

LYING INDIVIDUALLY OR IN A GAME IN THE PRESENCE OF NORM
ENFORCER

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ABSTRACT

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We conduct an online experiment to explore the role of symmetric externalities and third-party (norm enforcer) punishment on dishonest behavior. In particular, for symmetric externality treatments, we vary whether reports of group members change payoff of each other. To study how possibility of third-party punishment affects reporting behavior, we introduce a third-party with punishment option into the setting. We find that the effect of symmetric externalities on dishonest behavior is insignificant at aggregate level. However, further analysis of individual data shows that symmetric externalities decrease probability of dishonest reporting if dishonesty is advantageous. We observe no significant effect of third-party punishment on reporting behavior of subjects both at individual level and aggregate level. Moreover, our findings suggest that when both of the group members report dishonestly to their advantage, third parties impose more punishment in no symmetric externality treatment than symmetric externality treatment.

Keywords: Dishonesty, symmetric externality, social norms, third-party punishment

ÖZ

NORM UYGULAYICININ VARLIĞINDA BİREYSEL YA DA OYUNDA YALAN SÖYLEME

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Simetrik dışsallıkların ve üçüncü taraf (norm uygulayıcı) cezalarının dürüst olmayan davranışlar üzerindeki rolünü araştırmak üzere çevrimiçi bir deney düzenledik. Simetrik dışsallık tretmanı için grup üyelerinin bildirimlerinin birbirlerinin kazançlarını değiştirip değiştirmemesi durumunu kontrol ettik. Üçüncü tarafın ceza vermesi olasılığının bildirim davranışını nasıl etkilediğini incelemek için deneye ceza verme seçeneği olan bir üçüncü taraf ekledik. Simetrik dışsallıkların yalan söyleme davranışı üzerine etkisinin toplam düzeyde etkisiz olduğunu bulduk. Ancak bireysel verilerin analizi yalan söylemek avantajlı ise simetrik dışsallıkların yalan bildirim olasılığını düşürdüğünü gösterdi. Üçüncü taraf cezalarının hem bireysel düzeyde hem de toplam düzeyde deneklerin bildirim davranışları üzerinde anlamlı bir etkisi olmadığını gözlemledik. Bulgularımız, her iki grup üyesi de kendi avantajları için yalan bildirimde bulunduğu anda, üçüncü tarafın simetrik dışsallık tretmanında, simetrik dışsallığın olmadığı tretmana göre, daha fazla ceza uyguladığını gösterdi.

Anahtar Kelimeler: Dürüst olmayan davranışlar, simetrik dışsallık, sosyal normlar, üçüncü taraf cezaları

*Dedicated to
my beloved mother, father, and brother.*

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CHAPTER 1

INTRODUCTION

Norms play a crucial role in ordering our daily lives. We try to conform to norms and expect other people to do so. To maintain the order that these norms created, we often impose social or legal sanctions on people who show deviant behavior. The effect of norms on economic behavior is mostly examined through the perception of fairness (Fehr & Fischbacher, 2004). However, fairness is not only about distribution. Dishonest behavior could also result in deviation from fairness norm. For example, underreporting income to avoid paying tax liabilities is a form of dishonest behavior that cause unfairness in society, and people caught in such actions are imposed legal sanctions. Moreover, in some cases dishonest behavior not only benefit the people that engage in it but also hurts others. Falsely informing buyer by providing misleading images of the product on online shopping sites could be given as example for such behavior.

With this study we would like to understand whether people behave more honest when their lies affect payoff of each other, whether people lie less if there is a third-party with punishment option, and finally, how third parties punish when people affect each other's payoff.

In order to improve our understanding of the role of symmetric externalities and third-party punishment on dishonest behavior, we conducted an online experiment.¹ In the experiment, subjects in groups of two observe the same coin-toss result and

¹ We use the term symmetric externalities as in Schitter et al. (2019), and it refers whether dishonest behavior of an individual affects the payoff of others while dishonest behavior of others in turn affects payoff of the individual. It can also be thought as a strategic game, however, we use the term symmetric externalities for the rest of the paper.

their payoffs are determined based on their reports. Reports of group members could affect each other's payoff. We also introduce a third-party who could punish group members based on realized coin-toss outcome and their reports. We study whether affecting each other's payoff and possibility of punishment change the reporting behavior of group members. We also check whether punishment behavior of third parties is affected from the fact that reports of group members could change each other's payoff.

The results from the experiment indicate that subjects are less likely to report dishonestly when dishonest report benefit themselves but hurts the other group member.² In particular, regression results suggest that when dishonest behavior is advantageous, that is, a subject can earn more payoff by reporting dishonestly than they would earn by reporting honestly, symmetric externalities decrease probability of dishonest behavior. Conversely, we do not observe the decreasing effect of symmetric externalities on dishonest behavior when dishonesty is disadvantageous, i.e., a subject can earn less by reporting dishonestly than they would earn by reporting honestly. Moreover, our results suggest that subjects who expect the other group member to be dishonest are more likely to report dishonestly. On the other hand, third-party punishment has no significant effect on reporting behavior of subjects. In addition, beliefs regarding punishment assigned by norm enforcers do not have significant impact on probability of dishonest behavior. We also find that when both group members report dishonestly to their own advantage, punishment assigned by third parties is lower in symmetric externality treatment (Ext-NE) than in no symmetric externality treatment (NoExt-NE).

Our study contributes to dishonesty literature at least two ways. First, previous studies examining the impact of externalities on dishonest behavior (Gneezy, 2005; Gneezy & Kajackaite, 2020; Dilmaghani & Tabvuma, 2020) are rather inconclusive, and in their experimental setting only one player has opportunity to be dishonest.

² Although regression results support this finding, since our sample size is small, we could not confirm this result with nonparametric tests.

Second, to our knowledge, there is no other study exploring punishment behavior of third parties when both subjects can behave dishonestly and affect each other's outcome in the presence of symmetric externalities.

The remainder of the paper is organized as follows. In Chapter 2, we give an overview of literature. In Chapter 3, we describe our experimental design and give details of the experimental procedures. In Chapter 4, we provide our hypotheses. In Chapter 5, we present results of the experiment. Finally, in Chapter 6, we make our concluding remarks.

CHAPTER 2

LITERATURE REVIEW

Our study is related to two branches of the dishonesty literature: dishonesty with externalities and third-party punishment. Fischbacher and Föllmi-Heusi (2013) has shown that there are three types of people based on lying behavior, and these are people who lie in full extent, people who are fully honest, and people who lie but not in full extent, i.e., partial liars. This behavioral pattern suggests that there are underlying factors which restrain people from lying in full extent even though it is the most profitable action. In fact, it is shown that preference for being seen as honest and being honest (Abeler et al., 2019) and lying cost (Abeler et al., 2014; Kajackaite & Gneezy, 2017) are some of those factors. It is also reported that consequences of lying, that is, personal gain as well as the harm that lying may cause to other parties, could be another factor affecting dishonest behavior (Gneezy, 2005). In this study, we check how honest subjects in a group of two behave if both of the group members see the same coin-toss result, yet they could earn differently according to their reports with or without affecting the payoff of the other group member.

One dimension of our study focuses on symmetric externalities caused by dishonesty. Following Gneezy (2005), the dishonesty literature focuses on the effect of externalities on dishonest behavior. In some of these studies, they benefit from a sender-receiver game in which sender sends receiver a message telling which one of the two options pays more to receiver and receiver chooses one of the two options (Gneezy, 2005). Payoffs of the players depend on the option chosen by the receiver. Gneezy and Kajackaite (2020) study the effect of externalities on dishonest behavior

using a cheating game. In the game, senders are asked to choose a box out of ten boxes that are shown on their screen. Each box hides a number from 1 to 10 underneath. Then, senders are asked to report the number underneath the box they choose. Senders receive the payoff x according to their report while receivers are paid the amount $10-x$. It is reported that senders are less dishonest when there is a receiver compared to when there is no receiver. However, when the stakes are 5 times higher, having hurt a receiver as a result of dishonest behavior does not change dishonest behavior compared to when there is no receiver. On the other hand, Dilmaghani and Tabvuma (2020) report that subjects are more dishonest when dishonesty harms a partner compared to when dishonesty harms only the experimenter. Barron et al. (2019) study conflicting moral motives, specifically fairness and truth-telling. In the experiment, decision makers observe a random draw (out of numbers 1 to 10) and report the number they see. Decision makers receive the amount they report as payment while the other person receive the remaining of 10 Euros. It is predicted that when random draw is low, since it is more costly for subjects to report honestly, they will choose to adhere fairness motive. In the case of high random draw, it is predicted that subjects will report honestly since fairness is more costly. In line with the prediction, results show that subjects follow the norm which is more in line with their self-interest when they are conflicted between fairness and truth-telling. Looking these results, it can be said that in terms of the effect of externalities on dishonesty, these studies are rather inconclusive.

Our design differs from above mentioned studies in ability of both group members affect each other's payoff. The closest study to ours belongs to Schitter et al. (2019). In one dimension of our design, we analyze the impact of hurting others by lying and being hurt by others due to lying on dishonest behavior which is similar to "symmetric externality" treatment of Schitter et al. (2019). Schitter et al. (2019) study the role of anonymity and symmetric externalities on dishonest behavior by using a claim game. In the experiment, each participant receives an envelope containing either 30 or 70 cents. Then, they are asked to take envelope content and report their claim, i.e., the difference between their envelope content and 1 euro. In

control treatment, participants are paid according to their claim. In the symmetric externality treatments, however, participants are assigned to groups of four, and their claims are paid from a group pool containing 4 euros. After claims are paid, remaining amount is distributed equally between four group members. Results of the experiment suggest that symmetric externalities do not significantly affect dishonest behavior. In our study, different from Schitter et al. (2019), in symmetric externality treatments, fixed amount of money is allocated proportional to reports of two group members. Thus, if only one of the group members is dishonest, dishonest member earn more than they would have earned if they had reported honestly, and honest member earn less than they would have earned if the other member had reported honestly. We also investigate the role of norm enforcers in these treatments and whether or how norm enforcers decide to punish dishonest people in these treatments.

The number of studies in which each subject can behave dishonest and affect others' payoff is very few. One of them belongs to Benistant et al. (2021), and they report that subjects are more dishonest in a competitive setting compared to non-competitive setting. Moreover, it is reported that subjects are less dishonest if they are matched with a partner who cannot lie rather than a partner who can lie. These results imply that setting in which dishonesty takes place and expectations regarding dishonest behavior of other people could affect dishonesty. In our study, we analyze dishonest behavior in a setting that dishonesty of subjects could affect each other's payoff, and subjects are aware of the fact that their decisions could affect each other's payoff.

Another part of the literature related to our study is third-party punishment. Studies regarding social norms and third-party punishment generally focus on fairness, cooperation, and distribution norms. For example, Fehr and Fischbacher (2004) analyze the third-party punishment regarding violation of distribution and cooperation norms. It is reported that more than half of the third parties whose payoffs are not affected by norm violation punish participants who violate the distribution and cooperation norms although punishment is costly for them.

One study on third-party punishment and honesty norm belongs to Ohtsubo et al. (2010). They conduct two experiments using a trust game in which the trustee can send a message to the trustor indicating that they will return x units from the total amount if the trustor transfers their endowment to them. In the first experiment, x is equal to half of the total amount. Third parties tend to punish dishonest trustee more than the trustee that reallocates the amount unequally but does not send a dishonest message. In the second experiment, x is more than half of the total amount, and third parties are eager to punish dishonest trustees who reallocate the amount equally more than fair trustees that do not send dishonest message. These findings suggest that third parties are willing to punish dishonest subjects even though they are fair, and punishment is costly. Finally, Dimant and Gesche (2020) investigate how motives for lying and norm perceptions are related with third-party punishment. They report that as the size of the lie and inequality between subjects due to lie increase, punishment given by the norm enforcers also increases. Moreover, information given to norm enforcers regarding norm perceptions of the subjects is also effective when pre-existing norms are vague. Different from Dimant and Gesche (2020), we investigate whether there is a change in dishonest behavior in the presence of a third-party and whether punishment behavior of the third-party changes when symmetric externalities are present compared to when there is no symmetric externality.

CHAPTER 3

EXPERIMENTAL DESIGN AND PROCEDURES

We use a variant of coin-toss task in which we apply the method used by Kocher et al. (2018) to a coin-toss task.³ Participants see an image showing one of the two sides of a coin on their screens. The image is chosen by computer randomly out of two images each showing one possible outcome of a coin-toss.⁴

We elicit participants' reporting behavior using strategy method before we show them the coin-toss result. We ask participants to report a side for each of two possible outcomes before the coin-toss realized. In particular, we ask participants which side of the coin they would like to report if the coin-toss result is heads and which side of the coin they would like to report if the coin-toss result is tails. In this way, we get the information about subjects' reporting behavior for each possible outcome. Participants can report either "heads" or "tails" for each possible outcome. In particular, we design the setting such a way that when the coin-toss result is tails and subjects misreport it as heads, subjects could get more points than they would have get if they had reported honestly, which makes their lie advantageous. On the other hand, when the coin-toss result is heads and subjects misreport it as tails, subjects could get less points than they would have get if they had reported honestly, which makes their report disadvantageous. We inform participants that their payoff

³ Abeler et al. (2014) and Schindler and Pfattheicher (2017) are two examples of studies using coin-toss task.

⁴ Result of a coin toss is based on a random selection out of binomial distribution with 0.5 probability of success. Considering the possibility that participants might be confused by the images, we also state the coin-toss result in writing.

will be calculated according to their reports for the realized outcome. Since participants can report one of the two sides, they can report dishonestly. In particular, a participant who solely wants to maximize their monetary payoff would like to report heads.

In most of the studies using coin-toss and die-roll tasks (Abeler et al., 2014; Fischbacher & Föllmi-Heusi, 2013; Schindler & Pfattheicher, 2017), subjects perform the task in private, and dishonesty is observable only at aggregate level. However, our design choice allows us to observe dishonesty for each possible outcome at individual level.⁵ In particular, we know which side of the coin participants report for each possible outcome, and we can detect the subjects who report dishonestly. We refer deviating from truthful reporting as “dishonesty”, “misreporting”, and “lying” for the rest of the paper. After eliciting reports, we show participants the coin-toss result chosen by the computer, and we calculate their payoffs based on their reports for the realized outcome. Since full observability and usage of strategy method may affect dishonest behavior, our analyses focus on treatment differences.

We conduct a 2x2 between subject design experiment. We study the effects of the existence of norm enforcer, that is, whether a third-party observes and punishes dishonest behavior and symmetric externalities, i.e., whether reports of the subjects affect each other’s payoff. Table 1 illustrates the treatments and the number of subjects participated in each treatment.

Participants are randomly assigned to groups of two or three according to treatment condition. Group members are referred as Participant A, Participant B, and Participant C, accordingly. All treatments consist of three parts; coin-toss task followed by belief elicitation, and survey. In Treatment 3 and Treatment 4, coin-toss task consists of two stages. Since we use strategy method in both stages, the

⁵ Kocher et al. (2018) use a variant of die-rolling task in which subjects are shown video of a die-roll and asked to report the number they observe. Thus, authors could detect dishonest behavior of subjects at individual level.

instructions given to Participant A and Participant B are different from the instructions given to Participant C. Therefore, we conduct these stages separately, and payoff of participants are calculated after both stages concluded.

Table 1: Treatments and number of participants

	Without Norm Enforcer	With Norm Enforcer
Without Symmetric Externality	Treatment 1 (NoExt-NoNE) (24 participants – 12 groups)	Treatment 3 (NoExt-NE) (36 participants – 12 groups)
With Symmetric Externality	Treatment 2 (Ext-NoNE) (28 participants – 14 groups)	Treatment 4 (Ext-NE) (40 participants – 13 groups) ⁶

In the first part of Treatment 1 (NoExt-NoNE), we randomly assign participants into groups of two and elicit the reporting behavior. We ask Participant A and Participant B to report the result of the coin-toss for two possible outcomes and inform that their payoffs will be determined according to their reports in the following way: For each possible outcome, if the participant reports the coin-toss outcome as tails, they will get 1 experimental point, and if the participant reports the outcome as heads, they will get 3 experimental points.⁷ Participants are informed that their payoff will be determined according to their reports for realized outcome. Then, we show the result of random coin-toss. Participant A and Participant B see the same coin-toss result. In the first part of Treatment 2 (Ext-NoNE), different than NoExt-NoNE, payoffs of subjects change according to their reports as follows: if one of Participant A and Participant B reports tails while the other reports heads for the realized outcome, they will get 1 experimental point and 3 experimental points, respectively. If both Participant A and Participant B report the same outcome for the realized outcome, each of them will get 2 experimental points. We design the point system in a way

⁶ For this treatment, we have 13 groups and 1 more norm enforcer. We randomly chose one of the eight punishment scenarios and calculate the participant’s payoff for this scenario.

⁷ The exchange rate of 1 experimental point equals to 5 TL.

that if one of the group members report dishonestly and the other reports honestly, they will receive the exactly the same payoffs as in the no symmetric externality treatments. Another explanation for the payoff scheme is that in symmetric externality treatments we keep the inequality between payoffs of group members which occurs in no externality treatment when one of the group members is honest and the other is dishonest constant and distribute the total of 4 points proportional to the reports of the group members. The reason why we choose this payoff scheme is that we can compare punishment assigned by norm enforcers when the payoff difference between dishonest and honest person is the same but in one case, dishonesty does not affect payoff of each other, in the other case, it affects. To make instructions clear, we use Table 2 to illustrate point system in the experiment.

Table 2: Point system of Ext-NoNE and Ext-NE treatments

		Participant B	
		Tails	Heads
Participant A	Tails	(2, 2)	(1, 3)
	Heads	(3, 1)	(2, 2)

In the first stages of coin-toss task in Treatment 3 (NoExt-NE) and Treatment 4 (Ext-NE), we repeat the similar processes in NoExt-NoNE and Ext-NoNE treatments, and in the second stage, Participant C, i.e., norm enforcer, observes the reports of the group members and can assign deduction points to Participant A and Participant B. All group members are informed that Participant C can deduct points of Participant A and Participant B based on their reports and the coin-toss outcome. It is also explained that Participant C is given 3 experimental points as an endowment at the start of the second stage and payoff of Participant C is reduced by 0.5 points for every deduction point that Participant C assigned to Participant A and Participant B. We include the task performed by Participant A and Participant B in the instructions of Participant C (norm enforcer).⁸

⁸ See the instructions given to subjects in the appendix.

After participants are given the instructions, they are asked to answer four comprehension questions. Experiment starts after all participants complete comprehension questions correctly.









We elicit norm enforcers' deduction points using strategy method (Fehr & Fischbacher, 2004; Dimant & Gesche, 2020). We ask norm enforcers to fill-out the table in Table 3.⁹ The first column of the table shows the state of nature (potential true values of a coin-toss), the second and the third columns show the potential reports of Participant A and Participant B, the fourth and fifth columns show the potential gains of Participant A and Participant B, respectively. In the last two columns, we ask Participant C how many points they would like to deduct from Participant A and Participant B, respectively.

Following the first part, we elicit the beliefs of Participant A and Participant B regarding the report of the other group member (Fehr and Fischbacher, 2004; Kocher et al., 2018) since it might affect the reporting behavior of participants. We inform participants that if they guess the report of the other member correctly, they will earn extra 5 TL.

In the treatments with norm enforcer, i.e., NoExt-NE and Ext-NE, we also elicit the beliefs of Participant A and Participant B regarding the deduction points that Participant C could assign (Fehr & Fischbacher, 2004; Jordan et al., 2016). We inform participants that if they guess the deduction point assigned by Participant C correctly, they will earn extra 5 TL.

⁹ The tables shown to norm enforcers in Ext-NE and NoExt-NE are quite similar except the points Participant A and Participant B receive in each treatment.

Table 3: Decision table of norm enforcers (Ext-NE)

Coin-toss	Participant A's Report	Participant B's Report	Participant A's Points	Participant B's Points	How many points would you like to reduce from Participant A?	How many points would you like to reduce from Participant B?
 Tails	Tails	Tails	2	2	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Heads	Heads	2	2	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Heads	Tails	3	1	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Tails	Heads	1	3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Tails	Heads	1	3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Heads	Tails	3	1	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Heads	Heads	2	2	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Tails	Tails	2	2	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3

In the last part of the experiment, participants answer a survey including the questions about their age, gender, monthly income, department, and grade.¹⁰ We ask Participant A and Participant B how angry they expect the other group member to be (on 1-5 Likert scale, ranging from “Not angry at all” to “Very angry”) based on their reports. In the treatments with norm enforcer, we also include a question for Participant A and B regarding how angry they expect Participant C to be (on 1-5 Likert scale, ranging from “Not angry at all” to “Very angry”). We ask Participant C how angry they get (on 1-5 Likert scale, ranging from “Not angry at all” to “Very angry”) knowing that there is a possibility that reports of other participants are not honest since it is reported that punishment assigned by norm enforcers are related with anger (Jordan et al., 2016). We ask all participants how often they encounter with dishonest behavior in their daily life (on 1-5 Likert scale, ranging from “Not at all” to “Always”). We also ask whether they agree that dishonest people should be punished, dishonest people are punished appropriately, and they are wronged in their daily life due to lies (on 1-5 Likert scale, ranging from “Strongly disagree” to “Strongly agree”).¹¹

At the end of the experiment, experimental points participants received from the first part converted to TL.¹² Earnings of participants from belief elicitation and 5 TL show up fee are added to their earnings from the first part. For Treatment 3 and Treatment 4, payoffs determined after both stages are finalized.

We use neutral language in the instructions and avoid using words such as punishment, dishonesty, lying, and misreport.

¹⁰ Table 16 in the appendix provides the variable names and survey questions.

¹¹ Table 17 and Table 18 in the appendix provide descriptive statistics for subjects and percentages of subjects according to groups.

¹² Hourly minimum wage is 15.90 TL (gross minimum wage/225=hourly minimum wage) in Turkey in 2021.

We conducted all sessions online via oTree (Chen et al., 2016) and deployed the experiment using cloud service Heroku (<https://www.heroku.com>).¹³ In the invitation, we informed subjects that the experiment will be conducted online via computer, and sessions will be managed through Zoom. We also informed subjects about show-up fee (5 TL) and the maximum amount they could earn by participating the experiment (30 TL). We used Google Forms for registration, and we collected electronically confirmed consent forms in this step. We sent a reminder e-mail before the experiment, and we included Zoom meeting information in this e-mail. We also informed subjects that they are not allowed to use their cellphones and communicate with the other subjects throughout the experiment. To ensure anonymity, we rename subjects to the participant IDs before entering Zoom meeting room and made sure that we had enough number of subjects. Upon allowing subjects into meeting room, we reminded them to open their cameras and muted all subjects. We informed them if they have any questions regarding the experiment, they could ask their questions privately via the chat box. Then, we have shared o-Tree session link. Once all subjects opened the link, they were presented with the instructions. We read instructions aloud and informed subjects that the experiment will begin after all subjects have answered comprehension questions correctly. At the end of the experiment, we shared an online survey in which subjects submitted their IBAN. We made payments online, and majority of subjects received their payment on the same day. In cases where we could not make the payment during work hours, we made payments on the next working day.

Data were collected in June 2021 and total of 128 subjects participated. Each session last roughly 40 minutes, and the average income (including show-up fee) amounts to 18.20 TL. Subjects are all undergraduate and graduate students at Middle East Technical University. Our sample consists of students from various departments; however, the majority of the participants (32.8%) are from economics department. The age of the participants ranges from 19 to 31 and average age is 22.5. 59.4 % of

¹³ We benefit from the works of Ertac and Kotan (2020) and Zhao et al. (2020) conducting online sessions.

the participants are female. 30.5% of the participants are in the third income category with 1000-2000 TL monthly income.

CHAPTER 4

HYPOTHESES

In this chapter, we present our hypotheses based on the findings of priory studies. First, we explore the role of symmetric externalities on dishonest reporting. Findings of Gneezy (2005) and Erat and Gneezy (2012) have shown that people do care about other people's gain and loss which are caused by their action. Furthermore, Gneezy and Kajackaite (2020) suggest that when stakes are low people lie less if they hurt other people. Thus, we expect less dishonest reporting in symmetric externality treatments than in no symmetric externality treatments since in symmetric externality treatments if one of the two group members lies to their advantage, the other member who is honest hurts from dishonesty. Therefore, we hypothesize that symmetric externalities in Ext-NoNE and Ext-NE lead to less lying in these treatments compared to NoExt-NoNE and NoExt-NE.

Hypothesis 1: *Proportion of dishonest subjects is lower in symmetric externality treatments compared to no symmetric externality treatments.*

Second, we examine the effect of possible third-party punishment on reporting behavior. Existing research suggests that possibility of punishment makes people to comply norms (Teraji, 2013). Therefore, we expect group members to refrain from dishonest behavior when there is a possibility of third-party punishment.

Hypothesis 2: *Proportion of dishonest subjects is lower in norm enforcer treatments compared to no norm enforcer treatments.*

Finally, we explore punishment behavior of norm enforcers when both players change each other's payoff. Dimant and Gesche (2020) report that punishment assigned by the norm enforcers is higher for lies increasing inequality. In our setting, inequality between payoffs of group members which occurs when one of the group members is honest and the other is dishonest is the same in symmetric externality and no symmetric externality treatments. Thus, we expect assigned punishment points to be similar in NoExt-NE and Ext-NE if the main motivation for punishment is inequality.

Hypothesis 3: *Amount of the punishment assigned in Ext-NE and NoExt-NE are similar.*

CHAPTER 5

RESULTS

In this section we provide the results of the experiment. The structure of the results section as follows. First, in Chapter 5.1, we present results on whether symmetric externalities and presence of norm enforcer affect dishonest behavior of the group members. Then, in Chapter 5.2, we analyze the effect of symmetric externalities on the punishment behavior of norm enforcers.

5.1. Dishonest Behavior of Group Members

First, we look at the effect of symmetric externalities on reporting behavior of subjects. The second column of Table 4 shows the fraction of dishonest subjects, that is, subjects who misreport at least one of the two possible outcomes. In line with Hypothesis 1, the fraction of misreporting subjects in NoExt-NoNE is 11.9 percentage points larger than the fraction of misreporting subjects in Ext-NoNE, and fraction of misreporting subjects in NoExt-NE is 14.4 percentage points larger than Ext-NE. The difference in the percentage of dishonest subjects across treatments suggests that subjects in externality treatments consider consequences of dishonesty for the other group member, which is in line with existing research (Gneezy and Kajackaite, 2020). Nevertheless, the percentage of dishonest subjects does not differ significantly between treatments (Chi-square tests; NoExt-NoNE versus Ext-NoNE, $p = 0.31$; and NoExt-NE versus Ext-NE, $p = 0.203$).¹⁴ We summarize our findings in Result 1.

¹⁴ Fisher's exact tests; NoExt-NoNE versus Ext-NoNE, $p = 0.346$; and NoExt-NE versus Ext-NE, $p = 0.294$.

Result 1: *The percentage of dishonest subjects in symmetric externality treatments does not differ significantly from the percentage of dishonest subjects in no externality treatments.*

Table 4: Proportion of dishonest subjects across treatments

Treatment	Dishonest Reporting	Disadvantageous Dishonesty	Advantageous Dishonesty
NoExt-NoNE (n = 24)	83.3%	16.7%	79.2%
Ext-NoNE (n = 28)	71.4%	28.6%	64.3%
NoExt-NE (n = 24)	87.5%	20.8%	79.2%
Ext-NE (n = 26)	73.1%	34.6%	61.5%

Notes: Numbers in the second column reflect the fraction of participants who misreport at least one of the possible outcomes. Disadvantageous dishonesty is reporting tails when outcome of the coin-toss is heads. Advantageous dishonesty is reporting heads when outcome of the coin-toss is tails. n is the number of subjects participated in each treatment.

Second, we look at whether presence of norm enforcer has an impact on reporting behavior of subjects. Contrary to our expectations in Hypothesis 2, the fraction of misreporting subjects slightly higher in norm enforcer treatments (NoExt-NE and Ext-NE) compared to no norm enforcer treatments (NoExt-NoNE and Ext-NoNE), suggesting that presence of norm enforcer does not restrain subjects from lying. We find that the difference in the fraction of misreporting subjects across treatments is not significant (Chi-square tests; NoExt-NoNE versus NoExt-NE, $p = 0.683$; and Ext-NoNE versus Ext-NE, $p = 0.892$).¹⁵ We summarize our findings in Result 2.

Result 2: *Presence of norm enforcer does not affect dishonesty significantly.*

Third, we focus on misreporting with respect to coin-toss outcomes. In our setting, depending on the coin-toss outcome misreporting could be advantageous or disadvantageous. It is economically advantageous to misreport the outcome as heads when the outcome of coin-toss is tails, and it is economically disadvantageous to misreport the outcome as tails when the outcome of coin-toss is heads. The third

¹⁵ Fisher's exact tests; NoExt-NoNE versus NoExt-NE, $p = 1$; and Ext-NoNE versus Ext-NE, $p = 1$.

column of Table 4 shows the fraction of dishonest subjects across treatments when dishonesty is disadvantageous, and the fourth column of Table 4 shows the fraction of misreporting subjects across treatments when dishonesty is advantageous.

We observe that misreporting in Ext-NoNE and Ext-NE is slightly higher than misreporting in NoExt-NoNE and NoExt-NE when it is disadvantageous. However, when misreporting is advantageous, misreporting in Ext-NoNE and Ext-NE is slightly less than misreporting in NoExt-NoNE and NoExt-NE. One of the possible reasons why reporting behavior changes across treatments might be the tendency of subjects to misreport to avoid appearing dishonest (Abeler et al., 2019; Choshen-Hillel et al., 2020) especially when their decision affect other players payoff. Nevertheless, the fraction of disadvantageous liars does not differ significantly across treatments (Chi-square tests; NoExt-NoNE versus Ext-NoNE, $p = 0.31$; and NoExt-NE versus Ext-NE, $p = 0.278$).¹⁶ Moreover, the difference in percentage of dishonest subjects is not significant across treatments when misreporting is advantageous (Chi-square tests; NoExt-NoNE versus Ext-NoNE, $p = 0.238$; and NoExt-NE versus Ext-NE, $p = 0.174$).¹⁷ ¹⁸ It is noteworthy that in all treatments more than half of the subjects misreport the coin-toss result if dishonesty is advantageous. This is quite different from the findings of previous studies in which the distribution of coin-toss reports is quite similar to the truthful distribution (Abeler et al., 2014) and the estimated proportion of dishonest reports is 26.7% (Schindler & Pfattheicher, 2017). As it is mentioned in Kajackaite and Gneezy (2017), the reason why we observe this difference may be the fact that dishonesty is presented as an option in the setting and subjects can choose to report honestly or dishonestly unlike the above-mentioned studies.

¹⁶ Fisher's exact tests; NoExt-NoNE versus Ext-NoNE, $p = 0.346$; and NoExt-NE versus Ext-NE, $p = 0.352$.

¹⁷ Fisher's exact tests; NoExt-NoNE versus Ext-NoNE, $p = 0.358$; and NoExt-NE versus Ext-NE, $p = 0.224$.

¹⁸ Although nonparametric test results are not significant, regression analysis supports our symmetric externality hypothesis.

Table 5 reports the regression results. In Model (1) and Model (2), the dependent variable is a binary indicator that takes on the value of 1 if the subject misreports at least one of the coin-toss outcomes. In Model (3) and Model (4), the dependent variable is a binary indicator that takes on the value of 1 if the subject misreports the outcome as heads when coin-toss outcome is tails, i.e., advantageous dishonesty. In Model (5) and Model (6), the dependent variable is a binary indicator that takes on the value of 1 if the subject misreports the outcome as tails when coin-toss outcome is heads, i.e., disadvantageous dishonesty. The independent variables are the following: *Externality* is a treatment dummy taking of the value 1 if subject is in Ext-NoNE or Ext-NE, *NormEnforcer* is another treatment dummy taking of the value 1 if subject is in NoExt-NE or Ext-NE. *Gender* is a dummy variable taking the value of 1 if the subject is female.

In Model (1), we regress the probability of dishonest reporting on treatment dummies. We observe that symmetric externalities decrease the probability of lying significantly and presence of norm enforcer has no significant effect on lying. In Model (3), we regress the probability of advantageous dishonesty on treatment dummies and find that symmetric externalities decrease probability of lying significantly by 16.2%. This suggests that when dishonesty is advantageous, subjects in symmetric externality treatments restrain from dishonest reports. We also observe that presence of norm enforcer has no effect on advantageous dishonesty. In Model (5), we regress probability of disadvantageous dishonesty on treatment dummies and report that symmetric externalities and presence of norm enforcer have no significant effect on disadvantageous lying. In Model (2), Model (4), and Model (6), we control for gender effects since there are studies reporting gender differences in terms of dishonest behavior. Although the sign of the coefficient for *Gender* variable is negative in Model (2) and Model (4), which is in line with the literature reporting that females lie less than men (Dreber & Johannesson, 2008; Conrads et al., 2013; Kajackaite & Gneezy, 2017), we observe no significant gender effect. We summarize our findings in Result 3.

Result 3: *Symmetric externalities significantly decrease probability of advantageous lying.*

Table 5: Dishonest behavior – regression results

	Probit (ME)					
	Dishonest Reporting		Advantageous Dishonesty		Disadvantageous Dishonesty	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Externality</i>	-0.132*	-0.130	-0.162*	-0.159*	0.128	0.127
	(0.079)	(0.079)	(0.088)	(0.088)	(0.084)	(0.084)
<i>NormEnforcer</i>	0.029	0.036	-0.014	0.001	0.052	0.042
	(0.080)	(0.081)	(0.089)	(0.090)	(0.085)	(0.086)
<i>Gender (Female)</i>		-0.036		-0.078		0.048
		(0.082)		(0.090)		(0.087)
Observations	102	102	102	102	102	102
Log Likelihood	-51.779	-51.684	-60.145	-59.786	-56.618	-56.470
AIC	109.558	111.369	126.290	127.572	119.236	120.940
Pseudo R ²	0.026	0.028	0.027	0.032	0.022	0.025

Notes: In Model (1) and Model (2), dependent variable is a binary indicator for whether the subject has misreported at least one of the coin-toss results. In Models (3) and (4), dependent variable is a binary indicator for whether the subject has misreported coin-toss outcome as heads when it is tails. In Model (5) and (6), dependent variable is a binary indicator for whether the subject has misreported coin-toss as tails when it is heads.

*p<0.1; **p<0.05; ***p<0.01

Finally, we look at how belief about the report of the other group member is related with dishonest behavior.¹⁹ Table 6 shows the proportion of subjects who expect the other group member to report the realized outcome dishonestly across treatments. We observe that when the realized outcome is tails, the fraction of subjects who expect the other group member to lie is higher in NoExt-NoNE and NoExt-NE than

¹⁹ We also look at how beliefs of subjects regarding punishment points assigned by norm enforcers affect dishonest behavior, however, we find no significant effect of it. Table 14 and Table 15 showing the descriptive statistics and the regression results can be found in the appendix.

Ext-NoNE and Ext-NE, however, these differences in the fraction of subjects across treatments are not significant (Chi-square tests; NoExt-NoNE versus Ext-NoNE, $p = 0.184$; and NoExt-NE versus Ext-NE, $p = 0.302$).²⁰ On the other hand, when the realized outcome is heads we observe that the fraction of subjects who expect the other member to lie is higher in Ext-NoNE and Ext-NE than NoExt-NoNE and NoExt-NE. However, these differences across treatments are not significant (Chi-square tests; NoExt-NoNE versus Ext-NoNE, $p = 0.317$; and NoExt-NE versus Ext-NE, $p = 0.134$).²¹

Table 6: Proportion of subjects who expect the other group member to report the realized outcome dishonestly

Treatments	Subjects expecting dishonest reporting when the realized outcome is tails	Subjects expecting dishonest reporting when the realized outcome is heads
NoExt-NoNE	81.2% ($n_1 = 16$)	12.5% ($n_2 = 8$)
Ext-NoNE	58.3% ($n_1 = 12$)	31.2% ($n_2 = 16$)
NoExt-NE	75% ($n_1 = 8$)	25% ($n_2 = 16$)
Ext-NE	50% ($n_1 = 8$)	50% ($n_2 = 18$)

Notes: Numbers reflect the proportion of subjects that expect the other group member to report the realized outcome dishonestly. $n_1 + n_2$ is the number of subjects participated in treatment.

Table 7 shows the regression results. The dependent variable is a binary indicator that takes the value of 1 if the subject misreports the realized outcome. The independent variables are *Externality*, *NormEnforcer*, and *ExpectedLying* which takes on the value of 1 if the subject expects the other group member to misreport the realized outcome.

²⁰ Fischer's exact tests; NoExt-NoNE versus Ext-NoNE, $p = 0.231$; and NoExt-NE versus Ext-NE, $p = 0.608$.

²¹ Fischer's exact tests; NoExt-NoNE versus Ext-NoNE, $p = 0.621$; and NoExt-NE versus Ext-NE, $p = 0.172$.

Table 7: Dishonest behavior based on beliefs– regression result

	Probit (ME)		
	Misreporting for the realized outcome	Misreporting when the realized outcome is tails	Misreporting when the realized outcome is heads
<i>Externality</i>	-0.083 (0.085)	-0.108 (0.133)	-0.005 (0.105)
<i>NormEnforcer</i>	-0.139 (0.084)	0.024 (0.127)	-0.113 (0.105)
<i>ExpectedLying</i>	0.474*** (0.086)	0.374** (0.156)	0.338*** (0.127)
Observations	102	44	58
Log Likelihood	-54.800	-22.729	-25.233
AIC	117.599	53.458	58.467
Pseudo R ²	0.211	0.149	0.147

Note: * p<0.1; ** p<0.05; *** p<0.01

We find that coefficient of *ExpectedLying* is positive and significant in all models suggesting that subjects who expect their group member to be dishonest are more likely to misreport. This is in line with the findings of Benistant et al. (2021) that people are more honest when they are matched with an opponent who cannot cheat. We summarize our findings in Result 4.

Result 4: *Subjects who expect the other group member to be dishonest are more likely to be dishonest.*

5.2. Punishment Behavior of Norm Enforcers

In previous part, we document reporting behavior of group members across treatments controlling for symmetric externalities and norm enforcement. Now, we focus on punishment behavior of norm enforcers in NoExt-NE and Ext-NE.

First, we look at the aggregate impact of the symmetric externalities on punishment. We implement the method used by Dimant and Gesche (2020) and compute the share of punishment that norm enforcers assign to Participant A and Participant B

across the eight punishment scenarios shown to them.²² Then, we compare the mean of the share of punishment assigned by norm enforcers in NoExt-NE and Ext-NE. Figure 1 illustrates the mean of the share of punishment assigned across treatments.

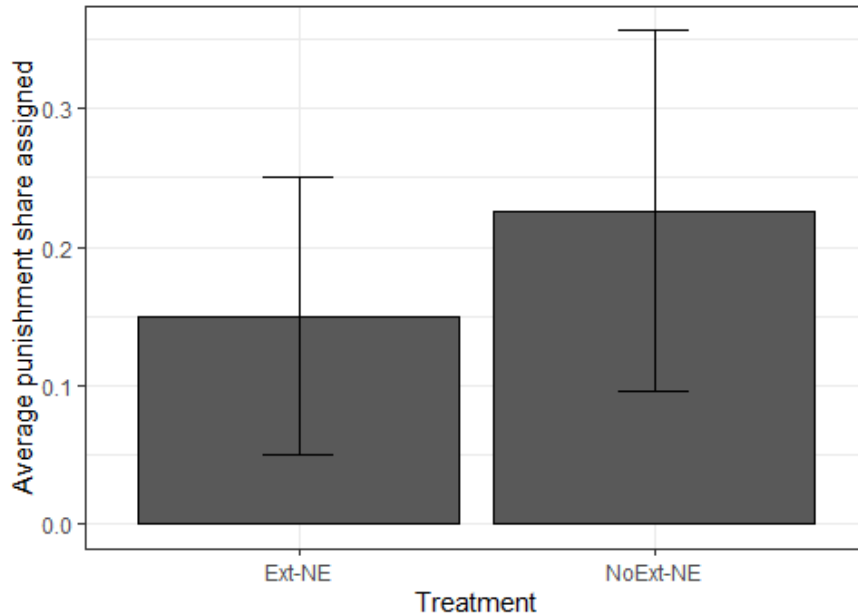


Figure 1: Average punishment share assigned

Note: Error bars denote standard errors.

Following Hypothesis 3, we expect subjects in Ext-NE to be punished same as subjects in NoExt-NE. We find that the share of punishment assigned is higher in NoExt-NE than the share of punishment assigned in Ext-NE. However, the difference is not statistically significant (Wilcoxon rank sum test, $p = 0.152$). We summarize this finding in Result 5.

Result 5: *The share of punishment assigned does not differ significantly between symmetric externality and no symmetric externality treatments.*

²² For example, consider a norm enforcer who assigned 1 punishment point (which is 33.3% of the available punishment) in four scenarios and 2 punishment points (which is 66.6% of the available punishment) in the remaining four scenarios to each one of Participant A and Participant B. Then, the norm enforcer's share of punishment assigned would be 50%.

Next, we focus on how norm enforcers punish in particular punishment scenarios. We apply the methods used by Dimant and Gesche (2020) and Fehr and Fischbacher (2004) and examine punishment behavior of norm enforcers across different punishment scenarios, that is, different scenarios for reporting which could be punished. Tables 8-11 display the average punishment points assigned by norm enforcers and the fraction of punishing norm enforcers in each possible scenario with respect to coin-toss result and treatment.

In Ext-NE when coin-toss result is tails (Table 8), more than half of the norm enforcers (64.3%) punish dishonest group member if the other group member honest, and 42.9% of the norm enforcers punish if both of the group members are dishonest. The average punishment point imposed on dishonest group member is 1.214 if the other group member is honest. However, the average punishment point is 0.464 if both group members are dishonest, showing a major decrease in punishment. A Wilcoxon signed rank test shows that this difference is significant ($p = 0.001$). On the other hand, in NoExt-NE when outcome of the coin-toss is tails (Table 10), 91.7% of the norm enforcers punish dishonest group member if the other group member is honest, and 75% of the norm enforcers punish if both group members are dishonest. The average punishment imposed on dishonest group member is 1.458 if the other group member is honest, and the average punishment is 1.250 points if both group members are dishonest. A Wilcoxon signed rank test shows that punishment pattern is not significantly different in no symmetric externality treatment ($p = 0.288$). These results suggest that when symmetric externalities are present and lying is advantageous, norm enforcers perceive dishonesty as less severe action compared to when lying has only individual benefit. A Mann-Whitney U test shows that the difference in punishment patterns is significant across treatments when both group members lie advantageously ($p = 0.001$).

Table 8: Punishment in Ext-NE when coin-toss result is tails (n = 14)

Punished group member is	Other group member is honest	Other group member is dishonest
honest	0.143 (14.3%)	0.071 (7.1%)
dishonest	1.214 (64.3%)	0.464 (42.9%)

Notes: The number in each cell denotes the average punishment of norm enforcers. The number in parentheses denotes the percentage of norm enforcers who punish. Misreporting is advantageous.

Table 9: Punishment in Ext-NE when coin-toss result is heads (n = 14)

Punished group member is	Other group member is honest	Other group member is dishonest
honest	0.071 (14.3%)	0.714 (42.9%)
dishonest	0.357 (28.6%)	0.571 (57.1%)

Notes: The number in each cell denotes the average punishment of norm enforcers. The number in parentheses denotes the percentage of norm enforcers who punish. Misreporting is disadvantageous.

Table 10: Punishment in NoExt-NE when coin-toss result is tails (n = 12)

Punished group member is	Other group member is honest	Other group member is dishonest
honest	0.208 (25%)	0.208 (33.3%)
dishonest	1.458 (91.7%)	1.250 (75%)

Notes: The number in each cell denotes the average punishment of norm enforcers. The number in parentheses denotes the percentage of norm enforcers who punish. Misreporting is advantageous.

Table 11: Punishment in NoExt-NE when coin-toss result is heads (n = 12)

Punished group member is	Other group member is honest	Other group member is dishonest
honest	0.750 (50%)	1.042 (75%)
dishonest	0.250 (41.7%)	0.250 (33.3%)

Notes: The number in each cell denotes the average punishment of norm enforcers. The number in parentheses denotes the percentage of norm enforcers who punish. Misreporting is disadvantageous.

In Ext-NE when coin-toss result is heads (Table 9), if both of the group members are dishonest, each dishonest group member receives 0.571 punishment points on average from 57.1% of the norm enforcers. In NoExt-NE when coin-toss result is

heads (Table 11), if both of the group members are dishonest, 33.3% of the norm enforcers assign 0.250 punishment points on average. In fact, punishment pattern across treatments is significantly different when both group members lie disadvantageously (Mann-Whitney U test, $p = 0.001$), which suggests that dishonesty is considered more severe action when both group members are affected from each other's action.

Table 12 reports the regression results. The dependent variable is punishment point assigned by norm enforcer. The independent variables are the following: *Externality* is the treatment dummy taking on the value of 1 if the treatment is Ext-NE, *PD* is another dummy taking on the value of 1 if punished group member is dishonest, *OD* is also a dummy variable that takes on the value of 1 if the other group member is dishonest.²³ *Gender* is another dummy variable that takes on the value of 1 if the norm enforcer is female.

In Model (1), we only add *Externality*, and find that symmetric externalities lead to significant decrease in punishment. In Model (2), we introduce *PD*, *OD*, and *Gender*. We find that if punished group member is dishonest, punishment increase significantly. Model (2) also shows that there is no gender effect on punishment. In Model (3), we add interaction of *PD* and *OD*. We see that when both group members are dishonest punishment decreases significantly. On the other hand, the coefficient of *OD* becomes significant which is strange. Therefore, to understand the reason why the coefficient of *OD* becomes significant, we run additional regressions.

We present regression results for punishment behavior when dishonesty is advantageous and disadvantageous in Table 13. Model (1) shows that when dishonesty is advantageous, symmetric externalities significantly decrease punishment. Coefficient of *PD* is positive and significant which suggests that norm enforcers punish more if punished group member is dishonest. Coefficient of *OD* is negative and significant which means norm enforcers punish less when the other

²³ We apply the method used by Fehr and Fischbacher (2004) and add *PD* and *OD* as dummy variables.

group member is dishonest. In Model (2), we introduce interaction of *PD* and *OD*, and we observe that *OD* becomes insignificant. Positive and significant coefficient of interaction term implies that if both group members are dishonest norm enforcers punish significantly less. These results are in line with our previous findings. When lying is advantageous, symmetric externalities lead to decrease in punishment assigned, which suggests that norm enforcers consider dishonesty less severe if group members affect each other's payoff. In Model (3), we add *Gender* to measure gender affect, however, we find no significant effect of gender.

Table 12: Punishment behavior – regression results

	<i>Punishment</i>		
	(1)	(2)	(3)
<i>Externality</i>	-0.226*	-0.226*	-0.226*
	(0.136)	(0.137)	(0.137)
<i>PD</i>		0.332***	0.538***
		(0.122)	(0.141)
<i>OD</i>		0.014	0.221***
		(0.055)	(0.079)
<i>PD × OD</i>			-0.413***
			(0.146)
<i>Gender (Female)</i>		0.014	0.014
		(0.146)	(0.147)
<i>Constant</i>	0.677***	0.496***	0.392**
	(0.110)	(0.180)	(0.189)
Observations	416	416	416
R ²	0.019	0.061	0.077
Adjusted R ²	0.017	0.051	0.065

Notes: The dependent variable is deduction point assigned by norm enforcer. OLS regression with clustering on norm enforcers. Standard errors are clustered at the norm enforcer level.

* p<0.1; ** p<0.05; *** p<0.01

Table 13: Punishment behavior with advantageous and disadvantageous dishonesty – regression results

	Punishment when dishonesty is advantageous			Punishment when dishonesty is disadvantageous		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Externality</i>	-0.308** (0.138)	-0.308** (0.139)	-0.307** (0.139)	-0.144 (0.163)	-0.144 (0.163)	-0.145 (0.163)
<i>PD</i>	0.923*** (0.179)	1.154*** (0.215)	1.154*** (0.215)	-0.260 (0.189)	-0.077 (0.191)	-0.077 (0.192)
<i>OD</i>	-0.269** (0.106)	-0.038 (0.055)	-0.038 (0.056)	0.298*** (0.093)	0.481*** (0.149)	0.481*** (0.150)
<i>PD × OD</i>		-0.462*** (0.177)	-0.462*** (0.177)		-0.365** (0.152)	-0.365** (0.153)
<i>Gender (Female)</i>			0.058 (0.146)			-0.030 (0.170)
<i>Constant</i>	0.454*** (0.097)	0.339*** (0.103)	0.305** (0.146)	0.554*** (0.196)	0.462** (0.209)	0.480* (0.269)
Observations	208	208	208	208	208	208
R ²	0.341	0.359	0.360	0.077	0.091	0.092
Adjusted R ²	0.332	0.347	0.344	0.063	0.073	0.069

Note: OLS regression with clustering on norm enforcers. Standard errors are clustered at the norm enforcer level.

*p<0.1; **p<0.05; ***p<0.01

In Model (4), we regress punishment when dishonesty is disadvantageous on *Externality*, *PD*, and *OD*. We observe that coefficient of *OD* is positive and significant while coefficients of *Externality* and *PD* are negative and insignificant. This finding implies that if the other group member lies disadvantageously, norm enforcers punish more. Since lying is disadvantageous, norm enforcers might want to lessen payoff inequality between group members by imposing punishment although the punished group member is honest. This becomes clearer when we add interaction variable into the model. Negative and significant coefficient of interaction variable shows that if both group members are dishonest, punishment

decreases. In Model (6), we control for gender effect, but we do not observe significant gender effect. We summarize our findings in Result 6, Result 7, and Result 8.

Result 6: *When dishonesty is advantageous, symmetric externalities decrease punishment.*

Result 7: *When dishonesty is disadvantageous, norm enforcers punish to decrease inequality.*

Result 8: *Punishment decreases if both group members are dishonest.*

CHAPTER 6

CONCLUSION

In this study, we explore whether symmetric externalities and third-party punishment affect dishonest behavior and how punishment behavior of third parties change when symmetric externalities are present. Symmetric externalities help us to understand dishonesty in a more similar way we see it in daily economic interactions. Existing studies mostly focus on when only one of the two agents make dishonest decision affecting the other agent, however, in daily economic interactions it is mostly both parts of the interaction make decisions that could affect each other. This points out the strategic side of the decision beside moral judgements. With our design we try to capture this side of the economic interactions.

First, we observe that presence of norm enforcer does not significantly change dishonest behavior of group members neither in symmetric externality treatments nor in no symmetric externality treatments. Contrary to existing research (Teraji, 2013) implying decrease in norm violation due to possibility of punishment, our subjects do not refrain from dishonest reporting against the probability of third-party punishment. The reason why we do not observe this kind of effect may be that our sample are accustomed to dishonest behavior, and they do not expect norm enforcers to react to it (Gächter & Schulz, 2016); therefore, they do not refrain from dishonest behavior when norm enforcer is present.

Second, we find that symmetric externalities decrease dishonest behavior when dishonesty is advantageous. In line with our expectations, subjects refrain from dishonest behavior when the other group member hurts from it. This implies that subjects are sensitive to consequences of dishonest behavior even though it involves

strategic interactions. We also observe that beliefs regarding the other group member's reporting behavior affect dishonest behavior irrespective of symmetric externalities. One reason may be that believing that the other group member behave dishonestly decreases the intrinsic cost of lying. This would be in line with the findings of Weisel and Shalvi (2015) who report that collaborative settings offset the moral cost of dishonesty and lead to increase in dishonest behavior.

Third, we observe that norm enforcers punish less when both group members lie in symmetric externality treatment than no symmetric externality treatment. As a consequence, we can say that norm enforcers consider dishonesty less severe when both of the group members can affect each other's payoff.

Finally, we find that when lying is disadvantageous, norm enforcers punish more if the other group member is dishonest. When lying is disadvantageous, dishonest group member ends up with less payoff than honest player. Hence, increase in punishment in such a situation suggests that norm enforcers try to achieve equality in payoffs by punishing the group member that gets higher payoff irrespective of reports.

Our study applies the symmetric externality feature of the economic interactions into experimental setting and shows that probability of hurting other people by lying and being hurt due to lying leads to deterrence from lying in strategic setting. Furthermore, it presents that norm enforcers consider advantageous dishonest behavior morally more acceptable in symmetric externality setting. However, one might wonder what would happen if stakes were higher for group members, and what would happen if we used direct method. These are the subjects of future research.

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APPENDICES

A. EXPERIMENTAL INSTRUCTIONS AND SURVEY QUESTIONS

In this section, we provide the English translations of instructions and survey questions we used in the experiment. First, in A.1, we provide the English translations of instructions we used in NoExt-NE and Ext-NE treatments. Then, in A.2, we present the English translations of survey questions.

A.1. Experimental Instructions

In this section, we provide the translated instructions (from Turkish) we used in NoExt-NE and Ext-NE treatments. The instructions we used in NoExt-NoNE and Ext-NoNE are quite similar to instructions we used in NoExt-NE and Ext-NE except that they do not include anything regarding Participant C; hence, we do not include them here. Also, since NoExt-NoNE and Ext-NoNE treatments do not involve Participant C, subjects participating in these treatments are informed about the amount they have earned from belief elicitation part and their total payoff at the end of the experiment. Please note that in each treatment, the same set of instructions are given to Participant A and Participant B. In the following, you can see the instructions shown to subjects. Page names are specified in square brackets.

Instructions for Participant A and Participant B (NoExt-NE)

[General Instructions Page]

General Instructions

Welcome to the experiment.

In this experiment, we study economic decision making. You have earned 5 TL by participating. In addition, depending on your decisions and other participants' decisions, you can earn money during the experiment.

In certain parts of the experiment, your income is calculated in points. The points you receive during the experiment will be converted into Turkish liras after the experiment has ended, with the exchange rate of:

$$1 \text{ point} = 5 \text{ TL}$$

The experiment consists of two stages, Stage I and Stage II.

The income you earn from the experiment will be paid to you after all stages are completed.

The experiment consists of decision making and survey parts. At the beginning of decision-making part, you will see detailed instructions on your screen.

Please read the instructions carefully.

You will not be able to use the back button during the experiment, so please make sure that you want to switch to the next page before clicking the "Next" button.

[Instructions Page]

Instructions

We will randomly place you in a group of three people. Your group will consist of Participant A, Participant B, and Participant C. You are **Participant A** (Participant B). You will never be aware of the identities of Participant B (Participant A) and Participant C; similarly, Participant B (Participant A) and Participant C will never be aware of your identity.

This part consists of two stages, Stage I and Stage II. Detailed instructions about the stages are given below.

Stage I

- In this stage, **you** and **Participant B** (Participant A) are the decision makers.
- There will be a virtual and fair coin-toss.
- You and Participant B (Participant A) will see **the same** coin-toss result.
- **Before the coin-toss is realized**, you and Participant B (Participant A) will be asked to choose which side of the coin you would report if the coin-toss is tails and which side of the coin you would report if the coin-toss is heads:
 - o You will choose which side of the coin you would report if the coin-toss is tails: tails or heads.
 - o You will choose which side of the coin you would report if the coin-toss is heads: tails or heads.

- After making your decisions, a coin-toss will take place.
- Depending on the realized coin-toss outcome, one of the reports you have made will be used to determine your points. Therefore, in both cases, it is important to make your choice as if “it could happen”.
- Your points will be determined as follows:
 - If the realized coin-toss is tails, your points will be determined based on your report for tails outcome.
 - If the realized coin-toss is heads, your points will be determined based on your report for heads outcome.
 - If the realized coin-toss is tails:
 - If your report is **tails**, you will receive **1 point**.
 - If your report is **heads**, you will receive **3 points**.
 - If the realized coin-toss is heads:
 - If your report is **tails**, you will receive **1 point**.
 - If your report is **heads**, you will receive **3 points**.

The table below shows the points you will receive corresponding to your report.

Report	Points
Tails	1
Heads	3

Stage II

- In this stage, **Participant C** is the decision maker.
- Participant C may choose to reduce your points and Participant B’s (Participant A’s) points evaluating the realized coin-toss outcome and your reports for this outcome.
- For each point Participant C chooses to reduce from you and Participant B (Participant A), Participant C’s points are reduced by 0.5 points.
- Participant C may choose to reduce points between 0 and 3 (including 0 and 3) from you and Participant B (Participant A).
- *Participant C cannot reduce your points and Participant B’s (Participant A’s) points below 0.*
- *At the start of this stage, Participant C will be endowed with 3 points.*

Comprehension Questions

Before starting the experiment, you need to answer the comprehension questions. The experiment will begin after all participants have answered the comprehension questions correctly.

You can see the instructions again below.

(Instructions)

Suppose that the coin-toss outcome is “Tails”:

1. In case the coin-toss is tails, Participant A chooses to report “Tails” and Participant B chooses to report “Heads”. Participant C chooses to reduce “0” points from Participant A and “2” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
2. In case the coin-toss is tails, Participant A chooses to report “Heads” and Participant B chooses to report “Tails”. Participant C chooses to reduce “2” points from Participant A and “2” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
3. In case the coin-toss is tails, Participant A chooses to report “Heads” and Participant B chooses to report “Heads”. Participant C chooses to reduce “0” points from Participant A and “0” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
4. In case the coin-toss is tails, Participant A chooses to report “Tails” and Participant B chooses to report “Tails”. Participant C chooses to reduce “2” points from Participant A and “0” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?

[Report Page]

Now, we want you to choose which side of the coin you would like to report for each of the two possible outcomes.

You can see the instructions again below.

(Instructions)

Please select the side of the coin you would like to report for each of the two possible outcomes.

In case the coin-toss is tails, the side of the coin you would like to report:

- Heads
- Tails

In case the coin-toss is heads, the side of the coin you would like to report:

- Heads
- Tails

[Coin-toss Page]

Coin-toss result: ... (Image of the outcome)

[Belief Elicitation Page 1]

Now, we ask you to evaluate the task. Please answer the questions as accurately as possible.

You can earn money as a result of your evaluation.

Please indicate the side of the coin that you think Participant B (Participant A) has reported **for the realized outcome**. If you guess the side of the coin Participant has reported correctly, you will receive 5 TL in addition to money you have earned from the task.

The realized coin-toss outcome is.... Which side of the coin do you think Participant B (Participant A) has reported?

- Heads
- Tails

[Belief Elicitation Page 2]

Please indicate how many points you think Participant C has reduced from you due to your report **for the realized outcome**. If you guess the points Participant C has reduced from you correctly, you will receive 5 TL in addition to money you have earned from the task.

The realized coin-toss outcome is How many points do you think Participant C has reduced from you?

- 0
- 1

- 2
- 3

Instructions for Participant C (NoExt-NE)

[General Instructions Page]

General Instructions

Welcome to the experiment.

In this experiment, we study economic decision making. You have earned 5 TL by participating. In addition, depending on your decisions and other participants' decisions, you can earn money during the experiment.

In certain parts of the experiment, your income is calculated in points. The points you receive during the experiment will be converted into Turkish liras after the experiment has ended, with the exchange rate of:

$$1 \text{ point} = 5 \text{ TL}$$

The experiment consists of two stages, Stage I and Stage II.

The income you earn from the experiment will be paid to you after all stages are completed.

The experiment consists of decision making and survey parts. At the beginning of decision-making part, you will see detailed instructions on your screen.

Please read the instructions carefully.

You will not be able to use the back button during the experiment, so please make sure that you want to switch to the next page before clicking the "Next" button.

[Instructions Page]

Instructions

We will randomly place you in a group of three people. Your group consist of Participant A, Participant B, and Participant C. You are **Participant C**. You will never be aware of the identities of Participant A and Participant B; similarly, Participant A and Participant B will never be aware of your identity.

This part consists of two stages, Stage I and Stage II. Detailed instructions about the stages are given below.

Stage I

- In this stage, **Participant A** and **Participant B** are the decision makers.
- There will be a virtual and fair coin-toss.
- Participant A and Participant B will see **the same** coin-toss result.
- Participant A and Participant B will be asked to report the outcome of the coin-toss.
- The side of the coin Participant A and Participant B have reported will determine the points Participant A and Participant B will receive as follows:
 - o If Participant A's report or Participant B's report is **tails**, they will receive **1 point**.
 - o If Participant A's report or Participant B's report is **heads**, they will receive **3 points**.

The table below shows the points Participant A and Participant B will receive corresponding to their reports.

Report	Points
Tails	1
Heads	3

Stage II

- In this stage, you, **Participant C**, are the sole decision maker.
- You will be asked to evaluate the decisions of Participant A and Participant B.
- You can evaluate the decisions of Participant A and Participant B and reduce their points.
- For each point you choose to reduce from Participant A and Participant B, your points are reduced by 0.5 points.
- *You cannot reduce Participant A's and Participant B's points below 0.*
- *You may choose to reduce points between 0 and 3 (including 0 and 3) from Participant A and Participant B.*
- *At the start of this stage, Participant C will be endowed with 3 points.*
- You will evaluate all possible outcomes before learning the coin-toss outcome and the reports of Participant A and Participant B.
- Which of your decisions ultimately applies depends on the coin-toss outcome and the reports of Participant A and Participant B.

[Comprehension Questions Page]

Comprehension Questions

Before starting the experiment, you need to answer the comprehension questions. The experiment will begin after all participants have answered the comprehension questions correctly.

You can see the instructions again below.

(Instructions)

Suppose that the coin-toss outcome is “Tails”:

1. Participant A chooses to report “Tails” and Participant B chooses to report “Heads”. Participant C chooses to reduce “0” points from Participant A and “2” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
2. Participant A chooses to report “Heads” and Participant B chooses to report “Tails”. Participant C chooses to reduce “2” points from Participant A and “2” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
3. Participant A chooses to report “Heads” and Participant B chooses to report “Heads”. Participant C chooses to reduce “0” points from Participant A and “0” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
4. Participant A chooses to report “Tails” and Participant B chooses to report “Tails”. Participant C chooses to reduce “2” points from Participant A and “0” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?









[Punishment Page]

Now, we ask you to choose how many points you would like to reduce from Participant A and Participant B for each of the eight possible outcomes.

You can see the instructions below.

(Instructions)

Please choose how many points you would like to reduce from Participant A and Participant B for each of the eight possible outcomes.

Coin-toss	Participant A's Report	Participant B's Report	Participant A's Points	Participant B's Points	How many points would you like to reduce from Participant A?	How many points would you like to reduce from Participant B?
 Tails	Tails	Tails	1	1	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Heads	Heads	3	3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Heads	Tails	3	1	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Tails	Heads	1	3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Tails	Heads	1	3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Heads	Tails	3	1	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Heads	Heads	3	3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Tails	Tails	1	1	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3

Instructions for Participant A and Participant B (Ext-NE)

[General Instructions Page]

General Instructions

Welcome to the experiment.

In this experiment, we study economic decision making. You have earned 5 TL by participating. In addition, depending on your decisions and other participants' decisions, you can earn money during the experiment.

In certain parts of the experiment, your income is calculated in points. The points you receive during the experiment will be converted into Turkish liras after the experiment has ended, with the exchange rate of:

$$1 \text{ point} = 5 \text{ TL}$$

The experiment consists of two stages, Stage I and Stage II.

The income you earn from the experiment will be paid to you after all stages are completed.

The experiment consists of decision making and survey parts. At the beginning of decision-making part, you will see detailed instructions on your screen.

Please read the instructions carefully.

You will not be able to use the back button during the experiment, so please make sure that you want to switch to the next page before clicking the "Next" button.

[Instructions Page]

Instructions

We will randomly place you in a group of three people. Your group will consist of Participant A, Participant B, and Participant C. You are **Participant A** (Participant B). You will never be aware of the identities of Participant B (Participant A) and Participant C; similarly, Participant B (Participant A) and Participant C will never be aware of your identity.

This part consists of two stages, Stage I and Stage II. Detailed instructions about the stages are given below.

Stage I

- In this stage, **you** and **Participant B** (Participant A) are the decision makers.
- There will be a virtual and fair coin-toss.
- You and Participant B (Participant A) will see **the same** coin-toss result.

- **Before the coin-toss is realized**, you and Participant B (Participant A) will be asked to choose which side of the coin you would report if coin-toss is tails and which side of the coin you would report if the coin-toss is heads:
 - You will choose which side of the coin you would report if the coin-toss is tails: tails or heads.
 - You will choose which side of the coin you would report if the coin-toss is heads: tails or heads.
- After making your decisions, a coin-toss will take place.
- Depending on the realized coin-toss outcome, one of the reports you have made will be used to determine your points. Therefore, in both cases, it is important to make your choice as if “it could happen”.
- Your points will be determined as follows:
 - If the realized coin-toss is tails, your points and Participant B’s (Participant A’s) points will be determined based on your report for tails outcome.
 - If the realized coin-toss is heads, your points and Participant B’s (Participant A’s) will be determined based on your report for heads outcome.
 - If the realized coin-toss is tails:
 - If your report is **tails** and Participant B’s (Participant A’s) report is **tails**, you will receive **2 points**, and Participant B (Participant A) will receive **2 points**.
 - If your report is **tails** and Participant B’s (Participant A’s) report is **heads**, you will receive **1 point**, and Participant B (Participant A) will receive **3 points**.
 - If your report is **heads** and Participant B’s (Participant A’s) report is **tails**, you will receive **3 points**, and Participant B (Participant A) will receive **1 point**.
 - If your report is **heads** and Participant B’s (Participant A’s) report is **heads**, you will receive **2 points**, and Participant B (Participant A) will receive **2 points**.
 - If the realized coin-toss is heads:
 - If your report is **tails** and Participant B’s (Participant A’s) report is **tails**, you will receive **2 points**, and Participant B (Participant A) will receive **2 points**.
 - If your report is **tails** and Participant B’s (Participant A’s) report is **heads**, you will receive **1 point**, and Participant B (Participant A) will receive **3 points**.
 - If your report is **heads** and Participant B’s (Participant A’s) report is **tails**, you will receive **3 points**, and Participant B (Participant A) will receive **1 point**.

- If your report is **heads** and Participant B's (Participant A's) report is **heads**, you will receive **2 points**, and Participant B (Participant A) will receive **2 points**.

The table below shows the points you and Participant B (Participant A) will receive corresponding to your report and Participant B's report.

The points Participant A will receive is written in (red) on the left side of each cell, and the points Participant B will receive is written in (blue) on the right side of each cell.

		Participant B's Report	
		Heads	Tails
Participant A's report	Heads	(2,2)	(3,1)
	Tails	(1,3)	(2,2)

Stage II

- In this stage, **Participant C** is the decision maker.
- Participant C may choose to reduce your points and Participant B's (Participant A's) points evaluating the realized coin-toss outcome and your reports for this outcome.
- For each point Participant C chooses to reduce from you and Participant B (Participant A), Participant C's points are reduced by 0.5 points.
- Participant C may choose to reduce points between 0 and 3 (including 0 and 3) from you and Participant B (Participant A).
- *Participant C cannot reduce your points and Participant B's (Participant A's) points below 0.*
- *At the start of this stage, Participant C will be endowed with 3 points.*

[Comprehension Questions Page]

Comprehension Questions

Before starting the experiment, you need to answer the comprehension questions. The experiment will begin after all participants have answered the comprehension questions correctly.

You can see the instructions again below.

(Instructions)

Suppose that the coin-toss outcome is “Tails”:

1. In case the coin-toss is tails, Participant A chooses to report “Tails” and Participant B chooses to report “Heads”. Participant C chooses to reduce “0” points from Participant A and “2” points from Participant B.
 - d. What will be Participant A’s points?
 - e. What will be Participant B’s points?
 - f. What will be Participant C’s points?
2. In case the coin-toss is tails, Participant A chooses to report “Heads” and Participant B chooses to report “Tails”. Participant C chooses to reduce “2” points from Participant A and “2” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
3. In case the coin-toss is tails, Participant A chooses to report “Heads” and Participant B chooses to report “Heads”. Participant C chooses to reduce “0” points from Participant A and “0” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
4. In case the coin-toss is tails, Participant A chooses to report “Tails” and Participant B chooses to report “Tails”. Participant C chooses to reduce “2” points from Participant A and “0” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?

[Report Page]

Now, we want you to choose which side of the coin you would like to report for each of the two possible outcomes.

You can see the instructions again below.

(Instructions)

Please select the side of the coin you would like to report for each of the two possible outcomes.

In case the coin-toss is tails, the side of the coin you would like to report:

- Heads
- Tails

In case the coin-toss is heads, the side of the coin you would like to report:

- Heads
- Tails

Coin-toss result: ... (Image of the outcome)

[Belief Elicitation Page 1]

Now, we ask you to evaluate the task. Please answer the questions as accurately as possible.

You can earn money as a result of your evaluation.

Please indicate the side of the coin that you think Participant B (Participant A) has reported **for the realized outcome**. If you guess the side of the coin Participant has reported correctly, you will receive 5 TL in addition to money you have earned from the task.

The realized coin-toss outcome is heads. Which side of the coin do you think Participant B (Participant A) has reported?

- Heads
- Tails

[Belief Elicitation Page 2]

Please indicate how many points you think Participant C has reduced from you due to your report **for the realized outcome**. If you guess the points Participant C has reduced from you correctly, you will receive 5 TL in addition to money you have earned from the task.

The realized coin-toss outcome is How many points do you think Participant C has reduced from you?

- 0
- 1
- 2
- 3

Instructions for Participant C (Ext-NE)

[General Instructions Page]

General Instructions

Welcome to the experiment.

In this experiment, we study economic decision making. You have earned 5 TL by participating. In addition, depending on your decisions and other participants' decisions, you can earn money during the experiment.

In certain parts of the experiment, your income is calculated in points. The points you receive during the experiment will be converted into Turkish liras after the experiment has ended, with the exchange rate of:

$$1 \text{ point} = 5 \text{ TL}$$

The experiment consists of two stages, Stage I and Stage II.

The income you earn from the experiment will be paid to you after all stages are completed.

The experiment consists of decision making and survey parts. At the beginning of decision-making part, you will see detailed instructions on your screen.

Please read the instructions carefully.

You will not be able to use the back button during the experiment, so please make sure that you want to switch to the next page before clicking the “Next” button.

[Instructions Page]

Instructions

We will randomly place you in a group of three people. Your group consist of Participant A, Participant B, and Participant C. You are **Participant C**. You will never be aware of the identities of Participant A and Participant B; similarly, Participant A and Participant B will never be aware of your identity.

This part consists of two stages, Stage I and Stage II. Detailed instructions about the stages are given below.

Stage I

- In this stage, **Participant A** and **Participant B** are the decision makers.
- There will be a virtual and fair coin-toss.
- Participant A and Participant B will see **the same** coin-toss result.
- Participant A and Participant B will be asked to report the outcome of the coin-toss.
- The side of the coin Participant A and Participant B have reported will determine the points Participant A and Participant B will receive as follows:
 - If Participant A’s report is **tails** and Participant B’s report is **tails**, Participant A will receive **2 points**, and Participant B will receive **2 points**.
 - If Participant A’s report is **tails** and Participant B’s report is **heads**, Participant A will receive **1 point**, and Participant B will receive **3 points**.

- If Participant A's report is **heads** and Participant B's report is **tails**, Participant A will receive **3 points**, and Participant B will receive **1 point**.
- If Participant A's report is **heads** and Participant B's report is **heads**, Participant A will receive **2 points**, and Participant B will receive **2 points**.

The table below shows the points Participant A and Participant B will receive corresponding to their reports.

The points Participant A will receive is written in (red) on the left side of each cell, and the points Participant B will receive is written in (blue) on the right side of each cell.

		Participant B's Report	
		Heads	Tails
Participant A's report	Heads	(2,2)	(3,1)
	Tails	(1,3)	(2,2)

Stage II

- In this stage, you, **Participant C**, are the sole decision maker.
- You will be asked to evaluate the decisions of Participant A and Participant B.
- You can evaluate the decisions of Participant A and Participant B and reduce their points.
- For each point you choose to reduce from Participant A and Participant B, your points are reduced by 0.5 points.
- *You cannot reduce Participant A's and Participant B's points below 0.*
- *You may choose to reduce points between 0 and 3 (including 0 and 3) from Participant A and Participant B.*
- *At the start of this stage, Participant C will be endowed with 3 points.*
- You will evaluate all possible outcomes before learning the coin-toss outcome and the reports of Participant A and Participant B.
- Which of your decisions ultimately applies depends on the coin-toss outcome and the reports of Participant A and Participant B.

[Comprehension Questions Page]

Comprehension Questions

Before starting the experiment, you need to answer the comprehension questions. The experiment will begin after all participants have answered the comprehension questions correctly.

You can see the instructions again below.

(Instructions)

Suppose that the coin-toss outcome is “Tails”:

5. Participant A chooses to report “Tails” and Participant B chooses to report “Heads”. Participant C chooses to reduce “0” points from Participant A and “2” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
6. Participant A chooses to report “Heads” and Participant B chooses to report “Tails”. Participant C chooses to reduce “2” points from Participant A and “2” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
7. Participant A chooses to report “Heads” and Participant B chooses to report “Heads”. Participant C chooses to reduce “0” points from Participant A and “0” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?
8. Participant A chooses to report “Tails” and Participant B chooses to report “Tails”. Participant C chooses to reduce “2” points from Participant A and “0” points from Participant B.
 - a. What will be Participant A’s points?
 - b. What will be Participant B’s points?
 - c. What will be Participant C’s points?









[Punishment Page]

Now, we ask you to choose how many points you would like to reduce from Participant A and Participant B for each of the eight possible outcomes.

You can see the instructions below.

(Instructions)

Please choose how many points you would like to reduce from Participant A and Participant B for each of the eight possible outcomes.

Coin-toss	Participant A's Report	Participant B's Report	Participant A's Points	Participant B's Points	How many points would you like to reduce from Participant A?	How many points would you like to reduce from Participant B?
 Tails	Tails	Tails	2	2	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Heads	Heads	2	2	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Heads	Tails	3	1	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Tails	Tails	Heads	1	3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Tails	Heads	1	3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Heads	Tails	3	1	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Heads	Heads	2	2	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
 Heads	Tails	Tails	2	2	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3

A.2. Survey Questions

In this section, we present the translated survey questions (from Turkish) we used in NoExt-NE and Ext-NE treatments. Since questions are quite similar, we italicize the different questions we ask to Participant A, Participant B, and Participant C and note the relevant participant (or participants) and the treatment in parentheses.

Please answer the following questions.

How old are you?

What is your gender?

- Female
- Male
- Other
- Prefer not to say

What is your department?

What grade are you in?

- 1
- 2
- 3
- 4
- Master's
- PhD

What is your monthly income?

- 0-500 TL
- 500-1000 TL
- 1000-2000 TL
- 2000-3000 TL
- 3000 TL and above

Please select the statement that is appropriate for you and complete the sentence.
(Participant A and Participant B, Ext-NE)

- I have chosen to report tails in the case the coin-toss is tails.*
- I have chosen to report heads in the case the coin-toss is tails.*

Because...

Please select the statement that is appropriate for you and complete the sentence.
(Participant A and Participant B, Ext-NE)

- I have chosen to report tails in the case the coin-toss is heads.*
- I have chosen to report heads in the case the coin-toss is heads.*

Because...

How angry do you think Participant B (Participant A) would feel based on the side of the coin you have reported? (Participant A and Participant B)

- 1 – Not angry at all.
- 2
- 3
- 4
- 5 – Always.

Why?

How angry do you think Participant C would feel based on the side of the coin you have reported? (Participant A and Participant B)

- 1 – Not angry at all.
- 2
- 3
- 4
- 5 – Very angry.

Why?

How angry it makes you that there is a possibility that reports of the participants and the actual outcome of the coin-toss is not the same? (Participant C)

- 1 – Not angry at all.
- 2
- 3
- 4
- 5 – Very angry.

Why?

How often do you encounter lies in your daily life?

- 1 – Not at all.
- 2
- 3
- 4
- 5 – Always.

Do you agree that people who lie should be punished?

- 1 – Strongly disagree.
- 2
- 3
- 4
- 5 – Strongly agree.

Do you agree that people who lie are punished appropriately?

- 1 – Strongly disagree.
- 2
- 3
- 4
- 5 – Strongly agree.

Do you agree that you are wronged in daily life because of lying?

- 1 – Strongly disagree.
- 2
- 3
- 4
- 5 – Strongly agree.

How many times have you participated in an experimental study?

- I haven't.
- 1-3 times.
- 3-5 times.
- More than 5 times.

Have you participated in a similar study before?

- No
- Yes

B. ADDITIONAL TABLES AND DATA ANALYSIS

Table 14: Descriptive statistics of beliefs regarding third-party punishment

Treatment	Mean	Std. Dev.	The realized outcome is tails		The realized outcome is heads	
			Mean	Std. Dev.	Mean	Std. Dev.
NoExt-NE (n = 24)	1	0.933	0.75	0.886	1.12	0.957
Ext-NE (n = 26)	0.692	0.838	0.875	0.991	0.611	0.778

Notes: n is the number of subjects participated in each treatment. Belief refers to the punishment point that group member expects to be assigned by norm enforcer.

Table 15: The effect of beliefs about third-party punishment on dishonest behavior

	Probit (ME)		
	Misreporting for the realized outcome	Misreporting when the realized outcome is tails	Misreporting when the realized outcome is heads
<i>ExpectedPunishment</i>	-0.025 (0.069)	0.192 (0.127)	-0.097 (0.081)
<i>ExpectedLying</i>	0.425*** (0.123)	0.635*** (0.164)	0.279* (0.154)
<i>Externality</i>	-0.089 (0.121)	0.041 (0.174)	-0.118 (0.136)
Observations	50	16	34
Log Likelihood	-26.753	-5.908	-13.765
AIC	61.507	19.817	35.529
Pseudo R ²	0.165	0.405	0.131

Note: *ExpectedPunishment* is the punishment point that group member expects norm enforcer to assign.

*p<0.1; **p<0.05; ***p<0.01

Table 16: Variable names and survey questions

Variable Name	Survey Question
Age	How old are you?
Gender	What is your gender?
Department	What is your department?
Grade	What grade are you in?
Income	What is your monthly income?
Anger	How angry do you think Participant B (Participant A) would feel based on the side of the coin you have reported? (on 1-5 Likert scale, ranging from “Not angry at all” to “Very angry”)
Anger Participant C	How angry do you think Participant C would feel based on the side of the coin you have reported? (on 1-5 Likert scale, ranging from “Not angry at all” to “Very angry”)
Anger Participant C Self	How angry it makes you that there is a possibility that reports of the participants and the actual outcome of the coin-toss is not the same? (on 1-5 Likert scale, ranging from “Not angry at all” to “Very angry”)
Dishonesty	How often do you encounter lies in your daily life? (on 1-5 Likert scale, ranging from “Not at all” to “Always”)
Punishment 1	Do you agree that people who lie should be punished? (on 1-5 Likert scale, ranging from “Strongly disagree” to “Strongly agree”)
Punishment 2	Do you agree that people who lie are punished appropriately? (on 1-5 Likert scale, ranging from “Strongly disagree” to “Strongly agree”)
Injustice	Do you agree that you are wronged in daily life because of lying? (on 1-5 Likert scale, ranging from “Strongly disagree” to “Strongly agree”)
Experience 1	How many times have you participated in an experimental study? (on 1-5 Likert scale, ranging from “Strongly disagree” to “Strongly agree”)
Experience 2	Have you participated in a similar study before?

Table 17: Descriptive statistics for subjects (N = 128)

	n	Mean	Std. Dev.	Median	Min	Max
Age	128	22.5	2.27	23	19	31
Anger	102	1.74	0.964	1	1	5
Anger Participant C	50	1.7	1.16	1	1	5
Anger Participant C Self	26	2.46	1.27	2	1	5
Dishonesty	128	3.18	1.02	3	1	5
Punishment 1	128	3.35	1.07	3	1	5
Punishment 2	128	1.78	0.913	2	1	5
Injustice	128	3.12	1.23	3	1	5

Note: n = subset of the sample

Table 18: Percentages of subjects according to groups (N = 128)

		n	%
Gender	Female	76	59.4
	Male	52	40.6
Department	Economics	42	32.8
	International Relations	17	13.3
	Business Administration	8	6.2
	Political Science and Public Administration	8	6.2
	Mechanical Engineering	5	3.9
	Chemical Engineering	4	3.1
	Other	44	34.4
Grade	1	23	18.0
	2	21	16.4
	3	32	25.0
	4	38	29.7
	Master's	11	8.6
	PhD	3	2.3
Income	0-500 TL	29	22.7
	500-1000 TL	37	28.9
	1000-2000 TL	39	30.5
	2000-3000 TL	9	7.0
	3000 TL and above	14	10.9
Experience 1	I haven't.	45	35.2
	1-3 times.	62	48.4
	3-5 times.	13	10.2
	More than 5 times.	8	6.2
Experience 2	No	106	82.8
	Yes	22	17.2


Notes: n = subset of the sample; % = subset percentage of the sample

C. APPROVAL OF THE METU HUMAN SUBJECTS ETHICS COMMITTEE

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

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16 HAZİRAN 2020

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)


İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Mürüvvet BÜYÜKBOYACI

"Dürüst Olmayan Davranışların Yaratıcıları Dışsalıklar" başlıklı araştırmanız İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve 191 ODTU 2020 protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız.



Prof. Dr. Mine MISIRLISOY
Başkan


Prof. Dr. Tolga CAN
Üye


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Dr. Öğr. Üyesi Süreyya Özcan KABASAKAL
Üye

D. TURKISH SUMMARY / TÜRKE ÖZET

Bu çalışmada dışsallığın ve norm uygulayıcının varlığının yalan söyleme davranışı üzerine etkisi araştırılmaktadır. Daha açık bir ifadeyle insanlar yalan söyleyerek birbirlerinin kazançlarını etkileyebiliyorken ve ceza verme yetkisine sahip bir norm uygulayıcı varken yalan söyleme davranışının bu faktörlerden nasıl etkilendiği araştırılmıştır. Bu çerçevede çalışmada şu soruların cevabı aranmaktadır: Yalan söylemek diğer insanların kazancını etkiliyorsa insanlar daha dürüst mü davranır? Cezalandırma seçeneği bulunan bir norm uygulayıcı mevcutsa insanlar daha az mı yalan söyler? Yalan söylemek diğer insanların kazançlarını etkiliyorsa üçüncü kişiler nasıl cezalandırır?

Çalışma boyunca kullanılan simetrik dışsallık terimi Schitter vd. (2019)'nin çalışmasında kullanılan şekliyle, kişilerin yalan söyleyerek birbirlerinin kazançlarını etkileyebilmesi durumuna karşılık gelmektedir. Öte yandan bu durum stratejik oyun olarak da düşünülebilir.

Simetrik dışsallıkların ve norm uygulayıcı cezalarının yalan söylemeye etkisini ölçmek amacıyla çevrimiçi bir deney düzenlenmiştir. Deneyde katılımcılar ikiye ayrılarak gruplandırılmış ve aynı gruptaki katılımcılar aynı yazı tura sonucunu gözlemlemişlerdir. Katılımcıların kazançları yaptıkları bildirimlere göre belirlenmekte ve katılımcıların bildirimleri birbirlerinin kazançlarını etkileyebilmektedir. Yalan söyleme davranışının norm uygulayıcının varlığından nasıl etkileneceğini ölçmek üzere deneye cezalandırma seçeneği olan norm uygulayıcı eklenmiştir. Birbirlerinin kazançlarını etkilemelerinin ve norm uygulayıcı tarafından cezalandırılma olasılığının katılımcıların yalan söyleme davranışını etkileyip etkilemediği araştırılmıştır. Buna ek olarak grup üyelerinin birbirlerinin kazançlarını etkileyecek olmasının norm uygulayıcının cezalandırma davranışına etkisine de bakılmıştır.

Çalışma yalan söyleme literatürünün dışsallıklar ve üçüncü taraf cezaları olmak üzere iki kısmıyla ilgilidir. Fischbacher ve Föllmi-Heusi (2013) yalan söyleme davranışı çerçevesinde insanları üçe ayırmıştır. Bunlar tümüyle yalan söyleyenler, tümüyle doğru söyleyenler ve yalan söyleyen ama tümüyle söylemeyen insanlar olarak sıralanabilir. Yalan söyleme davranışındaki bu ayrım tümüyle yalan söylemek kazançlı olsa da insanların yalan söylemekten çekinmesine neden olan faktörlerin olduğunu göstermektedir. Başkaları tarafından dürüst görünmenin ve dürüst olmanın (Abeler vd., 2019) ve yalan söylemenin maliyetinin (Abeler vd., 2014; Kajackaite & Gneezy, 2017) insanları yalan söylemekten alıkoyan faktörlerden bazıları olduğu gösterilmiştir. Buna ek olarak yalan söylemenin sonuçlarının, başka bir ifadeyle kişiye kazandırdığı ve diğer insanlara verdiği zararın, yalan söyleme davranışını etkileyen faktörlerden bir diğeri olduğu rapor edilmiştir (Gneezy, 2005). Bu çalışmada aynı grupta yer alan ve aynı yazı tura sonucunu gören iki kişinin bildirimleri doğrultusunda, birbirlerinin kazançlarını etkileyerek ya da etkilemeden, farklı kazançlar elde edebilecekken ne kadar dürüst davrandıkları araştırılmıştır.

Çalışmanın literatürle ilgili ilk kısmı dışsallığın yalan söyleme davranışı üzerine etkisidir. Gneezy (2005)'yi takiben yalan söyleme davranışını inceleyen literatürde dışsallık üzerine yapılan çalışmalar artış göstermiştir. Bu çalışmaların bazılarında gönderici-alıcı oyunundan (sender-receiver game) faydalanılmıştır. Bu oyunda gönderici alıcıya iki ödeme seçeneğinden hangisinin alıcıya daha fazla kazandıracığına dair bir mesaj gönderir ve alıcı iki ödeme seçeneğinden birisini seçer (Gneezy, 2005). Oyuncuların ödemeleri alıcının yaptığı seçime göre belirlenir. Gneezy ve Kajackaite (2020) dışsallığın yalan söyleme davranışı üzerine etkisini hile oyunu (cheating game) kullanarak araştırmıştır. Bu oyunda göndericilerden ekranlarında ardında 1'den 10'a kadar sayıların yer aldığı on kutudan birini seçmeleri ve seçtikleri kutunun ardındaki sayıyı rapor etmeleri istenmiştir. Göndericilere rapor ettikleri x sayısı kadar ödeme yapılırken alıcılara 10-x kadar ödeme yapılmıştır. Göndericilerin alıcılarla eşleştirildiklerinde eşleştirilmedikleri duruma göre daha az yalan söylediği rapor edilmiştir. Öte yandan Dilmaghani ve

Tabvuma (2020) katılımcıların yalan söyleme davranışının partnerlerine zarar vermesi durumunda sadece deneyi yapan kişiye zarar verdiği duruma göre daha fazla yalan söylediğini rapor etmiştir. Barron vd. (2019) ise çatışan ahlaki güdülerin, adalet ve doğru söyleme (fairness and truth-telling), yalan söyleme davranışı ile ilişkisini incelemiştir. Deneyde karar vericiler 1'den 10'a kadar sayıların yer aldığı rastgele çekilişin sonucunu gözlemlemiş ve sonucu rapor etmişlerdir. Karar vericilere rapor ettikleri x sayısı kadar ödeme yapılırken eşleştirildikleri alıcılara 10-x kadar ödeme yapılmıştır. Çekilen sayının düşük olması durumunda dürüstlük normuna uymak daha maliyetli olduğu için karar vericilerin adalet normuna uymaları beklenmiştir. Öte yandan çekilen sayı yüksek olduğunda adalet normuna uymak daha maliyetli olduğu için karar vericilerin dürüstlük normuna uymaları beklenmiştir. Bu beklentilere uygun olarak katılımcılar iki norm arasında ikilemde kaldıklarında kendi çıkarlarına daha çok uyan norma uymuşlardır. Bu çalışmaların sonuçlarına bakılarak dışsallığın yalan söyleme davranışına etkisi bakımından ortak bir sonuca varılamadığı söylenebilir.

Bu çalışma, her iki grup üyesinin de yalan söyleyebilmesi bakımından bahsi geçen çalışmalardan farklıdır. Bu çalışmaya en yakın çalışma Schitter vd. (2019)'ne aittir. Çalışmanın bir düzleminde kişilerin yalan söyleyerek başkalarına zarar vermesi ve başkalarının yalanlarından zarar görmesinin yalan söyleme davranışı üzerine etkisi araştırılmaktadır ve bu Schitter vd. (2019)'nin simetrik dışsallık tretmanına benzerlik göstermektedir. Schitter vd. (2019) anonimliğin ve simetrik dışsallıkların yalan söyleme davranışı üzerine etkisini talep oyunu (claim game) kullanarak araştırmıştır. Bu deneyde, katılımcılara 30 ya da 70 sent içeren zarflar verilmiş ardından zarf içeriğini almaları ve zarf içeriğini 1 Euro'ya tamamlayacak miktarı rapor etmeleri istenmiştir. Kontrol tretmanlarında katılımcılara ödemeleri yaptıkları raporlara doğrultusunda yapılmıştır. Simetrik dışsallık tretmanında ise katılımcılar dört kişilik gruplara yerleştirilmiş ve ödemeleri raporları doğrultusunda 4 Euro tutarındaki grup havuzundan yapılmıştır. Katılımcılara rapor ettikleri miktar ödendikten sonra havuzda kalan para dört grup üyesi arasında eşit olarak paylaştırılmıştır. Deney sonuçları simetrik dışsallıkların yalan söyleme davranışını

anamlı düzeyde etkilemediğini göstermiştir. Bu çalışmada ise Schitter vd. (2019)'nden farklı olarak belirli bir miktardaki para grup üyelerinin raporları doğrultusunda iki grup üyesi arasında paylaştırılmıştır. Bu şekilde eğer grup üyelerinden sadece birisi yalan söylemişse yalan söyleyen grup üyesi doğru söyleyerek alabileceği miktardan daha fazla kazanabilir ve dürüst davranan grup üyesi diğer grup üyesi dürüst davransaydı alabileceği miktardan daha az kazanabilir. Buna ek olarak çalışmada norm uygulayıcının simetrik dışsallığın mevcut olduğu ve olmadığı durumdaki cezalandırma davranışı araştırılmaktadır.

Literatürde her iki tarafın de yalan söyleyebildiği ve birbirlerinin kazançlarını etkileyebildiği az sayıda çalışma bulunmaktadır. Bunlardan biri Benistant vd. (2021)'ne aittir. Bu çalışmada katılımcıların rekabetçi bir düzende rekabetin olmadığı bir düzende göre daha fazla yalan söylediği rapor edilmiştir. Buna ek olarak katılımcıların yalan söyleyemeyecek bir partnerle eşleştirildiklerinde yalan söyleyebilecek bir partnerle eşleştirilmelerine kıyasla daha az yalan söyledikleri görülmüştür. Bu sonuçlar yalan söyleme davranışının gözlemlendiği düzenin ve diğer insanların yalan söyleme davranışlarının yalan söyleme davranışını etkilediğini göstermektedir. Bu çalışmada yalan söyleme davranışı katılımcıların yalan söyleyerek birbirlerinin kazançlarını değiştirebildiği ve kararlarının birbirlerinin kazançlarını değiştirebileceğinin farkında oldukları durumda incelenmektedir.

Çalışmanın literatürle ilgili ikinci kısmı ise üçüncü taraf cezaları hakkındadır. Fehr ve Fischbacher (2004) üçüncü taraf cezalarını dağıtım ve iş birliği (distribution and cooperation norms) normları çerçevesinde incelemiştir. Üçüncü tarafların üçte ikisinden fazlasının kazançlarının norm ihlalinden etkilenmemesine ve ceza vermenin bir maliyeti olmasına rağmen ceza verdiği görülmüştür. Üçüncü taraf cezalarıyla ilgili bir diğer çalışma Ohtsubo vd. (2010)'nin çalışmasıdır. Yazarlar güven oyununu (trust game) kullandıkları iki deney düzenlemiştir. Deneyde güvenilen kişi (trustee) güvenen kişiye (trustor) elindeki miktarı (endowment) kendisine göndermesi durumunda toplam miktarın x kadarını geri göndereceğini belirten bir mesaj gönderebilmektedir. Birinci deneyde x toplam miktarın yarısıdır.

Üçüncü tarafların yalan mesaj gönderen katılımcıları toplam miktarı eşit şekilde paylaşmayan ama yalan mesaj göndermeyen katılımcılara göre daha fazla cezalandırdığı görülmüştür. İkinci deneyde ise x toplam miktarın yarısından fazladır. Bu durumda üçüncü tarafların toplam miktarı eşit şekilde paylaşmayan ama yalan mesaj gönderen katılımcıları toplam miktarı eşit şekilde paylaşmayan ama yalan mesaj göndermeyen katılımcılara kıyasla daha fazla cezalandırdığı görülmüştür. Bu sonuçlar üçüncü tarafların adaletli bir dağıtım yapan ama yalan söyleyen katılımcıları cezalandırmaya istekli olduklarını göstermektedir. Dimant ve Gesche (2020) ise yalan söyleme güdülerinin (motives for lying) ve norm algılarının (norm perceptions) üçüncü taraf cezalarıyla ilgisini araştırmıştır. Yazarlar yalanın büyüklüğü ve yalandan dolayı katılımcılar arasında oluşan eşitsizlik arttıkça norm uygulayıcı tarafından verilen cezaların arttığını gözlemlemiştir. Dimant ve Gesche (2020)'den farklı olarak bu çalışmada üçüncü tarafların varlığında katılımcıların yalan söyleme davranışında bir değişikliğin olup olmadığına ve simetrik dışsallıkların üçüncü tarafların cezalandırma davranışlarında bir değişikliğe neden olup olmadığı araştırılmaktadır.

Deneyde Kocher vd. (2018) tarafından kullanılan teknik yazı tura görevine uyarlanmıştır. Bu görevde katılımcılar madeni paranın iki yüzünden birine ait görseli ekranlarında gözlemlemiştir. Görsel bilgisayar tarafından olası yazı tura sonuçlarını gösteren iki görsel arasından rastgele seçilmiştir.

Katılımcıların raporlama davranışları strateji metodu kullanılarak katılımcılar yazı tura sonucunu görmeden önce toplanmıştır. Katılımcılardan yazı tura atışı gerçekleşmeden önce olası her sonuç için madeni paranın hangi yüzünü rapor edeceklerini seçmeleri istenmiştir. Başka bir ifadeyle katılımcılara eğer yazı tura sonucu yazı ise paranın hangi yüzünü ve eğer yazı tura sonucu tura ise paranın hangi yüzünü rapor edecekleri sorulmuştur. Bu şekilde her iki olası yazı tura sonucu için katılımcıların raporlama davranışı öğrenilmiştir. Katılımcılar her olası sonuç için madeni paranın yazı ya da tura yüzünden birini rapor edebilmektedir. Katılımcılar yazı tura sonucu yazı ise yazı tura sonucunu yalan söyleyerek tura olarak rapor edebilir ve bu durumda doğru söyleyerek kazanabileceği miktardan daha fazla

kazanabilir. Bu durum yalan söylemeyi avantajlı kılmaktadır. Diğer yandan katılımcılar yazı tura sonucu tura ise yazı tura sonucunu yalan söyleyerek yazı olarak rapor edebilir ve bu durumda doğru söyleyerek kazanabileceği miktardan daha az kazanabilir. Bu durum yalan söylemeyi dezavantajlı kılmaktadır. Katılımcıların kazançları gerçekleşen yazı tura sonucu için rapor ettikleri para yüzüne göre belirlenmiştir. Bu bilgi deneklere verilmiştir. Katılımcılar madeni paranın herhangi bir yüzünü rapor edebilir böylece yalan söyleyebilir. Böylece tek amacı parasal kazancını maksimize etmek olan katılımcılar her durumda tura rapor etmek isteyecektir.

Yazı tura atışı ve zar atışı görevlerinin kullanıldığı birçok deneyde (Abeler vd., 2014; Fischbacher & Föllmi-Heusi, 2013; Schindler & Pfattheicher, 2017), katılımcılar görevi gizli olarak gerçekleştirir ve yalan söyleme ancak genel düzeyde (aggregate level) tespit edilebilir. Ancak bu çalışmanın deney tasarımı yalan söylemeyi bireysel düzeyde tespit edebilmeyi mümkün kılmaktadır. Katılımcıların her olası sonuç için hangi para yüzünü rapor ettiği bilinmektedir. Katılımcıların raporları alındıktan sonra katılımcılara bilgisayar tarafından rastgele belirlenen yazı tura sonucu gösterilmiş ve katılımcıların kazançları gerçekleşen yazı tura sonucu için yaptıkları rapora göre belirlenmiştir. Yalan söylemenin tam olarak gözlenebilmesi ve strateji metodunun kullanımı yalan söyleme davranışını etkileyebileceğinden analizlerin odağını tretmanlar arası farklılıklar oluşturmaktadır.

Deney 2x2 ve denekler arası olarak tasarlanmıştır. Bir yandan norm uygulayıcının varlığının, diğer yandan yalanın simetrik dışsallık yaratıp yaratmamasının yalan söyleme davranışı üzerine etkisine bakılmaktadır. Deney NoExt-NoNE, Ext-NoNE, NoExt-NE ve Ext-NE olmak üzere dört tretmandan oluşmaktadır.

Katılımcılar tretman koşuluna bağlı olarak ikişerli ya da üçerli olarak rastgele gruplanmıştır. Grup üyeleri Katılımcı A, Katılımcı B ve Katılımcı C olarak adlandırılmıştır. Katılımcı C norm uygulayıcı görevindedir. Her tretman yazı tura görevi, inanç değerlendirme (belief elicitation) ve anket olmak üzere üç kısımdan

oluşmaktadır. Tretman 3'te ve Tretman 4'te yazı tura görevi iki aşamadan oluşmaktadır. Her iki aşamada da strateji metodu kullanıldığı için deneklere verilen açıklamalar farklılıklar göstermektedir. Bu nedenle aşamalar ayrı olarak gerçekleştirilmiş ve katılımcıların kazançları tüm aşamalar tamamlandıktan sonra belirlenmiştir.

Tretman 1'de gruplar Katılımcı A ve Katılımcı B olmak üzere iki kişiden oluşmaktadır. İlk kısımda Katılımcı A'ya ve Katılımcı B'ye her iki olası sonuç için bildirmek istedikleri para yüzü sorulmuş ve kazançlarının şu şekilde belirleneceği bilgisi verilmiştir: Her iki olası sonuç için grup üyeleri yazı tura sonucunu yazı olarak bildirirlerse 1 puan, tura olarak bildirirlerse 3 puan alacaklardır. Katılımcılara kazançlarının gerçekleşen yazı tura sonucu için yaptıkları rapora göre belirleneceği bilgisi verilmiştir. Katılımcıların raporları alındıktan sonra gerçekleşen yazı tura sonucu gösterilmiştir. Aynı gruptaki Katılımcı A ve Katılımcı B aynı yazı tura sonucunu görmüştür. Tretman 2'de Tretman 1'den farklı olarak katılımcıların yaptıkları raporlara göre alacakları puan şu şekildedir: Eğer gerçekleşen yazı tura sonucu için grup üyelerinden biri yazı rapor ederken diğeri tura rapor ederse yazı rapor eden grup üyesi 1, tura rapor eden grup üyesi 3 puan alacaktır. Eğer gerçekleşen yazı tura sonucu için her iki grup üyesi de aynı para yüzünü rapor ederse her iki grup üyesi de 2 puan alacaktır. Bu şekilde grup üyelerinden biri dürüst davranırken diğeri yalan söylediğinde, grup üyelerinin simetrik dışsallığın olduğu ve olmadığı tretmanlardaki kazançları aynı olacaktır. Başka bir ifadeyle simetrik dışsallık tretmanında, simetrik dışsallığın olmadığı tretmanda bir grup üyesi dürüst davranıp bir diğeri yalan söylerken oluşan eşitsizlik sabit tutulmuş ve 4 puan raporlarla orantılı olacak şekilde grup üyeleri arasında paylaştırılmıştır. Böylece dürüst olan ve yalan söyleyen grup üyelerinin kazançları arasındaki fark sabitken, grup üyelerinin birbirlerinin kazançlarını etkilediği ve etkilemediği durumda norm uygulayıcının ceza davranışını karşılaştırmak mümkün olmuştur. Tretman 3'ün ve Tretman 4'ün birinci kısmının ilk aşamasında Tretman 1 ve Tretman 2'deki süreç tekrarlanmıştır. İkinci aşamada ise norm uygulayıcılar gerçekleşen yazı tura sonucunu ve grup üyelerinin raporlarını gözlemleyerek her bir grup üyesinden

düşürmek istedikleri puanı belirlemişlerdir. Tüm katılımcılara Katılımcı C'nin Katılımcı A'dan ve Katılımcı B'den puan düşürebileceği bilgisi verilmiştir. Katılımcı C, Katılımcı A ve Katılımcı B'den 0 ve 3 arasında puan düşürebilir ve Katılımcı C'nin Katılımcı A'dan ve Katılımcı B'den düşürdüğü her bir puan Katılımcı C'nin puanını 0.5 puan düşürmektedir. Katılımcı C, Katılımcı A'dan ve Katılımcı B'den düşürmek istediği puanı gerçekleştiren yazı tura sonucunu ve Katılımcı A ve Katılımcı B'nin gerçek raporlarını öğrenmeden gerçekleştirebilecek olası 8 durum için belirlemiştir. Katılımcı C'nin verdiği cezalar strateji metodu kullanılarak toplanmıştır (Fehr & Fischbacher, 2004; Dimant & Gesche, 2020).

Katılımcılar açıklamaları okuduktan sonra kavrama sorularını cevaplamış, deney tüm katılımcılar kavrama sorularını doğru yanıtladıktan sonra başlamıştır.

Yazı tura görevinin ardından Katılımcı A ve Katılımcı B inanç değerlendirmesi sorularına cevap vermiştir. Katılımcılara gerçekleşen yazı tura sonucu için diğer grup üyesinin paranın hangi yüzünü rapor ettiklerini düşündükleri sorulmuştur (Fehr & Fischbacher, 2004; Kocher vd., 2018). Bunun yanı sıra norm uygulayıcı tretmanlarında Katılımcı A'ya ve Katılımcı B'ye gerçekleşen yazı tura sonucu için yaptıkları bildirimine göre Katılımcı C'nin kendilerinden kaç puan düşüreceğini tahmin ettikleri sorulmuştur (Fehr & Fischbacher, 2004; Jordan vd., 2016).

Deneyin son kısmında katılımcılar yaş, cinsiyet, aylık gelir, bölüm ve sınıflarına dair soruların da yer aldığı anket sorularını cevaplamışlardır. Anket sorularında Katılımcı A'ya ve Katılımcı B'ye diğer grup üyesinin yaptıkları rapor nedeniyle ne kadar kızacağını tahmin ettikleri sorulmuştur (1-5 aralığı; Likert ölçeği, Hiç kızgın değil; Çok kızgın). Buna ek olarak norm uygulayıcı tretmanlarında Katılımcı A'ya ve Katılımcı B'ye gerçekleşen yazı tura sonucu için yaptıkları rapora bağlı olarak Katılımcı C'nin ne kadar kızacağını tahmin ettikleri sorulmuştur (1-5 aralığı; Likert ölçeği, Hiç kızgın değil; Çok kızgın). Katılımcı C'ye ise grup üyelerinin yalan söyleme ihtimalinin onları ne kadar kızdırdığı sorulmuştur (1-5 aralığı; Likert ölçeği, Hiç kızgın değilim; Çok kızgınım). Katılımcılara günlük yaşamda ne sıklıkla yalanla karşılaştıkları (1-5 aralığı; Likert ölçeği, Hiç karşılaşmıyorum; Her zaman

karişılaşıyorum), yalan söyleyen insanların cezalandırılıp cezalandırılmaması gerektiği hakkındaki görüşleri (1-5 aralığı; Likert ölçeği, Kesinlikle düşünmüyorum; Kesinlikle düşünüyorum), yalan söyleyen insanların uygun şekilde cezalandırılıp cezalandırılmadığı hakkındaki görüşleri (1-5 aralığı; Likert ölçeği, Kesinlikle düşünmüyorum; Kesinlikle düşünüyorum) ve günlük yaşamda yalan nedeniyle haksızlığa uğrayıp uğramadıkları hakkındaki görüşleri (1-5 aralığı; Likert ölçeği, Kesinlikle düşünmüyorum; Kesinlikle düşünüyorum) sorulmuştur. Bunlara ek olarak simetrik dışsallık tretmanlarında Katılımcı A'ya ve Katılımcı B'ye olası yazı tura sonucu için yaptıkları raporlar ve bunu neden yaptıkları sorulmuştur.

Deneyin sonunda katılımcıların kazançları 1 puan 5 TL'ye karşılık gelecek şekilde Türk lirasına çevrilmiştir. Katılımcılara 5 TL katılım ücreti ödenmiştir. Katılımcıların inanç değerlendirmesinden kazançları da toplam kazançlarına eklenmiştir. Tretman 3 ve Tretman 4 için katılımcıların kazançları tretmanların her iki aşaması da tamamlandıktan sonra belirlenmiştir.

Açıklamalarda tarafsız bir dil kullanılmış, ceza, yalan söyleme, dürüstlük ve yanlış raporlama gibi ifadelerden kaçınılmıştır.

Deneyin tüm oturumları oTree (Chen vd., 2016) ve Heroku (<https://www.heroku.com>) kullanılarak çevrimiçi gerçekleştirilmiştir. Çevrimiçi deney gerçekleştirilirken Ertac ve Kotan (2020)'ın ve Zhao vd. (2020)'nin çalışmalarından faydalanılmıştır. Deneyin bilgisayar kullanılarak çevrimiçi gerçekleştirileceği ve Zoom üzerinden kontrol edileceği davetiyede katılımcıların bilgisine sunulmuştur. Buna ek olarak Katılım ücretinin 5 TL olacağı ve deneye katılarak kazanabilecekleri toplam miktarın maksimum 30 TL olacağı bilgisi de katılımcılara verilmiştir. Deneye katılım için Google Forms kullanılmış ve elektronik olarak onaylanmış katılım formları bu aşamada toplanmıştır. Deneyden önce Zoom bilgilerinin de yer aldığı hatırlatma e-postası katılımcılara gönderilmiştir. Bu e-postada katılımcılara deney süresince telefonlarını kullanamayacakları ve diğer katılımcılarla iletişim kuramayacakları da söylenmiştir. Anonimliğin sağlanması için katılımcıların kullanıcı adları değiştirilmiş ve yeterli

sayıda katılımcının olması sağlanmıştır. Katılımcılar Zoom toplantı odasına girdiklerinde kameralarını açmaları hatırlatılmış ve tüm katılımcılar sessize alınmıştır. Katılımcılara deneyle ilgili sorularını mesaj yoluyla özel olarak sorabilecekleri söylenmiştir. Sonrasında o-Tree oturum bağlantıları katılımcılarla paylaşılmıştır. Katılımcılar bağlantıları açtıklarında açıklamaları ekranlarında görmüşlerdir. Açıklamalar yüksek sesle okunmuş, deneyin tüm katılımcılar kavrama sorularını doğru cevapladıktan sonra başlayacağı bilgisi verilmiştir. Deneyin sonunda katılımcıların IBAN bilgilerinin toplandığı çevrimiçi anket formunun bağlantısı paylaşılmıştır. Katılımcıların kazançları çevrimiçi olarak ödenmiştir. Çoğu katılımcının ödemesi oturumun gerçekleştirildiği gün içerisinde yapılmış, aynı gün içerisinde yapılamayan ödemeler o günü takip eden iş günü içerisinde yapılmıştır.

Veriler 2021 Haziran ayında toplanmış, deneye toplamda 128 kişi katılmıştır. Her oturum yaklaşık 40 dakika sürmüş ve katılımcılar ortalama olarak 18.20 TL kazanmıştır. Tüm katılımcılar Orta Doğu Teknik Üniversitesinde öğrencidir. Katılımcıların %32.8'i iktisat bölümünde öğrencidir. Katılımcıların yaş ortalaması 22.5'tir ve %59.4'ü kadındır. Katılımcıların %30.5'nin aylık geliri 1000-2000 TL'dir.

Deneyin sonuçları yalan söyleme davranışı ve norm uygulayıcıların cezalandırma davranışı olmak üzere iki kısımda incelenmiştir. İlk kısımda simetrik dışsallığın ve norm uygulayıcının varlığının yalan söyleme davranışını nasıl eklediğine bakılmıştır. Simetrik dışsallığın olduğu ve olmadığı tretmanlar karşılaştırıldığında bu tretmanlarda yalan söyleyen katılımcı oranının birbirinden istatistiksel olarak anlamlı bir farklılık göstermediği görülmüştür. Bunun yanı sıra norm uygulayıcının olduğu ve olmadığı tretmanlar karşılaştırıldığında norm uygulayıcının varlığının bu tretmanlarda yalan söyleyen katılımcı oranında anlamlı bir değişikliğe sebep olmadığı görülmüştür. Ardından yalan söyleme davranışı olası yazı tura sonuçları için incelenmiştir. Deneyde yazı tura sonucuna bağlı olarak yalan söylemek avantajlı ya da dezavantajlı olabilmektedir. Yazı tura sonucu yazı ise bu sonucu tura olarak raporlamak ekonomik olarak avantajlıdır. Öte yandan yazı tura sonucu tura

ise bu sonucu yazı olarak raporlamak dezavantajlıdır. Yazı tura sonucunun tura olması durumunda yalan söyleyerek sonucu yazı olarak bildiren (dezavantajlı yalan söyleme) katılımcıların oranı Ext-NoNE ve Ext-NE tretmanlarında NoExt-NoNE ve NoExt-NE tretmanlarına göre daha fazladır. Bu davranışın nedenlerinden biri özellikle grup üyelerinin raporlarının birbirlerinin kazançlarını etkilemesi nedeniyle katılımcıların yalancı olarak görülmemek için yalan söylemesi olabilir (Abeler vd., 2019; Choshen-Hillel vd., 2020). Öte yandan yalan söyleyen katılımcı oranının tretmanlar arasında gösterdiği farklılığın istatistiksel olarak anlamlı olmadığı görülmüştür. Yazı tura sonucunun yazı olması durumunda yalan söyleyerek tura bildiren (avantajlı yalan söyleme) katılımcıların oranı NoExt-NoNE ve NoExt-NE tretmanlarında Ext-NoNE ve Ext-NE tretmanlarından fazladır ancak bu farklılığın istatistiksel olarak anlamlı olmadığı görülmüştür. Dikkat çekici bir diğer nokta yazı tura sonucunun yazı olması durumunda sonucu tura olarak bildiren katılımcıların oranı daha önceki çalışmalardan farklılık göstermektedir. Bu çalışmalarda katılımcıların yazı tura sonucu raporlarının dağılımının gerçek dağılıma oldukça yakın olduğu (Abeler vd., 2014) ve yalan söyleyen katılımcıların tahmini oranının %26.7 olduğu (Schindler & Pfattheicher, 2017) rapor edilmiştir. Bu çalışmada ise avantajına yalan söyleyen katılımcıların oranı %50'nin üzerindedir. Bunun nedeni Kajackaite ve Gneezy (2017)'nin çalışmalarında değindikleri üzere yukarıda bahsedilen çalışmaların aksine görevde yalanın bir seçenek olarak sunulması ve katılımcıların dürüst ya da yalan bir şekilde raporlamayı seçebilmesi olabilir.

Yalan söyleme olasılığının simetrik dışsallıkla ve norm uygulayıcının varlığıyla ilişkisi regresyon yöntemi kullanarak incelendiğinde ise norm uygulayıcının varlığının anlamlı bir etkisi olmadığı ancak simetrik dışsallığın avantajlı yalan söyleme olasılığını düşürecek yönde anlamlı bir etkisi olduğu gözlemlenmiştir. Buna ek olarak cinsiyetin yalan söyleme davranışı ile ilişkisi de incelenmiş ancak anlamlı bir etki gözlemlenmemiştir.

Yalan söyleme davranışı ve diğer grup üyesinin raporlama davranışı hakkındaki inanç arasındaki ilişki incelendiğinde ise diğer grup üyesinin yalan söyleyeceğini düşünen grup üyelerinin yalan söyleme olasılığının arttığı gözlemlenmiştir. Yalan

söyleme davranışı ve grup üyelerinin norm uygulayıcının kendilerinden düşürmesini bekledikleri puan arasındaki ilişki de incelenmiş ancak anlamlı bir ilişki bulunamamıştır.

Norm uygulayıcıların cezalandırma davranışları ikinci kısımda incelenmiştir. Öncelikle simetrik dışsallığın cezalandırma davranışı üzerindeki genel etkisine bakılmıştır. Bu etkiyi gözlemek amacıyla Dimant ve Gesche (2020) tarafından kullanılan teknik kullanılmış ve norm uygulayıcıların grup üyelerinden düşürebilecekleri toplam puanın ne kadarını düşürdükleri hesaplanmıştır. NoExt-NE ve Ext-NE tretmanları karşılaştırıldığında bu oranlarda istatistiksel olarak anlamlı bir farklılık gözlemlenmemiştir.

Ardından Dimant ve Gesche (2020) ve Fehr ve Fischbacher (2004) tarafından uygulanan teknikler kullanılarak norm uygulayıcıların farklı cezalandırma senaryolarında verdikleri cezalar incelenmiştir. Sonuçlar norm uygulayıcıların avantajına yalan söylemeyi simetrik dışsallığın olmadığı durumda simetrik dışsallığın olduğu duruma kıyasla daha kötü bir davranış olarak algıladıklarını önermektedir. Öte yandan norm uygulayıcıların dezavantajına yalan söylemeyi simetrik dışsallığın olduğu durumda simetrik dışsallığın olmadığı duruma kıyasla daha kötü bir davranış olarak algıladıkları söylenebilir.

Norm uygulayıcıların verdikleri cezalar regresyon yöntemi kullanılarak incelendiğinde yukarıdaki sonuçları destekleyecek şekilde yalan söylemenin avantajlı olduğu durumda simetrik dışsallığın verilen cezayı anlamlı olarak azalttığı gözlemlenmiştir. Öte yandan yalan söylemenin dezavantajlı olduğu durumda norm uygulayıcıların grup üyelerinin kazançları arasındaki eşitsizliği azaltmak için ceza verdiği sonucu çıkarılabilir. Fehr ve Fischbacher (2004) tarafından kullanılan teknik kullanılarak grup üyelerinin raporlama davranışları ve norm uygulayıcılar tarafından verilen cezalar incelendiğinde ise her iki grup üyesinin yalan söylediği durumda norm uygulayıcıların verdiği cezaların düştüğü gözlemlenmektedir.

Çalışmada simetrik dışsallığın ve üçüncü taraf cezalarının yalan söyleme davranışını nasıl etkilediği ve simetrik dışsallıkların üçüncü tarafların cezalandırma davranışını nasıl etkilediği incelenmiştir. Simetrik dışsallıklar yalan söyleme davranışını gerçek hayattakine benzer koşullar altında incelememize olanak vermektedir. Literatürdeki çalışmaların çoğunun yoğunlaştığının aksine günlük hayatta ekonomik ilişkilerin çoğunda her iki tarafın da kararları birbirlerini etkileyebilir. Bu kararların stratejik yönünü öne çıkarmaktadır. Çalışmadaki deney tasarımı bu yönü yakalamaya çalışmaktadır.

İlk olarak norm uygulayıcının varlığının simetrik yalan söyleme davranışını anlamlı bir şekilde etkilemediği sonucuna ulaşılmıştır. Ceza verilmesi olasılığının norm ihlalini düşüreceğini öngören çalışmanın (Teraji, 2013) aksine norm uygulayıcının ceza verme olasılığı katılımcıları yalan söylemekten alıkoymamıştır. Bunun bir sebebi olarak katılımcıların yalanı kanıksaması ve norm uygulayıcıların bu kanıksanmış davranışa karşı tepki göstermeyeceklerini düşünmeleri olabilir (Gächter & Schulz, 2016).

İkinci olarak yalan söylemenin avantajlı olduğu durumda simetrik dışsallıkların yalan söyleme olasılığını azalttığı sonucuna ulaşılmıştır. Diğer grup üyesinin yalandan zarar göreceğ olmasının katılımcıları yalan söylemekten alıkoymadığı gözlemlenmiştir. Bu sonuçtan katılımcıların etkileşim stratejik olsa da yalan söylemenin sonuçlarına karşı hassas oldukları çıkarımı yapılabilir. Bunun yanı sıra simetrik dışsallığın var olup olmadığı fark etmeksizin diğer grup üyesinin raporlama davranışı hakkındaki inanın yalan söyleme davranışı üzerinde etkili olduğu görülmüştür. Bunun bir nedeni diğer grup üyesinin yalan söyleyeceği yönündeki inanın yalan söylemenin içsel maliyetini düşürmesi olabilir. Bu, işbirlikçi ortamların yalan söylemenin ahlaki maliyetini azalttığı ve dürüst olmayan davranışlarda artışa yol açtığını bildiren Weisel ve Shalvi (2015)'nin bulguları ile uyumludur.

Üçüncü olarak norm uygulayıcıların her iki grup üyesi de yalan söylediğinde daha az ceza verdiği gözlemlenmiştir. Bu durum norm uygulayıcıların yalan söylemeyi

her iki grup üyesi de yalan söylediğinde daha az kötü bir davranış olarak algıladığını önermektedir.

Son olarak yalan söylemenin dezavantajlı olduğu durumda diğer grup üyesi yalan söylüyorsa norm uygulayıcıların daha fazla ceza verdikleri gözlemlenmiştir. Yalan söylemenin dezavantajlı olduğu durumda diğer grup üyesinin yalan söylemesi yalan söyleyen grup üyesinin doğru söyleyen grup üyesinden daha az kazanmasına neden olmaktadır. Böyle bir durumda verilen cezaların daha fazla olması norm uygulayıcıların raporların yalan olmasına bakmaksızın grup üyelerinin kazançlarını eşitlemeye çalıştığını akla getirmektedir.

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