intoxicated at the time?
A: Yes. I deny it.

Q: You do admit you had some beer to drink?
A: Yes.

Q: Had you ever seen the motorcycle over at the entrance of the Travis State School before it came out into the road?
A: No.

Figure B15. Case materials: Document 4 of 10.

Document 5 of 10

Deposition of Harold Baker
Examination by Plaintiff's Attorney

Q: Mr. Baker, where are you employed?
A: Brumley Buick Company.

Q: How long have you been employed by Brumley?
A: Three years.

Q: And what do you do there?
A: Salesman.

Q: And where did you work before that?
A: I had my own business for 27 years, Harold Baker Used Cars.

Q: So, I take it you are pretty familiar with the used car sales and that business, are you not, sir?
A: Yes.

Q: Mr. Baker, this lawsuit arises out of an automobile – motorcycle collision that occurred on or about the 30th of August of 1989. Do you remember in general the occasion?
A: I remember the man taking the car out.

Q: Do you recall what car he was interested in?
A: 1988 Buick Riviera.

Q: Do you have any idea as to how long you and Mr. Johnson talked about the car before he took it out?
A: Probably 5 or 10 minutes.

Q: Now, had he expressed a desire to purchase the car?
A: Yeah, he wanted to buy the car.

Q: Did he tell you what his purpose in wanting to take it out was?
A: For demonstration. All of them want to take them out demonstration before they buy them.

Q: And did you indicate to him any limitations on where he could take the car or how long he could have it or anything?
A: I don't imagine I did.

Q: Do you generally just let people take them and go wherever they want to as long as they want to?
A: If we think they are a good citizen, we will let them try the car out.

Q: All right. What do you do and what did you do in this case to determine whether he was a good citizen, as you put it?
A: Well, he had a job and he had a good trade-in sitting on the lot that he drove in there.

Q: And you had an opportunity to be close around him?
A: Yes.

Figure B16. Case materials: Document 5 of 10.

Q: Did you notice at all that he had anything to drink?
A: Definitely not. If he had, he wouldn't have drove that car.

Q: Did you make any special effort to check that to see whether he had or not?
A: We try to check them all. I have been in this thing 30 years. We don't let a man drive a car that's drinking.

Q: Did you ask him whether he had or not been drinking?
A: No, I didn't ask him.

Q: Did you make any effort to smell his breath?
A: No.

Q: Did he give any appearance to you to have any good judgment about what he was doing?
A: Yeah, he seemed like he knew what he was doing and if he was drinking, he sure didn't, you know, didn't act like he was drinking.

Q: Did you watch him drive off?
A: Yes.

Q: Did he appear to drive off all right?
A: Yes.

Q: Well, has it ever happened to you that somebody did stop and get something to drink while they were driving a car?
A: I couldn't tell you. I don't know whether they did or not.

Q: You just don't check them that close then?
A: You know, we are not going to let them out and drive a car if they are drinking.

Figure B17. Case materials: Document 5 of 10 (continued).

Document 6 of 10

Deposition of Dr. Philip Yaeger, M.D.
Examination by Defendant's Attorney

Q: What is your business or profession?
A: Orthopedic surgeon.

Q: Doctor, have you had occasion to treat or examine a Mr. Rick Jones?
A: Yes.

Q: When did you first see him?
A: November the 15th, 1989.

Q: At that time, what complaints did he have? What complaints did he tell you that he had?
A: Pain in his neck and mid back and lower back.

Q: Did you take a history from him to determine what he considered to be the onset or reason for these complaints?
A: Yes.

Q: Tell us what that was?
A: It was a history of a motorcycle-auto accident precipitating the symptoms.

Q: When did he say that occurred?
A: On the 29th of August, 1989.

Q: So, it was roughly 2-1/2 months after the accident when you first saw him?
A: Yes.

Q: Did you perform a physical examination on the man?
A: Yes.

Q: Tell us the results of the examination?
A: There was full motion of the cervical spine but in certain directions he had extremeness of motion and he had some discomfort in the neck and posterioral shoulder area.

Q: Now, tell us what the cervical spine is so we will all understand?
A: That is the neck – the spine and the neck region.

Q: All right. And you say he had full motion of the neck?
A: Right.

Q: What else did you find, Doctor?
A: In the mid portion of his back to percussion, he had some tenderness.

Q: is this what he told you?
A: Right.

Q: All right. What about any deformity or misalignment or malalignment of the back?
A: Not in the mid part of his back.

Figure B18. Case materials: Document 6 of 10.

Q: So, that covers the neck are and the mid part of the back. Did you examine the remainder of his back?
A: Yes.

Q: What was the result of that examination?
A: The lower back, he didn't seem to have normal motion in each direction. He began complaining of some discomfort in the lower back when he got to the extreme of each motion. He seemed to have no weakness in the musculature and lower extremities, and it was felt that the reflexes and sensation to pin prick were within normal limits.

Q: All right. Now, I am still looking at the report or note that you made on that date which says, "No positive nerve stretch sign." What do you mean by that Doctor?
A: Nothing to suggest the nerve being pinched by any abnormality in the joint or disc.

Q: Were X-rays obtained, Doctor?
A: Yes.

Q: What was the result of the X-rays? Did you read them yourself?
A: Yes. The X-rays of the cervical spine or the neck region showed no abnormalities. X-rays of the dorsal spine and thoracic spine or the mid portion of the spine did not show any bone or joint abnormalities. I couldn't find anything out of the ordinary to account for the pain he was describing.

Q: Now, what does the last paragraph of your report say and mean, if you will explain it to us, Doctor?
A: I feel like he was dwelling a great deal on a very little ache and pain and I certainly expected he was going to have some after the type of injury that he sustained.

Q: All right. What specifically did you say in that paragraph?
A: I encouraged him to be as normally active as he could.

Q: Okay. And, you say you thought he was unduly introspective, and by that do you mean you thought he was dwelling more than necessary on the complaints that he had?
A: Yes.

Q: Did he seem to be blowing them out of proportion to what you could find on examination?
A: Not necessarily blowing them out of proportion, but just worrying about more than I thought that he really needed to.

→

Figure B19. Case materials: Document 6 of 10 (continued).

Document 7 of 10

Statement of Sam White

My name is Sam White and I work at Travis State School. I worked there on the day that Ricky Jones was injured. I was sitting at the gate to Travis State School right behind Ricky and was getting ready to leave about the time he was hit. I was right in front of the pickup truck driven by J. Howard. I saw Ricky leave from in front of me, and I momentarily looked away. Then I heard the crash. I did not believe Ricky had time to get behind M. Lewis' car and stop before he was hit because it all happened so quickly. I think this is a very dangerous place and it is almost impossible to get out onto Webberville Road safely when a car is in your vision to your left. I smelled no alcohol on Mr. Johnson.

October 14, 1989

Figure B20. Case materials: Document 7 of 10.

Document 8 of 10

Statement of Martha Lewis

My name is Martha Lewis and I am employed at Travis State School. I was employed at Travis State School on the day Ricky Jones was injured. I left Travis State School on my way home very shortly after 5:00 pm. I turned right onto Webberville Road and stopped where it joins Decker Lane where I was going to turn left. I was stopped waiting for traffic headed into town to clear before I could turn. I had my left turn blinker light on. I remember looking up and seeing Ricky Jones stop on his motorcycle about three to five feed behind my car. I saw him put his left foot on the ground. I heard brakes squeal and somebody or something hit my car and moved me forward just a few feet. I never did see the car or whatever it was that hit Ricky. I was not badly hurt. I was taken to the hospital in the same pickup that took Ricky.

I did not smell any alcohol on the other man's breath but I wasn't close enough to notice.

I know that leaving this school is very dangerous because when you see a car coming to your left around the curve and over the hill as you are leaving there is hardly time to get out of there without getting hit.

October 27, 1989

→

Figure B21. Case materials: Document 8 of 10.

Document 9 of 10

Driving Record of Plaintiff, Rick Jones

Date	Location	Offense
07/21/1987	Austin	Ran Red Light
03/02/1987	Austin	Accident - Motor with Motor
04/30/1986	Austin	Accident - Motor with Motor
03/14/1983	Austin	Accident - Motor with Motor
08/30/1983	Travis County	Accident - Motor with Motor

Figure B22. Case materials: Document 9 of 10.

Document 10 of 10

Driving Record of Defendant, Elmo Johnson

Date	Location	Offense
07/17/1986	Austin	Ran Red Light
07/24/1986	Austin	Speeding
08/08/1986	Austin	Accident - Motor with Motor
09/27/1986	Austin	Speeding
10/30/1986	New Braunfels	Following Too Closely
02/15/1985	Austin	Speeding
08/30/1983	Austin	Fail to Control Speed
08/30/1983	Austin	Accident - Motor with Motor

Figure B23. Case materials: Document 10 of 10.

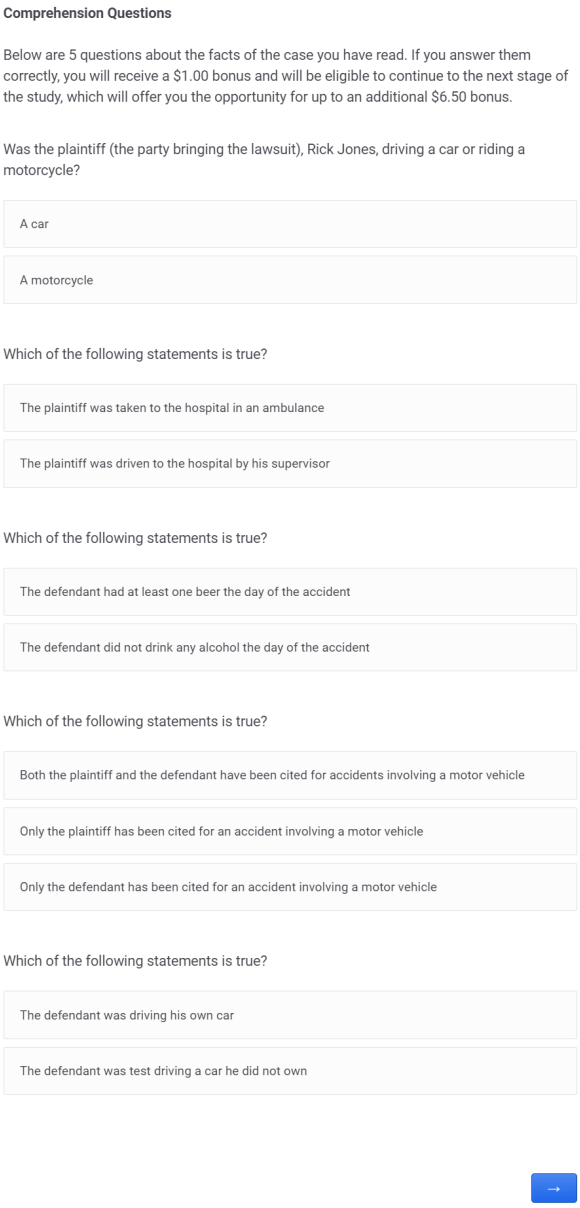


Figure B24. Comprehension check questions.

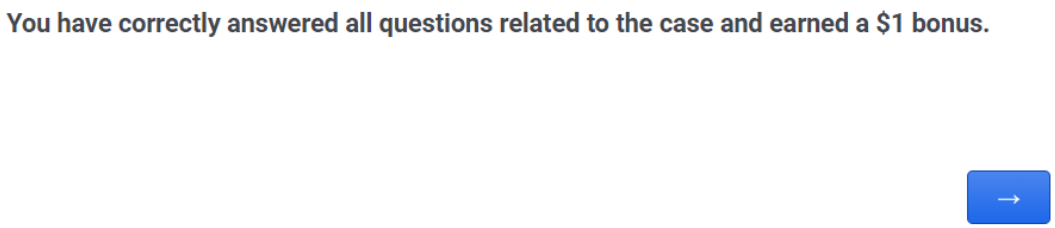


Figure B25. Displayed to participants who passed the comprehension check.

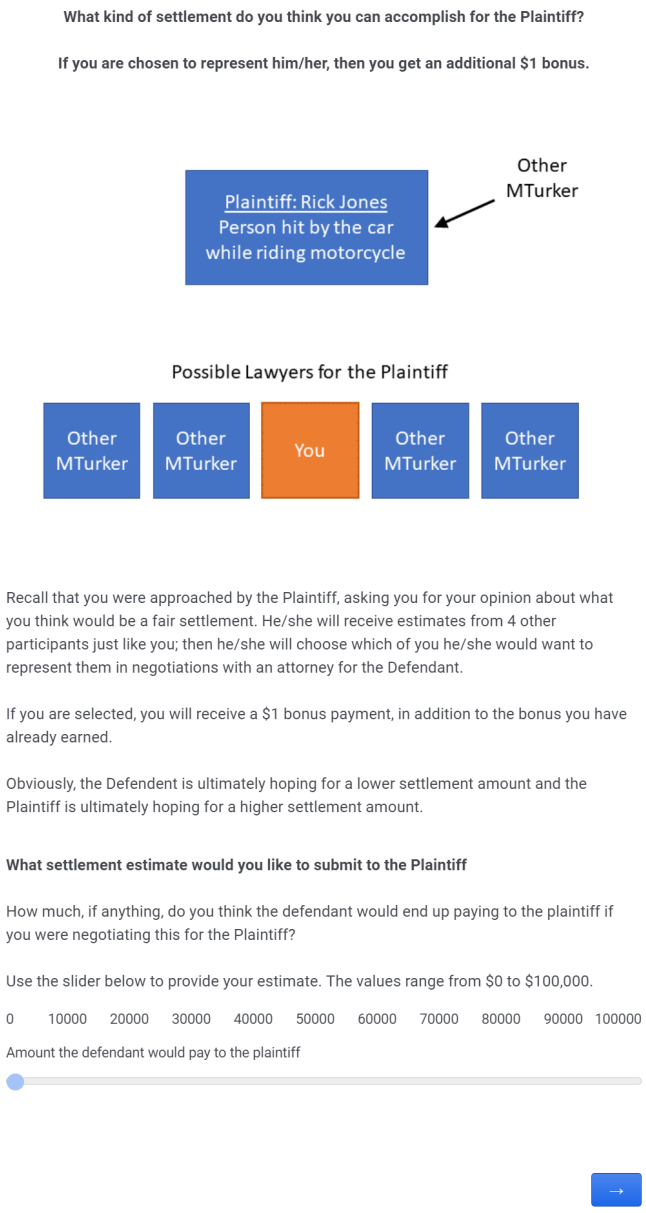


Figure B26. Agents are reminded of their incentive for being hired and make a settlement proposal to the principals.

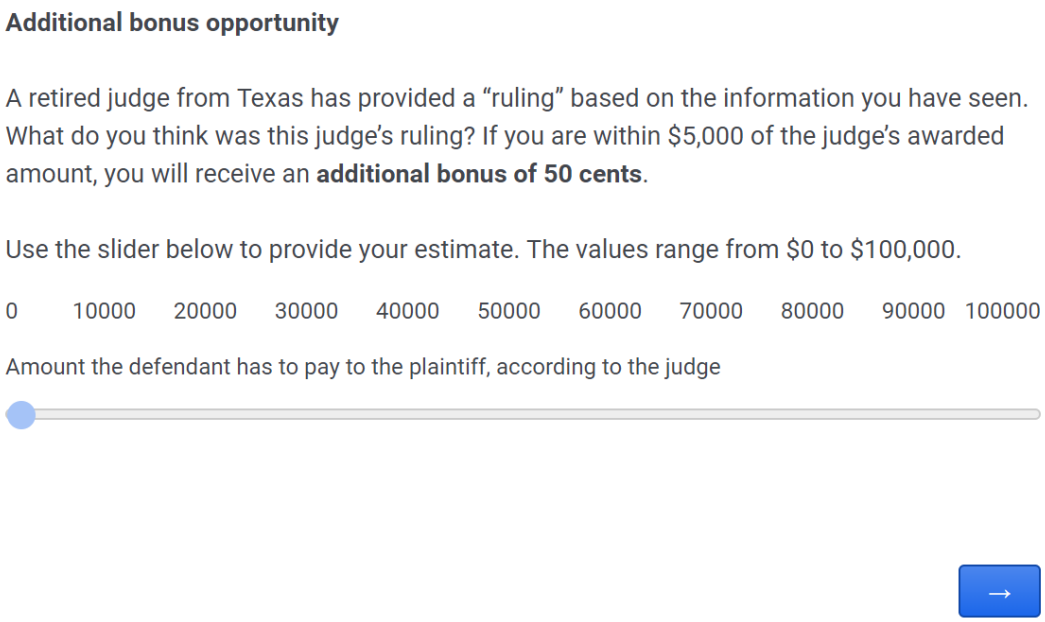


Figure B27. Incentivized estimate of the neutral judge's ruling.

How does the settlement bonus work?
Put simply:

1. The plaintiff's lawyer gets paid more for higher settlements and the defendant's lawyer gets paid more for a lower settlement outcomes.

2. If the two sides can't agree, then the judge's decision will determine the outcome and both sides get the corresponding bonus but lose 30% of it (to represent the costs of going to court).

The exact bonus formula:

Lawyer for the Plaintiff
If you **settle** the case: Settlement / 20,000
If you **go to judge**: (Judge's Ruling / 20,000) * 0.7

Lawyer for the Defendant
If you **settle** the case: $4 - (Settlement / 20,000)
If you **go to judge**: ($4 - Judge's Ruling / 20,000) * 0.7

What it actually means

Settlement Bonus examples:
If the **settlement amount** is…

- $60,000, then plaintiff's lawyer gets $3.00 and defendant's lawyer gets $1.00.
- $20,000, then plaintiff's lawyer gets $1.00 and defendant's lawyer gets $3.00.

Bonus examples if it goes to the Judge:
If the **judge's ruling** is…

- $60,000, then plaintiff's lawyer gets $2.10 and defendant's lawyer gets $0.70.
- $20,000, then plaintiff's lawyer gets $0.70 and defendant's lawyer gets $2.10.

As you can see, it matters a lot…

1. What you think the judge's decision will be.
2. Whether you and the other lawyer think similarly or differently about what a fair settlement would be.

The next screen will show you the instructions for this settlement negotiation.

→

Figure B28. Explanation of the settlement negotiation (the Ultimatum Negotiation Game).

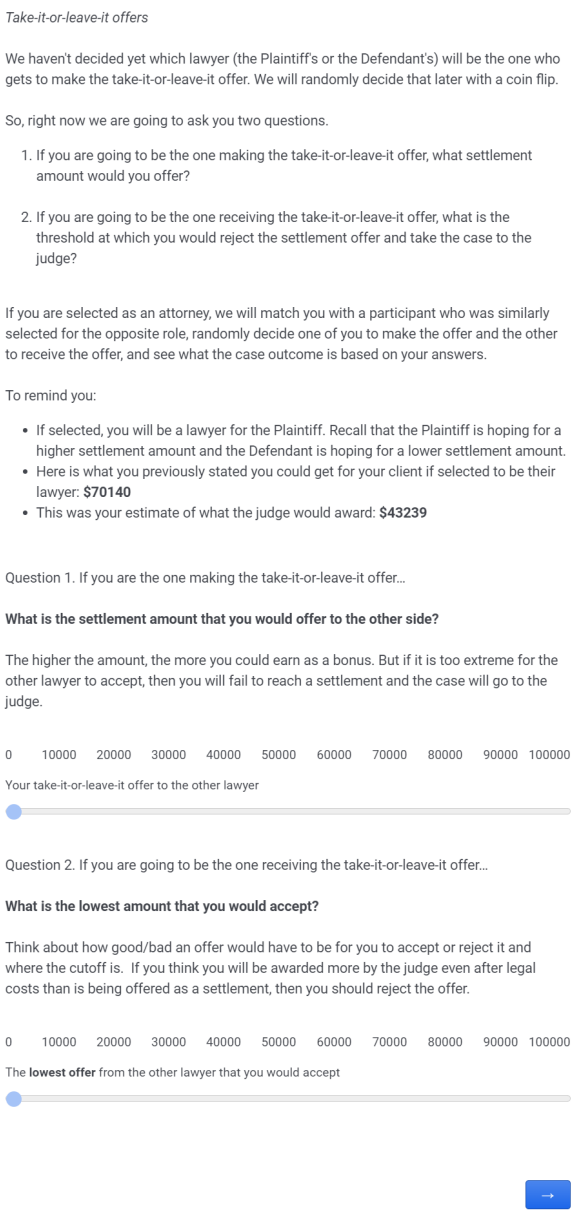


Figure B29. Elicitation of the ultimatum offer and the rejection threshold.

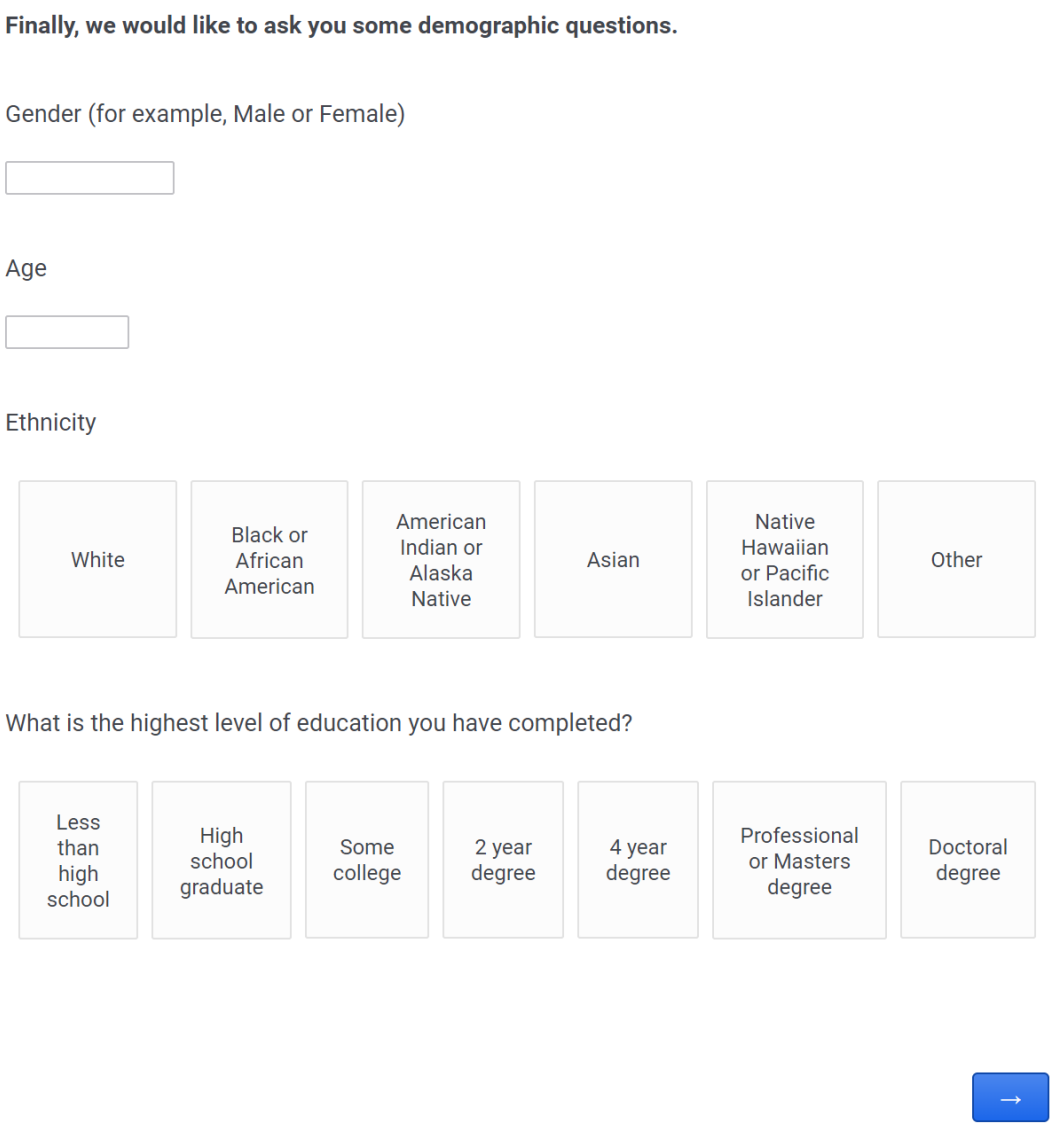


Figure B30. Demographic questions.

The judge awarded the plaintiff **$30,560**.

We hope you enjoyed reading these case materials and thank you for your participation.

You will receive your bonus earnings within 7 days of completing this study. This accounts for the time it takes to recruit additional participants to choose one of the lawyers to represent them for the case.

Please do not share any information related to this case with others who may be participating in this study.

On the next screen, you will see your unique completion code.

Do you have any comments for the researchers? (optional)

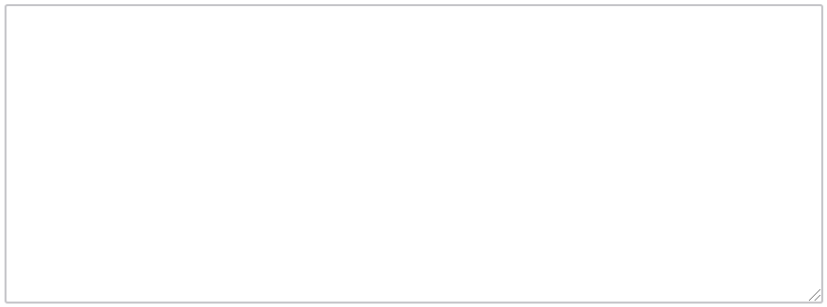


Figure B31. Concluding information.

Principals

The following figures show the materials for the role of Defendant. Plaintiffs observed nearly identical materials, except that the text refers to their role as Plaintiff. We skip the screens relating to the case materials and the comprehension check, which were identical to those shown to the Agents.

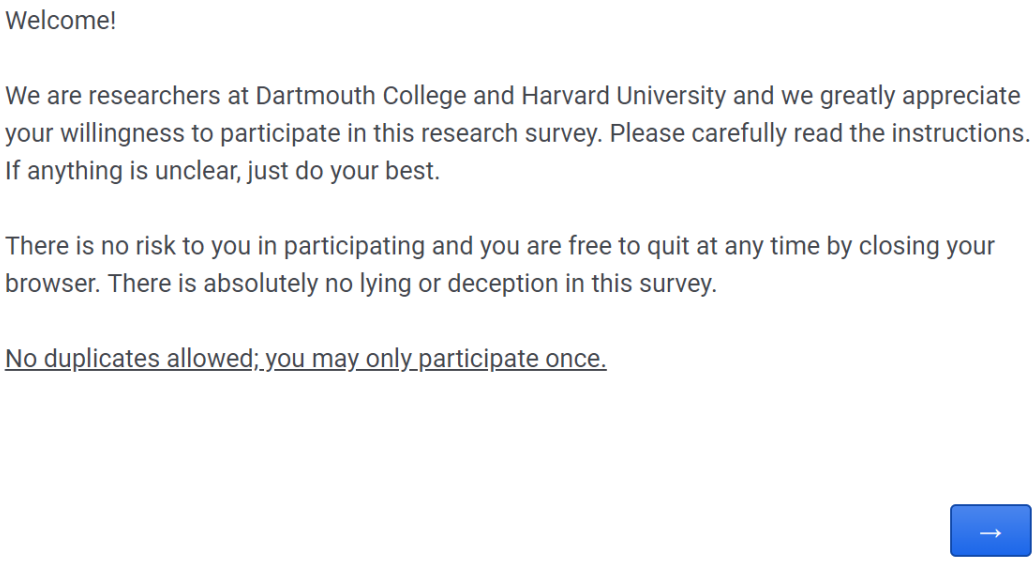


Figure B32. Introduction to the survey for principals.

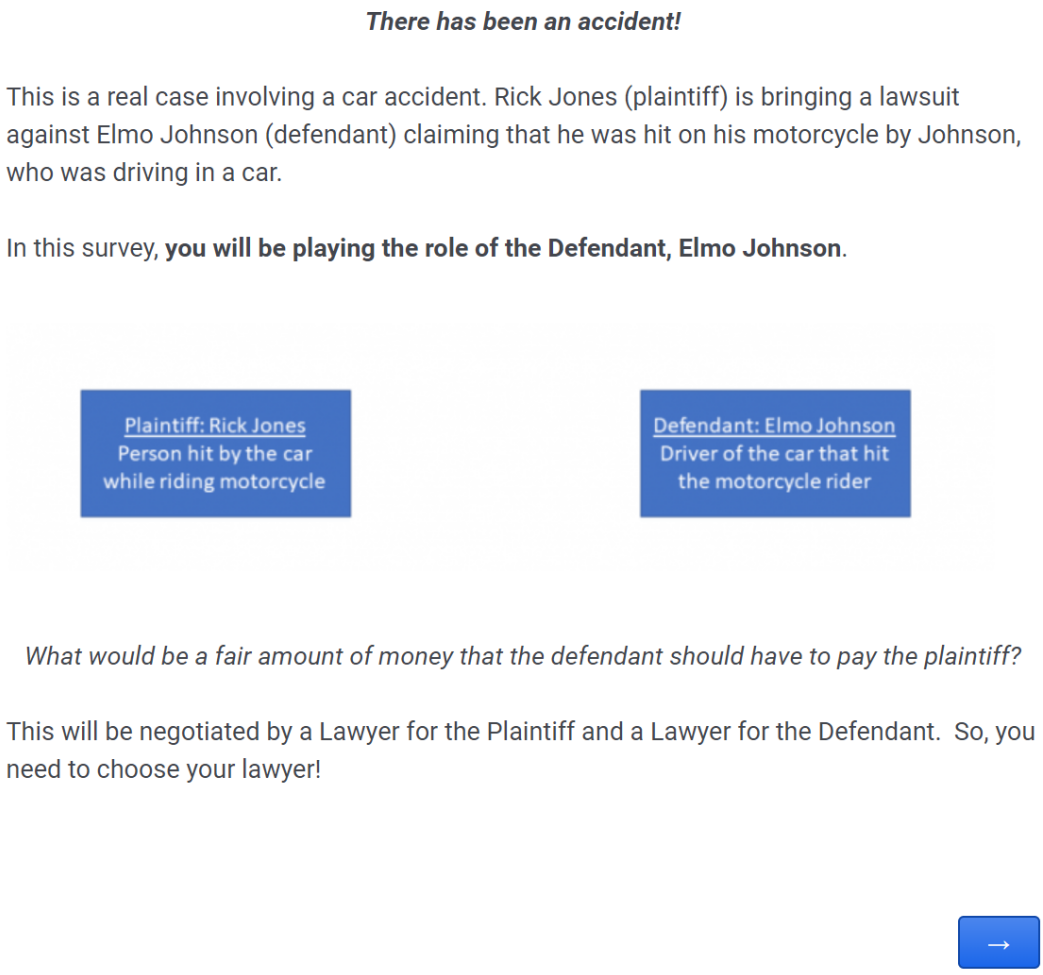
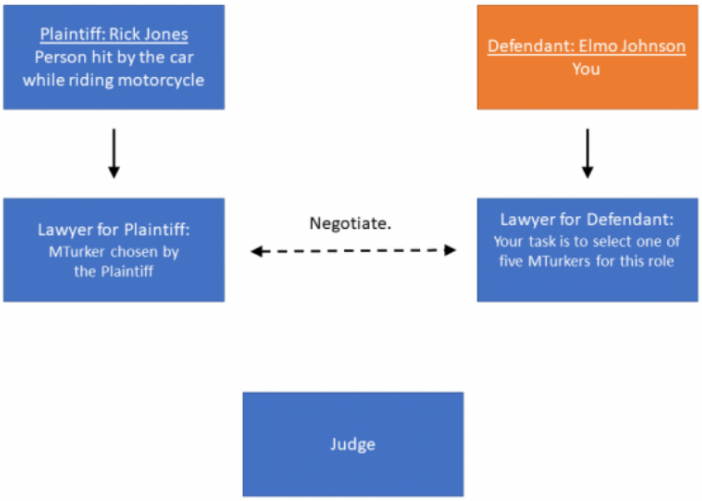


Figure B33. Principals are assigned to their role.



In this study, your task is to hire one of 5 potential lawyers whom you would want to represent you in this case.

The prospective lawyers are all participants on MTurk and have read the same case materials you will be reading. They have also passed a comprehension check on the contents of the case. Based on their reading of the evidence, they reported a settlement amount that they think they can negotiate on your behalf.

Your earnings will depend on the outcome of your lawyer's negotiation.

The next screens will describe your bonus opportunities.

→

Figure B34. Description of their roles and structure of the experiment.

First Bonus Opportunity

After reading these materials, we will ask you 5 questions about the facts of the case. You will earn a **$1 bonus** if you answer these questions correctly. If you read the materials, you should have no problem answering the questions: they will not focus on small details, but on the basic facts of the case (e.g. whether the plaintiff was in a car or on a motorcycle).

Second Bonus Opportunity
If you answer all questions about the case correctly, you will have a second opportunity to earn a bonus of up to **$5.**

You will be matched with 5 other MTurkers who were competing for the job of representing you, the the Defendant. They were told that if you select them, they will receive a $1 bonus in addition to their earnings from the outcome of the case.

Your task will be to **choose a lawyer** from among the 5. Your bonus earnings will be identical to what they earned.

We will explain the details of this decision to you after you have read the case materials.

→

Figure B35. Description of incentives.

We expect that it will take about 15 minutes just to read the documents. After that, the remainder of the survey will be short, but will require that you have read the documents.

Although this study consists of a lot of reading, we hope you will find the material engaging and interesting. At the end of the study, we will show you the ruling of a retired judge in Texas who rendered a decision based on this information.

When you are ready, click the ">>" button to see the first document related to the case.

→

Figure B36. Introduction to case materials. Following this screen, participants read the identical case materials and answer the identical comprehension-check questions as did the Agents.

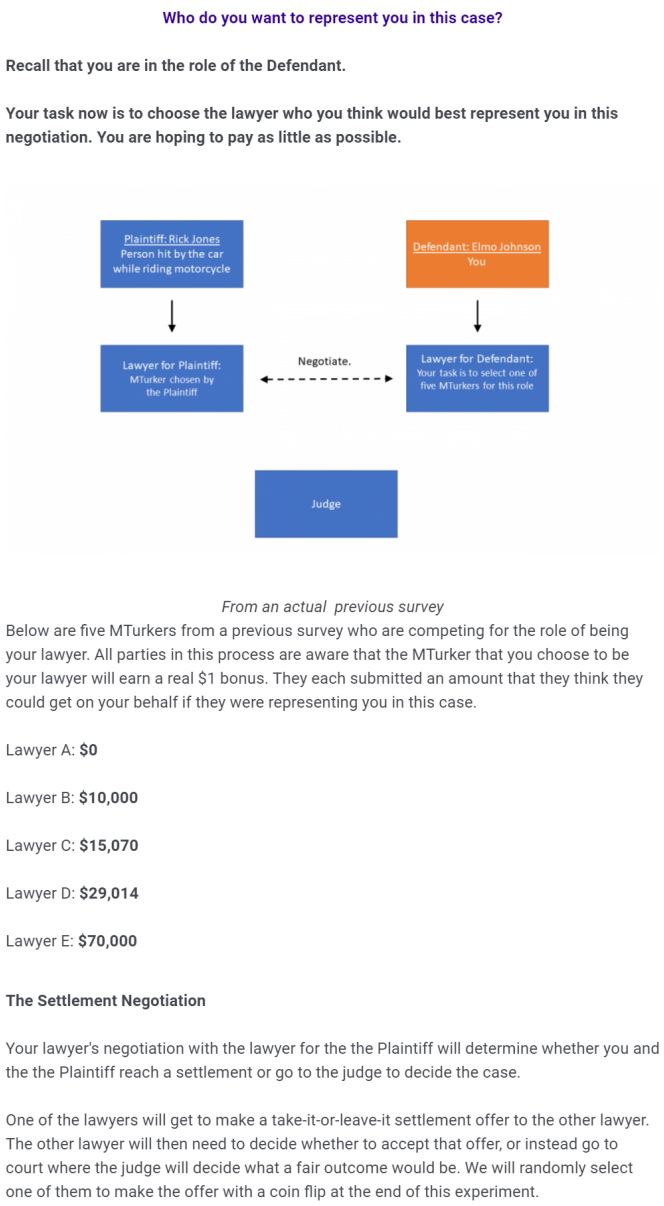


Figure B37. Principals receive information about 5 agents. Participants who did not pass the comprehension check were excluded and did not advance to this screen.

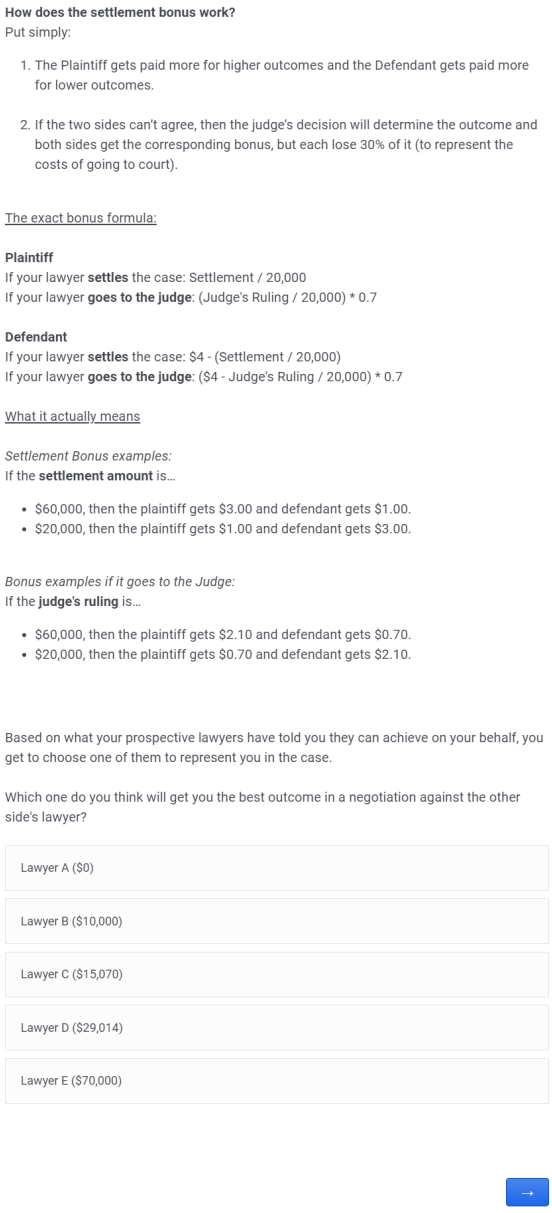


Figure B38. Principals select an agent to represent them.

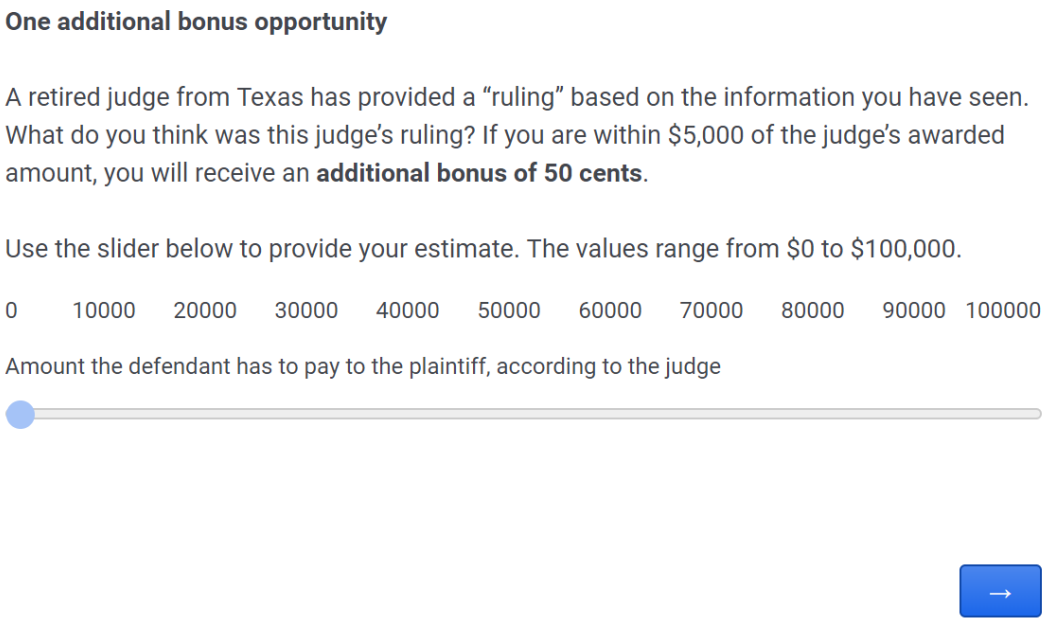


Figure B39. Principals estimate the judge's ruling.

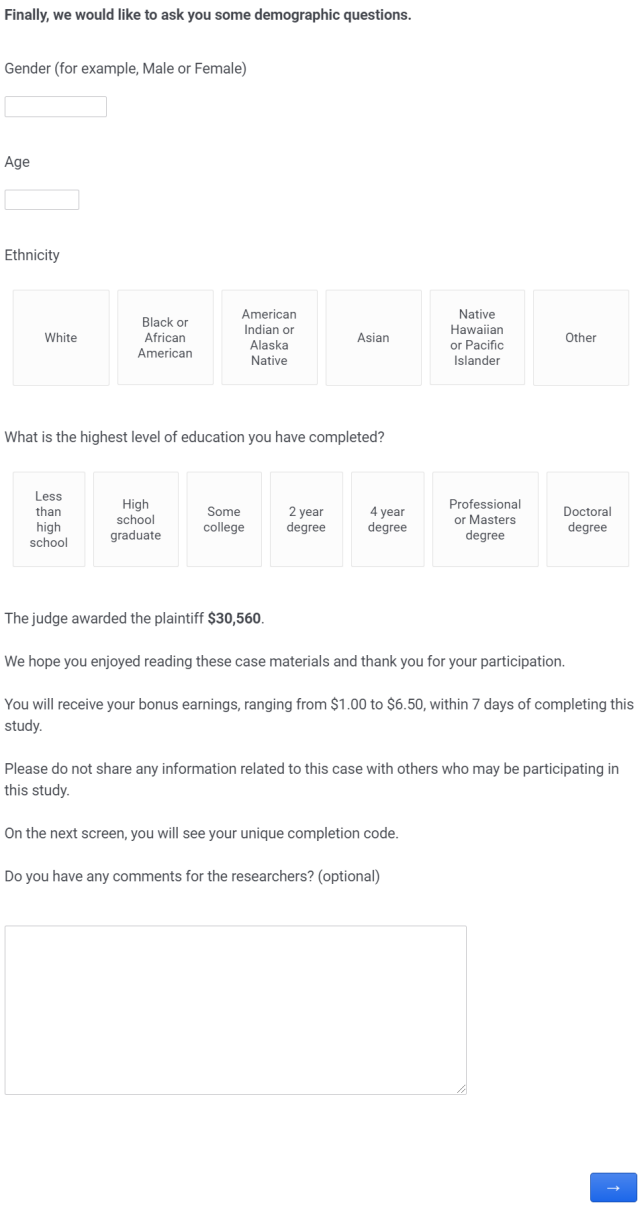


Figure B40. Demographic questions and conclusion.