

On the Role of Emotions in Experimental Litigation Contests*

Gerald Eisenkopf Tim Friehe
University of Vechta University of Marburg

Ansgar Wohlschlegel[†]
University of Portsmouth

Abstract

We present experimental evidence on the influence of emotions on litigation, using a stylized litigation contest in which a potential plaintiff can make a costly effort to regain points that had been transferred to the potential defendant before. In our design, we compare data from a treatment in which any transfer of points happens only when a player decided to take points from the other one (i.e., in which takings are intentional) to data from a treatment in which transfers are initiated by chance (i.e., takings are random events). Takings that are intentional induce negative emotions (e.g., anger), but this emotional arousal does not influence litigant behavior in terms of either filing a case or spending litigation effort. Our observation is independent of litigation being a one-staged or a (possibly) two-staged contest (i.e., one with an appeal).

Keywords: Litigation; Contest; Emotions; Experiment.

JEL codes: K41; D91; C91.

*We would like to thank the Editor Giuseppe Dari-Mattiacci, an anonymous referee, Claudia Landeo, Wolfgang Luhan, Matteo Rizzolli and conference participants at Portsmouth Business School and the Italian Society of Law & Economics for helpful comments. Financial support by the British Academy Small Research Grant SG153177 is gratefully acknowledged.

[†]Corresponding author: Economics & Finance Subject Group, Faculty of Business and Law, University of Portsmouth, Richmond Building, Portland Street, Portsmouth PO1 3DE, United Kingdom. Email: ansgar.wohlschlegel@port.ac.uk

1 Introduction

Legal experts often argue that litigation costs are excessive, as many litigants bring low-merit suits and devote too many resources to the lawsuit. Potential causes for excessive legal spending include rent-seeking incentives (e.g., Katz 1988) and emotions calling for retaliation. In support of this latter factor, emotions, as a key driver of decisions in litigation such as filing, settlement, and effort decisions, theoretical considerations (Huang and Wu 1992; Baumann and Friehe 2012), interviews with lawyers (Farnsworth 1999), field data from divorce cases (Farmer and Tiefenthaler 2001), and survey data (Robbenolt 2006) have been presented. We use a laboratory experiment of a stylized litigation contest in order to isolate the role of emotions for behavior in such a strategic setting as the laboratory environment helps identifying crucial variables and causal relationships in litigation that are typically obscured in real legal contexts, facilitating the test of specific theoretical hypotheses.

Our experiment is designed so as to arouse similar emotions in the participant in the role of the plaintiff as those of a real-world plaintiff. To this end, the experimental litigation contest is put into the context of a transfer of points, which have previously been earned in a real-effort task, from the participant in the role of the plaintiff to that in the role of the defendant. By succeeding in the litigation contest, the plaintiff can achieve a reversal of this transfer of points. In order to study how emotions impact the plaintiff's decision-making, we follow the approach by Landeo and Spier (2009) by considering two types of treatments: In the *endogenous* treatment, the transfer of points results from the defendant's choice, whereas it is entirely random and unswayable for the defendant in the *exogenous* treatment. While the transfer can be expected to induce negative emotions such as anger or irritation for the plaintiff in either treatment,¹ we hypothesize that these emotions are stronger in the endogenous treatment and find empirical support for this hypothesis in our data.² Our main result is that, despite this difference in

¹As argued by Dessalles (2010), an outcome that deviates significantly from a simple, easily accessible counterfactual may be perceived as good or bad luck and, thereby, arouse emotions.

²For example, Friehe and Utikal (2018) establish that extra punishment results for bad intentions.

the plaintiff's negative emotions, participants in the role of the plaintiff do not make significantly different decisions with regards to initiating a litigation contest or the effort therein.

The role of emotions may also depend on the design of litigation. To address this issue, we consider a scenario in which plaintiffs can appeal their case after losing in the first instance. The plaintiff's possibility of appeal makes winning in the first instance relatively less important, possibly calling for a different effort level, and making the litigation contest more attractive. These distinctions may be neglected by emotionally aroused plaintiffs. In contrast, the potentially longer duration of the conflict may also induce a cooling-off of the plaintiff. We find that plaintiffs in the treatment with possible appeals are just as likely to initiate the litigation contest as those in the one-stage treatment and, additionally, that they invest comparable effort levels.

Experimental evidence supporting that emotions such as anger are very relevant for understanding retaliatory behavior such as punishment abounds (e.g., Bolle et al. 2014, Bosman and van Winden 2002, Galeotti 2015, Reuben and van Winden 2008, Xiao and Houser 2005, van Winden 2007). Our paper is also related to a small line of literature using experimental economics to study decision-making in litigation, which has examined the impacts of whether the judicial system is adversarial or inquisitorial (Block and Parker 2004), of litigants delegating decisions to attorneys (Croson and Mnookin 1997) and how this delegation is governed contractually (McKee et al. 2007), of the context of settlement bargaining vis-a-vis a standard ultimatum game (Pecorino and Van Boening 2010), and of the cost allocation rule (Coursey and Stanley 1988 on settlement bargaining, and Coughlan and Plott 1997 and Massenet et al. 2017 on litigation contest effort). While Coughlan and Plott (1997) and Massenet et al. (2017) also analyze experimentally decision-making in a litigation contest, neither of them considers the impact of emotions thereon.

In the remainder of the paper, we will first discuss design and implementation of the experiment, and then present the experimental results. Section 4 concludes.

Xiao and Houser (2005) report that punishment is a way of venting negative emotions.

2 Experiment Design and Implementation

We considered a stylized litigation contest in which the plaintiff’s filing choice and effort level were endogenous. We used a 2×2 between-subject design. The first treatment dimension distinguished whether or not appealing the outcome of the first-instance court was possible. The second treatment dimension concerned whether the grounds for litigation – namely, an *unfair* allocation of payoffs – resulted only when Player A chose to take points from Player B (endogenous treatment) or resulted due to chance (exogenous treatment).³

Subjects started off by participating in a real-effort task with a performance threshold to earn the uniform endowment of 180 points. Failing the task ends the experiment for both players in that pair who, in this case, only receive the show-up fee of 80 points. Next, participants were matched into pairs of plaintiffs (Player B) and defendants (Player A) and learned their role. We used neutral language such as ‘Player A and Player B’ instead of ‘defendant and plaintiff’ throughout the experiment’s instructions.

In Stage 2, 100 points may be transferred from Player B to Player A. In the endogenous treatment, Player A chose whether to take points from Player B or not. In the exogenous treatment, the transfer probability is equal to the relative frequency with which Players A in a pilot session chose to take Player B’s points, and its exact level was not communicated to participants in order to retain comparability of the subjects’ information across treatments. The pilot session was conducted before our main experiment with different subjects.

If points have been transferred, Player B can, in Stage 3, decide whether and how many points to invest in a stylized litigation contest that builds on the theoretical model in Friehe and Wohlschlegel (2017). Higher investment implies a higher probability to reverse the transfer of points. While Player B can select a level of effort from the set $[10, 30]$, Player A’s investment in any contest is fixed at 16 points in order to rule out

³Landeo and Spier (2009) use a similar strategy in the context of buyers’ reactions to an incumbent seller’s offer of exclusive dealing contract, which may be exogenously given or chosen by the seller.

strategic uncertainty, which is known to make effort choices in experimental contests very heterogeneous and to produce results that are hard to interpret (see Dechenaux et al. 2015). An effort level of 16 results as the defendant’s equilibrium effort in Friehe and Wohlschlegel (2017) when both litigants appeal a judgment in favor of the other party. In the experiment, the plaintiff’s probability of winning the litigation contest can be stated as

$$P = \frac{e_P}{32 + e_P},$$

where e_P denotes the plaintiff’s effort. As a result, maximal investment induces a probability of winning amounting to less than 50 percent. After Player B’s litigation decision, eleven emotions are elicited on a Likert scale from 1 to 7, where 1 represents the strongest feeling of the emotion (Bosman and van Winden 2002).

Depending on the treatment, the plaintiff may be able to appeal in Stage 4 after losing the litigation contest. To simplify the experiment and increase the predictability, both players’ effort levels in the appeals stage are exogenously fixed at 9 points. In other words, the plaintiff’s appealing the first outcome implies a fixed cost of 9 points for both parties. Table 1 summarizes both players’ choices at each stage, depending on the treatment.

If Player B was risk neutral and motivated only by monetary payoff consequences, her optimal trial effort choices, based on Player A’s exogenously given effort, can be obtained using the theoretical model in Friehe and Wohlschlegel (2017). However, the participants’ decisions are likely to be driven also by behavioral considerations: Against the background of the preceding literature of fair intentions, we anticipate that players will invest more effort and initiate the litigation contest with a higher likelihood and higher effort when Player A intentionally took points from Player B. This hypothesis reflects the idea that litigating may be considered as an act intended to reciprocate the unfair act of the defendant (e.g., Rabin 1993).

Possible implications from the availability of an appeals stage may be related to the literature on cooling-off periods (e.g., Neo et al. 2013, Oechssler et al. 2015). For example, Neo et al. (2013) find that time delay correlates with decreased reported feelings

Table 1: Experiment Design with Endogenous (Exogenous) Taking

Stage	No appeal	Plaintiff Can Appeal
1	Real-effort task for 15 minutes to earn 180 points. Task: Counting zeros on screens with a threshold of 4 correct screens (Abeler et al. 2011).	
2	Endogenous Treatment: Player A chooses whether or not to take 100 points from Player B Exogenous Treatment: Move of chance determines taking where probability was determined in a pilot)	
3	Player B chooses whether to invest $p_{T_{rial}} \in [10, 30]$ to start litigation contest. Game ends after no plaintiff investment. Player A's investment in any contest is fixed at 16 points to remove strategic uncertainty. Elicitation of 11 emotions with Likert scales from 1 to 7 (Bosman and van Winden 2002).	
4	Trial court verdict. Player B wins 100 points back with probability $\pi_{T_{rial}}(p_{T_{rial}}) = (1 + 32/p_{T_{rial}})^{-1}$. Game ends	When Player B won contest: Game ends When Player B lost contest: Player B can appeal, otherwise game ends In appeal, both players' investments are fixed at 9 points. Player B wins 100 points back with probability $\pi_{Appeal} = 1/10$.
5		Appeals Verdict and end of game.
# of Subjects	Endogenous: 102; Exogenous: 62	Endogenous: 60; Exogenous: 40

of disappointment. When appeals are possible, the final word is not spoken in the first litigation contest such that less depends on the immediate reaction of the plaintiff to the transfer of points. Moreover, the decision about whether or not to appeal happens after having made the effort decision and awaiting the move of nature, allowing for some cooling off of the plaintiff. We thus expect differences across one-staged and potentially two-staged litigation contests. However, since we do not have a forced delay, any differences might turn out to be moderate. For example, Neo et al. (2013) use a forced delay of 15 minutes.

The experiment was conducted between August and November 2017 at the University of Hamburg’s economic laboratory, using z-Tree (Fischbacher, 2007) for programming and hroot (Bock et al., 2014) for organizing and administrating the experiment. On average, each session of the experiment lasted about 45 minutes (including payment), and the 204 participants earned a total of about 11 Euro on average.

3 Results

Manipulation Check We are interested in the role of emotions on litigation. We hypothesized that intentional taking makes people angrier than an exogenous transfer. Table 2 shows results from an ordered-probit estimation of some emotions of Player B with a dummy indicating whether points had been transferred, a treatment dummy equal to 1 for the exogenous treatment, and the interaction of these dummies as independent variables.

As expected, the significantly negative coefficient for the transfer dummy variable in the first column, for instance, shows that anger is higher after a transfer of points than without it conditional on being in the endogenous treatment (as a lower value of the anger variable means a stronger emotion). Similarly, irritation and sadness are higher and joy is lower after a transfer in the endogenous treatment.

In order to check whether the manipulation using the endogeneity of the transfer was successful, it is not sufficient to just compare average emotion levels between both

treatments in those cases where the transfer took place, as the significant coefficients of the dummy variable for the exogenous treatment in Table 2 shows that emotions differ significantly between treatments even if no transfer happened. Hence, we need a difference-in-differences estimator of how the emotional reaction to a transfer differs between treatments, which is achieved by the coefficient of the interaction term. For the estimation of anger in the first column, for instance, this coefficient is significantly positive, which means that experiencing a transfer in the exogenous treatment is not associated with intense anger as it is in the endogenous treatment. We observe similar effects for related emotions.

Table 2: The Impact of a Transfer of Points on Player B’s Emotions.

Dep. Var.	Anger	Irritation	Sad	Joy
Transfer	-2.181*** (0.588)	-1.707*** (0.571)	-1.156** (0.584)	2.332*** (0.578)
Exogenous	-0.941** (0.321)	-0.866*** (0.317)	-0.633** (0.317)	0.641** (.314)
Interaction (Transfer × Exogenous)	1.112*** (0.400)	0.735* (0.393)	0.751* (0.402)	-0.803** (.395)
Pseudo- R^2	.045	.049	.012	0.089

Notes: N = 132 in all estimations; *** p < .01; ** p < .05; * p < .1. All models report results from ordered-probit estimations of the respective emotions. Emotions are measured on a scale from 1 (strong emotion) to 7 (no emotion).

Litigation Rates and Effort Levels Table 3 summarizes the data on both players’ decisions. Players A chose to take points from their counterpart about half the time, whereas Players B reacted to takings of their points by initiating the litigation contest in the vast majority of cases. Furthermore, conditional on having initiated the contest, Players B chose high effort levels. As a comparison, the last row of Table 3 displays the equilibrium effort choices for the case where both players are risk neutral and only care about monetary payoffs, which were obtained using Friehe and Wohlschlegel (2017). The actually observed effort choices significantly exceed the point predictions of the theoret-

ical model ($p < .01$, according to the Wilcoxon signed-rank test). Figure 1 shows the frequency of Player B’s effort choices by treatment and suggests that this over-investment in effort might have been even more pronounced if it wasn’t for the cap on effort: In all four treatments, most Players B who had entered the contest chose the highest possible effort level of 30 points.

Table 3: Summary Statistics.

Appeal Transfer Treatment	Player B can appeal		No appeal	
	endog.	exog.	endog.	exog.
Taking/Groups in treatment	14/30 (46.7%)	14/20 (70.0%)	26/51 (51.0%)	22/31 (71.0%)
Contest started/Groups with taking	13/14 (92.9%)	12/14 (85.7%)	20/26 (76.9%)	17/22 (77.3%)
Average effort	26.2	26.4	28.3	25.9
Equilibrium effort for pure expected monetary payoff maximizers	24.3		24.6	

We use two-sided non-parametric tests (Wilcoxon Ranksum test, Fisher exact test) to analyze how participants’ decisions differ across the treatments. We start by examining our main research question and exploring differences in the average effort levels and litigation rates for each appeals regime under endogenous and exogenous taking. The main result of our paper is that we do not find any significant difference in litigation (second line in Table 3) or effort decisions (third line) between the endogenous and the exogenous treatment (all relevant p-values > 0.5).

In addition to the implication of an endogenous instead of an exogenous taking, we were interested in the potential role of the possibility to appeal. Our experiment allows for analyzing whether Player B’s possibility to appeal a judgment in favor of Player A has an effect on participants’ choices or their difference under endogenous versus exogenous taking of points. Note first that Player B lost in 13 of the 25 cases in which appeals are possible, points were transferred to Player A, and Player B started a contest. In one

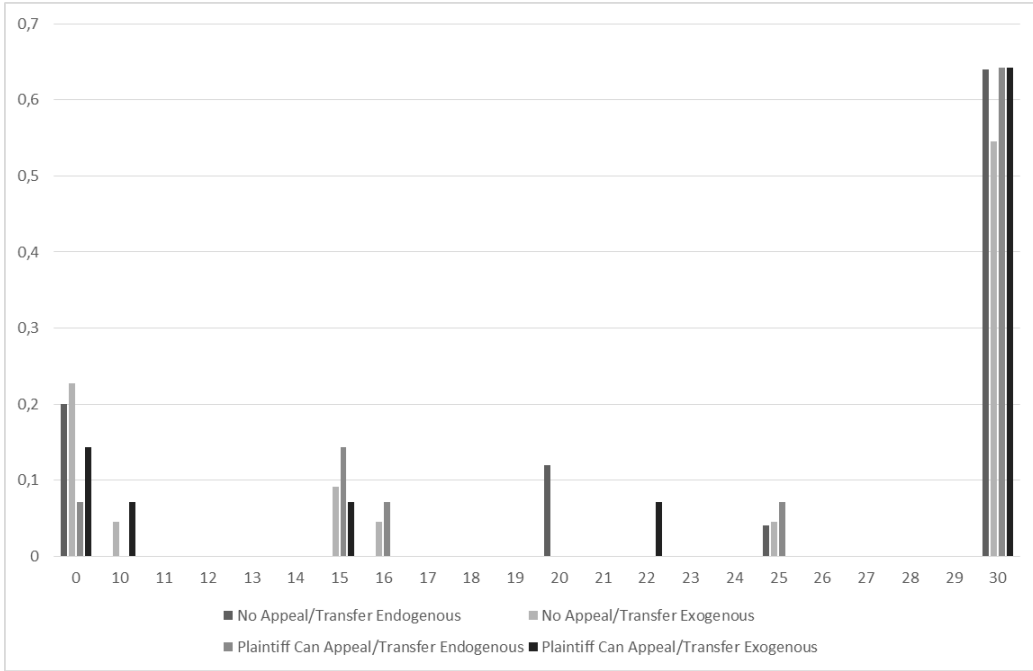


Figure 1: Frequencies of Player B's Litigation Effort Choices.

out of three such cases in the endogenous treatment and in three out of ten such cases in the exogenous treatment did Player B actually appeal the judgment, suggesting that this possibility may only be of limited relevance for participants. Furthermore, even if players anticipate plaintiffs to use this opportunity whenever possible, the theory does not predict a sizeable impact of this possibility on Player B's earlier decisions (see the last row of Table 3). Indeed, litigation rates are, on average, slightly higher if Player B can appeal (89.3%) compared to the scenario without appeal (77.1%), but this difference is statistically insignificant ($p = 0.242$, χ^2 -test). Furthermore, average effort conditional on having initiated the contest seems independent of whether or not appeal was possible. Note that this lack of difference in Player B's decisions between the treatments with and without the possibility of appeals seems to be correctly anticipated by Players A, as the proportion of Player A taking points from Player B in the case where taking is endogenous does not differ significantly between these treatments either.

To complement our direct, non-parametric test of the treatment effect, we also test the impact of emotions when controlling for the treatment. Table 4 confirms our non-parametric results by showing that the filing decision in both treatments is not statistically

different even when controlling for emotions. As for the impact of emotions on the filing decision, the table shows that anger, irritation and joy do not have any significant effect on the plaintiff's filing choice. However, for a given treatment, a stronger feeling of sadness makes a plaintiff significantly less likely to file suit (on the 10%-level).⁴

Table 4: The Impact of Emotions on Filing Decision.

	(i)	(ii)	(iii)	(iv)
Anger	-0.007 (0.099)			
Irritation		0.025 (0.107)		
Sad			0.215* (0.122)	
Joy				0.086 (0.129)
Exogenous	-0.014 (0.405)	-0.014 (0.401)	-0.169 (0.424)	0.038 (0.410)
Appeal	0.562 (0.404)	0.571 (0.403)	0.415 (0.421)	0.585 (0.406)
Pseudo- R^2	0.037	0.038	0.093	0.045

Notes: N = 76 in all estimations; *** p < .01; ** p < .05; * p < .1. All models report results from Probit estimations of the plaintiff's filing choice (dependent variable = 1 if plaintiff files suit). Emotions are measured on a scale from 1 (strong emotion) to 7 (no emotion).

⁴There is some weak indication for the effect of emotions to vary across treatments. When we look at the Probit results for the endogenous and the exogenous treatments separately, the coefficients for anger, irritation and joy have opposite signs across treatments. Similarly, we looked at the interaction between emotions and the exogenous treatment dummy within a Tobit model of the effort choice that reflects the fact that plaintiffs who chose not to start a litigation contest had an optimal litigation effort of at most 9. This interaction is significantly positive at the 10%-level for anger and irritation, which means that the impact of these emotions is smaller in the exogenous treatment (results from these estimations available on request).

4 Conclusion

We report results from an economic experiment on behavior in a potentially multi-staged litigation contest. Our focus was on the role of emotions for the plaintiff's choices of whether or not to bring the case and how much litigation effort to invest. Variation in emotions was introduced by distinguishing between two treatments in which the transfer of points was either intentional or random. While emotions are stirred up by the treatment variation, there are no differences in litigant choices.

Our data indicate that the results from the experimental literature on emotions and punishment (e.g., Xiao and Houser 2005) do not carry over to our game, in which the only way for Player B to punish Player A's antisocial behavior was by initiating a litigation contest and, therefore, less direct than in that literature. This finding may be seen as related to the result of Pecorino and van Boening's (2010) experimental study of settlement bargaining, which they implement as an ultimatum game that is embedded within the wider context of litigation in the sense that rejecting an offer means that the amount that the defendant has to pay to the plaintiff is determined stochastically and both players bear a fixed dispute cost. They find that much lower offers are made and accepted than in pure ultimatum bargaining games. Both their and our results indicate that established results from well-known experimental games may be markedly weaker if these games are put into a wider strategic context. A potential avenue for future research might be to explore more generally how the impact of emotions on the incidence of punishment depends on the particular way in which this punishment is implemented in the experiment.

References

- Abeler, J., Falk, A., Goette, L., and D. Huffman, 2011. Reference Points and Effort Provision. *American Economic Review* 101, 470-492.
- Baumann, F., and T. Friehe, 2012. Emotions in Litigation Contests. *Economics of Governance* 13, 195-215.

Block, M.K., and J.S. Parker, 2004. Decision making in the absence of successful fact finding: theory and experimental evidence on adversarial versus inquisitorial systems of adjudication. *International Review of Law and Economics* 24, 89-105.

Bock, O., Baetge, I., and A. Nicklisch, 2014. hroot - Hamburg registration and organization online tool. *European Economic Review* 71, 117-120.

Bolle, F., Tan, J.H.W., and D.J. Zizzo, 2014. Vendettas. *American Economic Journal: Microeconomics* 6, 93-130.

Bosman, R., and F. van Winden, 2002. Emotional hazard in a power-to-take experiment. *Economic Journal* 112, 117-169.

Coughlan, P.J., and C.R. Plott, 1997. An experimental analysis of the structure of legal fees: American Rule vs. English Rule. Social Sciences Working Paper no. 1025. California Institute of Technology.

Coursey, D.L., and L.R. Stanley, 1988. Pretrial bargaining behavior within the shadow of the law: theory and experimental evidence. *International Review of Law and Economics* 8, 161-179.

Croson, R., and R.H. Mnookin, 1997. Does disputing through agents enhance cooperation? Experimental evidence. *Journal of Legal Studies* 26, 331-346.

Dechenaux, E., Kovenock, D., and R.M. Sheremata, 2015. A survey of experimental research on contests, all-pay auctions and tournaments. *Experimental Economics* 18, 609-669.

Dessalles, J.-L., 2010. Emotion in Good Luck and Bad Luck: Predictions from Simplicity Theory. Proceedings of the 32nd Annual Conference of the Cognitive Science Society.

Farmer, A., and J.A. Tiefenthaler, 2001. Conflict in divorce disputes: The determinants of pretrial settlement. *International Review of Law and Economics* 21, 157-180.

Farnsworth, W, 1999. Do Parties to Nuisance Cases Bargain after Judgment? A Glimpse inside the Cathedral. *University of Chicago Law Review* 66, 373-436.

Fischbacher, U., 2007. z-Tree: Zurich toolbox for ready-made economic experiments. *Experimental Economics* 10, 171-178.

Friehe, T., and V. Utikal, 2018. Intentions under cover – Hiding intentions is considered

unfair. *Journal of Behavioral and Experimental Economics* 73, 11-21.

Friehe, T., and A. Wohlschlegel, 2017. Rent Seeking and Bias in Appeals Systems. Forthcoming, *Journal of Legal Studies*.

Galeotti, F., 2015. Do negative emotions explain punishment in power-to-take games? *Journal of Economic Psychology* 49, 1-14.

Huang, P.H., and H.M. Wu, 1992. Emotional responses in litigation. *International Review of Law and Economics* 12, 31-44.

Katz, A., 1988. Judicial decisionmaking and litigation expenditure. *International Review of Law and Economics* 8, 127-143.

Landeo, C.M., and K.E. Spier, 2009. Naked exclusion: an experimental study of contracts with externalities. *American Economic Review* 99, 1850-1877.

Massenot, B., Maraki, M., and C. Thöni, 2017. Legal compliance and litigation spending under the English and the American rule: Experimental evidence. Mimeo.

McKee, M., Santore, R., and J. Shelton, 2007. Contingent fees, moral hazard, and attorney rents: A laboratory experiment. *Journal of Legal Studies* 36, 253-273.

Neo, W.S., Yu, M., Weber, R.A., and C. Gonzalez, 2013. The effects of time delay in reciprocity games. *Journal of Economic Psychology* 34, 20-35.

Oechssler, J., Roider, A., and P. Schmitz, 2015. Cooling off in negotiations: Does it work? *Journal of Institutional and Theoretical Economics* 171, 565-588.

Pecorino, P., and M. Van Boening, 2010. Fairness in an embedded ultimatum game. *Journal of Law and Economics* 53, 263-287.

Rabin, M., 1993. Incorporating fairness into game theory and economics. *American Economic Review* 83, 1281-1302.

Reuben E., and F. van Winden, 2008. Social ties and coordination on negative reciprocity: the role of affect. *Journal of Public Economics* 92, 34-53.

Robbennolt, J.K., 2006. Apologies and settlement levers. *Journal of Empirical Legal Studies* 3, 333-373.

von Winden, F., 2007. Affect and Fairness in Economics. *Social Justice Research* 20, 35-52.

Xiao, E., and D. Houser, 2005. Emotion expression in human punishment behavior. PNAS 102, 7398-7401.