University of Passau
Faculty of Business Administration and Economics
Chair of Economic Theory

The Allocation of 10 Tokens in a Sequential Decision Process: Take, Not Take… or Delegate the Last Token?

Seminar Paper
Seminar in: Experimental Economics
Submitted to: Katharina Werner, Susanna Grundmann

written by
Peter Rhomberg
Schillerstraße 12
94032 Passau

Studies: M.A. International Economics and Business

Student ID: 61432

Date: 21.08.2015

Table of Contents

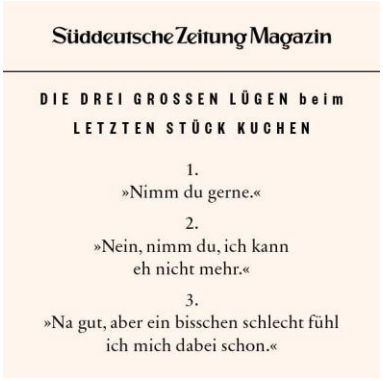
List of abbreviations

BT	Baseline Treatment
D	Delegate Token
DT	Delegation Treatment
D&G	Delegate Token and Get Token Assigned
NT	Not Take Token
PB	Punishment Baseline Treatment
PD	Punishment Delegation Treatment
T	Take Token

List of tables

List of figures

1 Introduction


Süddeutsche Zeitung Magazin

DIE DREI GROSSEN LÜGEN beim LETZTEN STÜCK KUCHEN

1.
»Nimm du gerne.«
2.
»Nein, nimm du, ich kann eh nicht mehr.«
3.
»Na gut, aber ein bisschen schlecht fühl ich mich dabei schon.«

Figure 1: Three big lies eating the last piece of cake (SZ 2015)

This seminar paper on hand is inspired by an event, in which a group of individuals share a cake that is cut into several pieces. After eating all but the last piece of cake, the attendants enforcedly find themselves in an unpleasant situation. Who eats the last piece? As listed in figure 1, the Süddeutsche Zeitung Magazine identifies hypothetical statements, as 'the three big lies concerning the last piece of cake'. They describe the individuals' intentions to leave the cake for another person for apparently unselfish reasons and reveal the bad feeling a person might have for taking that piece.

The experiment resembles this situation, where three persons allocate ten tokens depending on their decisions. In a random order, the individuals decide, whether to take the token or leave the decision for another person. In the baseline treatment the decision space remains the same when it comes to the last token. The delegation treatment adds a third option. Now the decision maker can appoint a person, who has to allocate the token within the group. According to this, the experiment addresses how the participants play and perceive the game, depending on whether they can make the move to delegate or not. How do they act, when restricted to the decision to take or not to take? How do others perceive their behavior? Is the option to delegate de facto chosen and are people judged differently if they take the token directly or receive it after delegating the decision to another person?

In experimental economics, studies measuring the effects of delegation have been modeled by means of dictator games with punishment (Bartling and Fischbacher 2012, Oexl and Grossman 2013, Coffman 2009) or without (Hamman et al. 2010, Fersthman and Gneezy 2011, Charness et al. 2012). Belonging to the first class of experiments, the underlying design is similar to a dictator game, which is played repeatedly by three persons with randomly changing roles. In contrast to underlying studies, it seeks to be based on a social event by animating interaction through chats.

Results show, that individuals aim to leave the token for another person in the absence of delegation. Consequently, the allocation process takes longer. If the option to delegate exists, individuals choose to delegate the token instead of not taking it. In the absence of the delegation option, subjects are punished to a similar extent for taking token 1-9 or token 10.

This causality cannot be confirmed for the DG, which supposes that the option to delegate 10 also has an effect on the individuals' perception for token 1-9.

The rest of the seminar paper is organized as follows: the next section summarizes the related literature along with its underlying findings. Section 3 explains the experimental design, followed by the formation of hypotheses in section 4. After a short description of the procedural design in section 5, section 6 provides an analysis of the main results obtained from the collected data. Ultimately, previous findings are discussed in section 7 and concluded in section 8.

2 Related Literature

According to the standard economic analysis, a principal hires an agent to reach efficiency gains, arising from special abilities or lower opportunity costs on the part of the agent. Therefore, research focuses on the design of monitoring and incentive schemes that deal with the differing incentives and information asymmetries of both individuals (Bolton and Dewatripont 2005). Lately, several experimental studies have been investigating alternative motives and incentives unrelated to the notion of efficiency. Thus, the effects of delegation are measured in the framework of dictator-, ultimatum- and gift-exchange-games. For instance, Fershtman and Gneezy (2011) adopt an ultimatum game, while Hamman et al. (2010), Bartling and Fischbacher (2012), Oexl and Grossman (2013) as well as Coffman (2009) implement dictator games. Furthermore, Charness et al. (2012) modify the design of a gift-exchange game (for an overview of the literature, see Appendix A). In these experiments, the decision makers (dictators, proposers or employers) take a decision either directly or delegate it. Therefore the focus of the analysis lies either on the investigation of the outcome of the game or on the perception of the individuals behavior. In order to explore the latter, diverse studies expand their design by including the elicitation of punishment. By integrating this choice, Bartling and Fischbacher (2012), Oexl and Grossman (2013) as well as Coffman (2009) measure judgments of responsibility attributions regarding the actions of principals and agents. Overall, they find that individuals will be less willing to punish people for outcomes if they delegate instead of deciding directly. According to Bartling and Fischbacher (2012) principals can effectively shift the blame to the agent, although doing so intentionally. Furthermore, these results hold true even if the agent has to make an inevitably unfair decision (Oexl und Grossman 2013). Thus, delegation constitutes a strong motive in order to shirk responsibility away from the principal to the agent. Coffman (2009) finds similar punishment patterns, although in his study the agent's decision scope is more restricted. Even

if the agent virtually makes no decision, but carries out the unfair decision, the agent himself is punished more than the principal. Further, Charness et al. (2012) allow the laboratory employers either to delegate the wage decision to the employee or determine it themselves. They find that the decision to delegate can cause a positive reaction on the part of the delegate. The effort levels of employers increase significantly, assuming that a delegated task itself might imply a motivational effect.

3 Experimental Design

The design is inspired by those experiments exploring punishment patterns for allocation choices, in which the decision right is delegated. Unlike these studies, three players actively take part in the distribution of ten tokens. By doing so, the allocation of the distributed amount is not determined by a single decision of one dictator alone. Instead, every single integer of the amount is distributed through a random sequence of different decision makers. For every decision, the roles of all three players are repeatedly determined, whereby the non-selected persons play a passive role. In the end, all players are allowed to punish the others.

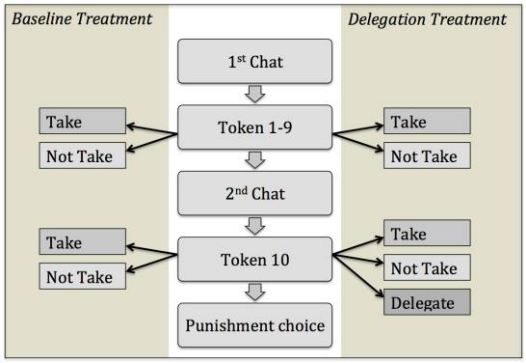


Figure 2: Schematic Illustration of the Experimental Design

As a starting payoff, all participants receive one token and are randomly matched into groups consisting of three individuals each. Every group obtains an amount of ten tokens to be distributed. The terminating last decision is unavoidably linked to an unequal outcome, no matter if it is made directly or through an agent. As depicted in the center column of Figure 2, the experiment consists of five stages, including two chats, two allocation stages (Token 1-9 & Token 10) and a final punishment stage. Whereas the underlying studies do not allow any exchange of information, the experiment on hand includes a chat to encourage interaction and lower anonymity. After the first chat, in which the participants can communicate for 100 seconds within the group, the allocations of Tokens 1-9 are realized. Afterwards, the participants can chat for a second time, followed by the decision about Token 10. After the allocation, the players can make a punishment choice. Appendix B provides exemplary screenshots of the instructions of the treatments, the chat and the punishment decision (see appendix B.1-B.4).

The allocation process of the tokens works as follows: beginning with the first token, one by one token is allocated depending on the decision of the random decision makers. He can decide between two alternatives, namely to choose to take (T) or not to take (NT) a particular token. Hence, the decision maker can either claim the token for himself (T) or shift the decision to the next random decision maker by rejecting it (NT). Option T equals the pay-off (1|0|0), favoring the person who takes the token. Selecting NT equals (0|0|0), for which reason all subjects remain with their actual payoffs. This process is being repeated until the tokens 1-9 are allocated to the participants. Another time, the participants are allowed to chat for 100 seconds. In stage 4, the allocation of token 10, the experiment´s set up is divided up into two treatments, the Baseline and the Delegation Treatment. Hereby the treatments' difference lies only in the decision alternatives of the decision maker:

(1) In the **Baseline Treatment (BT)** the participants face the same selection options as given for token 1-9. The decision maker can choose to take or not to take the token (see left column, Figure 2).

(2) The **Delegation Treatment (DT)** modifies the **BT** by adding a third alternative choice to the decision maker of token 10. Besides T and NT, he can delegate (D) the decision to another individual of the group. Therefore, the decision maker appoints his delegate, who consequently must assign the last token to one of the three group members, including him (see right column, Figure 2).

After the distribution of token 10, every individual has the option to punish the other two group members. The punishment choice is costly, though. The punisher has to pay one token, which allows him in return to deduct a maximum of three tokens from both individuals' accounts. The punishment tokens can be freely divided between those two.
Summing up, an individual's payoff equals the total amount of acquired tokens, including the initial endowment of one token, minus the punishment tokens a person receives.

4 Hypotheses

Based on the findings of the underlying literature, three hypotheses are tested. As observed in Bartling und Fischbacher (2012), individuals seek to avoid punishment by shirking responsibility for a particular outcome. In the BT, doing so is only possible by choosing NT and, hence, avoiding to be involved in the final outcome of the event. In consideration of the DG, in which the opportunity to delegate does exist, decision makers could constitute the delegation as a favored alternative. By delegating, an individual still maintains the chance to

receive the last token in contrast to decision NT, since the delegate is forced to allocate the token, whereas a self-assigned token equals the decision T and could be therefore less attractive for him. Similar to the workers response in Charness´ (2012) gift exchange experiment, the delegation of the decision right could appear as a gift or a kind of act of friendship, which could be preferable in a familiar environment like it is here. Based on the assumption that NT is preferred to T in the BT but D to NT in the DG, it is conjectured:

Hypotheses 1: In the BT, the allocation process of token 10 takes more decisions than in the DG, as option NT is more frequently chosen.

Hypotheses 2: Making the first decision for the last token, in the DG fewer individuals decide not to take it compared to the BT. As an alternative, those people opt for the delegation of the decision.

Furthermore, the punishment literature on delegation suggests that people are able to evade from punishment by delegating a decision instead of taking it directly. According to that, delegation lowers assigned punishment in comparison to a direct decision, even if the outcome is the same. From this follows:

Hypotheses 3: Individuals who delegate are punished less than those, who decide to take the token, even though delegates receive the token in the end.

5 Procedures

Using the z-tree software (Fischbacher 2007), the experiment was devised within the framework of the seminar Experimental Economics at the University of Passau. The experiment was conducted in eight sessions on two days with an attendance per session of 21 participants (168 altogether). On June 18th, six sessions were conducted, beginning at 9.50am, 10.50am, 11.50am, 1:50pm, 2.50pm and 3:50pm. On the second day, June 19th, the two final sessions were carried out on the last two times. The realization took place in one of the university´s computer labs, where each of them lasted approximately 20 minutes. Mostly, the participants were recruited voluntarily right before every session by two fellow students on the campus and the faculty of Business Administration and Economics, which is why the participants were almost exclusively students of the University of Passau who passed by in this area. Moreover, the event was advertised as a public event on facebook.com and by posters, which were handed out on campus beforehand. Via a link to the website of the Chair of Economic Theory potential participants could register in advance. Before entering the

computer lab, participants randomly draw a number between 1 and 21 to take their assigned seat. The corresponding seat numbers were placed beforehand in such a manner, that group members could not sit next to each other. A total of 56 groups took part, consisting of 28 in each treatment. In the beginning, the participants were welcomed and informed verbally about the basic rules of conduct to be considered during the experiment. Specific instructions concerning the experiment itself were displayed on the computer screens for each individual. At the end of the experiment, the participants completed a brief demographic questionnaire. Since the experiment was based on hypothetical payoffs, the participants were offered snacks and drinks afterwards.

6 Analysis of Experimental Results

The 168 participants are composed of nearly 95% enrolled students, 72 (42.9%) males and 96 (57.1%) females. A majority of almost 44% studies *Business Administration* or *Economics,* followed by 26.8% studying *International Cultural and Business Studies* or *European Studies* (for details, see appendix C). This seminar paper focuses on the participants' behavior concerning the last token and the elaboration on the differences regarding the decision and punishment patterns between both treatments.

6.1 Hypothesis 1: Allocation Process of Token 10

For examining the allocation process, the frequency of decision NT plays a central role. The more people decide to reject token 10, the longer it takes to allocate it. In the DG, a total of 5 subjects choose not to take token 10, while in the BT 21 people decide to do so. Table 1 separates the *BT´s and DT´s* frequencies for the individuals' decisions for T, NT or D, respectively. NT is chosen eight times in the DT. Contrarily in the BT, that decision frequency is much higher counting 66 in the BT. The difference in selecting NT or T is significant between the treatments (Fisher's exact test = 0.003). Furthermore, these differing dimensions for selecting NT have consequences on the allocation process, which become more evident in figure 3. The bars depict the frequency of the respective decisions (y axis) for every sequence of decision (x axis). Obviously, the black bars (BT) labeled NT outperform the white bars at every decision. The sequence of allocation sums up to twelve decisions in the BT and five in the DT in the most extreme cases.

Decision token 10	**Treatment**		Total
	BT	*DT*	
T	28	15	43
NT	66	8	74
D	-	13	13
Total	94	36	117

Table 1: Frequencies of Decisions for token 10 in BT and DT

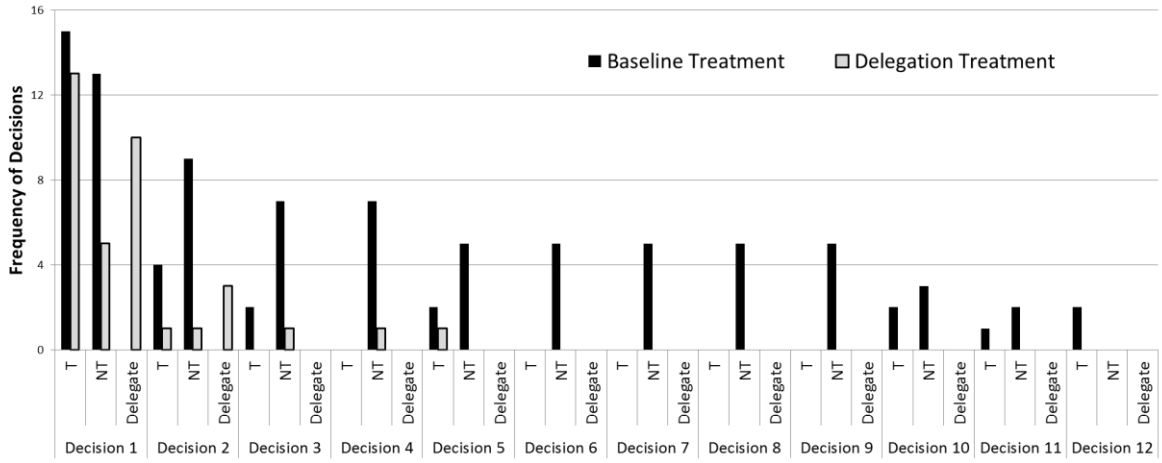


Figure 3: Allocation process in treatments *baseline* and *delegation*

A logistic regression with the dependent variable 'NT Token 10' aims at understanding the individuals' intentions. The results of model (1) in table 2 show that the fact to possess at least three of the tokens 1-9 does not explain the decision NT at a statistically significant level. In contrast to that, the characteristic to own four tokens or more (model 2) reveals a significant causality. If a subject takes more than three token out of token 1-9, the probability of rejecting token 10 increases significantly. Consequently, subjects do not choose NT in order to avoid making themselves better off, but they might do it to avoid an even more unfair or selfish outcome.

	(1)	(2)
	NT Token 10	NT Token 10
≥3 tokens (token 1-9)	**2.1**	
	(1.1)	
≥4 tokens (token 1-9)		**1.8****
		(0.6)
_cons	-2.9**	-1.6***
	(1.0)	(0.3)
N	84	84
pseudo R-sq	0.068	0.109

Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 2: Logit analysis of selection behavior in *BT*

Result 1: In the BT, the rejection behavior of the last token is significantly different to the DT. Accordingly, the allocation process requires more decisions in the BT. Following that, in the absence of option D, option NT might be preferred to T. A reason for that might be the motive not to own more than 4 tokens.

6.2 Hypothesis 2: The First Decision for Token 10

In order to compare the individuals' considerations regarding their decision options between the treatments, the first decision for token 10 is expected to be the most meaningful. Therefore the analysis in chapter 6.2 focuses on this very decision.[1] In support of this approach, 10 out of 13 individuals actually make the decision to delegate exactly at this stage. The respective frequencies of the subjects' first decisions are depicted in figure 3. 53.6% (N=15) of decision makers decide to take the last token in the BT, whereas 46.4% (N=13) do so in the DG. Yet the decision for T does not differ significantly (one-sided Fisher's exact test = 0.395) across the treatments. In contrast to that, the percentage of those choosing NT drops from 46.4% (N =13) in the BT to 17.9% (N=5) in the DT. In a one-sided Fisher's exact test, this difference is statistically significant (p= 0.022). The rest of the individuals in the DG choose to delegate, representing a share of 35.7% (N=10). Adding the delegation option, in fact 56.5% (N=13) of the decision makers choose to delegate the last token, ten at decision 1 and three at decision 2, respectively. Thus, individuals seem to consider delegation as a preferable alternative to NT in the DG, as the share of those who choose T stays almost constant, leading to:

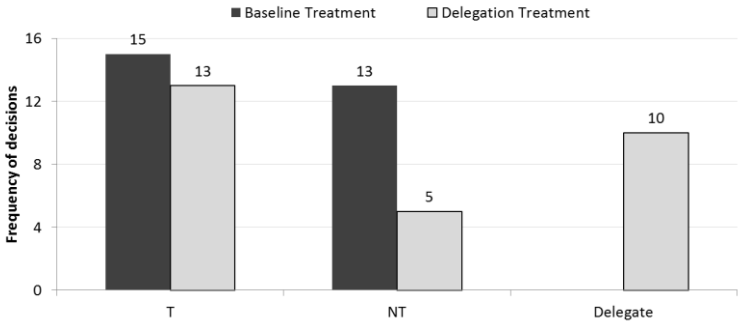


Figure 4: Decision 1 for token 10 in treatments baseline and delegation

Result 2: In the DG, significantly fewer individuals opt for NT at decision 1. Instead of choosing NT, they choose to delegate the decision. Consequently, individuals at decision 1 seem to prefer option D to NT.

[1] Due to the identical decision rules for tokens 1-9 in the BT and DT, the decision pattern is expected to be similar. Hence, these decisions are no object of investigation in the following. 80 out of the 168 individuals took exactly three tokens of token 1-9, whereby roughly 29% (N=16) of all groups ended up with an allocation of (3|3|3). Across both treatments, the frequencies of decision T and NT for token 1-9 do not differ significantly (Fisher's exact test = 0.167).

6.3 Hypothesis 3: Elicitation of Punishment Patterns

Recalling the punishment rules, every individual is allowed to assign a total deduction of three tokens to both group members. Generally, the punishment pattern between both treatments does not differ significantly as a two-sample Wilcoxon rank-sum (Mann-Whitney) test reveals (Prob > |z| = 0.4963) How the punishment might differ depending on the actual decision whether a subject delegates or takes the token shows figure 5. It plots the quantity of owning tokens against the respective punishment. Whereas the punishment ranges from 0 to 5 for those who choose T (N=43), the highest punishment for D sums up to two tokens (N=13). Though, these differing punishments cannot be statistically confirmed by a Wilcoxon rank-sum (Mann-Whitney) test (Prob > |z| = 0.9745). Testing hypothesis 3, figure 6 restricts underlying observations by comparing the average punishments of subjects taking the token directly (T) and receiving it indirectly through delegation (D&G). There are only two subjects that are assigned the token after passing on the decision right and receiving a punishment of one and two for owning two respectively six tokens. The average punishment of 1.5 tokens is higher than for those who choose T (0.88 tokens). Despite a small sample and an insignificant two-sample Wilcoxon rank-sum (Mann-Whitney) test (Prob > |z| = 0.3818), this result challenges hypothesis 3, which conjectured an opposed trend. Table 3 controls these differing punishments for the decisions concerning token 1-9. Though, the effect on punishment for choosing D&G is positive and not significant.

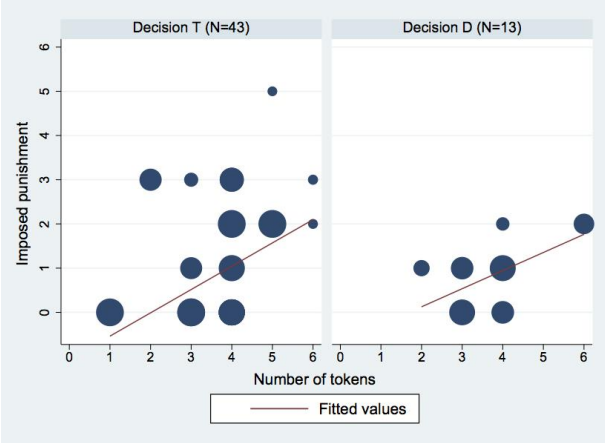


Figure 6: Punishment pattern depending on decision T and D for token 10. Sizes of circles indicate the number of observations.

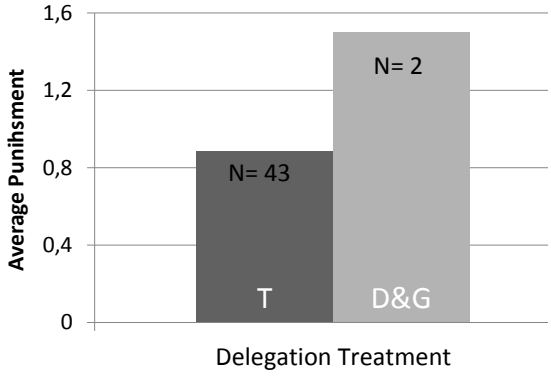


Figure 5: Average punishment for the same outcomes T and D&G

In order to understand the forces behind the elicitation of punishment, table 4 summarizes the results obtained from an ordered logit regression for both treatments. It includes as independent variables the frequencies of decision T and NT for token 1-9 and of decision T for token 10. Moreover, the final decisions to take (T) or delegate (D) the last token are implemented. From an analysis of the chat, a dummy variable for agreements about the distribution of the tokens within a group is created. It takes the value 1 if the group reached an agreement on a fair distribution until token 9 (3|3|3), but a particular subject broke it. Models PB and PD describe the punishment for the BT and DT, respectively. As model PB reveals, taking another token from token 1-9 increases on average the imposed punishment by 1.1 tokens. Furthermore, regardless of the quantity a person takes from token 1-9, the punishment increases by 1.3 tokens if token 10 is taken, albeit at a lower level of significance. Surprisingly, this clear pattern does not hold for model DP, hence in the treatment with *delegation*. None of the variables have a significant influence in order to explain the motives behind the elicitation of punishment. The most striking aspect might the effect on the punishment for the 'Frequency of T (token 1-9)'. Although the implementation of delegation is restricted to token 10, the clear punishment pattern for token 1-9 seems to disappear, too. Lastly, the punishment cannot be explained by breaking an agreement.

Dependent Variable (y): 'Punishment'	
Frequency of T (token 1-9)	**0.8***
	(0.3)
Decision 10 (0: T; 1:D&G)	**0.2**
	(1.2)
_cut1	2.4***
	(0.9)
_cut2	3.4***
	(1.0)
_cut3	4.5***
	(1.2)
_cut4	6.4***
	(1.5)
N	45
pseudo R-sq	0.070

Standard errors in parentheses
*** p<0.05, ** p<0.01, *** p<0.001**

Table 3: Ordered logit analysis of punishment for T and D&G

	Dependent Variable (y): 'Punishment'	
Model	(PB)	(PD)
Treatment	BG	DG
Frequency of T (token 1-9)	**1.1****	0.4
	(0.3)	(0.2)
Frequency of NT (token 1-9)	0.04	-0.1
	(0.4)	(0.1)
T token 10 (0: no;1:yes)	**1.3***	0.1
	(0.6)	(0.6)
Frequency of NT (token 10)	0.09	-1.1
	(0.1)	(1.1)
Delegate token 10 (0: no;1: yes)	-	-0.004
		(0.2)
Chat (0: no agreement; 1: breaking agreement)	-0.04	-0.5
	(0.8)	(0.7)
_cut1	4.6***	1.3
	(1.2)	(0.7)
_cut2	5.5***	2.1**
	(1.3)	(0.8)
_cut3	6.2***	3.9***
	(1.3)	(0.9)
_cut4	7.3***	
	(1.5)	
_cut5	8.1***	
	(1.6)	
_cut6	8.8***	
	(1.7)	
N	84	84
pseudo R-sq	0.072	0.039

Standard errors in parentheses
*** p<0.05, ** p<0.01, *** p<0.001**

Table 4: Ordered logit analysis of punishments in treatments *baseline* and *delegation*

Finally, the question remains which individual reached higher payoffs. In the BT, those who do not take token 10 end up with 3.20 tokens on average, slightly less those who take it (3.39 tokens). In the DG, delegates earn the most with 3.69 tokens, followed by those who take it (3.49 tokens) and not take it (3.13 tokens). Thus, most of the individuals in the DT made the better decision by delegating the token instead of taking or not taking it.

Result 3: In the BT, the imposed punishment significantly depends on how much a subject takes of token 1-9 and especially if it takes token 10. This straightforward causality does not hold true in the DT. Even the allocation of token 1-9, which is identical over the treatments, cannot be detected as a significant factor influencing the elicitation of punishment in the DT. Furthermore, delegating subjects are not punished significantly different from those who take the toke even if they get the token in the end.

7 Discussion

Recent studies on delegation are based on dictator-, ultimatum- and gift- exchange-games. The here implemented dynamic process for the allocation of payoffs constitutes a completely different approach. Whereas in the existing literature, the individuals interact in a rather anonymous manner, this experiment allows certain communication and thus, aims to create social proximity. As other experiments show, by delegation punishment can be effectively shifted to another person. The reasons for the elicitation of punishment in the DG, cannot be traced back to significant factors influencing the punishment as found in the BG. Consequently, in this context further analysis could be done to explore the impacts a delegated decision possibly has on earlier decisions. Due to its design, the experiment does not offer possible intentions why subjects opt to delegate, such as intrinsically to dislike appearing unfair or avoiding punishment. In order to enlighten latter issue, a distinction between treatments with and without punishment could be useful. Nonetheless the act of delegation might be seen as a move on cordial terms, which causes positive reciprocity and therefore less punishment in general. The implementation of subjects' expectations regarding the others behavior could clarify this question.

Yet, the conducted experiment implies several limitations. Unlike most of the real world relationships between principals and agents, the design does not allow the delegate to reject a decision. The experimental environment causes other meaningful weaknesses. First, the individuals' decisions and actions rely on hypothetical payoffs, which call real incentives into question. Second, since the recruitment took place at the Faculty of Business Administration

and Economics, the subject pool is mostly restricted to participants studying at this institution. Lastly, as the sample is rather small and the number of those, opting for delegation and getting the last token, is marginal, effects on punishment are difficult to abstract.

8 Concluding Remarks

This seminar paper showed that the distribution of tokes tends to be a protracted procedure in the absence of the option to delegate, as individuals frequently aim to reject the last token. A reason therefore might be the avoidance to get much more tokens than the average. Exploring the decision preferences, a comparison between those revealed, that subjects prefer to delegate instead of not taking the token. In the BT the elicitation of punishment can be traced back to plausible causes such as how much tokens are taken from token 1-9 or whether token 10 is taken. Though, these motives cannot be observed in the DG, which is especially in the case of token 1-9 surprising, insofar as that the perception of the individuals' behavior is expected to be unaffected from token 10. Ultimately, the punishment concerning the decision for token 10 does not differ significantly. Delegates are not punished significantly less than those who take the last token. This holds even for the case, in which the token is allocated to the delegate himself. Transferring underlying results into practice it might be recommendable to delegate or not to take the last piece of cake to avoid negative judgment by other attendants. Though, to prevent you and the rest from an annoying passing around of the decision, the delegation of the decision should be favored to cut through this. Hence, a person aiming to eat more than the average should directly take at least four pieces and delegate the last one, instead. Concluding, the statement "I don´t mind if you take it, I´ve had enough anyway." would not even be a lie.

References

Bartling, B., & **Fischbacher**, U. (2012). Shifting the Blame: On Delegation and Responsibility. *Review of Economic Studies* 79 (1), 67-87.

Bolton, P., & **Dewatripont**, M. (2005). Contract theory. *MIT press*.

Charness, G., **Cobo-Reyes**, R., **Jiménez**, N., **Lacomba**, J. A., & **Lagos**, F. (2012). The hidden advantage of delegation: Pareto improvements in a gift exchange game. *The American Economic Review*, 2358-2379.

Coffman, L. C. (2011). Intermediation reduces punishment (and reward). *American Economic Journal: Microeconomics*, S. 77-106.

Fershtman, C., & **Gneezy**, U. (2001). Strategic Delegation: An experiment. *The RAND. Journal of Economics* 32(2), S. 352-368.

Fischbacher, U. (2007). z-Tree: Zurich toolbox for ready-made economic experiments. *Experimental economics*, *10*(2), 171-178.

Hamman, J., **Loewenstein**, G. & **Weber**, R. (2010). Self-Interest through Delegation: An Additional Rationale for the Principal-Agent Relationship. *The American Economic Review* 100(4), 1826-1846.

Oexl, R., & **Grossman**, Z. J. (2013). Shifting the blame to a powerless intermediary. *Experimental Economics*, 16(3), S. 306-312.

SZ (2015). Gefühlte Wahrheit Nr. 167. *Süddeutsche Zeitung Magazin*, Ausgabe Nr. 33, S. 3.

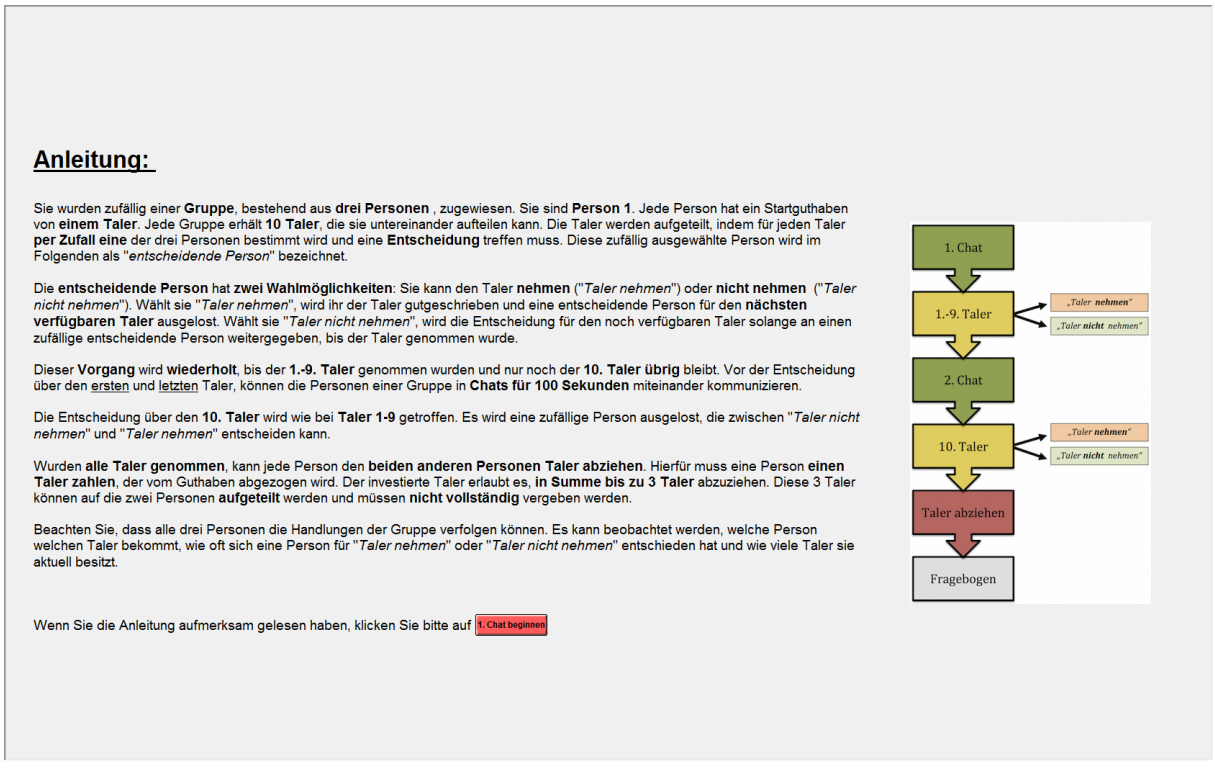
Appendix

A Overview Related Literature

Characteristics / Games	Punishment choice	
	Yes	No
Dictator Game	**Bartling and Fischbacher** (2012) **Oexl and Grossman** (2013) **Coffman** (2009)	**Hamman et al.** (2010)
Ultimatum Game		**Fershtman and Gneezy** (2011)
Gift-Exchange Game		**Charness et al.** (2012)

B Selected Screenshots of the Experiment

B.1 Instructions Baseline Treatment



Anleitung:

Sie wurden zufällig einer **Gruppe**, bestehend aus **drei Personen** , zugewiesen. Sie sind **Person 1**. Jede Person hat ein Startguthaben von **einem Taler**. Jede Gruppe erhält **10 Taler**, die sie untereinander aufteilen kann. Die Taler werden aufgeteilt, indem für jeden Taler **per Zufall eine** der drei Personen bestimmt wird und eine **Entscheidung** treffen muss. Diese zufällig ausgewählte Person wird im Folgenden als "*entscheidende Person*" bezeichnet.

Die **entscheidende Person** hat **zwei Wahlmöglichkeiten**: Sie kann den Taler **nehmen** ("*Taler nehmen*") oder **nicht nehmen** ("*Taler nicht nehmen*"). Wählt sie "*Taler nehmen*", wird ihr der Taler gutgeschrieben und eine entscheidende Person für den **nächsten verfügbaren Taler** ausgelost. Wählt sie "*Taler nicht nehmen*", wird die Entscheidung für den noch verfügbaren Taler solange an einen zufällige entscheidende Person weitergegeben, bis der Taler genommen wurde.

Dieser **Vorgang** wird **wiederholt**, bis der **1.-9. Taler** genommen wurden und nur noch der **10. Taler übrig** bleibt. Vor der Entscheidung über den ersten und letzten Taler, können die Personen einer Gruppe in **Chats für 100 Sekunden** miteinander kommunizieren.

Die Entscheidung über den **10. Taler** wird wie bei **Taler 1-9** getroffen. Es wird eine zufällige Person ausgelost, die zwischen "*Taler nicht nehmen*" und "*Taler nehmen*" entscheiden kann.

Wurden **alle Taler genommen**, kann jede Person den **beiden anderen Personen Taler abziehen**. Hierfür muss eine Person **einen Taler zahlen**, der vom Guthaben abgezogen wird. Der investierte Taler erlaubt es, **in Summe bis zu 3 Taler** abzuziehen. Diese 3 Taler können auf die zwei Personen **aufgeteilt** werden und müssen **nicht vollständig** vergeben werden.

Beachten Sie, dass alle drei Personen die Handlungen der Gruppe verfolgen können. Es kann beobachtet werden, welche Person welchen Taler bekommt, wie oft sich eine Person für "*Taler nehmen*" oder "*Taler nicht nehmen*" entschieden hat und wie viele Taler sie aktuell besitzt.

Wenn Sie die Anleitung aufmerksam gelesen haben, klicken Sie bitte auf 1. Chat beginnen

B.2 Instructions Delegation Treatment

Anleitung:

Sie wurden zufällig einer **Gruppe**, bestehend aus **drei Personen** , zugewiesen. Sie sind **Person 1**. Jede Person hat ein Startguthaben von **einem Taler**. Jede Gruppe erhält **10 Taler**, die sie untereinander aufteilen kann. Die Taler werden aufgeteilt, indem für jeden Taler **per Zufall eine** der drei Personen bestimmt wird und eine **Entscheidung** treffen muss. Diese zufällig ausgewählte Person wird im Folgenden als "*entscheidende Person*" bezeichnet.

Die **entscheidende Person** hat **zwei Wahlmöglichkeiten**: Sie kann den Taler **nehmen** ("*Taler nehmen*") oder **nicht nehmen** ("*Taler nicht nehmen*"). Wählt sie "*Taler nehmen*", wird ihr der Taler gutgeschrieben und eine entscheidende Person für den **nächsten verfügbaren Taler** ausgelost. Wählt sie "*Taler nicht nehmen*", wird die Entscheidung für den noch verfügbaren Taler solange an einen zufällige entscheidende Person weitergegeben, bis der Taler genommen wurde.

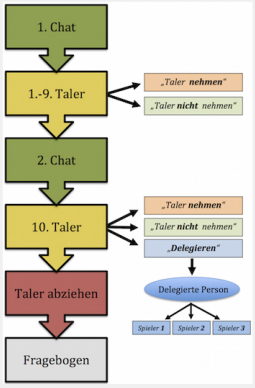
Dieser **Vorgang** wird **wiederholt**, bis der **1.-9. Taler** genommen wurden und nur noch der **10. Taler übrig** bleibt. Vor der Entscheidung über den ersten und letzten Taler, können die Personen einer Gruppe in **Chats für 100 Sekunden** miteinander kommunizieren.

Die Entscheidung über den **letzten 10. Taler** wird wie bei **Taler 1-9** getroffen, jedoch hat die entscheidende Person eine **weitere dritte Wahlmöglichkeit**. Neben "*Taler nehmen*" und "*Taler nicht nehmen*" kann sie nun auch "*Delegieren*". Wählt sie "*Delegieren*", ernennt sie **eine** der zwei anderen Personen als ihre **delegierte Person**. Diese **delegierte Person** muss entscheiden, ob sie **einer der beiden anderen Personen oder sich selbst** den **letzten Taler** gutschreibt.

Sobald sich eine Person für "*Taler nehmen*" oder "*Delegieren*" entschieden hat, ist die Zuteilung der Taler abgeschlossen (bei "*Delegieren*" mit der Entscheidung des Delegierten).

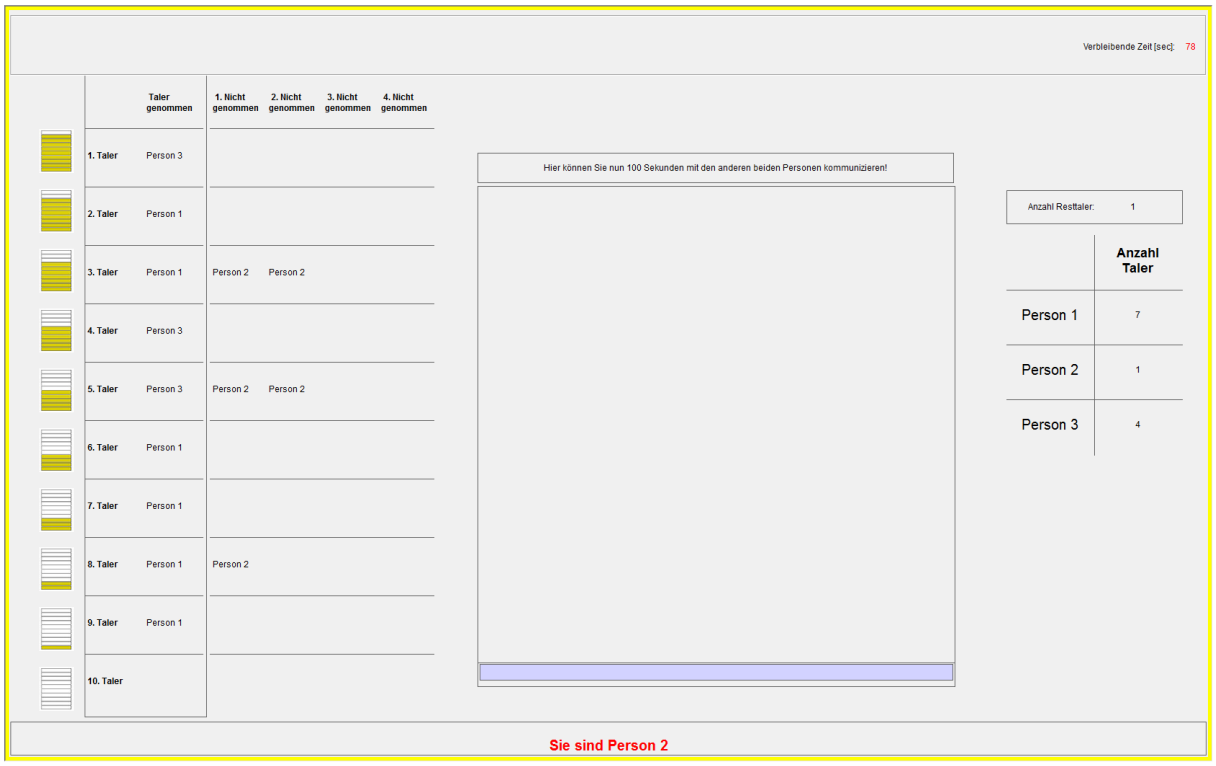
Wurden **alle Taler genommen**, kann jede Person den **beiden anderen Personen Taler abziehen**. Hierfür muss eine Person **einen Taler zahlen**, der vom Guthaben abgezogen wird. Der investierte Taler erlaubt es, **in Summe bis zu 3 Taler** abzuziehen. Diese 3 Taler können auf die zwei Personen **aufgeteilt** werden und müssen **nicht vollständig** vergeben werden.

Beachten Sie, dass alle drei Personen die Handlungen der Gruppe verfolgen können. Es kann beobachtet werden, welche Person welchen Taler bekommt, wie oft sich eine Person für "*Taler nehmen*" oder "*Taler nicht nehmen*" entschieden hat und wie viele Taler sie aktuell besitzt.

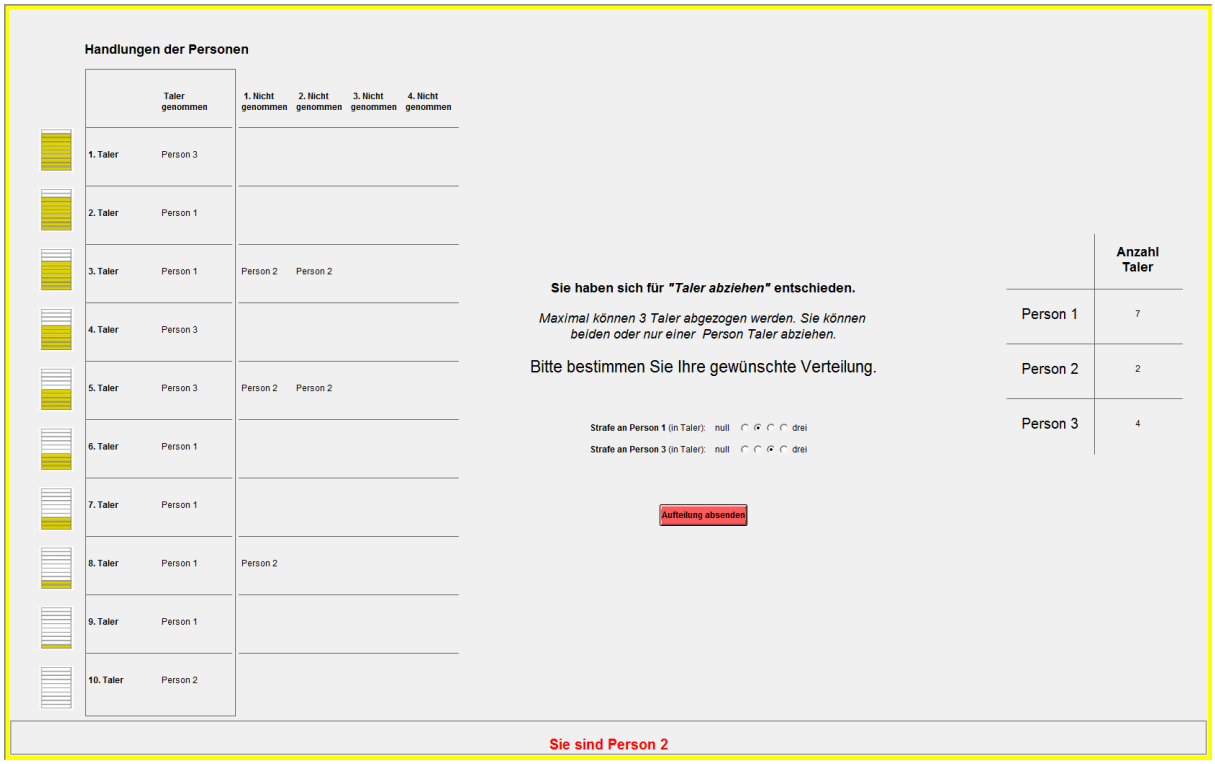


Wenn Sie die Anleitung aufmerksam gelesen haben, klicken Sie bitte auf 1. Chat beginnen

B.3 Chat Screen and Decision History



B.4 Punishment Screen



C Demographic Results

Course of Studies	**N**	**%**
Business Administration / Economics	74	44.05%
Governance and Public Policy	12	7.14%
International Cultural and Business Studies / European Studies	45	26.79%
Media and Communication / Language and Text	3	1.79%
Computer Science / Internet Computing	2	1.19%
Teacher Training	16	9.52%
Law	7	4.17%
Other	9	5.36%
Gender	**N**	**%**
Male	72	42.86%
Female	96	57.14%

Eidesstattliche Erklärung

Ich erkläre hiermit an Eides statt, dass ich die vorliegende Arbeit selbständig angefertigt habe; die aus fremden Quellen direkt oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht.
Die Arbeit wurde bisher keiner anderen Prüfungsbehörde vorgelegt und auch noch nicht veröffentlicht.

Passau, den 23.8.2015

_____

Peter Rhomberg