

Doll, Monika; Seebauer, Michael; Tonn, Maren

Working Paper

Bargaining over waiting time in gain and loss framed ultimatum games

FAU Discussion Papers in Economics, No. 15/2017

Provided in Cooperation with:

Friedrich-Alexander University Erlangen-Nuremberg, Institute for Economics

Suggested Citation: Doll, Monika; Seebauer, Michael; Tonn, Maren (2017) : Bargaining over waiting time in gain and loss framed ultimatum games, FAU Discussion Papers in Economics, No. 15/2017, Friedrich-Alexander-Universität Erlangen-Nürnberg, Institute for Economics, Nürnberg

This Version is available at:

<https://hdl.handle.net/10419/167685>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

No. 15/2017

**Bargaining over waiting time in gain and
loss framed ultimatum games**

Monika Doll
University of Erlangen-Nürnberg

Michael Seebauer
University of Erlangen-Nürnberg

Maren Tonn
University of Erlangen-Nürnberg

ISSN 1867-6707

Bargaining over waiting time in gain and loss framed ultimatum games

Monika Doll^a, Michael Seebauer^a, Maren Tonn^a

^a*University of Erlangen-Nürnberg, Lange Gasse 20, 90403 Nürnberg, Germany*

Monday 21st August, 2017

Abstract

We implement waiting time as a currency in an ultimatum game in an experimental laboratory study. Subjects had to split 60 minutes of waiting time. We analyze bargaining behavior in varying situations connected to waiting time as well as gain and loss framing. Different situations that follow waiting time have no influence on bargaining behavior. Regarding gain and loss framing, we do not find differences in proposers' behavior. Responders show less willingness to wait when the bargaining outcome is framed as a loss compared to being framed as a gain of time. Displaying less willingness to wait, responders show a higher propensity to risk a rejection of the proposers' offers.

Keywords: Ultimatum Game, Waiting Time, Experimental Currency, Leaving the Laboratory, Framing

JEL classification: C91, C70

1. Introduction

Time, just like money, is a scarce and highly valued resource that can be wasted and allocated (Leclerc et al. 1995), but while a loss of money may be recovered, lost time is irreplaceable. Waiting time, as an 'empty time slot', is disfavored to time spent on activities and even found to cause psychological stress (Antonides et al. 2002; Osuna 1985). Thus, using waiting time as currency in experimental studies offers certain advantages. First, no windfall gains occur as the experimenter does not endow participants with time (Arkes et al. 1994). Second, individual abilities and endowment can be neglected as every individual has no more than 24 hours a day and homogenous opportunity costs with respect to waiting time can be assumed for each individual. Third, unoccupied time, such as waiting time per se, is assumed to be an instrument for losses in experimental studies, as less waiting time is better than more waiting time and empty time, by its own nature, is perceived as being a loss of time.

In contrast to this, money, by its own nature, is perceived to be a gain. It is known that people vary their behavior depending on whether an outcome is perceived as being positive (gain) or negative (loss). This so-called 'framing effect' was initially described in the context of prospect theory (Kahneman and Tversky 1979). In the loss domain, people tend to display more risk seeking behavior than in the gain domain (Hershey and Schoemaker 1980; Bottom and Studt 1993).

Therefore, it is surprising that no clear difference in behavior regarding risk attitudes could be found by analyzing choice equality questions and choice situations in the domain of money compared to in the domain of waiting time (Leclerc et al. 1995; Weber and Milliman 1997; Festjens et al. 2015; Abdellaoui and Kemel 2014). In contrast to this, in the context of decision making under risk, risk seeking behavior was found with waiting time (Kroll and Vogt 2008; Zushi et al. 2009).

However, in the context of ultimatum bargaining, which is also a situation of decision making under risk, no differences between proposers' bargaining behavior over waiting time (assumed to be perceived as a loss per se) and monetary endowments (assumed to be perceived as a gain per se) were found by Berger et al. (2012) as well as Noussair and Stoop (2015). These are so far the only two studies, which to our knowledge analyzed waiting

time as an alternative experimental currency in an ultimatum game (Berger et al. (2012) at analyzing anonymity conditions and Noussair and Stoop (2015) at analyzing social preference experiments' results). This null finding challenges the assumption of waiting time being perceived as a loss by its very nature.

The value of an outcome, thus being perceived as a gain or a loss, is found to be related to a reference point, e.g. an expected outcome (Abdellaoui and Kemel 2014). Studies show that reference points play a key role in the domain of time as subjects perceive an outcome not to be a loss when scheduled and expected upfront (Abdellaoui and Kemel 2014; Kumar et al. 1997; Festjens et al. 2015).

This is in line with research on framing effects finding that gain framed actual losses are perceived as gains (Kühberger et al. 1999). The possibly occurring problem of subjects having expectations of the experiments' duration that could influence bargaining behavior was mentioned and considered by both studies on bargaining over waiting time in ultimatum games (Berger et al. 2012; Noussair and Stoop 2015). Thus, Berger et al. (2012) announced a minimum as well as a maximum experiment duration to the participants in the experiment's invitation. On the one hand, the announced maximum duration could have been perceived being a reference point that was taken into account and scheduled upfront by the subjects. On the other hand, no study yet has focused research on whether the framing effect exists when bargaining over waiting time in ultimatum games and thus the extra treatment of durations' announcements was needed.

As waiting time is assumed to be a loss by its own nature and using waiting time as currency in economic experiments offers certain advantages being inter alia avoiding windfall endowments, it is assumed to be a valid instrument for real losses. Therefore, it is necessary to analyze whether the framing effect exists and if so, in which situations this effect could lead to waiting time not being perceived as a loss anymore, thus not being a valid instrument for losses.

We close this research gap by analyzing the influence of framing as our experiment's main treatment variable. In the gain frame, the bargaining situation is presented as a possibility to reduce waiting time, while the loss frame suggests a perceived increase of waiting time through bargaining.

Moreover, we extend previous research by implementing the strategy method. Previous studies have shown that the loss domain has more impact on responders' behavior than on proposers' behavior in ultimatum games with monetary currency. While for proposers, economic experiments' findings do not only show the difference in behavior between framings to be weaker than that of responders, findings are moreover twofold. In the loss frame compared to the gain frame, some studies found proposers to disadvantage responders (Lusk and Hudson 2010), other studies found proposers to favor responders (Buchan et al. 2005; Baquero et al. 2013; Leliveld et al. 2009) at splitting an endowment. In contrast to this, responders show a stronger and clearly directed difference in behavior by displaying higher demands in the loss frame compared to the gain frame (Buchan et al. 2005; Baquero et al. 2013). Thus, by implementing the strategy method, we are able to not only observe proposers' bargaining behavior, but also identify more detailed information on responders' decisions.

Our results regarding the impact of framing show that proposers predominantly offer an equal split of waiting time in gain as well as loss frame. In contrast to this, responders are found to have a significantly lower willingness to wait in the loss frame. Thus, responders' behavior leads to an increased risk of rejection in the domain of losses, which fosters the interpretation of bargaining over waiting time being influenced by framing, and loss framed waiting time rather being perceived as a loss than a gain by responders.

Besides analyzing the effect of framing in the domain of waiting time, we compare behavior at varying situations that follow after waiting time exceeds. Berger et al. (2012) as well as Noussair and Stoop (2015), who analyze ultimatum bargaining with waiting time as currency, allowed their participants to leave the laboratory when waiting time had ended.

By using money as experimental currency, the situation that follows the bargaining outcome is assumed to not have an influence on bargaining behavior. However, by using waiting time as experimental currency, some participants could have stronger intentions to leave the laboratory than others. Thus, by not letting subjects leave the laboratory but allowing them to freely use their time until the end of the experiment, subjects are assumed to have more similar attitudes towards the situation after waiting time ends.

Thus, in addition to analyzing the influence of framing, we are the first to focus on

whether different allowed uses of the available time after waiting time have an impact on bargaining behavior as well. We implement two conditions that the subjects had to expect after waiting time. On the one hand, in line with previous papers, subjects could leave the experimental laboratory after the end of their waiting time, on the other hand they could freely use the remaining time but had to stay in the laboratory.

Our results show no differences in participants' bargaining behavior regarding the situations that follow after waiting time ends.

2. Design and Procedure

Our experiment is based on a standard ultimatum game, in which a proposer offers a share of an endowment to a responder (Güth et al. 1982). In case the responder accepts this split, both players receive the suggested respective share; in case of a rejection none of the players get a share of the endowment. Our design of the treatments basically follows Berger et al. (2012) and Noussair and Stoop (2015). In this variation of the standard ultimatum game, instead of money, the proposers distribute 60 minutes of waiting time as experimental currency. In contrast to Berger et al. (2012) as well as to Noussair and Stoop (2015), we apply the strategy method to get more detailed information on responders' preferences. Whereby in our design the responders state their 'maximum acceptable waiting time' (MAWT) before learning the proposers' suggested split of the 60 minutes. In case a responder's MAWT is equal to or higher than 'the amount of waiting time that was assigned to him/her by the proposer (OFFER) the suggested split is realized. To implement the same rejection's consequence as Berger et al. (2012) and Noussair and Stoop (2015), in case MAWT is lower than OFFER, both participants have to wait the full 60 minutes.

The situation that follows after waiting time's impact on bargaining behavior was analyzed by implementing treatments with varying predefined allowed uses of available time after waiting.

Subjects, who completed their waiting time either do not need to wait any longer and are able to spend the available time outside the laboratory (LEAVE), or have to stay in the experimental laboratory but are allowed to use entertainment devices (mobile phone, Inter-

net on laboratory computer, or book) for the rest of the experiment's duration (USE). For both situations that follow after waiting time, each participant received the same invitation e-mail asking them to bring entertainment devices to the experiment.

Gain and loss framing was implemented by stating the decision in a way such that participants perceive the bargaining's outcome as a reduction (GAIN), respectively increase (LOSS) of waiting time. Thus, we applied different expected experiment durations via announcing different maximum respectively minimum experiment durations in the reminder e-mail to this experiment as well as in the instructions shown and read out loud to the participants at the beginning of the experiment.

First, every subject accepted to participate in an experiment that was stated to last 75 minutes. Thus we avoided subjects' self-selection resulting in different opportunity costs of waiting time, which would have had occurred by inviting them to experimental sessions with different durations. No payment was announced in the invitations to avoid setting an expectation on duration based on the amount of payment. The participants received an e-mail as a reminder of their registration. For those sessions in which the participants would be allowed to leave the laboratory after the waiting time, the reminder e-mail and the experiments' instructions text stated that the duration of the experiment would be 'at least 15 minutes'. For those treatments, that would not allow the participants to leave the experimental laboratory, the duration of the experiment was affirmed to be 75 minutes. This way, we prevented the problem with implementing losses through setting different reference points, one by an expected and thus planned experiment duration of '75 minutes', one by a much lower expected duration time by fostering a reference dependence at 'minimum 15 minutes'. Although the described procedure yields a rather weak framing, it was chosen to avoid any kind of deception.

Overall, we implement a one-shot, between subjects 2x2 design and vary loss versus gain frame as well as different alternative situations after waiting time (see Table 1). That is, each participant interacted with one randomly allocated other person and played one game condition once.

The experiment was conducted in February and April 2016 in the LERN (Laboratory for

Table 1: 2x2 design; expected treatments' durations, induced perceived bargaining outcome
 Situation that follows waiting time

		LEAVE (leave laboratory after waiting time)	USE (use time in laboratory after waiting time)
Framing	LOSS	LEAVE_LOSS (minimum 15 min)	USE_LOSS (exactly 75 min)
		Waiting time: might leave later	60 min entertainment, less because of waiting time
	GAIN	LEAVE_GAIN (maximum 75 min)	USE_GAIN (exactly 75 min)
		Waiting time: might leave earlier	60 min waiting time, less when splitting waiting time

Experimental Research Nuremberg) at the University of Erlangen-Nuremberg, Germany.

A session proceeded in the following way: Subjects were recruited by e-mail via ORSEE (Greiner 2015). The initial sample consisted of 282 students, 4 of whom were excluded from the sample.¹ Just over half of the sample were female. Participants were mainly undergraduate economics students with an average age of 23.6. No significant differences in control variables could be found between all treatments.² After arriving, each participant was randomly assigned to one cubicle, containing one computer terminal. Then the instructions were read out loud as well as presented on computer screens.³ The experiment was computerized and conducted with the experimental software z-Tree (Fischbacher 2007).

After making their decisions and before getting to know the outcome of the bargaining game, we asked subjects to fill out an extensive questionnaire, such that each participant stayed in the experimental laboratory for 15 minutes before the beginning of the waiting time. This way, we ensured the minimum duration to be 15 minutes and the maximum duration of the experiment to be 75 minutes.

Depending on the treatment, subjects were either allowed to leave or were allowed to

¹Out of 282 participants, 2 subjects left before the waiting time was over. Therefore, we excluded these individuals and their bargaining partners from the sample for analysis.

²The four conditions of our 2x2 design consisted of 5 sessions each, with 70, respectively 68 (USE_Gain) participants.

³The instructions, translated from German to English, can be found in the appendix.

use the entertainment devices they brought with them, use the Internet, or use the available time to study or read. At the (individual) end of a session, each participant received a fixed payment of 10 Euros upon leaving the laboratory. Payment was independent of the actual time stayed in the laboratory.

As framing was found to have more impact on bargaining behavior than an endowment's actual valence as positive or negative (Kühberger et al. 1999), we expect waiting time, which is an actual loss of time, to be perceived differently depending on the frame. In LOSS we expect waiting time to be perceived as a loss, but in GAIN as a gain,. Thus, in line with prospect theory's proposed behavior, we expect to observe more risk seeking behavior from both proposer and responder in LOSS than in GAIN. More risk seeking behavior is anticipated by observing proposers to impose more waiting time on responders (Hypothesis 1a), while responders are expected to state a lower maximum acceptable waiting time in loss than in gain frame (Hypothesis 1b).

Time is assumed to be evaluated differently depending on spending it inside or outside the laboratory. Although the participants could bring entertainment devices, we expect that they feel more restricted using time inside the laboratory compared to using time outside the laboratory. Therefore, we assume that participants have a stronger preference to leave the laboratory earlier than planned as they have the wish to be able to freely use their time until the end of the experiment's duration. Thus, we expect to observe responders to have a lower maximum acceptable waiting time and proposers to implement more waiting time on proposers in LEAVE than in USE (Hypothesis 2).

3. Results

Table 2 shows the descriptive statistics for our main variables. These variables are the proposers' offered share of the 60 minutes waiting time that is assigned to the responders (OFFER), and the responders' stated maximum acceptable waiting time (MAWT).

Result 1a) Proposers' bargaining behavior is not influenced by framing

Table 2: Mean OFFER and mean MAWT over all treatments as well as for each treatment separately, standard deviations in brackets; n=278

	All treatments	USE_GAIN	USE_LOSS	LEAVE_GAIN	LEAVE_LOSS
Mean OFFER	31.42 (4.26)	31.59 (4.26)	30.49 (3.53)	31.77 (4.55)	31.83 (4.65)
Mean MAWT	36.41 (9.09)	36.91 (9.27)	35.83 (10.10)	38.54 (9.62)	34.37 (6.94)

Regarding OFFER, two-sided Wilcoxon-Mann-Whitney U tests show no significant difference between GAIN and LOSS treatment for every as well as over both situations that follow waiting time ($p=0.3851$ (USE), $p=0.8010$ (LEAVE), $p=0.4157$ (USE&LEAVE)). In addition, the effect of this difference was calculated using standardized mean difference effect size statistics, which show a negligible (0.0) to small (0.2) practical effect of the influence of framing on proposers' behavior.⁴

Thus, we found that proposers' behavior in the domain of loss framed waiting time is not significantly or practically different from the one in the domain of gain framed waiting time, which is in line with findings from [Berger et al. \(2012\)](#) and [Noussair and Stoop \(2015\)](#), who found no difference in behavior of proposers bargaining over a gain (money) compared to a loss (waiting time).

Result 1b) Responders' bargaining behavior is influenced by framing

Analyzing responders' behavior, the Wilcoxon-Mann-Whitney U test shows a significant difference between the responders' MAWT for framing over both situations that follow waiting time ($p=0.0321$ (USE&LEAVE) as well as for comparing LEAVE_GAIN to LEAVE_LOSS ($p=0.0250$). However, no significant difference in responders' behavior was shown comparing

⁴The treatment effects were analyzed by calculating the effect sizes Cohen's d ([Cohen 1988](#)), Hedges' g ([Hedges 1982](#)), and the robust effect size d_R ([Algina et al. 2005](#)). The corresponding confidence intervals around the effect sizes were calculated based on the percentil-bootstrap method ([Efron 1979](#)).

USE_GAIN to USE_LOSS ($p=0.3886$).⁵ A possible explanation could be that framing in USE treatments was perceived as being slightly weaker than framing in the LEAVE treatments, but it also raises concerns on whether the result of the analysis for LEAVE is a type 1 error. Therefore, effect sizes were calculated using standardized mean difference effect size statistics. These effect sizes state an effect of 0.5, which displays the difference of MAWT between both frames to be of medium size in LEAVE, independent of significance levels. Moreover, 95%-confidence intervals around the effect sizes, calculated via the percentil-bootstrap method, foster the interpretation that the actual size of the effect is non-negligible by not including zero. Therefore, framing is found to have an influence on responders' bargaining behavior in ultimatum games with waiting time as currency.

Accordingly, in line with studies analyzing the influence of framing in ultimatum games with monetary currency in strategy method (Buchan et al. 2005; Baquero et al. 2013), our results show that responders are more sensitive to framing than proposers.

Result 2) The situation that follows after waiting time does not influence participants' bargaining behavior

Wilcoxon-Mann-Whitney U tests show no significant differences in bargaining behavior comparing the situations that follow waiting time, thus USE and LEAVE treatments, neither regarding OFFER, thus proposers' behavior, nor MAWT, thus responders' behavior.⁶

A 2x2 ANOVA analysis also showed no significant interaction effect between framing and situation that follows waiting time.⁷ Thus, the relationship between framing and OFFER, respectively MAWT does not depend on the situation that follows waiting time.

⁵As a high frequency of equal splits was observed, Wilcoxon-Mann-Whitney U tests were also performed with excluding those participants that stated an equal split (for OFFER or MAWT). Test outcomes did not change.

⁶p-values of two-sided Wilcoxon-Mann-Whitney U tests for OFFER: $p=0.53$ (GAIN), $p=0.2925$ (LOSS); for MAWT: $p=0.3886$ (GAIN), $p=0.7523$ (LOSS).

⁷p-values of a 2x2 ANOVA analysis on interaction effects between framing and situation that follows waiting time for OFFER: $p=0.4250$; for MAWT: $p=0.3169$.

4. Discussion

As no difference in responders' or proposers' behavior for the situations that follow waiting time could be found, no straightforward recommendation can be provided on which situation to implement. However, as allowing participants to leave the laboratory seems to be the simpler method, some concerns have to be stated. First, it is to say that LEAVE showed to lead to slightly higher heterogeneity compared to USE for OFFER, as well as for MAWT (displayed by higher standard deviations, see table 2). Second, it has to be remarked that LEAVE is not necessarily a cheaper method than USE as payment should stay the same for all participants so that no incentives other than bargaining over waiting time have an influence on bargaining behavior. Moreover, it has to be noted that this study's design does not allow to draw conclusions comparing subjects' behavior in the domain of money to the domain of waiting time in ultimatum games other than by comparing general behavior, as its main aim is to analyze framing effects in the domain of waiting time.

Subsequently, this study is the first to show that in an ultimatum game over waiting time even a rather weak gain and loss framing has an influence on especially responders' behavior. A lower stated MAWT not only displays a stronger preference for a fairer distribution of waiting time, but also shows a higher willingness to take the risk of rejecting the OFFER and thus accepting a higher risk of having to wait the full 60 minutes. Accordingly, the significant lower MAWT stated in the loss compared to the gain framed situation ($p=0.01268$, one-sided) is in line with prospect theory by showing a more risk seeking behavior in loss framed situations than in gain framed situations.⁸ In contrast to this, when the experiment's maximum duration was announced and thus expected upfront, risk seeking behavior was not observable.

Therefore, these new findings on responders' behavior suggest waiting time to be rather perceived as a loss than a gain in loss framed situations and as a gain in gain framed situations, which is in line with findings of [Kühberger et al. \(1999\)](#).

Thus, this study is the first to propose a possible explanation for previous studies' finding

⁸Subjects' general risk attitudes were measured in the questionnaire via self-assessment. No significant correlation between stated OFFER, respectively stated MAWT and general risk attitude was found.

that proposers' bargaining behavior over waiting time in ultimatum games is similar to bargaining behavior in ultimatum games with monetary currency.

Framing works for responders in the domain of waiting time.

In addition to this, we suggest waiting time outside a gain framed situation to be a valid instrument for losses in experimental studies, as it offers the advantages of no occurring windfall gains, every individual having no more than 24 hours a day and that waiting time is assumed to be perceived as a loss of time by its own nature.

Acknowledgements

We thank the Hans-Frisch-Stiftung for funding the experiment.

Bibliography

- Abdellaoui, M. and Kemel, E. (2014). Eliciting prospect theory when consequences are measured in time units: “time is not money”. *Management Science*, 60(7):1844–1859.
- Algina, J., Keselman, H. J., and Penfield, R. D. (2005). An alternative to cohen’s standardized mean difference effect size: a robust parameter and confidence interval in the two independent groups case. *Psychological methods*, 10(3):317–328.
- Antonides, G., Verhoef, P. C., and van Aalst, M. (2002). Consumer perception and evaluation of waiting time: A field experiment. *Journal of Consumer Psychology*, 12(3):193–202.
- Arkes, H. R., Joyner, C. A., and Pezzo, M. V. (1994). The psychology of windfall gains. *Organizational Behavior and Human Decision Processes*, (59):331–347.
- Baquero, G., Smit, W., and Wathieu, L. (2013). The generosity effect: fairness in sharing gains and losses. *ESMT Working Paper*, (13-08):1–47.
- Berger, R., Rauhut, H., Prade, S., and Helbing, D. (2012). Bargaining over waiting time in ultimatum game experiments. *Social science research*, 41(2):372–379.
- Bottom, W. P. and Studt, A. (1993). Framing effects and the distributive aspect of integrative bargaining. *Organizational Behavior and Human Decision Processes*, (56):459–474.
- Buchan, N., Croson, R., Johnson, E., and Wu, G. (2005). Gain and loss ultimatums. In Morgan, J., editor, *Advances in Applied Microeconomics*. Elsevier, Amsterdam.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Psychology Press, New York, second edition edition.
- Efron, B. (1979). Bootstrap methods: Another look at the jackknife. *Annals of Statistics*, (7):1–26.
- Festjens, A., Bruyneel, S., Diecidue, E., and Dewitte, S. (2015). Time-based versus money-based decision making under risk: An experimental investigation. *Journal of Economic Psychology*, 50:52–72.

- Fischbacher, U. (2007). z-tree: Zurich toolbox for ready-made economic experiments. *Experimental Economics*, 10(2):171–178.
- Greiner, B. (2015). Subject pool recruitment procedures: Organizing experiments with orsee. *Journal of the Economic Science Association*, 1(1):114–125.
- Güth, W., Schmittberger, R., and Schwarze, B. (1982). An experimental analysis of ultimatum bargaining. *Journal of Economic Behavior and Organization*, (3):367–388.
- Hedges, L. V. (1982). Estimation of effect size from a series of independent experiments. *Psychological Bulletin*, 92(2):490–499.
- Hershey, J. C. and Schoemaker, P. J. H. (1980). Risk taking and problem context in the domain of losses: An expected utility analysis. *The Journal of Risk and Insurance Association*, 47(1):111–132.
- Kahneman, D. and Tversky, A. (1979). Prospect theory: an analysis of decision under risk. *Econometrica*, 47(2):263–291.
- Kroll, E. B. and Vogt, B. (2008). Loss aversion for time: An experimental investigation of time preferences. *FEMM Working Paper*, (27).
- Kühberger, A., Schulte-Mecklenbeck, M., and Perner, J. (1999). The effects of framing, reflection, probability, and payoff on risk preference in choice tasks. *Organizational Behavior and Human Decision Processes*, 78(3):204–231.
- Kumar, P., Kalwani, Manohar, U., and Dada, M. (1997). The impact of waiting time guarantees on customers’ waiting experiences. *Marketing Sciences*, 16(4):295–314.
- Leclerc, F., Schmitt, B. H., and Dubé, L. (1995). Waiting time and decision making: Is time like money? *Journal of Consumer Research*, 22(1):110–119.
- Leliveld, M. C., van Beest, I., van Dijk, E., and Tenbrunsel, A. E. (2009). Understanding the influence of outcome valence in bargaining: A study on fairness accessibility, norms, and behavior. *Journal of Experimental Social Psychology*, 45(3):505–514.

- Lusk, J. L. and Hudson, D. M. (2010). Bargaining over losses. *International Game Theory Review*, 12(01):83–91.
- Noussair, C. N. and Stoop, J. (2015). Time as a medium of reward in three social preference experiments. *Experimental Economics*, 18(3):442–456.
- Osuna, E. E. (1985). The psychological cost of waiting. *Journal of Mathematical Psychology*, 29(1):82–105.
- Weber, E. U. and Milliman, R. D. (1997). Perceived risk attitudes: Relating risk perception to risky choice. *Management Science*, 43(2):123–144.
- Zushi, N., Curlo, E., and Thomas, G. P. (2009). The reflection effect in time-related decisions. *Psychology and Marketing*, 26(9):793–812.