THE EFFECT OF EMOTIONAL STATES ON DECISION MAKING: EXPERIMENTAL EVIDENCE

by

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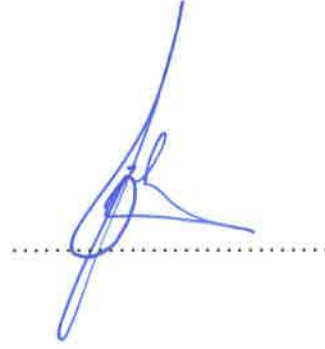Master of Arts

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THE EFFECT OF EMOTIONS ON DECISION MAKING: EXPERIMENTAL EVIDENCE

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Abstract

Being emotionally aroused often involves making different choices than one's ex-ante preferences. In this research project, we experimentally study the effect of incidental emotions induced through movies on individuals' social preferences. We design an experiment which consists of a triadic design Trust Game to identify the subjects' trusting and positive reciprocal preferences, a triadic design Ultimatum Game to identify their negative reciprocal preferences and the Dictator Game to identify their altruistic preferences. Our results suggest that there exists an impact of emotions on the social preferences. Firstly, sad people are less motivated by the fear of rejection than happy people and than people in a neutral mood. Secondly, sad people behave more altruistically than people in a neutral mood. Finally, we find evidence to support that happy people trust less than people in a neutral mood. Results provide evidence against the hypothesis that emotions do not systematically affect the decisions that concern other people.

Keywords: Experimental Economics, Decision Making, Social Preference, Emotion.

DUYGULARIN KARAR VERME ÜZERİNDEKİ ETKİSİ: DENEYSEL KANIT

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Özet

Duygusal olarak uyarılmış olmak genellikle kişinin ön görülen tercihlerinden farklı seçimler yapmasına neden olur. Bu araştırma projesinde, film klipleri aracılığıyla uyarılmış duyguların, kişinin sosyal tercihleri üzerindeki etkisini deneysel olarak incelemekteyiz. Tasarladığımız deneyimiz güven ve pozitif karşılık tercihlerini belirleyen üçlü Güven Oyunu'ndan, negatif karşılık tercihlerini belirleyen üçlü ültimatom Oyunu'ndan ve özgecil tercihleri belirleyen Diktatör Oyunu'ndan oluşmaktadır. Deneyden elde ettiğimiz sonuçlar duyguların sosyal tercihler üzerinde etkisi olduğunu göstermektedir. İlk bulgumuz, üzgün kişilerin duygu durumu nötr olan kişilere ve mutlu kişilere göre daha az reddedilme korkusuyla hareket ettiğini göstermektedir. İkinci olarak, üzgün kişilerin duygu durumu nötr olan kişilere göre daha çok özgecil davrandığını görmekteyiz. Son bulgumuz ise, mutlu insanların duygu durumu nötr olan kişilere göre tanımadıkları kişilere karşı daha az güven duyduğunu gösteren kanıtlar sunmaktadır. Sonuçlarımız duyguların diğer kişileri ilgilendiren kararlar üzerinde sistematik bir etkisi olmadığını savunan hipotezlere karşı kanıt sunmaktadır.

Anahtar Kelimeler: Deneysel Ekonomi, Karar Verme, Sosyal Tercih, Duygu.

To my family

ACKNOWLEDGEMENTS

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1 Introduction

In the neoclassical model of economic behaviour, individuals process the available information appropriately and make choices to maximize their utilities. It is called rationality axiom and this could be - and often has been - considered as being self-interested by economists. The model assumes that the framing of the information does not affect their preferences. In laboratory settings, this assumption is proved to be inadequate to explain behaviour during decision making (Simon, 1982; Kahneman, 2003). As deeper studies have shown, individuals show risk preference reversal under different frames and reference points (Kahneman & Tversky, 1979), exhibit inconsistent time preferences (Thaler, 1981), a pattern of behaviour which represents a concern for other people (Charness & Rabin, 2002; Fehr & Gachter, 2000) and misestimation of their skills and future states (Read & van Leeuven, 1998; Gilbert et al., 1998). There are systematic inconsistencies in the application of self-regarding preferences.

This research project explores the effect of emotions on social preferences to achieve a better understanding of individuals' decision making. We design an experiment that consists of 2 emotion treatments, (the Happy treatment and the Sad treatment) and the control group (the Neutral treatment). We select these treatments based on Russel (1980). Happiness and sadness are corresponding emotional states that have positive and negative valence, respectively. To awaken the participants' emotions, we show them short excerpts from three movies which take nine minutes in total. In the Sad treatment, we chose movies which are considered as upsetting, or painful. In the Happy treatment, we chose movies

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which are considered as pleasing or cheerful. To categorize movies as sad or happy, we rely on the results of Schaefer et al. (2010). They conducted a study to reveal the emotional effectiveness of movie clips and to provide the largest data set for the researchers. In order to achieve these goals, seven emotion categories which contains amusement and sadness were constructed and for each emotion, ten movie scenes that have acquired the highest rate of citation by fifty film experts were selected. Then, participants watched and assessed the chosen film clips with three self-report measures: the Differential Emotional Scale, the PANAS scales and a scale of subjective emotional arousal. We chose the movie clips from their data set which have the highest arousal score, the highest positive affect score and the highest amusement score for the Happy treatment and have the highest arousal score, the highest negative affect score and the highest sadness score for the Sad treatment. **In Table 1**, the list of movie clips and the description of the scenes are shown. According to Gilet (2008), Westerman, Spies, Stahl and Hesse (1996), and Schaefer et al. (2010), showing short movie clips is the most efficient way to activate one's emotions. In addition, the nature of the movies provides one with the most optimal ways to simulate real life conditions in a laboratory (Schaefer et al., 2010).

In the second part of the experiment after subjects watched the movie clips, we give 13 tasks to elicit their social preferences. Trust, positive reciprocity, inequality aversion, negative reciprocity and altruism are considered as the social preferences. To elicit these preferences we use a triadic design Trust Game, a triadic design Ultimatum Game and the Dictator Game. There are two possible orders that subjects could play these games. In order 1, the first game is a triadic design Trust Game, then the second is a triadic design Ultimatum Game and the last one is a Dictator Game. In order 2, the first game is a triadic design Ultimatum Game, the second is a triadic design Trust Game and the last is a Dictator Game. The

order in which subjects play these games are decided before the sessions starts. In Section 4, We also perform an analysis of the Trust and the Ultimatum Game on the first round data which only includes the choices of subjects who play the respective game as a first game.

The triadic experimental design includes control games that discriminate among actions with alternative motivations. A triadic Design Trust Game consists of a Trust Game and two Dictator Games (the Transfer Control and the Return Control Games). A triadic design Ultimatum Game consists of an Ultimatum Game and two control games. One of them is a Dictator Game which we call the Offer Control Game and the other one is the Accept Control Game which is a modified version of the Ultimatum Game. The methods that shows how to analyse these games are explained in more detailed in Section 3.

In Table 2, experimental measures for each preference is represented. Using the same elicitation methods mentioned above, the difference between two treatment groups and the control group are analysed.

In the last part of our experiment, in order to be sure about the efficiency of mood induction technique throughout the movies on our subject pool, participants asses the movies with two self-report measures: a scale of subjective emotional arousal and the Different Emotional Scale (DES; Izard et. al, 1974)**.** In addition, we give participants a questionnaire to obtain demographic information about them. Demographic questionnaire, emotional measure questions, experimental instruction and additional information about experimental procedure can be found in Appendix. To sum up: First of all, subjects watch movie clips. Then, they answer total of 9 questions about their social preferences. Finally, they fill in the emotional arousal survey and the demographic survey.

Our research project is important for three main reasons. First of all, we present experimental evidence on the effect of emotions on the subjects' behaviour. This

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evidence would provide a useful tool for predicting the actions of economic agents. Secondly, in order to incorporate emotions into economic theory, one needs to know the systematic changes that results from people's emotional state. As Loewenstein (2000) suggested, a state-dependent utility function can be used to adapt emotions in the economic theory. This fuction can incorporate the broader goals of deliberative system and the affective system driven by emotions and motivational states (Loewenstein et al., 2015). They gave an example to describe how the dual-process they suggested can be applied to social preferences specifically for altruism. They suggested that the deliberative system has a concern for others which is resulted from the ethical and moral rules while the affective system is driven toward anything between pure self-interest and extreme altruism depending on the degree of sympathy - his motivational state- and his emotional state. Therefore, the person will choose an option that is between the deliberative optimum and the affective optimum. However, without knowing what emotions' exact effects are, it does not worth considering. Therefore, we provide experimental evidence to incorporate emotions into economic theory by showing how different emotions shift the subjects' behaviour in an experimental setting. Finally, we analyse the emotions that are exogenous to interaction between two players. The former (Bosman and van Winden, 2002; Bosman and Riedl, 2003; Charness and Grosskopf, 2001) analyze the effect of emotions that result from the interaction of players in a given game. We are the first in the literature who use the mood induction technique for happy and sad emotions in triadic design experiments to examine their effects on a wide range of social preferences.

Then, we hypothesized our claims based on the existing literature that we mention in Section 2:

Hypothesis 1.1. Sad people trust more than people in a neutral mood.

Hypothesis 1.2. Sad people trust more than happy people.

Hypothesis 1.3. Happy people trust less than people in a neutral mood.

Hypothesis 2.1. Sad people positively reciprocate more than people in a neutral mood.

Hypothesis 2.2. Sad people positively reciprocate more than happy people.

Hypothesis 2.3. Happy people positively reciprocate less than people in a neutral mood.

Hypothesis 3.1. Sad people are motivated less by the fear of rejection than people in a neutral mood.

Hypothesis 3.2. Sad people are motivated less by the fear of rejection than happy people.

Hypothesis 3.3. Happy people are motivated less by the fear of rejection than people in a neutral mood.

Hypothesis 4.1. Sad people negatively reciprocate less than people in a neutral mood.

Hypothesis 4.2. Sad people negatively reciprocate less than happy people.

Hypothesis 4.3. Happy people negatively reciprocate more than people in a neutral mood.

Hypothesis 5.1. Sad people behave more altruistically than people in a neutral mood.

Hypothesis 5.2. Sad people behave more altruistically than happy people.

Hypothesis 5.3. Happy people behave less altruistically than people in a neutral mood.

Hypothesis 6.1. Sad people are more inequality-averse than people in a neutral mood.

Hypothesis 6.2. Sad people are more inequality-averse than happy people.

Hypothesis 6.3. Happy people are less inequality-averse than people in a neutral mood.

We find an interaction between one's current emotional state and his/her behaviour. Social preferences are not independent of emotions. Specifically, we support Hypothesis 3.1 and Hypothesis 3.2 which state that sad people are less motivated by the fear of rejection than happy people and than people in a neutral mood. We also support Hypothesis 5.1 which states that sad people behave more altruistically than people in a neutral mood. In addition, we find evidence to support Hypothesis 1.3 which states that happy people trust less than people in a neutral mood when we only consider the first round data.

The remainder of the paper is divided as follows. Section 2 present the related literature. Section 3 describes our experimental design and procedure in detail. Section 4 presents the empirical results and Section 5 concludes.

Table 1: List of Movie Clips

Treatment	Movie	Description
Neutral Tr.	Blue (1)	A person passes a piece of aluminum foil through the window of a car.
	Blue (2)	A man clears out the drawers of his desk; a woman arrives walking in an alley.
	The Lover	Marguerite gets into a car, and the car starts to ride.
Happy Tr.	There is something about Mary (1)	Ted fights with a dog.
	When Harry met Sally	Sally simulates an orgasm in a restaurant.
	There is something about Mary (2)	Mary takes sperm from Ted's hair mistaking it for hair gel.
Sad Tr.	Dead Man Walking	The main character is put to death by lethal injection.
	Life is Beatiful	The main character is killed after he saw his son.
	Schindler's List	Dead bodies are being carried away in a concentration camp.

2 Related Literature

Integral and incidental emotions have been distinguished by several authors (e.g.Cohen, Pham & Andrade, 2008; Loewenstein & Lerner, 2003). Integral emotions result from the choice that depends on people's actions while incidental emotions' sources are not connected to the decision at hand. The situation where people experience regret when the outcome of a gamble is less than their reference point is given as an example of integral emotions by Hoezl and Loewenstein (2005). Regret depends on the action taken by the subject. On the other hand, Johnson and Tversky found that people who had a pleasant experience such as having free lunch judge political slogans more positively than people who had a negative experience (1983). These are incidental emotions which arouse independent of the subjects' own actions or choices. Since we use exogenous mood induction process in this research, we always refer incidental emotions.

In the standard rational choice model that is widely used in economic theory, the effect of emotions is not considered as a factor that could alter individuals' choices. According to the large literature on emotion in psychology, emotions play an important role in the decision making process and different emotions have different effects on it. Even minor changes in the environment that could affect the emotional state of an individual seems to alter their behaviour. In his experiment, Rind (1996) found that subjects tip more at the restaurant if the weather is sunnier. Schwarz and Clore (1983) found that subjects' overall happiness level is higher if the weather is sunnier. Another example comes from a field experiment. Saunders (1993) concluded that the changes in one's emotional state which is resulted from the weather have an effect on US stock returns. If the cloud cover is higher in New York, aggregate US stock returns are lower. Hirshleifer and Shumway (2003) generalized Saunders' finding to 26 cities which are from 26 different countries. They suggest that there is a negative relationship between cloud cover and aggre-

gate stock returns in 18 of the cities. Not only weather but also the outcome of international soccer matches affects the stock returns. Edmans, Garcia and Norli (2007) concluded that for the losing country daily returns are significantly lowered by 0.21 percent compared to a day with no match. The effect of emotions is not bounded by financial outcomes. Simonsohn (2010) found that students who visit prestigious universities on higher cloud cover days are significantly more likely to enroll because they are more prone to focus on academic attributes than social attributes on days with more cloud cover. The result of another experiment by Ariely and Loewenstein (2006) suggests that subjects in sexually aroused emotional state as a treatment are more willing to engage in possible date rape behaviour.

In addition, neuroscientists provide valuable scientific evidence which shows the relation between brain parts which regulate emotions and are responsible for decision making. One of the most important evidence comes from the study of Bechara et al. (2000) on emotionally impaired patients. These people have permanent injuries to the ventromedial prefrontol cortex (vmPFC) which is responsible of integrating emotion and cognition. People are not perfectly able to feel emotion and the optimality of their decisions. In their study, patients who have impairments on vmPFC repeatedly select a riskier financial option over a safer one in a gambling task because they are not able to experience the emotional signals which help decision makers to have a fear of high risk. This kind of studies have encouraged especially economists to study further on emotions and their role in the decision making process.

2.1 Elicitation of Social Preferences

The standard rational choice model often interpreted as that individuals behave only with respect to self-interests, their own payoffs. Cox (2007) defines "eco-

nomic man" or "self-regarding preferences" as preferences which are characterized by monotonic utility with indifference about others' material payoffs but positively affected for one's own material payoffs. However, wide range of laboratory experiments have weaken this assumption. In addition to pure self-interest, individuals are also affected by other people's payoffs negatively or positively, an event called as other-regarding preferences. Cox, Sadiraj K., and Sadiraj V. (2002) define other-regarding preferences as "preferences over the absolute and relative amount of another individual's money payoff, in addition to one's own money payoff." Other-regarding preference may or may not be affected by the history between the interacting parties. People may exhibit positive reciprocal behaviour to another person in return to a good interaction with her in the past even though this act does not maximize their own utility. However, when choices of individuals are not a result of what action the other party made, there also exists unconditional other-regarding preferences on other parties' behaviour like altruism, inequality-aversion. For example, in Forsythe et al. (1994)'s experiment with Dictator Game, a subject is endowed with $10 and asked to allocate none or a part of his endowment to an anonymous partner. Although pure self-interest suggests that the dictator should not allocate any positive amount to the other player, Forsythe et al. (1994) find that 60% of the participants transfer a positive amount. This result has been supported by a lot of experimental evidence. This result suggests that people might not act only with respect to their self-interest. Other social factors such as revenge, trust, guilt, fairness or reciprocity could affect their decisions, too.

The method that is used to elicit these preferences is one of the most important aspects of designing an experiment. If the experimental design is not as successful as to control the possible motives behind subjects' behaviour, it could even alter the results of the experiments. In this section, we introduce the methods that are widely used in Experimental Economics to elicit social preferences: trust, altruism,

positive reciprocity, negative reciprocity.

2.1.1 Trust

Trust is a belief that one agent has about another. A trusting action is one that creates the possibility of mutual benefit and the risk of loss of one's own utility if the other person defects (Cox, 2004). Investment games (or Trust Games) devised by Berg et al. (1995) are the first and one of the most widespread ways to elicit trust in the experimental economics. In the investment game, subjects are randomly placed as a first mover and second mover roles. Both players are endowed with A amount of money. The first mover chooses to allocate a portion or none of his endowment to the second mover. The amount given, x, is multiplied by k where $k > 1$,and transferred to the second mover's endowment. Then, the second mover chooses to allocate a portion or none of his total endowment which equals to $A + kx$. The allocated amount, y, is transferred to the first mover. At the end of the game, the first mover is left with $A - x + y$ where the second mover is left with $A + kx - y$. Becker et al.(1995) employed the investment game to elicit trust with two different k values, $k = 2$ and $k = 3$. In his version, both players are assigned to both roles, the first player and the second player. The average amount sent as a first mover in two versions is used as subject's willingness to trust a stranger. If first movers trust in positive reciprocity in the Investment Game, they might achieve outcomes that are Pareto superior to the prediction of Nash for the self-regarding preferences that is to pass zero amount since the economic man will return zero amount in the second stage. Berg et al. (1995) found that 55 out of 60 first players send a positive amount to the second players.

However, a first player in the Investment Game may send at least some money because either she/he trusts that the second mover will return some money, or, she/he has an unconditional other-regarding preference as altruism. The triadic

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experimental design makes it possible to discriminate between altruism and trust. For example, Cox (2001) used a triadic design Trust Game. In his design, the Trust Game is same as in Berg et al. (1995): First players can transfer any amount between zero and $10 while the second players can return any amount between zero and three times the amount of transfer they received. It is called Treatment A. Treatment B is a dictator game in which only first movers have a decision to make. They decide how much money to transfer to the second movers while second movers cannot return any amount back. When he compared the Treatment B with the Trust Game, he found that the first players' behaviour in the Trust Game is motivated by trust (Cox, 2001).

Cox and Deck (2006) also use a Trust Game and two dictator control games to discriminate among possible motives. Unlikely to Cox (2001), they provided limited action spaces for the players. In their version of triadic design Trust game, first player either chooses "Exit" or "Engage". If she chooses Exit, then player 1 and player 2 end up with 5 $liras$. If first player chooses to Engage, then second player either chooses to "Cooperate" or "Defect". If he chooses to Cooperate, player 1 and player 2 end up with 7.5 $liras$ and 12.5 $liras$, respectively. If he selects to Defect, then player 1 and player 2 end up with 0 $lira$ and 20 $liras$, respectively. Control 1 is a Dictator Game in which the first player decides either to Exit or Engage. If she exits, both of them end up with 5 $liras$. The second player does not have a choice to make. By comparing the results of Control 1 and the Trust Game, they found that the first movers' behaviour is characterized by trust in the Trust Game (Cox & Deck, 2006).

2.1.2 Altruism

A person is altruistic if his utility increases with the increase in other people's utility. Dictator Game is generally assessed to measure a subject's preference of

altruism. In Becker et al.'s (2016) study, subjects need to divide a portion or none of his endowment to a charitable organization. The average amount donated among subjects gives the measure of altruistic motives (Becker et al., 2016). Cox (2001) and Cox & Deck (2006) report that high proportion of the offers in the dictator control games are non-zero. These results might be explained by the study of Dunn et al. (2008). It suggests that only with helping others and giving to others with no expectation, people gain happiness. Andreoni and Miller (2002) use the Dictator Game with various initial endowments to elicit altruistic preferences. They found that 30% of the subjects transfer an amount which equalizes the payoffs.

2.1.3 Positive Reciprocity

Positive reciprocity is a motivation to respond generous or helpful actions of the other person by generous or helpful actions (Cox, 2004). Cox and Deck (2005), describe positive reciprocity as "...a motivation to adopt a generous action that benefits someone else because that person's intentional behaviour was perceived to be beneficial to oneself within the decision context of the experiment". One way to measure is the Dictator Game in which a first player is asked to allocate his endowment, X, between himself and the second player. The allocation offered will be their respective payoffs. Ozbay and Drazen (2016) modified the Dictator Game to analyse candidate's reciprocity towards voters with spatial model of voting (Down,1957). They compared the policy implemented by elected or appointed leaders. If the leader does not implement his type as a policy, then his action is considered as non-selfish behaviour. The amount he moves from his type to the voter's type gives the candidate's preference measure of positive reciprocity. They found that in the Appointment treatment, 26.25% of the leaders chose a policy different than their types while in the Election treatment 40% of the leaders chose a policy different than their types. This difference between two treatments is

statistically significant according to the Mann-Whitney test. In addition, elected leaders move more toward the voter when the voter chooses the further candidate with an expectation of positive reciprocity than both when the voter chooses the closer candidate and than appointed leaders.

Kirchsteiger, Rigotti and Rustichini (2006) designed a gift-exchange game to investigate the effect of mood on behaviour. In this game, the first mover has an initial endowment and can send a part or none of his endowment to the second player. The second mover receives the transfer and decides to an effort level. Higher level of effort comes with a higher cost for the second player but higher increase in the first mover's payoff. They found that second movers who were in a good mood treatment reciprocate less than second movers who were in a bad mood treatment. On the other hand, these same subjects are more generous to others when they are assigned as first movers (Kirchsteiger, Rigotti & Rustichini, 2006).

Another way to elicit positive reciprocity is the Investment Game (Berg et al., 1995) which is defined in Section 2.1.1. The average amount sent by the second mover is used as subject's preference measure of positive reciprocity. They found that the average amount returned by the second players is higher than the average amount sent by the first players (Berg et al., 1995). Kausel and Connolly (2014) examined people's expectations about the effect of emotions on others' reciprocity behaviour and whether these expectations shape their own behaviour by employing the Investment Game. They found that when proposers are informed about their partner's emotional state - angry, guilty or grateful -, they acted consistently with their beliefs about how these emotions affect one's behaviour. Angry responders' actual behaviour significantly differs from the expected behaviour (Kausel & Connolly, 2014). Capra (2004) found that subjects who experience negative emotions (e.g. anger) reciprocate more than subjects who experience positive emotions in

the Trust Game.

However, a second mover in the Trust Game returns a positive amount to the first player who sent at least some amount since either she/he has an altruistic or inequality-averse preference, or she/he positively reciprocates the trusting action. To test for quantitative effects of these motives, the triadic design Investment Game which incorporates dictator control games are used. This design consists of one Trust Game and 2 control games. For example, Cox (2001) used a triadic design Trust Game. In his design, the Trust Game is same as in Berg et al. (1995): First players can transfer any amount between zero and $10 while the second players can return any amount between zero and three times the amount of transfer they received. It is called Treatment A. Treatment C is a dictator game in which only second movers have a decision to make. At the beginning of this treatment, first players are endowed with an residual amount of money after they made a transfer in the Trust Game. Second movers are endowed with $10 plus the three times amount of transfer they received in the Trust Game. After second movers are informed about his and his partner's endowments, they transfer a part or none of their endowments to the first players. When he compared the Treatment C with the Trust Game, he found that the second players' behaviour in the Trust Game is motivated by positive reciprocity (Cox, 2001).

Cox and Deck (2006) also used a Trust Game and two dictator control games to discriminate among possible motives. Unlikely to Cox (2001), he limited the action space for the players. In his version of the triadic design Trust game, first player either chooses "Exit" or "Engage". If she chooses Exit, then player 1 and player 2 end up with 5 $liras$. If first player chooses to Engage, then second player either chooses to "Cooperate" or "Defect". If he chooses to Cooperate, player 1 and player 2 end up with 7.5 $liras$ and 12.5 $liras$, respectively. If he selects to Defect, then player 1 and player 2 end up with 0 $lira$ and 20 $liras$

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, respectively. Control 2 is a Dictator Game in which player 2 decides to either cooperate or defect. If he cooperates, he will get 12.5 *liras* and the other player will get 7.5 *liras* . If he defects, he will get 20 *liras* and the other player will get nothing. By comparing the results of the dictator game and the Trust Game, the second movers' behaviour is not characterized by the positive reciprocity in the Trust Game.

2.1.4 Negative Reciprocity

Fehr and Gachter (2000) define negative reciprocity as that in response to hostile actions, people are frequently much more nasty and even brutal than predicted by the self-interested model. According to Cox and Deck (2005), negative reciprocity is "...a motivation to adopt a costly action that harms someone else because that person's intentional behaviour was perceived to be harmful to oneself within the decision context of the experiment. Hence, in a given situation an action that would otherwise not be taken is considered reciprocal if it is undertaken in response to the action of another." One of most widespread ways to elicit negative reciprocity is using the Prisoner's Dilemma (Falk et al., 2005; Fehr & Gachter, 2000). The unilateral defection of a player can be punished by the other player but it has a cost. Becker et al. (2016) introduce the Prisoner's Dilemma with punishment stage to measure negative reciprocity as follows: Both players have an option to participate or not to participate to a project. The payoffs from both players' participation are (480,480) and from both players' deviation are (300,300). Unilateral deviation of the first player and unilateral deviation of the second player leads to payoffs of (540,240) and (240,540) respectively. Before the game is played, each subject indicates that how much money from his own endowment he would invest into the punishment of the other player's unilateral deviation which will decrease opponent's payoff by k times of the amount invested (*where* $k > 1$). In

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this scenario, the amount invested into costly punishment gives the measure of subjects' preferences of negative reciprocity.

Abbink et al. introduced the Moonlighting game. In this game, both players start with 12 talers. Player 1 can take money from or transfer money to player 2 who can either return money or punish player 1 (2000). Each taller passed by player 1 is multiplied by three and added into player 2's endowment. On the other hand, if player 2 wants to punish, each taller spent to punish by player 2 decreases player 1's payoffs by three times. This design allows to study both positive and negative reciprocity in one game. They found that negative reciprocity is much more prominent than positive reciprocity. It means that hostile actions are more widely punished than good actions are rewarded (Abbink et al., 2000).

Another method is Ultimatum Game (Guth et al., 1982) in which one of the subject is assigned into a role of a proposer and the other is a responder. The proposer is endowed with X amount of money which in turn is allocated between himself and the responder with respect to the proposer's choice. The responder has two options; accept or reject the offer. If he accepts, then their payoff will be the allocation that is offered by the proposer. If he rejects, both will end up with zero payoff. The responder's minimum acceptable amount of money gives his preference of negative reciprocity. Higher the minimum acceptable offer higher the rejection probability (Becker et al.,2016). While the unique sub-game perfect equilibrium of this game is that the proposer gets the whole pie assuming that both players are self-interested, the experimental results are in contrast. On average, proposers offer about 40% of the pie to the second players while they reject the offers about 15-20% of the time (Levin, 2006). A lot of researchers showed that first movers in the Ultimatum Game offer equal splits under various conditions (Güth, Schmittberger, and Schwarze, 1982; Hoffman and Spitzer, 1985; Hoffman, McCabe, Shachat, and Smith, 1994; and Bornstein and Yaniv, 1998).

However, the proposer may offer generously in the Ultimatum Game because either he/she is afraid of rejection or has altruistic preferences. Furthermore, the responder may reject the offer because either he/she negatively reciprocates the bad offer or has inequality-averse or altruistic preferences. The triadic experimental design makes it possible to discriminate between the implications of other-regarding preferences and fear, or negative reciprocity. For example, Cox and Deck (2006) use Punishment mini-ultimatum game and two dictator control games to discriminate among possible motives. In the Punishment mini-ultimatum game, first player either chooses "Take" or "Share". If she chooses Take, then second player either chooses "Tolerate" or "Punish". If he selects to Tolerate, then first player and second player end up with 8 and 2 dollars, respectively. If he selects to Punish, both end up with zero payoffs. If first player chooses to Share, then second player either chooses to "Accept" or "Reject". If he chooses to Accept, they both end up with 5 dollars. If he selects to Reject, then both get nothing. Control 1 is a Dictator Game in which the first player decides either to Take or Share. If she takes the offer, mover 1 and mover 2 end up with 8 and 2 dollars, respectively. The second player does not have a choice to make. Control 2 is a variation of the Punishment mini-ultimatum game in which nature decides which option player 1 will choose with an equal probability. Then, second player decides to take or share and accept or reject. By comparing the results of dictator games and the Punishment mini-ultimatum game, they found that the first movers' behaviour is not characterized by the fear of rejection and the second movers' behaviour in the Punishment mini-ultimatum game is not characterized by the negative reciprocity.

3   Experimental Design and Procedure

Our experiment was conducted at Sabancı University, Turkey in June, 2017. All participants were students who received 5 *liras* as a show up fee plus a payoff determined by random selection of one of the games. The experiment is computerized via Z-Tree: Zurich Toolbox for Ready-made Economic Experiments (Fischbacher, 2007). We have 3 treatment groups: the Neutral treatment, the Happy treatment, the Sad Treatment. We conducted 3 sessions for the Neutral treatment, 5 sessions for the Happy treatment and 5 sessions for the Sad treatment. Each subject participated once, in one game, and in only one session. Subjects were free to sign up any sessions. To minimize personal interaction between the researchers and the subjects, we use double blind procedure in which the experimenter do not know subjects' identity and subjects do not know their partners' identity. The only person who knows the decision of a specific individual is the individual herself. We give random identification codes to the subjects and made their payments with these codes in a closed envelope. Subjects only enter the identification codes to the computer. We use random payment schemes on decisions. In each session, we randomly selected one decision task to make payment. One of the thirteen decisions the subjects made during the experiment is randomly drawn and payment is done with respect to the chosen decision task. Each session took 30 minutes and each subject received on average 25 *liras*.

The experiment consists of three parts. In the first part, participants watch three movie clips which takes about nine minutes in total. In Table 1, the list of movie clips are shown. In the second part of the experiment, the triadic design experiments and the Dictator Game are used to elicit subjects' social preferences: trust, positive reciprocity, negative reciprocity and altruism. It consists of one triadic-design Trust Game, one triadic-design Ultimatum Game and a Dictator Game. These games are explained below in more detail. Participants played

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these game in two possible orders: a triadic-design Trust Game, a triadic-design Ultimatum Game, the Dictator Game or a triadic-design Ultimatum Game, a triadic-design Trust Game, the Dictator Game. The order is decided before the experiment started. Except the Dictator Game, each game is played twice with reversed roles. In the third part, two self-report measures: subjective emotional arousal and the DES (Izard et al., 1974) are employed to asses the effectiveness of the movie clips on our participants' emotional states. Subjects are asked to answer the following questions for each of the movie clips they watched. "Please rate the following statement by using a 7-point scale: While I was watching the film ...... (1)=I felt no emotions at all to (7)= I felt very intense emotions.". This measure is named as $self-reported\ emotional\ arousal$ in Schaefer et al. (2010). In the DES (Izard et al., 1974), participants used again a 7-point scale (1"not at all", 7"very intense") to rate the group of adjectives as follows "For each group of adjectives below, please rate the extent to which you felt each state as you were watching the film clip: (1) interested, concentrated, alert; (2) joyful, happy, amused; (3) sad, downhearted, blue; (4) angry, irritated, mad; (5) fearful, scared, afraid; (6) anxious, tense, nervous; (7) disgusted, turned off, repulsed; (8) disdainful, scornful, contemptuous; (9) surprised, amazed, astonished; (10) warm hearted, gleeful, elated." After mood induction survey, participants are asked to answer 12 demographic questions. Demographic questionnaire, mood induction survey and experimental instruction can be found in **Appendix A**.

3.1   The Triadic Design Trust Game

It consists of a Trust Game and 2 control games. Subjects are randomly assigned to either a first mover role or a second mover role. Both first players and second players play the Trust Game. Then, first players play the Transfer Control Game

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while second players play the Return Control Game. After first two decisions, subjects' role as first mover or second mover is reversed and they are rematched randomly. Then, they are asked to play the same game again with reversed roles.

3.1.1 The Trust Game

In the Trust Game, subjects are endowed with 10 *liras* and randomly assigned to either first mover role or second mover role. First movers are randomly matched with second movers in a way that they do not know their opponents. The first mover chooses to allocate a portion or none of his endowment to the second mover. The amount given, s_T, is multiplied by 3 and transferred to the second mover's endowment. Then, the second mover chooses to allocate a portion or none of his total endowment which is equal to $10 + 3s_T$. The allocated amount, r_T, is transferred to the first mover. At the end of the game, the first mover is left with $10 - 3s_T + r_T$ where the second mover is left with $10 + s_T + r_T$. The unique subgame perfect equilibrium of this game is that both send zero (0) amount assuming that both players are self-interested.

3.1.2 The Transfer Control Game

It is a Dictator Game which only first players play. They are asked to send a part or none of the endowment, $10 liras$ to their partners. The transferred amount is multiplied by 3. However, they are also informed that second players could not send any amount back to them.

3.1.3 The Return Control Game

It is a Dictator Game which only second players play. In this game, second players decide how much money to send to their partners from given initial endowments. The initial endowments are decided by the amount transferred by the first players

in the Trust Game. For example, let us assume that a first player sent s_{TC} *liras* to his partner in the Trust Game. This amount is tripled by 3. Therefore, in the Return Control Game the second player is informed that he has $10 + 3s_{TC}$ *liras* and his partner has $10 - s_{TC}$ *liras* and he is asked to send a part or none of his endowment to his partner.

3.1.4   Analysis of The Game

Let $s_T \in S$ denotes the amount of money that the first player sends to the second player in the Trust Game:

$S = 0, 1, 2, ..., 10$

Given s_T, the second player decides how much money to send back to the first player, $r_T \in R$:

$R(s_T) = 0, 1, ...3s_T$

The first mover's decision in the Transfer Control Game is to choose $s_{TC} \in S$.

If $s_T > s_{TC}$, then we can conclude that the first player is motivated by trust. Since in the Transfer Control Game, we eliminate the effect of trusting in positive reciprocity, it only represents the unconditional-altruistic behavior.

Let $r_{RC} \in R$ denotes the amount of money that the second player sends to the first player in the Return Control Game:

If $r_T > r_{RC}$, then we can conclude that the second player is motivated by the positive reciprocity. Since in the absence of the first player, second player does not choose to send big amount of money. He sends more money when he thinks that the first mover was good to him.

3.2 The Triadic Design Ultimatum Game

It consists of an Ultimatum Game and two control games. Subjects are randomly assigned to either a first mover role or a second mover role. Both first players and second players play the Ultimatum Game. Then, first players play the Offer Control Game while second players play the Accept Control Game. After first two decisions, subjects' role as first mover or second mover is reversed and they are rematched randomly. Then, they are asked to play the same game again with reversed roles.

3.2.1 The Ultimatum Game

In the Ultimatom game, subjects are randomly assigned to either proposer role or responder role. Proposers are randomly matched with responders and both do not know who they are playing with. Proposers are asked to allocate 24 $liras$ between himself and their partners. Responders have two options: either accept or reject the offfer. If the responder rejects the offer, both of the players end up with 0 $lira$. If the responder accepts the offer, the responder end up with the proposed amount of money, $x\ liras$, while the proper ends up with $24 - x\ liras$. The unique sub-game perfect equilibrium of this game is that the proposer gets the whole pie assuming that both players are self-interested.

3.2.2 The Offer Control Game

It is a Dictator Game which only proposers play. In this game, the proposer is asked to allocate 24 $liras$ between himself and his partner. However, in this game, the second player does not have a power to accept or reject the offer. The proposed amount by the first player directly determines their payoffs.

3.2.3 The Accept Control Game

It is a modified version of the Ultimatum Game which only responders play. In this game, computer randomly generates a number between 1 and 10 for each of the subject pairs. This number, o_U, indicates the amount offered for the first player and $24 - o_U \ liras$ for the second player by the computer. Then, the second player is asked to indicate his response: accept or reject the offer. If he rejects the offer, both of the players end up with $0 \ lira$. If he accepts the offer, the first player ends up with the proposed amount of money by the computer, $o_U \ liras$, while the second player ends up with $24 - o_U \ liras$.

3.2.4 Analysis Of the Game

Let $o_U \in O$ be the amount of money that the first player offers to the second player in the Ultimatum Game:

$O = 0, 1, 2, ..., 10$

Given o_U, the second player decides $a_U \in A$ whether to accept or reject the offer:

$A(o_U) = Accept, \ Reject$

The first mover's decision in the Offer Control Game is to choose $o_{OC} \in O$.

If $o_U > o_{OC}$, then we can conclude that the first player is motivated by the fear of rejection. Since in the Offer Control Game, we eliminate the possibility of rejection, it only represents the unconditional-altruistic behaviour.

Let $a_{AC} \in A(o_U)$ be the decision made by the second player in the Accept Control Game:

If for almost same offers in the Accept Control and the Ultimatum Game $a_U = Reject$ but $a_{AC} = Accept$, then we can conclude that the second player is motivated by the negative reciprocity. Since in the absence of the first player, second player accepts the almost equal offers made by a computer. The second

player rejects low offer when it comes from his partner.

3.3   The Dictator Game

In the Dictator Game, subjects are informed that their opponent is a charitable organization. It means that they are endowed with 30 *liras* and asked to donate a part or none of their endowment to a charitable organization, LÖSEV. This game is played once. The unique Nash equilibrium for Dictator Games played in our experiment is to offer nothing to the other player. We compare the result of the Dictator Game with the dictator controls in the triadic design experiments. The average amount sent to the LÖSEV or to the partner is evaluated as altruistic preferences.

In **Table 2**, experimental measures for social preferences are represented.

Table 2: Experimental Measures

Social Preference	Method	Measure
Trust	the triadic design - Trust Game	Comparison of average amount sent as a first mover in the Trust Game and in the Transfer Control Game
Altruism	the Dictator Game	Amount sent to the charitable organization and the partner in the control games
Positive Reciprocity	the triadic design - Trust Game	Comparison of average amount sent as a second mover in the Trust Game and in the Return Control Game
Negative Reciprocity	the triadic design - Ultimatum Game	Comparison of average amount sent as a second mover in the Ultimatum Game and in the Accept Control Game

4 Results

Table 3 shows the mean values of demographic variables across treatments. Results are almost same. **Table 4** provides a non-parametric analysis for the distributions of these variables. Wilcoxon rank-sum test tests the null hypothesis that two independent samples are from populations with the same distribution. According to the table, only average consumption (per month) and undergraduate variables change significantly across treatments. It seems that there are statistically more undergraduate students in the Neutral treatment than in the Happy treatment ($z = 1.696$; $p - value = 0.090$) . Also, subjects in the Sad treatment consumes statistically more money in a month than subjects in the Neutral treatment ($z = -2.55$; $p - value = 0.011$) and in the Happy treatment ($z = 1.76$; $p - value = 0.079$).

We proceed this section as follows: Firstly, we present the result of mood induction procedure. Secondly, we analyse the results of our triadic design experiments for trust and positive reciprocity, negative reciprocity. Finally, we analyse the result of the Dictator Game with a charitable organization and compare it with related control games of the Trust and the Ultimatum Games.

4.1 Mood Induction

In order to validate whether movie clips induced certain emotions on the subjects, at the end of the experiment, subjects are asked to answer the questions in the Emotional Arousal Survey (Appendix A). **Table 5** shows the mean values of subjective arousal scale, eleven discrete emotion scores - interested, happy, sad, angry, fearful, anxious, scornful, surprised, warm hearted - and one positive affect variable and two negative affect variables.

Based on the scales used in PANAS (Watson et al., 1988), we generated a

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Table 3: Descriptive Statistics for Demographic Variables

Variable	Neutral	Happy	Sad
Age	21.18	22.25	21.85
	(0.56)	(0.76)	(0.57)
Male	0.68	0.54	0.56
	(0.10)	(0.10)	(0.09)
Avg. Consumption (per month)	1239	1290	1644
	(207.02)	(119.02)	(136.32)
Undergraduate	0.91	0.71	0.79
	(0.06)	(0.09)	(0.07)
Econ major	0.23	0.25	0.12
	(0.09)	(0.09)	(0.06)
# of Econ classes	2.41	2.75	2.53
	(0.77)	(0.96)	(0.91)
# of Observations[1]	22	24	34

Notes: Mean values are represented. Standard errors in parenthesis. [1]In the neutral treatment, we have 22 data points for altruism scale and 18 data points for the positive and negative reciprocity scale. Data in the neutral treatment represents 22 subjects. However, there is no significant difference between mean values of a 22-subject group and an 18-subject group for any of the variables.

Table 4: Wilcoxon Rank-sum Test Results for the Demographic Variables

Variables	Neutral vs Happy	Neutral vs Sad	Sad vs Happy
Age	z=-0.889	z=-0.601	z=-0.430
	[0.374]	[0.548]	[0.667]
Male	z=0.962	z=0.912	z=0.128
	[0.336]	[0.361]	[0.898]
Avg. Consumption	z=-1.246	z=-2.552	z=1.758
	[0.213]	[0.011**]	[0.079*]
Undergraduate	z=1.696	z=1.134	z=0.745
	[0.090*]	[0.257]	[0.456]
Econ major	z=-0.179	z=1.081	z=-1.303
	[0.858]	[0.280]	[-0.193]
# of Econ classes	z=0.334	z=0.803	z=-0.177
	[0.738]	[0.422]	[0.860]

Notes: Two-tailed Wilcoxon Rank-sum Test. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

variable which is called "Positive Affect" by taking the average of the scores of interested, happy, surprised and warm hearted. We generated two negative affect variables. One of them contains the scores of "sad", "angry", "fearful" and "anxious" while the other one contains one additional variable: "disgusted". In Table 5 and Table 6 we present the results for both of these variables, but, in the following analyses since there is not any significant difference among them, we only include the one which does not contain "disgusted".

Table 6 shows that the mood induction procedure is successful. According to two sample Wilcoxon rank-sum test, the score of happiness is significantly higher in the Happy treatment than in the Neutral ($z = -3.58$; $p-value = 0.0003$) and the Sad treatments ($z = -5.73$; $p-value = 0.000$). For the adjective "sad", it is statistically higher in the Sad treatment than in the Neutral ($z = -5.96$; $p-value = 0.000$) and the Happy treatments ($z = 6.23$; $p-value = 0.000$). Also, the scores of positive and negative affect are significantly different across treatments.

Table 5: Descriptive Statistics for Emotion[1] Variables

Variable	Neutral	Happy	Sad
Subjective arousal	2.60	4.07	5.63
	(0.29)	(0.27)	(0.19)
Interested	4.39	4.29	5.61
	(0.39)	(0.27)	(0.22)
Happy	2.01	3.63	1.29
	(0.25)	(0.29)	(0.09)
Sad	1.71	1.35	5.41
	(0.19)	(0.11)	(0.24)
Angry	1.26	1.47	4.76
	(0.11)	(0.14)	(0.24)
Fearful	1.51	1.59	3.41
	(0.14)	(0.22)	(0.32)
Anxious	2.4	2.00	4.13
	(0.31)	(0.28)	(0.34)
Disgusted	1.27	2.32	4.54
	(0.13)	(0.23)	(0.25)
Scornful	1.29	2.32	1.35
	(0.14)	(0.29)	(0.15)
Surprised	1.76	3.47	2.50
	(0.19)	(0.35)	(0.26)
Warm hearted	1.80	3.78	1.10
	(0.25)	(0.30)	(0.04)
Positive Affect[2]	2.90	3.79	2.63
	(0.18)	(0.22)	(0.10)
Negative Affect[3]	1.72	1.60	4.43
	(0.15)	(0.16)	(0.24)
Negative Affect 2[4]	1.63	1.75	4.45
	(0.13)	(0.15)	(0.22)

Notes: Mean values are represented in the table. Standard errors in parenthesis. [1]For subjective arousal scale, subjects rated the following statement: While I was watching the film, (1) "I felt no emotions at all" to (7) "I felt very intense emotions". For the discrete emotional arousal scales, subjects rated each adjective the extent to which they felt each state as they were watching the film clip. (1"not at all", 7"very intense"). [2] PA: average of interested, happy, surprised and warm hearted scales. [3] NA: average of sad, angry, fearful and anxious scores. [4] NA2: average of sad, angry, fearful, anxious and disgusted scores.

Table 6: Wilcoxon Rank-sum Test Results for the Emotion Scores

Variables	Neutral vs Happy	Neutral vs Sad	Sad vs Happy
Subjective arousal	z=-3.238	z=-5.683	z=4.371
	[0.001***]	[0.000***]	[0.000***]
Interested	z=0.077	z=-2.465	z=3.481
	[0.938]	[0.014**]	[0.0005***]
Happy	z=-3.579	z=2.797	z=-5.731
	[0.0003***]	[0.005***]	[0.000***]
Sad	z=1.262	z=-5.964	z=6.230
	[0.207]	[0.000***]	[0.000***]
Angry	z=-1.308	z=-6.170	z=6.116
	[0.190]	[0.000***]	[0.000***]
Fearful	z=0.686	z=-4.025	z=4.113
	[0.493]	[0.0001***]	[0.000***]
Anxious	z=1.045	z=-3.268	z=4.023
	[0.296]	[0.001***]	[0.0001***]
Disgusted	z=-3.782	z=-5.927	z=4.821
	[0.0002***]	[0.000***]	[0.000***]
Scornful	z=-3.213	z=0.177	z=-3.656
	[0.001***]	[0.860]	[0.0003***]
Surprised	z=-3.451	z=-1.789	z=-2.074
	[0.0006***]	[0.074*]	[0.038**]
Warm hearted	z=-4.054	z=2.858	z=-6.202
	[0.0001***]	[0.004**]	[0.000***]
Positive Affect	z=-3.762	z=-0.966	z=-3.830
	[0.0002***]	[0.334]	[0.0001***]
Negative Affect	z=0.967	z=-5.809	z=5.888
	[0.334]	[0.000***]	[0.000***]
Negative Affect 2	z=-0.365	z=-5.902	z=5.883
	[0.715]	[0.000***]	[0.000***]

Notes: Two-tailed Wilcoxon Rank-sum Test. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

While positive affect is significantly higher in the Happy treatment than in the Neutral ($z = -3.76$; $p - value = 0.0002$) and the Sad treatments ($z = -3.83$; $p - value = 0.0001$), negative affect is significantly higher in the Sad treatment than in the Neutral ($z = -5.81$; $p - value = 0.000$) and the Sad treatments ($z = 5.89$; $p - value = 0.000$). Since movie clips were successfully aroused the expected emotions, from now on we call subjects in the Happy treatment as happy people and subjects in the Sad treatment as sad people.

4.2 Trust and Positive Reciprocity

Before moving on to the econometric analysis, we present figures that represent distributions of the amount transferred and returned across treatments. **Figure 1** shows the amount of transfer and return for each subject pairs in the Neutral treatment, in the Happy treatment and in the Sad treatment. According to them, the amounts of transfers and returns seem to be higher in the Sad treatment than others. While 33% of the subjects in the Happy treatment return an amount which is equal to the transfer they received, it is 22% in the Neutral treatment and 21% in the Sad treatment. In addition, the difference between return and transfer amounts seems to be higher in the Sad treatment than others. In the Sad treatment, both first players and second players send higher amounts than they do in the Happy and the Neutral treatments.

To conclude that first players are motivated by trust, their transfer amount should be higher in the Trust Game than in the Transfer Control Game. In **Figure 2**, we compare the amounts transferred in these two games for each treatment. Y-axis shows the number of subjects who transfer the given amounts in the Trust Game and in the Transfer Control Game. According to these graphs, the amount of money transferred in the Transfer Control Game seems to be higher in the Sad

Figure 1:   Transfer vs Return across Treatments
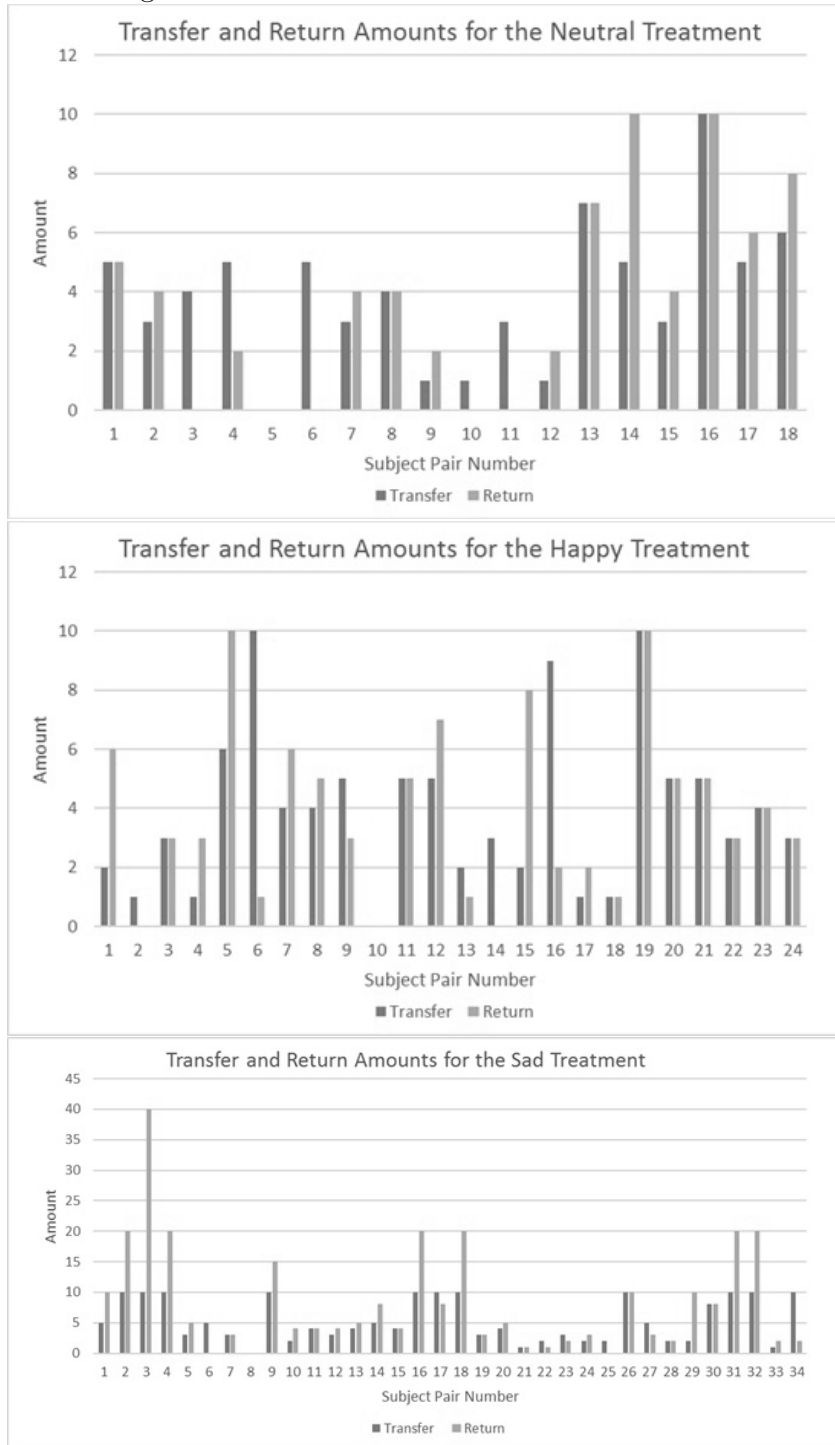
Figure 2:   Transfer vs Transfer Control across Treatments

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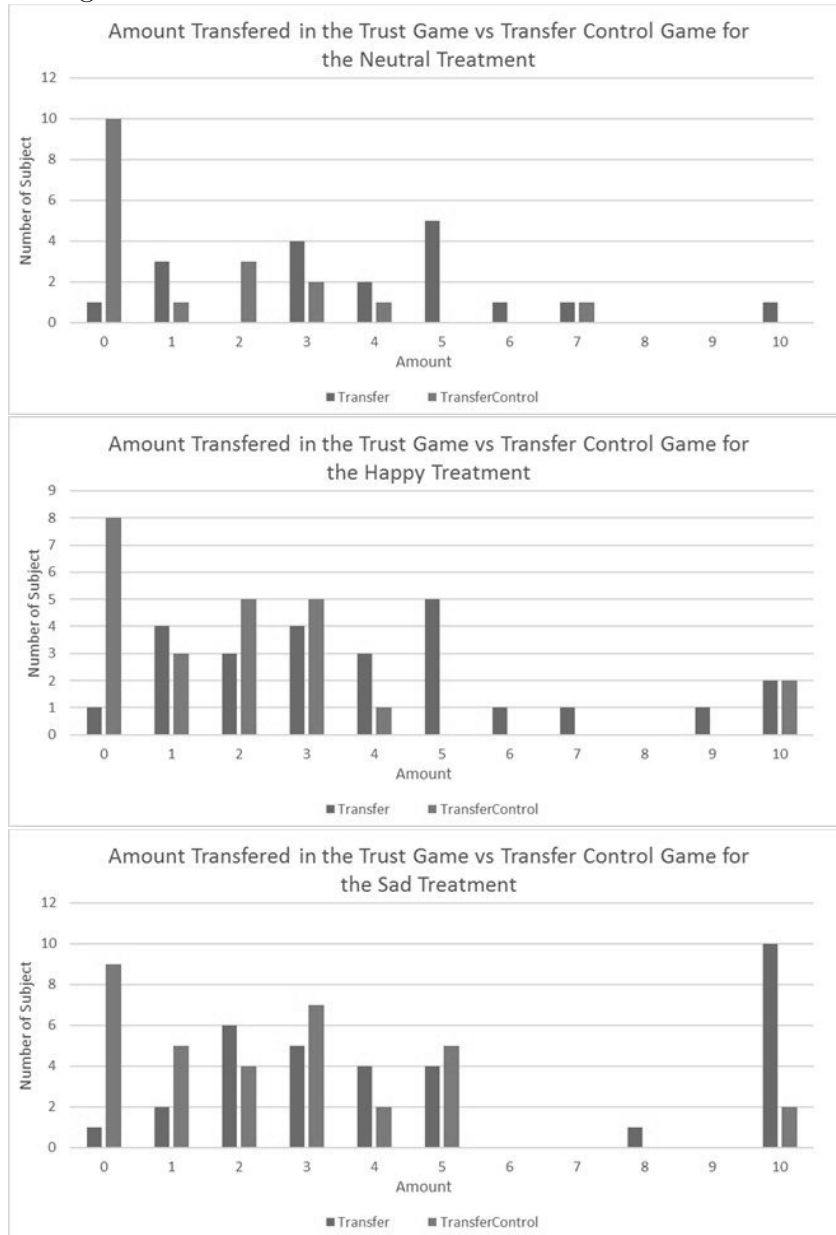
Figure 3:   Return vs Return Control across Treatments
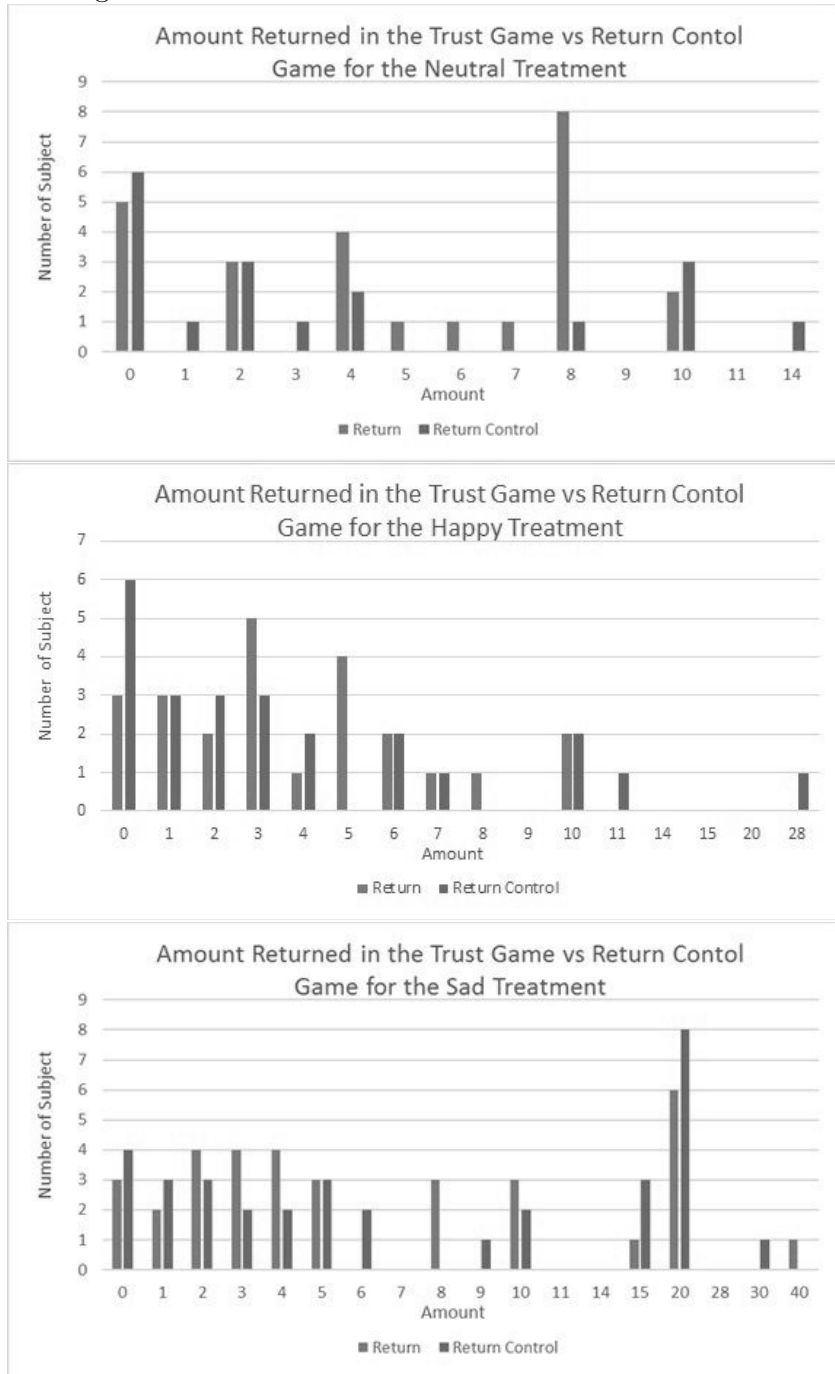
treatment than other treatments. This might indicate that sad people behave more altruistically than people in a neutral mood and than happy people. Furthermore, while 22% of the subjects in the Neutral treatment send zero amount in the Transfer Control Game, it is 26% in the Sad treatment and 33% in the Happy treatment.

If second players return more amount in the Trust Game than in the Return Control Game, then one could conclude that they are motivated by positive reciprocity. **Figure 3** compares the amounts that second players return in these games. Graphs suggest that the difference between the amounts of return in the Trust Game and in the Return Control Game is smaller in the Neutral treatment than others while the amounts of return are significantly higher in the Sad treatments than others. In addition, while in the Sad treatment, 12.5% of the subjects send zero amount in the Return Control Game, it is 25% in the Happy treatment and 33% in the Neutral treatment. This would suggest that sad people are more altruistic or inequality averse than others.

4.2.1 First Mover Behaviour in the Trust Game

Table 7 represents the mean values of the amount sent and the amount returned in the Trust Game and compares them across treatments. We use two tests to compare the distribution of data: two-tailed Wilcoxon rank-sum test and one-tailed t-test with unequal variances. While Wilcoxon test does not report any significant difference between amount transferred by the first player across treatments, t-test reports that amount of transfer is statistically higher in the Sad treatment than in the Neutral ($t = -1.72$; $p-value = 0.046$) and in the Happy treatment ($t = 1.77$; $p-value = 0.041$) at a 5% significance level. If we only use the Trust Game without its control games to detect trusting behaviour of the first players, this data would provide a support for Hypothesis 1.1 and Hypothesis 1.2 which

respectively state that sad people trust more than people in the neutral mood and happy people.

Table 8 shows the effects happy and positive affects on the amount transferred in the Trust Game. Model 1 is the baseline regression that regress happy on the amount sent. Happy is a dummy variable which takes 1 (one) if the subjects is in the Happy treatment and 0 (zero) if he/she is in the Neutral treatment. In model 2, we control for age, male, amount of consumption in a month and order effect. First round is a dummy variable which takes 1 (one) if the subject plays the Trust Game and its control games in the first place and 0 (zero) if the subjects plays the Trust Game and its control games after the Ultimatum Game and its controls. In model 3, we add two more controls: the number of economy classes they took and the frequency of engaging extreme sports such as bungee-jumping, rafting, and diving. Model 4, 5 and 6 incorporates positive affect variable into the regression. Model 4 observes the effect of positive affects on the amount sent by the first player. Again, only observing the behaviour in the Trust Game, the results of the OLS regression (model 1,2 and 3) do not support the Hypothesis 1.3 which states that happy people trust less than people in neutral mood. On the other hand, model 4,5 and 6 find a significant relation between positive affect and the amount sent by the first player. According to the model 6 which includes all control variables, one unit increase in the positive affect leads to decrease in the amount sent by 0.62 TL , ceteris paribus. It is statistically significantly at 10% significance level ($p-value = 0.063$). In this model, the constant term is also insignificant at 1%, 5% or 10% levels.($p-value = 0.105$). In addition, throughout the models, we could not find any order effect on trusting behaviour. Subjects who play this game first do not send significantly more or less money than subjects who play this game in the second.

Table 9 replicates the same regression models as in Table 8 but replaces happy

Table 7: Comparison of Trust and Positive Reciprocity Across Treatments- the Investment Game

Treatment	Transfer Mean	Return Mean
Neutral Tr.	3.94	3.78
	(0.574)	(0.794)
Happy Tr.	3.92	3.87
	(0.561)	(0.597)
Sad Tr.	5.38	8.29
	(0.607)	(1.513)
Wilcoxon test[1]		
Neutral vs Happy	z=0.32	z=-0.269
	[0.747]	[0.788]
Neutral vs Sad	z=-0.95	z=-1.714
	[0.339]	[0.087*]
Sad vs Happy	z=1.37	z=1.635
	[0.172]	[0.102]
t-test[2]		
Neutral vs Happy	t=0.035	t=-0.098
	[0.486]	[0.461]
Neutral vs Sad	t=-1.72	t=-2.642
	[0.046**]	[0.006***]
Sad vs Happy	t=1.77	t=2.716
	[0.041**]	[0.005***]

Notes: [1] Denotes a two-tailed Wilcoxon Rank-sum Test. [2] Denotes a one-tailed t-test with unequal variances. Standard errors in paranthesis. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 8: Regression Analysis: The effect of Happy/Positive Affect on the Amount Sent

	(1) without control variables	(2)	(3)	(4) without control variables	(5)	(6)
Happy	-0.03 [0.973]	1.00 [0.989]	0.20 [0.834]	-	-	-
Positive Affect	-	-	-	-0.63 [0.043**]	-0.67 [0.030**]	-0.62 [0.063*]
First round[1]	-	0.52 [0.625]	0.70 [0.477]	-	0.54 [0.476]	0.46 [0.537]
Age	-	-0.06 [0.630]	-0.015 [0.898]	-	-0.044 [0.674]	-0.042 [0.696]
Male	-	0.33 [0.710]	0.50 [0.606]	-	1.57 [0.030**]	1.41 [0.067*]
Consumption	-	-0.0002 [0.639]	0.0004 [0.946]	-	0.0007 [0.099*]	0.0007 [0.152]
# of Econ classes	-	-	-0.088 [0.197]	-	-	0.031 [0.721]
Extreme Sports[2]						
2 (one/two times)	-	-	1.27 [0.209]	-	-	1.38 [0.083*]
3 (occasionally)	-	-	1.95 [0.214]	-	-	1.80 [0.127]
4 (often)	-	-		-	-	3.40 [0.039**]
5 (every chance)	-	-		-	-	0.03 [0.775]
Constant	3.94 [0.000***]	5.08 [0.099*]	3.08 [0.277]	6.42 [0.000***]	5.30 [0.051*]	4.23 [0.105]

Notes: [1] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 9: Regression Analysis: The effect of Sad/Negative Affect on the Amount Sent

	(1) without control variables	(2)	(3)	(4) without control variables	(5)	(6)
Sad	1.44 [0.091*]	1.06 [0.240]	0.77 [0.436]	-	-	-
Negative Affect	-	-	-	0.23 [0.268]	0.20 [0.354]	0.17 [0.396]
First round[1]	-	0.43 [0.617]	0.15 [0.867]	-	0.24 [0.743]	0.18 [0.796]
Age	-	-0.06 [0.699]	-0.09 [0.577]	-	-0.04 [0.745]	-0.05 [0.662]
Male	-	2.18 [0.011**]	2.08 [0.031**]	-	1.59 [0.032**]	1.40 [0.07*]
Consumption	-	0.001 [0.033**]	0.001 [0.050**]	-	0.0007 [0.134]	0.0006 [0.212]
# of Econ classes	-	-	0.14 [0.187]	-	-	0.06 [0.457]
Extreme Sports[2]						
2 (one or two times)	-	-	1.17 [0.215]	-	-	1.45 [0.07*]
3 (occasionally)	-	-	2.30 [0.172]	-	-	1.76 [0.152]
4 (often)	-	-	2.78 [0.122]	-	-	3.55 [0.04**]
5 (every chance)	-	-	-0.31 [0.819]	-	-	0.77 [0.415]
Constant	3.94 [0.000***]	2.55 [0.478]	2.23 [0.523]	3.91 [0.000***]	2.84 [0.332]	2.27 [0.408]

Notes: [1] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 10: Regression Analysis: The effect of Being Emotionally Aroused on the Amount Sent

	(1) without control variables	(2)	(3)	(4) without control variables	(5)	(6)
Emotion[1]	0.83 [0.247]	0.72 [0.344]	0.44 [0.579]	-	-	-
Sad vs Happy[2]	-	-	-	-1.47 [0.082*]	-1.20 [0.174]	-0.96 [0.299]
First round[3]	-	0.18 [0.804]	0.16 [0.824]	-	0.35 [0.689]	-0.56 [0.542]
Age	-	-0.05 [0.678]	-0.06 [0.619]	-	-0.01 [0.955]	-0.04 [0.770]
Male	-	1.59 [0.03**]	1.41 [0.071*]	-	2.02 [0.025**]	1.85 [0.064*]
Consumption	-	0.0007 [0.105]	0.0007 [0.184]	-	0.0006 [0.282]	0.0005 [0.449]
# of Econ classes	-	-	0.06 [0.493]	-	-	0.09 [0.284]
Extreme Sports[4]						
2 (one or two times)	-	-	1.46 [0.065*]	-	-	1.33 [0.179]
3 (occasionally)	-	-	1.70 [0.182]	-	-	1.02 [0.502]
4 (often)	-	-	3.51 [0.045**]	-	-	2.84 [0.139]
5 (every chance)	-	-	0.51 [0.636]	-	-	-0.63 [0.644]
Constant	3.94 [0.000***]	3.03 [0.252]	2.50 [0.336]	5.38 [0.000***]	3.62 [0.258]	3.56 [0.261]

Notes: [1] Emotion is a dummy variable which takes 0 (zero) if subject is in the Neutral treatment and takes 1 (one) if subject is either in the Happy treatment or in the Sad treatment. [2] [3] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [4] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

with sad and positive affect with negative affect. Only model 1 shows a significant relation between amount sent and sad. It means that people in the Sad treatment sent 1.44 TL more than people in the Neutral treatment while there is no other variable is controlled for ($p-value = 0.091$). It is statistically significant at a 10% level. After the control variables are added into the regression, this significance disappears. If only the behaviour in the Trust Game is considered, this result weakly supports Hypothesis 1.1 which states that sad people trust more than people in neutral mood. The results of model 4, 5 and 6 also do not find a statistically significant relation between negative affect and the amount sent. Also, there is order effect in neither of the models. It means that trusting behaviour of subjects who play this game first do not statistically differ from trusting behaviour of subjects who play this game after the Ultimatum Game and its control games.

In the following analysis, a dummy variable which is called "emotion" is generated. It takes 1 if data comes from either the Happy treatment or the Sad treatment and 0 (zero) otherwise. It helps to observe the effect of being emotionally aroused on trusting behaviour. To compare the difference between being in a happy mood and being in a sad mood, "sad vs happy" variable is used. It takes 1 if data comes from the Happy treatment and 0 (zero) if it comes from the Sad treatment. The same regression models as in Table 8 and 9 are applied in **Table 10** with emotion and sad vs happy dummy variables. There is not significant relation between being emotionally aroused on the amount sent. It is expected since the significance of sad is not as strong as to affect the subjects' behaviour when it is combined with the data of the Happy treatment. In model 4 where there is not control variables in the regression, happy subjects transfer 1.47 TL less in the Trust Game than sad subjects at a 10% significance level ($p - value = 0.082$). Since control variables are added into the model, this variable loses its significance and the constant term is significant at 1% level, this result weakly supports Hypothesis 1.2 which

states that sad people trust more than happy people. In Table 10 too, the order in which subjects play this game does not statistically affect their trusting behaviour.

4.2.2 Second Mover Behaviour in the Trust Game

Table 7 shows the mean values of the amount returned in the Trust Game and compares statistically their differences across treatments. Since Wilcoxon rank-sum test does not report any statistical difference between the amounts transferred in the Trust Game across treatments, we can compare the mean values of return by this test. It reports that sad subjects return more money than subjects in a neutral mood at a 10% significance level ($z = -1.71$, $p - value = 0.087$). If we only consider the Trust Game, this result would support Hypothesis 2.1 which states that sad people positively reciprocate more than people in a neutral mood. Furthermore, t-test also detects significantly higher amount of return in the Sad treatment than in the Neutral treatment ($t = -2.64$; $p - value = 0.006$) and in the Happy treatment ($t = -2.72$; $p - value = 0.005$) at a 1% significance level. Since this test also find statistical difference between the amount sent in the Sad treatment and in the Neutral or the Happy treatment, it could be problematic to state there exists a higher level of positive reciprocity in the Sad treatment. That is why, we generated various variables related to amount returned in the Trust Game. **Table 11** shows their mean values and compares them across treatments. Relative return is the ratio of the amount returned by the second player to 3 times the amount transferred by the first player. It is commonly used as a rate of responders' reciprocal behaviour (Ashraf et al., 2006). The second column shows and compares the mean rate of subjects who return an amount which is greater than and equal to the amount of transfer that they receive. Third column shows and compares the mean rate of subjects who return an amount which is strictly

greater than the amount of transfer they receive. Fourth column shows the mean rate of subjects who return an amount that makes both players to end up with an equal payoffs. Last column represents the rate of subjects who return zero amount to the first player. According to Table 11, sad people relatively return more money than people in the neutral mood ($t = -1.87; p-value = 0.034$). Also, sad people are more likely to return strictly greater amount than what they received with respect to happy people ($t = 1.50; p-value = 0.070$). The Wilcoxon and the t-test suggest that sad people are more likely to make fair returns than happy people (Wilcoxon: $z = 1.94; p-value = 0.053$, $t = 2.15; p-value = 0.018$). Finally, people in a neutral mood are more likely to return zero amount than sad people ($z = 1.79; p-value = 0.074$). If we only consider the Trust Game to analyze second mover behaviours, all of these four results would support Hypothesis 2.1 and Hypothesis 2.2 which state that sad people positively reciprocate more than people in a neutral mood and happy people, respectively.

The same regression models as in Table 8, 9 and 10 are replicated in Table 12, 13 and 14, respectively but we replace the dependent variable with the amount returned and add a control variable for amount sent. **Table 12** shows that neither happy nor positive affects statistically change the amount of money second players returned to the first players. In addition, amount sent has a significant and positive effect on the amount returned in all of the six regression models. It means that second movers' behaviour is reciprocal. Consistent with the previous results, no order effect is found.

Table 13 represents the effect sad and negative affects on the amount of money second movers return after seeing the amount sent by the first movers. Only in the model 1 which includes a control variable for the amount sent, there exist a significant and positive impact of being sad on the amount returned. Subjects in the Sad treatment return 2.10 TL more money to their counterparts than subjects

Table 11: Comparison of Various Return Variables Across Treatments

Treatment	Relative Return Mean[1]	Return ≥ Transfer Mean[2]	Return > Transfer Mean[3]	Fair Return Mean[4]	Zero Return Mean
Neutral Tr.	0.33	0.72	0.44	0.22	0.28
	(0.056)	(0.109)	(0.12)	(0.101)	(0.109)
Happy Tr.	0.41	0.75	0.33	0.08	0.125
	(0.069)	(0.09)	(0.01)	(0.06)	(0.069)
Sad Tr.	0.48	0.79	0.53	0.29	0.09
	(0.059)	(0.07)	(0.09)	(0.08)	(0.05)
Wilcoxon rank-sum test[5]					
Neutral vs Happy	z=0.22	z=-0.2	z=0.72	z=1.26	z=1.23
	[0.823]	[0.841]	[0.468]	[0.208]	[0.218]
Neutral vs Sad	z=-1.352	z=-0.58	z=-0.58	z=-0.551	z=1.79
	[0.176]	[0.562]	[0.564]	[0.581]	[0.074*]
Sad vs Happy	z=0.23	z=0.40	z=1.47	z=1.94	z=-0.45
	[0.229]	[0.694]	[0.143]	[0.053*]	[0.65]
t-test[6]					
Neutral vs Happy	t=-0.87	t=-0.20	t=0.71	t=1.20	t=1.19
	[0.20]	[0.42]	[0.24]	[0.121]	[0.122]
Neutral vs Sad	t=-1.87	t=-0.55	t=-0.57	t=-0.56	t=1.59
	[0.034**]	[0.291]	[0.285]	[0.289]	[0.06*]
Sad vs Happy	t=0.82	t=0.38	t=1.50	t=2.15	t=-0.43
	[0.207]	[0.35]	[0.070*]	[0.018**]	[0.33]

Notes: [1] Relative return is the ratio of the amount returned by the second player to the 3 times amount transfered by the first player. [2] It is a dummy variable which takes one if the amount returned by the second player is greater than or equal to the amount transfered by the first player and zero otherwise. [3] It is a dummy variable which takes one if the amount returned by the second player is greater than the amount transfered by the first player and zero otherwise. [4] Fair return is a dummy variable which takes one if both players end up with same payoffs because of the amount returned by the second player and zero otherwise. [5] Denotes a two-tailed Wilcoxon rank-sum test. [6] Denotes a one-tailed t-test with unequal variances. Standard errors in parenthesis. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 12: Regression Analysis: The effect of Happy/Positive Affect on the Amount Returned

	(1)	(2)	(3)	(4)	(5)	(6)
Happy	0.11 [0.891]	-0.04 [0.963]	-0.23 [0.791]	-	-	-
Positive Affect	-	-	-	-0.33 [0.391]	-0.35 [0.327]	-0.04 [0.942]
Amount Sent	0.62 [0.006***]	0.58 [0.020**]	0.65 [0.004***]	1.47 [0.000***]	1.50 [0.000***]	1.55 [0.000***]
First round[1]	-	0.91 [0.281]	1.24 [0.124]	-	1.52 [0.154]	1.37 [0.169]
Age	-	0.004 [0.963]	-0.04 [0.762]	-	0.12 [0.291]	0.04 [0.826]
Male	-	0.51 [0.615]	0.79 [0.445]	-	-0.004 [0.998]	-0.25 [0.862]
Consumption	-	-0.0002 [0.798]	0.00008 [0.911]	-	0.001 [0.133]	0.0008 [0.399]
# of Econ classes	-	-	-0.06 [0.484]	-	-	0.21 [0.454]
Extreme Sports[2]						
2 (one or two times)	-	-	2.42 [0.01***]	-	-	3.80 [0.021**]
3 (occasionally)	-	-	0.45 [0.055*]	-	-	2.76 [0.043**]
4 (often)	-	-		-	-	5.07 [0.009***]
5 (every chance)	-	-		-	-	3.29 [0.221]
Constant	1.31 [0.179]	0.91 [0.695]	-0.71 [0.565]	0.2 [0.909]	-5.01 [0.107]	-6.50 [0.076*]

Notes: [1] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 13: Regression Analysis: The effect of Sad/Negative Affect on the Amount Returned

	(1)	(2)	(3)	(4)	(5)	(6)
Sad	2.10	1.25	0.27	-	-	-
	[0.042**]	[0.284]	[0.847]			
Negative Affect	-	-	-	0.43	0.30	0.25
				[0.175]	[0.373]	[0.436]
Amount Sent	1.68	1.71	1.87	1.42	1.46	1.52
	[0.000***]	[0.000***]	[0.000***]		[0.000***]	[0.000***]
First round[1]	-	1.59	1.29	-	1.31	1.29
		[0.268]	[0.296]		[0.226]	[0.204]
Age	-	0.18	0.10	-	0.12	0.03
		[0.344]	[0.674]		[0.318]	[0.863]
Male	-	-0.31	-0.84	-	0.05	-0.19
		[0.863]	[0.637]		[0.972]	[0.890]
Consumption	-	0.0007	0.0005	-	0.001	0.0007
		[0.484]	[0.678]		[0.217]	[0.498]
# of Econ classes	-	-	0.31	-	-	0.22
			[0.319]			[0.398]
Extreme Sports[2]						
2 (one or two times)	-	-	4.07	-	-	3.75
			[0.042**]			[0.015**]
3 (occasionally)	-	-	2.02	-	-	2.74
			[0.336]			[0.046**]
4 (often)	-	-	5.38	-	-	4.93
			[0.024**]			[0.006***]
5 (every chance)	-	-	4.43	-	-	3.34
			[0.166]			[0.144]
Constant	-6.53	-8.02	-8.90	-1.88	-6.59	-6.86
	[0.080*]	[0.06*]	[0.107]	[0.201]	[0.041**]	[0.059*]

Notes: [1] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 14: Regression Analysis: The effect of Being Emotionally Aroused on the Amount Returned

	(1)	(2)	(3)	(4)	(5)	(6)
Emotion[1]	1.50	0.74	0.29	-	-	-
	[0.068*]	[0.415]	[0.761]			
Sad vs Happy[2]	-	-	-	-2.33	-1.78	-1.22
				[0.063*]	[0.161]	[0.339]
Amount Sent	1.43	1.48	1.55	1.43	1.52	1.57
	[0.000***]	[0.000***]	[0.000***]	[0.000***]	[0.000***]	[0.000***]
First round[2]	-	1.27	0.31	-	1.21	0.89
		[0.804]	[0.211]		[0.398]	[0.522]
Age	-	0.12	0.03	-	0.12	0.02
		[0.333]	[0.857]		[0.425]	[0.916]
Male	-	0.02	-0.023	-	0.27	-0.08
		[0.988]	[0.870]		[0.879]	[0.964]
Consumption	-	0.001	0.0008	-	0.001	0.001
		[0.164]	[0.430]		[0.109]	[0.376]
# of Econ classes	-	-	0.21	-	-	0.24
			[0.413]			[0.379]
Extreme Sports[3]						
2 (one or two times)	-	-	3.79	-	-	3.56
			[0.017**]			[0.053*]
3 (occasionally)	-	-	2.71	-	-	2.64
			[0.055*]			[0.160]
4 (often)	-	-	5.00	-	-	4.25
			[0.008***]			[0.033**]
5 (every chance)	-	-	3.18	-	-	2.16
			[0.177]			[0.416]
Constant	-6.53	-6.34	-6.63	0.61	-5.59	-5.92
	[0.071*]	[0.034**]	[0.074*]	[0.593]	[0.114]	[0.207]

Notes: [1] Emotion is a dummy variable which takes 0 (zero) if subject is in the Neutral treatment and takes 1 (one) if subject is either in the Happy treatment or in the Sad treatment. [2] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [3] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

in the Neutral treatment. This relation is significant at 5% level (p-value=0.042). The constant term in this model is significant at 10% level ($p - value = 0.080$). After the addition of other control variables in model 2 and model 3, it losses its significance. Model 4, 5 and 6 suggest that negative affect does not alter the amount returned by the second movers significantly. In all of the models in Table 13, as is expected, amount sent by the first mover has a positive and significant effect on the amount returned by the second mover at 1% significance level. It means that second movers' behaviour is reciprocal when they are in a sad/negative mood. In addition, the order that subjects played this game does not statistically change the amount returned.

Table 14 shows the relation between being emotionally aroused and the amount returned and the difference between the effect of happy and sad on the amount returned. Since happy does not have a significant effect on the amount returned as is captured in Table 12, emotion variable is expect to show an effect on the amount returned in a same direction with the variable of sad but with a lower magnitude and p-value. As expected, second players who are emotionally aroused returned significantly more amount to the first players than people in a neutral mood at 10% significance level ($p - value = 0.068$). Its impact disappears as we add control variables into the regression . According to the model 4 where only amount sent is controlled, happy people return 2.33 TL less than sad people, ceteris paribus. This effect is significant at 10% level (p-value=0.063) and disappears when more control variables are incorporated into the regression . In addition, amount sent has a significant and positive effect on the amount returned in all of the six regression models. It means that second movers' behaviour is reciprocal. As a result, if only the Trust Game is used without its controls to examine the second mover behaviour, it would weakly support Hypothesis 2.1 and Hypothesis 2.2 which state that sad people positively reciprocate more than people in a neutral mood and

happy people. Throughout Table 14, no order effect is found while the amount sent has a positive and significant impact on the amount returned at 1% level.

4.2.3   First Mover Behaviour in the Triadic Design - Trust Game

Our experimental design allows us to separate trust from altruistic other-regarding motives. A first player in the Trust Game sends a positive amount of her/his endowment because of two possible reasons: unconditional altruism or trust. If she/he just want to increase her unknown partner's payoffs by decreasing her/his own payoff, then this seems to be due to unconditional altruism. If she/he trusts that her/his unknown partner will send back a positive amount that makes both parties better of than the case where the first player sends nothing, then it could be named as trust. Under the design of the Trust Game separating two possible motives seem to be impossible. As is mentioned in the Section 3, we add a control game to differentiate between altruism and trust. In **Table 15**, we use a two-tailed Wilcoxon matched-pairs signed-ranks test and a one-tailed paired-samples t-test to compare the amount sent in the Trust Game with the amount sent in the Dictator Control Game which we call the Transfer Control Game. In the control game, first player can send a part or none of his/her endowment to the second player, but, on the contrary to the Trust Game, the second player cannot return any amount to the first player. Both tests conclude that the amount sent in the Investment Game is statistically significantly higher than the amount sent in the Transfer Control Game in the Neutral, Happy and Sad Treatments at 1% significance level. In other words, we find that subjects in each treatments are motivated by the trust rather than unconditional altruism. These results provide a support for the literature on the existence of trust in the triadic-design experiments (Cox, 2001; Cox & Deck, 2006).

Next, in **Table 16**, we employ a two-tailed Wilcoxon rank-sum test and one-

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Table 15: Comparison of Trust and Positive Reciprocity within Treatment - Triadic Experimental Design

Treatment	Neutral Tr.	Happy Tr.	Sad Tr.
Wilcoxon test[1]			
Transfer vs Transfer Control	z=5.37 [0.000***]	z=2.53 [0.009***]	z=4.5 [0.000***]
Return vs Return Control	z=-0.30 [0.764]	z=-0.20 [0.839]	z=-1.18 [0.236]
t-test[2]			
Transfer vs Transfer Control	t=3.54 [0.0004***]	t=2.66 [0.008***]	t=3.72 [0.0002***]
Return vs Return Control	t=-0.18 [0.428]	t=-0.47 [0.320]	t=-0.89 [0.189]

Notes: [1] Denotes a two-tailed Wilcoxon matched-pairs signed-ranks test. [2] Denotes a one-tailed paired-samples t-test. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 16: Comparison of Trust and Positive Reciprocity Across Treatments- Triadic Experimental Design

Treatment	Transfer Mean	Transfer Control Mean	Difference Transfer Mean[1]	Return Mean	Return Control Mean	Difference Return Mean[2]
Neutral Tr.	3.94	1.33	2.61	3.78	3.89	-0.11
	(0.574)	(0.457)	(0.49)	(0.794)	(1.06)	(0.604)
Happy Tr.	3.92	2.17	1.75	3.87	4.33	-0.46
	(0.561)	(0.557)	(0.69)	(0.597)	(1.24)	(0.967)
Sad Tr.	5.38	2.56	2.82	8.29	9.23	-0.94
	(0.607)	(0.442)	(0.63)	(1.513)	(1.45)	(1.05)
Wilcoxon test[3]						
Neutral vs Happy	z=0.32	z=-1.21	z=1.09	z=-0.27	z=-0.19	z=0.04
	[0.747]	[0.225]	[0.275]	[0.788]	[0.846]	[0.968]
Neutral vs Sad	z=-0.95	z=-1.99	z=0.42	z=-1.71	z=-2.36	z=0.81
	[0.339]	[0.046**]	[0.677]	[0.087*]	[0.018**]	[0.420]
Sad vs Happy	z=1.37	z=0.93	z=0.63	z=1.635	z=2.271	z=-0.58
	[0.172]	[0.35]	[0.53]	[0.102]	[0.023**]	[0.562]
t-test[4]						
Neutral vs Happy	t=0.035	t=-1.16	t=1.02	t=-0.098	t=-0.27	t=0.30
	[0.486]	[0.127]	[0.157]	[0.461]	[0.393]	[0.381]
Neutral vs Sad	t=-1.72	t=-1.93	t=-0.27	t=-2.642	t=-2.98	t=0.68
	[0.046**]	[0.03**]	[0.395]	[0.006***]	[0.002***]	[0.249]
Sad vs Happy	t=1.77	t=0.55	t=1.15	t=2.72	t=2.57	t=-0.34
	[0.041**]	[0.292]	[0.128]	[0.005***]	[0.006***]	[0.368]

Notes: [1] is the amount sent in the Investment Game minus the amount sent in the Transfer Control Game. [2] is the amount returned in the Investment Game minus the amount returned in the Return Control Game. [3] Denotes a two-tailed Wilcoxon Rank-sum test. [4] Denotes a one-tailed t-test with unequal variances. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

tailed t-test to compare this behaviour across treatments. In the first column, transfer mean represents the mean value of amount sent in the Trust Game and its difference across treatments while transfer control mean represents the mean value of amount sent in the Transfer Control Game. Third column of Table 16 shows the mean value of the amount sent in the Trust Game minus the amount sent in the Transfer Control Game. If this difference significantly differs across treatments, then trusting behaviour changes with emotions. Although amount transferred is significantly higher in the Sad treatments, the differences in transfer means does not differ statistically across treatments. It may be due to the fact that the amount transferred in the Transfer Control Game is statistically higher in the Sad treatment than the Neutral treatment (Wilcoxon: $z = -1.99$; $p - value = 0.046$, t-test: $t = -1.93$; $p - value = 0.03$). Therefore, these results does not support Hypothesis 1.1 and Hypothesis 1.2 which state that sad people trust more. The difference between the results which analyse only the Trust Game and the results which analyse triadic-design experiments is because of the reason that the results of the Trust Game combines both altruism and trust while the triadic design experiment differentiates between them.

4.2.4 Second Mover Behaviour in the Triadic Design - Trust Game

Our experimental design also allows us to separate positive reciprocity from other preferences. A second player in the Trust Game returns a positive amount of her/his endowment to a first player who sent a positive amount of money because of two possible reasons: inequality aversion and positive reciprocity. If the second player returns more money in the Trust Game than in the Dictator Control Game which we call Return Control Game, then she/he is motivated by the positive reciprocity not by the inequality aversion. (Remember that before the second player returns money in the Investment Game if the first player's payoff is A TL

and the second player's payoff is B TL, then the Return Control Game starts with the same payoffs.) **Table 15** also compares the amount of return in the Trust Game and in the Return Control Game by using Wilcoxon matched-pairs signed-ranks test and a one-tailed paired-samples t-test. Neither the Wilcoxon test nor the t-test find a significant difference between amount returned in the Trust Game and in the Return Control Game. It means that our subject pool in any of the treatments are not motivated by positive reciprocity. On the contrary, since the return amounts in these two games comes from populations with a statistically same distribution, we conclude that our subjects in all of the treatments are mainly motivated by inequality aversion.

Our next analysis shows that whether inequality aversion differs across treatments. In order to observe that, we employ two-tailed Wilcoxon rank-sum test and one-tailed t-test. The fourth column of **Table 16** represents the mean values of amount sent back by the second movers in the Trust Game and its difference across treatments. Return control mean in the fifth column shows the mean values of amount sent in the Return Control Game. Last column of the table represents the mean values of the amount returned in the Trust Game minus the amount returned in the Return Control Game. If this difference statistically differs across treatments, that means that inequality aversion is affected by one's emotional mood. Neither the Wilcoxon test nor the t-test detects a significant difference between treatments. Therefore we could not support Hypothesis 6.1 and Hypothesis 6.2 which state that sad people are more inequality-averse. Since the effect of being sad on the amount returned in the Trust Game disappears when the results of triadic design experiment is analysed, it gives an evidence to support the idea that the Trust Game itself is not able to separate the positive reciprocity from the inequality-aversion.

4.3 Negative Reciprocity

Before analysing the data with econometric methods, we present figures that represent the distribution of offers proposed by the first players and whether they are accepted or rejected by the second players. **Figure 4** shows accepted and rejected offers for each subject pair in the Neutral treatment, in the Happy treatment and in the Sad treatment. According to Figure 4, the offers seem to be higher in the Sad treatments than others.However, the rate of rejection of offers that are lower than the half of the pie is lower in the Sad treatment (15%) than in the Happy treatment (25%) and in the Neutral treatment (28%). This could indicate that sad people negatively reciprocate less than the others.

To support the hypothesis that that first players are motivated by fear rejection, their offers should be higher in the Ultimatum Game than in the Offer Control Game. In **Figure 5**, we compare the amount offered in these two games. Y-axis shows the number of subjects who offer the given amounts in the Ultimatum Game and in the Offer Control Game. The results suggest that the amounts of offers in the Ultimatum Game and in the Offer Control Game are almost same in the Sad treatment, however, the difference seems to be bigger in the Neutral Treatment. Therefore, sad people would motivated less by the fear of rejection than the people in a neutral mood.

4.3.1 First Mover Behaviour in the Ultimatum Game

In the Ultimatum Game, first movers make a generous offer because of altruism, inequality aversion or fear of rejection. In the triadic-design Ultimatum Game, we explain how to separate these motives from each other. In this part, we interpret the variable offer as an indicator of fear of rejection as in the Ultimatum Game literature. First column of **Table 17** shows the mean value of amount offered by

Figure 4:   Accepted and Rejected Offers across Treatments

Figure 5: Offer vs Offer Control across Treatments
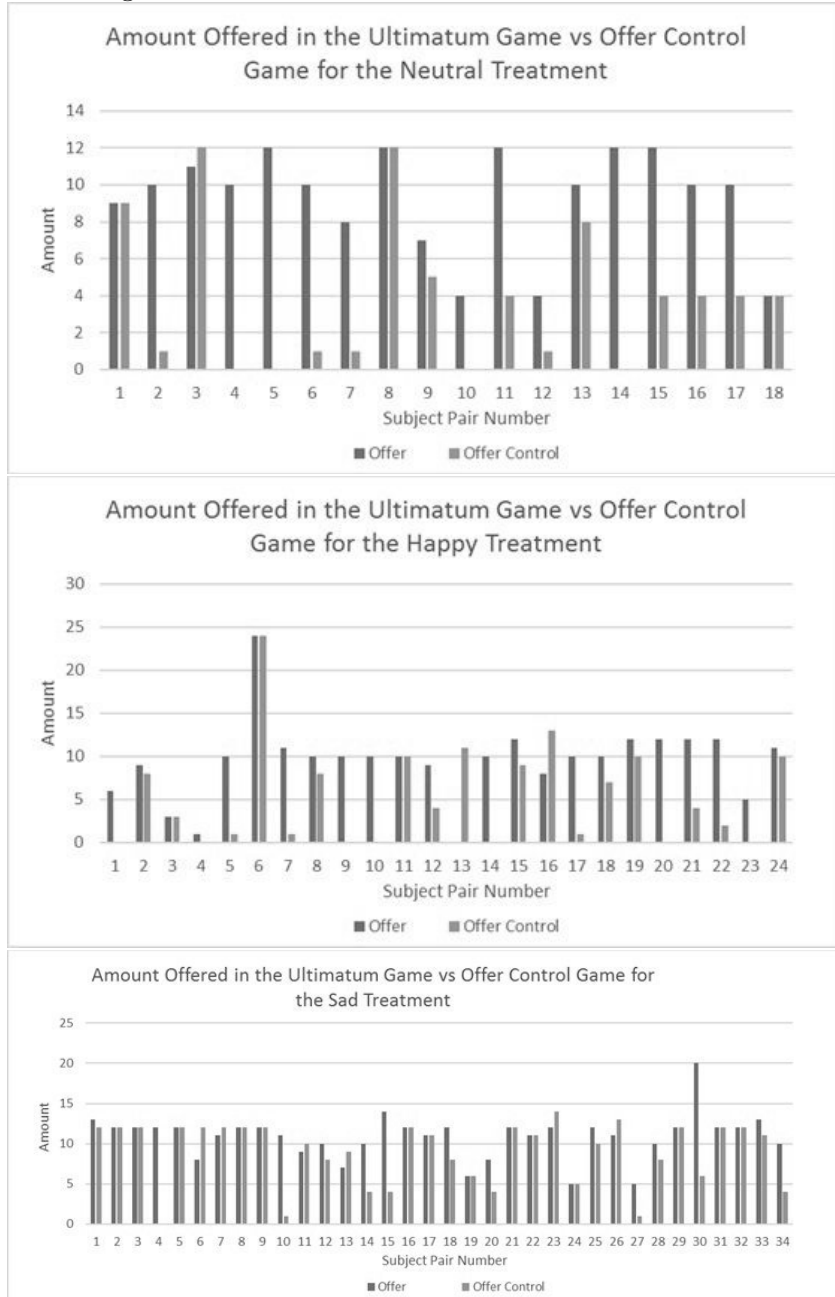
the first player in the Ultimatum Game and compares it across treatments. Mean offers are 9.28 TL in the Neutral treatment, 9.46 TL in the Happy treatment, 10.91 TL in the Sad treatments. We test whether offers differ with respect to our treatment variable -emotion- by using a two tailed Wilcoxon rank-sum test and one-tailed t-test. According to the results of the Wilcoxon test, subjects in the Sad treatment offer significantly higher amount than subjects in the Neutral treatment ($z = -2.15$; $p-value = 0.031$) and in the Happy treatment ($z = 2.34$; $p-value = 0.025$) at 5% significance level. The results of the t-test confirms the results of the Wilcoxon test. It also detects that subjects in the Sad treatment offer significantly higher amount than subjects in the Neutral treatment ($t = -2.01$; $p-value = 0.025$) and in the Happy treatment ($z = 1.38$; $p-value = 0.087$). These results support the opposite of Hypothesis 3.1 and Hypothesis 3.2 which state that sad people are motivated less by the fear of rejection.

Table 18 shows that the effect of happy and positive affects on the amount offered by the first player. According to the results of the regression analysis, neither happy nor positive affect have a significant effect on the amount offered in the Ultimatum Game. Thus, the results do not support Hypothesis 3.3 which states that happy people are motivated less by the fear of rejection than people in a neutral mood.

Table 19 represent the results of the regression analysis on the effect of sad and negative emotions on the amount offered by the first player in the Ultimatum Game. In the first model where there is not any control variable in the regression, people in the Sad treatment offer 1.63 TL more money compared to people in the Neutral treatment (p-value=0.049). While controls for age, gender, consumption level and order in which subjects play this game are added into the model, sad loses its significant effect on the amount offered. Whereas ,in the third model, when the number of economics classes which subject has taken and the frequency

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Table 17: Comparison of Fear of Rejection and Inequality Aversion Across Treatments - Triadic Experimental Design

Treatment	Offer Mean	Offer Control Mean	Difference Offer Mean[1]	Accept Mean	PC Offer Mean	Accept Control Mean
Neutral Tr.	9.28	3.89	5.39	0.72	4.67	0.44
	(0.66)	(0.94)	(1.01)	(0.11)	(0.31)	(0.12)
Happy Tr.	9.46	5.25	4.21	0.71	3.71	0.37
	(0.94)	(1.21)	(1.131)	(0.09)	(0.39)	(0.101)
Sad Tr.	10.91	8.94	1.97	0.82	3.59	0.44
	(0.47)	(0.68)	(0.72)	(0.07)	(0.30)	(0.09)
Wilcoxon test[2]						
Neutral vs Happy	z=0.052	z=-0.30	z=0.36	z=0.10	z=1.64	z=0.45
	[0.958]	[0.767]	[0.721]	[0.922]	[0.101]	[0.654]
Neutral vs Sad	z=-2.15	z=-3.67	z=2.74	z=-0.84	z=2.10	z=0.02
	[0.031**]	[0.0002***]	[0.006***]	[0.40]	[0.036**]	[0.982]
Sad vs Happy	z=2.34	z=3.30	z=-2.42	z=1.03	z=-0.20	z=-0.5
	[0.025**]	[0.001***]	[0.0156**]	[0.304]	[0.841]	[0.617]
t-test[3]						
Neutral vs Happy	t=-0.16	t=-0.89	t=0.78	t=0.10	t=1.92	t=0.44
	[0.438]	[0.190]	[0.22]	[0.462]	[0.031**]	[0.331]
Neutral vs Sad	t=-2.01	t=-4.36	t=2.77	t=-0.80	t=2.48	t=0.02
	[0.025**]	[0.0001***]	[0.004***]	[0.216]	[0.008***]	[0.491]
Sad vs Happy	t=1.38	t=2.66	t=-1.67	t=0.10	t=-0.24	t=0.50
	[0.087*]	[0.005***]	[0.051*]	[0.162]	[0.404]	[0.310]

Notes: [1] is the amount offered in the Ultimatum Game minus the amount offered in the Offer Control Game. [2] Denotes a two-tailed Wilcoxon Rank-sum test. [3] Denotes a one-tailed t-test with unequal variances. Standard errors in paranthesis. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 18: Regression Analysis: The effect of Happy/Positive Affect on the Amount Offered

	(1) without control variables	(2)	(3)	(4) without control variables	(5)	(6)
Happy	0.18 [0.876]	1.22 [0.230]	0.88 [0.376]	-	-	-
Positive Affect	-	-	-	-0.22 [0.577]	-0.17 [0.611]	-0.29 [0.442]
First round[1]	-	2.00 [0.108]	2.06 [0.110]	-	0.35 [0.679]	0.60 [0.481]
Age	-	-0.40 [0.010***]	-0.35 [0.029**]	-	-0.13 [0.335]	-0.1 [0.490]
Male	-	-0.35 [0.827]	-0.65 [0.705]	-	-0.24 [0.804]	-0.19 [0.930]
Consumption	-	-0.001 [0.120]	0.0007 [0.299]	-	0.0004 [0.524]	0.0006 [0.310]
# of Econ classes	-	-	-0.031 [0.792]	-	-	-0.05 [0.583]
Extreme Sports[2]						
2 (one/two times)	-	-	0.35 [0.787]	-	-	-0.40 [0.613]
3 (occasionally)	-	-	2.66 [0.245]	-	-	0.95 [0.569]
4 (often)	-	-		-	-	-0.25 [0.807]
5 (every chance)	-	-		-	-	-6.20 [0.000***]
Constant	9.27 [0.000***]	18.14 [0.000***]	16.72 [0.000***]	10.71 [0.000***]	12.72 [0.000***]	12.16 [0.000***]

Notes: [1] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 19: Regression Analysis: The effect of Sad/Negative Affect on the Amount Offered

	(1) without control variables	(2)	(3)	(4) without control variables	(5)	(6)
Sad	1.63 [0.049**]	1.27 [0.147]	1.75 [0.05**]	-	-	-
First round[1]	-	0.12 [0.891]	0.37 [0.675]	-	0.54 [0.535]	0.83 [0.351]
Negative Affect	-	-	-	0.40 [0.054]	0.40 [0.070*]	0.39 [0.086*]
Age	-	-0.012 [0.913]	-0.03 [0.769]	-	-0.13 [0.256]	-0.11 [0.342]
Male	-	-0.74 [0.347]	-0.39 [0.769]	-	-0.17 [0.864]	-0.03 [0.977]
Consumption	-	0.0008 [0.228]	0.0008 [0.223]	-	0.0003 [0.687]	0.0005 [0.442]
# of Econ classes	-	-	-0.06 [0.401]	-	-	-0.02 [0.757]
Extreme Sports[2]						
2 (one or two times)	-	-	-0.52 [0.550]	-	-	-0.46 [0.588]
3 (occasionally)	-	-	-1.66 [0.272]	-	-	0.92 [0.591]
4 (often)	-	-	-1.34 [0.200]	-	-	-0.35 [0.759]
5 (every chance)	-	-	-6.97 [0.000***]	-	-	-5.86 [0.000***]
Constant	9.27 [0.000***]	8.96 [0.002***]	9.58 [0.002***]	8.93 [0.000***]	11.22 [0.000***]	10.52 [0.000***]

Notes: [1] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 20: Regression Analysis: The effect of Being Emotionally Aroused on the Amount Offered

	(1)	(2)	(3)	(4)	(5)	(6)
Emotion[1]	1.03	1.21	1.33	-	-	-
	[0.207]	[0.136]	[0.094*]			
Happy vs Sad[2]	-	-	-	-1.45	-1.28	-1.78
				[0.172]	[0.213]	[0.116]
First round[3]	-	0.61	0.93	-	0.82	1.38
		[0.470]	[0.278]		[0.445]	[0.204]
Age	-	-0.14	-0.13	-	-0.08	-0.07
		[0.278]	[0.359]		[0.570]	[0.576]
Male	-	-0.18	-0.002	-	0.40	0.83
		[0.849]	[0.999]		[0.732]	[0.536]
Consumption	-	0.0003	0.0005	-	0.0003	0.0006
		[0.614]	[0.389]		[0.714]	[0.462]
# of Econ classes	-	-	-0.04	-	-	0.02
			[0.686]			[0.796]
Extreme Sports[4]						
2 (one or two times)	-	-	-0.45	-	-	-1.16
			[0.607]			[0.231]
3 (occasionally)	-	-	0.73	-	-	0.80
			[0.655]			[0.733]
4 (often)	-	-	-0.55	-	-	-1.84
			[0.603]			[0.218]
5 (every chance)	-	-	-6.59	-	-	-8.18
			[0.000***]			[0.000***]
Constant	9.28	11.61	10.89	10.91	11.63	11.26
	[0.000***]	[0.000***]	[0.001***]	[0.002***]	[0.000***]	[0.000***]

Notes: [1] Emotion is a dummy variable which takes 0 (zero) if the subject is in the Neutral treatment and takes 1 (one) if subject is either in the Happy treatment or in the Sad treatment. [2] is a dummy variable which takes 1 if the subject is in the Happy treatment and takes 0 if he/she in the Sad treatment. [3] is a dummy variable which takes 1 if subjects play this game first and takes zero if subjects play this game after the Trust Game. [4] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

of engaging extreme sports are added into the control variables, sad statistically affects the amount offered in the Ultimatum Game. Subjects in the Sad treatment offer 1.75 TL more than subjects in the Neutral treatment, ceteris paribus (p-value=0.050). Therefore, these results oppose to Hypothesis 3.1 which states that sad people are motivated less by the fear of rejection than people in a neutral mood. The results of model 5 and 6 support the opposite of this hypothesis. While model 5 suggests that one unit increase in the score of negative affect raises the amount offered by 0.40 TL (p-value=0.070), model 6 indicates that it raises the amount offered by 0.39 TL (p-value=0.086).

Table 20 shows the relation between being emotionally aroused and the amount offered and the differences between the effect of happy and sad emotions on the amount offered. Since happy does not have a significant effect on the amount offered as is captured in Table 18, emotion variable is expect to show an effect on the amount offered in the same direction with sad variable but with a lower magnitude and p-value. According to the model 3, as expected, people who are emotionally aroused offer 1.33 TL more than people in a neutral mood, ceteris paribus ($p - value = 0.094$). We could not find a significant difference in the amount offered between happy and sad people .

4.3.2   Second Mover Behaviour in the Ultimatum Game

Fourth column of the **Table 17** shows the mean rates of acceptance of offers made by the first players and compares them across treatments. While 71% of the offers in the Neutral treatment are accepted, it is 71% in the Happy treatment and 82% in the Sad treatment. Both the Wilcoxon test and the t-test cannot reject the null hypothesis that the rate of acceptance is similar across treatments. If we would only consider the Ultimatum Game to analyse the motives behind the second movers' behaviour, we would not support Hypothesis 4.1 and Hypothesis 4.2 which

Table 21: Probit Analysis: The effect of Happy/Positive Affect on the Acceptance Behavior

	(1)	(2)	(3)	(4)
Happy	-0.001	-0.02	-	-
	[0.992]	[0.892]		
Positive Affect	-	-	0.03	0.03
			[0.578]	[0.596]
Amount Offered	0.06	0.065	0.04	0.04
	[0.013**]	[0.011**]	[0.049**]	[0.056*]
Age	-	0.04	-	0.02
		[0.261]		[0.250]
Male	-	-0.03	-	0.13
		[0.832]		[0.197]
Consumption	-	0.00007	-	0.00004
		[0.565]		[0.468]
# of Econ classes	-	-0.02	-	-0.002
		[0.227]		[0.860]

Notes: [1] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

state that sad people negatively reciprocate less than people in a neutral and a happy mood. **Table 21** shows that the effect of happy and positive emotions on the probability of accepting the offers. We could not find any evidence to support Hypothesis 4.3 Neither happy nor positive affects statistically change the acceptance behaviour which is considered as negative reciprocity in the Ultimatum Game.

Table 22 represents that the effect of sad and negative emotions on the acceptance behaviour of the second players. The results of probit regression do not detect a significant relation between those emotions and the probability of accepting the offer. Since neither sad nor happy have a statistically significant relation between them, we do not expect to have an effect of being emotional aroused and a difference between happy and sad emotions. Results are represented in **Table 23**.

Table 22: Probit Analysis: The effect of Sad/Negative Affect on the Acceptance Behavior

	(1)	(2)	(3)	(4)
Sad	0.02	0.04	-	-
	[0.852]	[0.716]		
Negative Affect	-	-	-0.002	-0.001
			[0.957]	[0.975]
Amount Offered	0.04	0.03	0.04	0.04
	[0.205]	[0.210]	[0.041**]	[0.049**]
Age	-	-0.005	-	0.016
		[0.752]		[0.253]
Male	-	0.17	-	0.13
		[0.105]		[0.185]
Consumption	-	0.0000	-	0.00004
		[0.917]		[0.496]
# of Econ classes	-	0.02	-	-0.003
		[0.112]		[0.779]

Notes: [1] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 23: Probit Analysis: The effect of Being Emotionally Aroused on the Acceptance Behavior

	(1)	(2)	(3)	(4)
Emotion[1]	0.009	-0.004	-	-
	[0.931]	[0.974]		
Happy vs Sad[2]	-	-	-0.05	-0.05
			[0.654]	[0.618]
Amount Offered	0.04	0.04	0.03	0.03
	[0.054*]	[0.061*]	[0.162]	[0.124]
Age	-	0.02	-	0.02
		[0.242]		[0.170]
Male	-	0.13	-	0.2
		[0.187]		[0.045**]
Consumption	-	0.00004	-	0.0001
		[0.501]		[0.258]
# of Econ classes	-	-0.003	-	-0.004
		[0.786]		[0.704]

Notes: [1] Emotion is a dummy variable which takes 0 (zero) if subject is in the Neutral treatment and takes 1 (one) if subject is either in the Happy treatment or in the Sad treatment. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

As expected, being emotionally aroused does not change the acceptance behaviour statistically. Also, we could not find any statistical difference in the acceptance behaviour of second players between subjects in the Happy treatment and subjects in the Sad treatment. As we only consider the Ultimatum Game without to analyse second mover behaviour, we would not support Hypothesis 4.1 and Hypothesis 4.2 which state that sad people negatively reciprocate less than people in a neutral and a happy mood.

4.3.3 First Mover Behaviour in the Triadic Design - Ultimatum Game

Our experimental design allows us to separate fear of rejection from altruism or inequality aversion. A first mover in the Ultimatum game propose generously because of two reasons: fear of rejection and altruism/inequality aversion. She may be afraid of the fact that low offers are rejected by the second player and both of them end up with zero payoff. Also, she/he may want to divide the pie into two almost equal parts because she has an altruistic or inequality averse preference. Analysing only the behaviour of first movers in the Ultimatum Game do not provide a clear distinction between these two motives. That is why, we add a Dictator Control Game which we call the Offer Control Game. In the control game, first players can offer any allocation, but, on the contrary to the Ultimatum Game, second players cannot accept or reject this allocation. This allocation directly determine their payoffs. In **Table 24**, we use a two-tailed Wilcoxon matched-pairs signed-ranks test and a one-tailed paired-samples t-test to compare the amount offered in the Ultimatum with the amount offered in the Transfer Control Game. Both tests conclude that the amount offered in the Ultimatum is statistically significantly higher than the amount sent in the Offer Control Game in the Neutral, Happy and Sad Treatments. In other words, we find that subjects in each treatments are motivated by the fear of rejection rather than unconditional altruism.

Table 24: Comparison of Fear of Rejection and Negative Reciprocity within Treatment - Triadic Experimental Design

Treatment	Neutral Tr.	Happy Tr.	Sad Tr.
Wilcoxon test[1]			
Offer vs Offer Control	z=3.43	z=3.21	z=2.20
	[0.0006***]	[0.001***]	[0.028**]
Offer vs PC Offer	z=3.38	z=4.04	z=5.09
	[0.0007***]	[0.0001***]	[0.000***]
Accept vs Accept Control	z=2.34	z=2.53	z=3.36
	[0.025**]	[0.011**]	[0.0008***]
t-test[2]			
Offer vs Offer Control	t=5.35	t=3.72	t=2.75
	[0.000***]	[0.0006***]	[0.005***]
Offer vs PC Offer	t=5.67	t=6.50	t=6.50
	[0.000***]	[0.000***]	[0.000***]
Accept vs Accept Control	t=2.56	t=2.89	t=4.04
	[0.01**]	[0.004***]	[0.0001***]

Notes: [1] Denotes a two-tailed Wilcoxon matched-pairs signed-ranks test. [2] Denotes a one-tailed paired-samples t-test. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Unlikely to the results of Cox and Deck (2006), our results provide an evidence for the existence of fear of rejection in the triadic-design experiments.

Next, in **Table 25**, we employ two-tailed Wilcoxon rank-sum test and one-tailed t-test to compare fear of rejection across treatments. In the first column, offer mean represents the mean value of amount offered in the Ultimatum Game and its difference across treatments while offer control mean represent the mean value of amount sent in the Offer Control Game. Third column of Table 25 shows the mean value of the amount offered in the Ultimatum Game minus the amount offered in the Offer Control Game. If this difference is significantly different across treatments, then fear of rejection changes with emotions. According to the results

Table 25: Comparison of Fear of Rejection and Inequality Aversion Across Treatments- Triadic Experimental Design

Treatment	Offer Mean	Offer Control Mean	Difference Offer Mean[1]	Accept Mean	PC Offer Mean	Accept Control Mean
Neutral Tr.	9.28	3.89	5.39	0.72	4.67	0.44
	(0.66)	(0.94)	(1.01)	(0.11)	(0.31)	(0.12)
Happy Tr.	9.46	5.25	4.21	0.71	3.71	0.37
	(0.94)	(1.21)	(1.131)	(0.09)	(0.39)	(0.101)
Sad Tr.	10.91	8.94	1.97	0.82	3.59	0.44
	(0.47)	(0.68)	(0.72)	(0.07)	(0.30)	(0.09)
Wilcoxon test[2]						
Neutral vs Happy	z=0.052	z=-0.30	z=0.36	z=0.10	z=1.64	z=0.45
	[0.958]	[0.767]	[0.721]	[0.922]	[0.101]	[0.654]
Neutral vs Sad	z=-2.15	z=-3.67	z=2.74	z=-0.84	z=2.10	z=0.02
	[0.031**]	[0.0002***]	[0.006***]	[0.40]	[0.036**]	[0.982]
Sad vs Happy	z=2.34	z=3.30	z=-2.42	z=1.03	z=-0.20	z=-0.5
	[0.025**]	[0.001***]	[0.0156**]	[0.304]	[0.841]	[0.617]
t-test[3]						
Neutral vs Happy	t=-0.16	t=-0.89	t=0.78	t=0.10	t=1.92	t=0.44
	[0.438]	[0.190]	[0.22]	[0.462]	[0.031**]	[0.331]
Neutral vs Sad	t=-2.01	t=-4.36	t=2.77	t=-0.80	t=2.48	t=0.02
	[0.025**]	[0.0001***]	[0.004***]	[0.216]	[0.008***]	[0.491]
Sad vs Happy	t=1.38	t=2.66	t=-1.67	t=0.10	t=-0.24	t=0.50
	[0.087*]	[0.005***]	[0.051*]	[0.162]	[0.404]	[0.310]

Notes: [1] is the amount offered in the Ultimatum Game minus the amount offered in the Offer Control Game. [2] Denotes a two-tailed Wilcoxon Rank-sum test. [3] Denotes a one-tailed t-test with unequal variances. Standard errors in paranthesis. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

of both test, subjects in the Sad treatment are significantly less motivated by the fear of rejection than subjects in the Neutral Treatment (Wilcoxon: $z = 2.74$; $p - value = 0.006$, t-test: $t = 2.77$; $p - value = 0.04$) and subjects in the Happy treatment (Wilcoxon: $z = -2.42$; $p-value = 0.0156$, t-test: $t = -1.67$; $p-value = 0.051$). Therefore, these results support Hypothesis 3.1 and Hypothesis 3.2 which state that sad people are less motivated by the fear of rejection than people in a neutral and in a happy mood. The exactly opposite results of the Ultimatum Game and the triadic design Ultimatum Game is because of the fact that while our experimental design differentiates between the altruism and the fear of rejection, the Ultimatum Game interprets these two motives as the fear of rejection.

4.3.4 Second Mover Behaviour in the Triadic Design - Ultimatum Game

Our experimental design also allows us to separate negative reciprocity from other preferences. A second player in the Ultimatum Game rejects the first player's low offer because of two possible reasons: inequality aversion and negative reciprocity. The second player may think that the first player divides the pie unequally, therefore, he/she reject the offer. On the other hand, she/he may want to punish the second player because the first player offers low amount for her/him. In order to differentiate between negative reciprocity and inequality aversion, we add a control game which is called the Accept Control Game. This control game differs from the Ultimatum Game in one aspect. In the Accept Control Game, computer randomly generates an allocation for each subject pairs. Then, the second players are informed about the allocation and asked to decide whether to accept or reject this offer. In this control game, first player do not have any power to affect the computer's offer. If the second player rejects the low offer in the Ultimatum Game, but accepts statistically same offer in the Accept Control Game, then she/he is

motivated by the negative reciprocity.

Table 24 also compares the rate of acceptance in the Ultimatum Game and in the Accept Control Game by using Wilcoxon matched-pairs signed-ranks test and a one-tailed paired-samples t-test. Both of them find a significant difference between the acceptance behaviour in the Ultimatum Game and in the Accept Control Game. However, the distribution of amount offered for the second player in the Ultimatum Game significantly differs from the computer's offer for the second player in the Offer Control Game. As a result of statistically different offers in these two games, we are not able to interpret the significant difference between the acceptance behaviour in the Ultimatum Game and in the Accept Control game as the negative reciprocity. Therefore, we cannot support Hypothesis 4.1 and Hypothesis 4.2 which state that sad people negatively reciprocate less than people in a neutral and a happy mood. On the other hand, high rejection rates in the Accept Control Game guide us to consider the motive behind the second movers' behaviour as the inequality aversion.

In order to determine whether inequality aversion differs across treatments, we employ another analysis on our data. In the fifth column of **Table 25**, mean values of computer's offers are reported and compared across treatments. The mean value of computer's offer in the Sad treatment is significantly different than in the Neutral treatment and in the Happy treatment. In the sixth column, mean values of rate of acceptance of computer's offers are shown and compared across treatments. There is not statistically significant difference in the rate of acceptance between treatments. Since the mean value of computer's offers in the Happy and Sad treatments are statistically below the mean value of computer's offer in the Neutral treatment, we are not able to compare the degree of inequality aversion between treatments. However, if we assume that the differences in PC offers between treatments are small, we would conclude that consistent to our previous

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Table 26: Probit Analysis: The effect of Happy/Positive Affect on the Acceptance Behavior - The Accept Control Game

	(1)	**(2)**	**(3)**	**(4)**
Happy	-0.02	-0.02	-	-
	[0.911]	[0.905]		
Positive Affect	-	-	-0.09	-0.09
			[0.157]	[0.161]
PC Offer	0.06	0.05	0.07	0.07
	[0.232]	[0.293]	[0.048**]	[0.037**]
Age	-	-0.02	-	0.02
		[0.458]		[0.301]
Male	-	-0.20	-	0.03
		[0.230]		[0.800]
Consumption	-	0.0001	-	0.0001
		[0.453]		[0.049**]
# of Econ classes		0.006	-	-0.01
		[0.770]		[0.329]

Notes: [1] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 27: Probit Analysis: The effect of Sad/Negative Affect on the Acceptance Behavior - the Accept Control Game

	(1)	(2)	(3)	(4)
Sad	0.09	-0.03	-	-
	[0.544]	[0.881]		
Negative Affect	-	-	0.02	0.008
			[0.621]	[0.980]
PC Offer	0.09	0.09	0.08	0.08
	[0.051*]	[0.072*]	[0.029**]	[0.026]
Age	-	0.04	-	0.02
		[0.117]		[0.308]
Male	-	0.09	-	0.02
		[0.551]		[0.853]
Consumption	-	0.0002	-	0.0001
		[0.017**]		[0.045**]
# of Econ classes	-	-0.03	-	-0.01
		[0.147]		[0.443]

Notes: [1] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 28: Probit Analysis: The effect of Being Emotionally Aroused on the Acceptance Behavior - the Accept Control Game

	(1)	(2)	(3)	(4)
Emotion[1]	0.05	-0.02	-	-
	[0.742]	[0.871]		
Sad vs Happy[2]	-	-	-0.08	-0.05
			[0.540]	[0.737]
PC Offer	0.08	0.08	0.08	0.08
	[0.03**]	[0.036**]	[0.032**]	[0.038**]
Age	-	0.02	-	0.03
		[0.296]		[0.151]
Male	-	0.02	-	0.08
		[0.854]		[0.530]
Consumption	-	0.00001	-	0.0001
		[0.041**]		[0.125]
# of Econ classes	-	-0.01	-	-0.004
		[0.442]		[0.795]

Notes: [1] Emotion is a dummy variable which takes 0 (zero) if subject is in the Neutral treatment and takes 1 (one) if subject is either in the Happy treatment or in the Sad treatment. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

analysis on inequality-aversion in Section 4.2.4, inequality aversion does not depend on one's emotional state. To further analyse the effect of emotions on inequality aversion, we run a regression. The results of **Table 26** shows that happy and positive emotions do not have a significant effect on the acceptance behaviour in the Accept Control Game. **Table 27** shows the same analysis for sad and negative emotions. The results also do not report any significant relation. Since both happy and sad variable do not have a significant impact on the probability of accepting the computer's offer, the results of **Table 28** also do not report a statistically significant relation. Therefore, we cannot support Hypothesis 6.1 and Hypothesis 6.2 which states that sad people are more inequality-averse than people in a neutral and happy mood.

4.4   Altruism

4.4.1   Altruism Towards a Charitable Organization

In order to observe the altruistic behaviour towards a charitable organization, subjects are asked to donate a part or none of their endowments to the LÖSEV which helps children with leukaemia. **Figure 6** shows the frequency of the given amount of donation across treatments. While 18.18% of the subjects in the Neutral treatment donate zero amount, it is 4.17% in the Happy treatment and 5.88% in the Sad treatment. On the other hand, 37.5% of subjects in the Happy treatment donate all of their money while 22.73% of the subjects in the Neutral treatment and 20.59% of the subjects in the Sad treatment donate all of their endowments.

Table 29 reports the mean values of donation made in each treatments and its difference across treatments. In the Neutral treatment, the mean of donation is 12.27 while 17.87 in the Happy treatment and 19.18 in the Sad treatment. In order to observe whether the amount of donation statistically differs across

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Figure 6: Donation Across Treatments
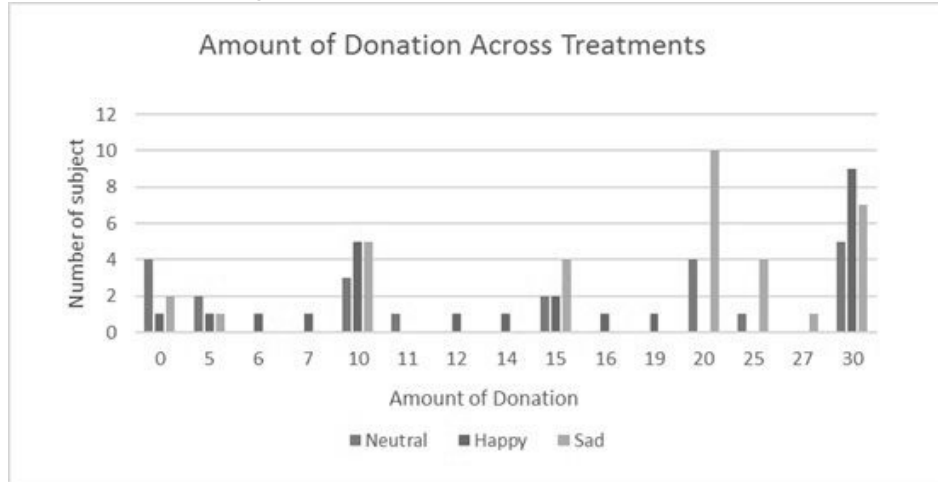
Table 29: Comparison of Altruism Across Treatments

Treatment	Donation Mean	Wilcoxon Rank-sum[1]	t-test[2]
Neutral Tr.	12.27	-	-
	(2.33)		
Happy Tr.	17.87	-	-
	(2.11)		
Sad Tr.	19.18	-	-
	(1.48)		
Neutral vs Happy	-	z=-0.761	t=-0.83
	-	[0.446]	[0.206]
Neutral vs Sad	-	z=-1.296	t=-1.41
	-	[0.195]	[0.083*]
Sad vs Happy	-	z=0.586	t=0.51
	-	[0.558]	[0.308]

Notes: [1] Denotes a two-tailed Wilcoxon Rank-sum Test. [2] Denotes a one tailed t-test. Standard errors in parentheses. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 30: Regression Analysis: The effect of Sad/Negative Affect on the Amount of Donation

	(1) without control variables	(2)	(3)	(4) without control variables	(5)	(6)
Sad	3.90 [0.162]	4.17 [0.119]	4.56 [0.081*]	-	-	-
Negative Affect	-	-	-	0.73 [0.241]	0.80 [0.173]	0.67 [0.262]
Age	-	1.08 [0.001***]	1.28 [0.000***]	-	0.93 [0.000***]	1.10 [0.000***]
Male	-	-2.29 [0.323]	-0.99 [0.664]	-	-3.71 [0.07*]	-2.81 [0.181]
Consumption	-	-0.003 [0.007***]	-0.003 [0.008***]	-	-0.003 [0.025**]	-0.003 [0.038**]
# of Econ classes	-	-	-0.49 [0.025**]	-	-	-0.52 [0.01***]
Extreme Sports[1] 2 (one or two times)	-	-	4.14 [0.137]	-	-	2.34 [0.318]
3 (occasionally)	-	-	-0.32 [0.934]	-	-	-1.32 [0.646]
4 (often)	-	-	-3.61 [0.454]	-	-	-2.86 [0.508]
5 (every chance)	-	-	-15.62 [0.000***]	-	-	-13.65 [0.000***]
Constant	15.27 [0.000***]	-2.09 [0.760]	−7.43 [0.331]	15.65 [0.000***]	1.04 [0.859]	-2.06 [0.456]

Notes: [1] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 31: Regression Analysis: The effect of Happy Emotion/Positive Affect on the Amount of Donation

	(1) without control variables	(2)	(3)	(4) without control variables	(5)	(6)
Happy	2.60 [0.412]	1.20 [0.674]	1.71 [0.570]	-	-	-
Positive Affect	-	-	-	0.48 [0.691]	0.51 [0.665]	0.13 [0.912]
Age	-	0.48 [0.216]	0.91 [0.028**]	-	0.94 [0.000***]	1.11 [0.000***]
Male	-	-7.14 [0.032**]	-5.85 [0.132]	-	-3.89 [0.057*]	-2.95 [0.169]
Consumption	-	-0.002 [0.209]	-0.002 [0.217]	-	-0.002 [0.055*]	-0.002 [0.060*]
# of Econ classes	-	-	-0.91 [0.005***]	-	-	-0.53 [0.019**]
Extreme Sports[1]						
2 (one or two times)	-	-	-1.76 [0.643]	-	-	2.47 [0.293]
3 (occasionally)	-	-	-4.95 [0.194]	-	-	-1.29 [0.664]
4 (often)	-	-	-1.30 [0.749]	-	-	-2.52 [0.556]
5 (every chance I get)	-	-		-	-	-13.93 [0.000***]
Constant	15.27 [0.000***]	12.77 [0.197]	6.36 [0.551]	16.31 [0.000***]	1.21 [0.870]	-1.11 [0.882]

Notes: [1] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 32: Regression Analysis: The effect of Being Emotionally Aroused on the Amount of Donation

	(1)	(2)	(3)	(4)	(5)	(6)
Emotion[1]	3.37 [0.202]	2.80 [0.254]	3.24 [0.178]	-	-	-
Happy vs Sad[2]	-	-	-	-1.30 [0.614]	-2.65 [0.304]	-3.02 [0.241]
Age	-	0.91 [0.000***]	1.07 [0.000***]	-	1.03 [0.000***]	1.08 [0.000***]
Male	-	-3.58 [0.077*]	-2.56 [0.210]	-	-2.81 [0.226]	-2.06 [0.393]
Consumption	-	-0.003 [0.021**]	-0.003 [0.025**]	-	-0.003 [0.087*]	-0.002 [0.159]
# of Econ classes	-	-	-0.53 [0.011***]	-	-	-0.41 [0.095*]
Extreme Sports[2]						
2 (one or two times)	-	-	2.25 [0.332]	-	-	1.88 [0.476]
3 (occasionally)	-	-	-1.99 [0.500]	-	-	-0.64 [0.840]
4 (often)	-	-	-3.03 [0.472]	-	-	-4.02 [0.487]
5 (every chance)	-	-	-15.26 [0.000***]	-	-	-16.64 [0.000***]
Constant	15.27 [0.000***]	1.58 [0.796]	-1.73 [0.793]	19.18 [0.000***]	2.41 [0.719]	1.33 [0.858]

Notes: [1] Emotion is a dummy variable which takes 0 (zero) if subject is in the Neutral treatment and takes 1 (one) if subject is either in the Happy treatment or in the Sad treatment. [2] with respect to 1 (never). p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

treatments, we employ a two-tailed Wilcoxon rank-sum test and one-tailed t-test with unequal variances. According to the Wilcoxon test, the distribution of the donation variable is statistically same in all treatments. However, t-test reports that the mean value of donation is significantly higher in the Sad treatment than in the Neutral treatment ($t = -1.41$; $p - value = 0.083$). This result supports Hypothesis 5.1 which states that sad people behave more altruistically than people in a neutral mood.

Table 30 shows the effect of sad and negative emotions on the amount donated. First three models include sad variable which takes 1 if the data comes from the Sad treatment and takes 0 (zero) if it comes from the Neutral treatment. Last three models include negative affect variable which is the average of the scores of following adjectives: sad, angry, fearful and anxious. When there is not any control variable in the regression, being sad does not lead to a change in the amount of donation ($p - value = 0.162$). In model 2, sad variable is still insignificant ($p - value = 0.119$) but age and consumption have a statistically significant effect on the amount of donation. Model 3 suggests that sad people donate 4.58 TL more than people in the neutral mood (p-value=0.081). This result is also in favour of Hypothesis 5.1 which states that sad people behave more altruistically than people in a neutral mood. In addition, model 3, 4 and 5 do not report any significant relation between negative affect and the amount of donation.

The same regression models as in Table 30 are replicated in **Table 31** but sad is replaced with happy variable and negative affect is replaced with positive affect variable. Neither of the models in Table 31 provide a significant effect of happy and positive emotions. Thus, Hypothesis 5.3 which states that happy people behave less altruistically than people in a neutral mood is not supported.

Finally, we examine the effect of being emotionally aroused and the difference between being happy and being sad on the amount of donation in **Table 32**.

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According the result of regression models, we could not find any significant difference between the amount donated by happy people and sad people. Therefore, Hypothesis 5.2 is not supported.

4.4.2 Comparison of Altruistic Preferences in Different Contexts

Apart from the Dictator Game that subjects donate a part or none of their endowments to a charitable organization, triadic design Trust Game and triadic design Ultimatum Game have also the Dictator Game component. Main difference between them is that in the control games, they play this game with a person as an opponent. Both the Transfer Control Game and the Offer Control Game represent altruistic preferences because first players are asked to send an amount to their partners while their partners do not have a chance to respond the first players' actions. The second column of **Table 16** represents the mean amount sent in the Transfer Control Game. According to the both Wilcoxon rank-sum test and t-test, subjects in the sad treatment transfer significantly more money to their partners than subjects in the Neutral treatment (Wilcoxon: $z = -1.99$; $p - value$=0.046, t-test: $t = -1.93$; $p - value = 0.030$). In addition, the second column of **Table 17** shows the mean amount offered in the Offer Control Game. Both Wilcoxon test and t-test reports that subjects in the Sad treatment offer significantly more money than subject in the Neutral treatment (Wilcoxon: $z = -3.67$; $p - value$=0.0002, t-test: $t = -4.36$; $p - value = 0.0001$) and in the Happy treatment (Wilcoxon: $z = 3.30$; $p - value$=0.001, t-test: $t = 2.66$; $p - value = 0.005$). All of our findings support Hypothesis 5.1 which states that sad people behave more altruistically than people in a neutral mood.

Table 33: Order of Games

	Order 1	Order 2
First Game	the Investment Game	the Ultimatum Game
Second Game	the Ultimatum Game	the Investment Game
Third Game	the Dictator Game	the Dictator Game
# of observations	46	30

Table 34: Comparison of Trust and Positive Reciprocity within Treatment - Triadic Experimental Design - *only First Round*

Treatment	Neutral Tr.	Happy Tr.	Sad Tr.
Wilcoxon test[1]			
Transfer vs Transfer Control	z=2.53 [0.011**]	z=1.71 [0.086*]	z=2.63 [0.008***]
Return vs Return Control	z=-1.72 [0.085*]	z=-0.42 [0.672]	z=-1.35 [0.176]
t-test[2]			
Transfer vs Transfer Control	t=4.21 [0.002***]	t=1.59 [0.066*]	t=3.13 [0.002***]
Return vs Return Control	t=-1.62 [0.075*]	t=-0.85 [0.204]	t=-0.53 [0.301]

Notes: [1] Denotes a two-tailed Wilcoxon matched-pairs signed-ranks test. [2] Denotes a one-tailed paired-samples t-test. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 35: Comparison of Trust and Positive Reciprocity Across Treatments - Triadic Experimental Design - *only First Round*

Treatment	Transfer Mean	Transfer Control Mean	Difference Transfer Mean[1]	Return Mean	Return Control Mean	Difference Return Mean[2]
Neutral Tr.	5	1.87	3.13	5.87	7.37	-1.5
	(0.982)	(0.833)	(0.742)	(1.288)	(1.64)	(0.926)
Happy Tr.	3.88	2.5	1.38	3.75	4.81	-1.06
	(0.694)	(0.790)	(0.865)	(0.772)	(1.77)	(1.25)
Sad Tr.	5.36	3	2.82	9.10	9.86	-0.77
	(0.737)	(0.505)	(0.755)	(2.08)	(1.89)	(1.46)
Wilcoxon test[3]						
Neutral vs Happy	z=1.11	z=-0.47	z=1.27	z=1.42	z=-1.58	z=-0.92
	[0.266]	[0.636]	[0.204]	[0.156]	[0.114]	[0.356]
Neutral vs Sad	z=0.05	z=-1.40	z=1.06	z=-0.19	z=-0.24	z=-0.24
	[0.962]	[0.160]	[0.287]	[0.850]	[0.813]	[0.806]
Sad vs Happy	z=1.27	z=1.34	z=0.36	z=1.68	z=2.07	z=-0.56
	[0.203]	[0.181]	[0.721]	[0.093*]	[0.039**]	[0.576]
t-test[4]						
Neutral vs Happy	t=0.935	t=-0.54	t=1.53	t=1.41	t=1.06	t=-0.28
	[0.182]	[0.296]	[0.069*]	[0.090*]	[0.150]	[0.390]
Neutral vs Sad	t=-0.30	t=-1.15	t=-0.72	t=-1.32	t=-0.99	t=-0.42
	[0.0.385]	[0.133]	[0.239]	[0.099*]	[0.164]	[0.338]
Sad vs Happy	t=1.46	t=0.53	t=0.86	t=2.41	t=1.95	t=0.151
	[0.075*]	[0.299]	[0.198]	[0.011**]	[0.030**]	[0.440]

Notes: [1] is the amount sent in the Investment Game minus the amount sent in the Transfer Control Game. [2] is the amount returned in the Investment Game minus the amount returned in the Return Control Game. [3] Denotes a two-tailed Wilcoxon Rank-sum test. [4] Denotes a one-tailed t-test with unequal variances. Standard errors in paranthesis. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

4.5 Order Effect Analysis

Since we induce incidental emotions on subjects, we are aware that their effects are temporary. A lot of evidence in emotion research has showed that emotions could lose their impacts on behaviour in later rounds (see, for example: Colosante, Marini & Russo, 2017). In order to see whether their effects disappear in a time, we also report the statistics for the subjects who play the given game in the first order separately. **Table 33** reports the orders in which subjects play the games.

Table 34 shows the existence of trust and positive reciprocity within treatments, but, it only analyses the data which comes from the subjects who play the Trust Game in the first round. In addition to previous results, it supports the existence of inequality-aversion in the Neutral treatment (Wilcoxon: $z = -1.72$; $p-value = 0.058$, t-test: $t = -1.62$; $p-value = 0.075$).

Table 35 compares the effect of emotions on trust and positive reciprocity. Different from our first analysis, we find an evidence to support Hypothesis 1.3 which states that happy people trust less than people in a neutral mood ($t = 1.53$; $p-value = 0.069$).

Table 36 shows the existence of fear of rejection and positive reciprocity within treatments, but, it only analyses the data which comes from the subjects who play the Ultimatum Game in the first round. **Table 37** compares the effect of emotions on fear of rejection and negative reciprocity. When we compare the result of Table 36 and Table 37 with Table 24 and Table 17, respectively, we could not find any extra significant effect other than we reported above.

Table 36: Comparison of Fear of Rejection and Negative Reciprocity within Treatment - Triadic Experimental Design - First Round

Treatment	Neutral Tr.	Happy Tr.	Sad Tr.
Wilcoxon test[1]			
Offer vs Offer Control	z=2.36	z=2.52	z=1.62
	[0.018**]	[0.012**]	[0.105]
Offer vs PC Offer	z=2.66	z=2.53	z=3.03
	[0.008***]	[0.011**]	[0.002***]
Accept vs Accept Control	z=1.73	z=1.89	z=1.73
	[0.083*]	[0.059*]	[0.083*]
t-test[2]			
Offer vs Offer Control	t=3.44	t=4.35	t=1.71
	[0.004***]	[0.002***]	[0.057*]
Offer vs PC Offer	t=4.39	t=6.79	t=7.53
	[0.001***]	[0.0001***]	[0.0000***]
Accept vs Accept Control	t=1.96	t=2.38	t=1.92
	[0.041**]	[0.025**]	[0.041**]

Notes: [1] Denotes a two-tailed Wilcoxon matched-pairs signed-ranks test. [2] Denotes a one-tailed paired-samples t-test. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

Table 37: Comparison of Fear of Rejection and Inequality Aversion Across Treatments- Triadic Experimental Design - First Round

Treatment	Offer Mean	Offer Control Mean	Difference Offer Mean[1]	Accept Mean	PC Offer Mean	Accept Control Mean
Neutral Tr.	9.3	4.1	5.2	0.6	4.9	0.3
	(0.77)	(1.59)	(1.51)	(0.231)	(0.43)	(0.15)
Happy Tr.	10.5	4.25	6.25	0.75	4.25	0.13
	(0.85)	(1.50)	(1.44)	(0.164)	(0.53)	(0.125)
Sad Tr.	11.17	9	2.17	0.67	2.92	0.42
	(1.11)	(1.19)	(1.27)	(0.142)	(0.53)	(0.15)
Wilcoxon test[2]						
Neutral vs Happy	z=-1.42	z=-0.23	z=-0.58	z=-0.65	z=1.25	z=0.862
	[0.156]	[0.821]	[0.562]	[0.515]	[0.212]	[0.389]
Neutral vs Sad	z=-1.72	z=-2.26	z=-0.316	z=-0.553	z=2.48	z=1.47
	[0.086*]	[0.024**]	[0.141]	[0.752]	[0.013**]	[0.580]
Sad vs Happy	z=0.53	z=2.32	z=-2.22	z=-0.39	z=-1.50	z=1.36
	[0.597]	[0.020**]	[0.027**]	[0.698]	[0.135]	[0.174]
t-test[3]						
Neutral vs Happy	t=-1.05	t=-0.07	t=-0.50	t=-0.65	t=1.92	t=0.89
	[0.155]	[0.473]	[0.310]	[0.262]	[0.031**]	[0.193]
Neutral vs Sad	t=-1.38	t=-2.46	t=1.54	t=-0.31	t=2.48	t=-0.55
	[0.092*]	[0.012**]	[0.070*]	[0.381]	[0.008***]	[0.295]
Sad vs Happy	t=0.48	t=2.48	t=-2.13	t=-0.38	t=-0.24	t=1.50
	[0.320]	[0.012**]	[0.024**]	[0.353]	[0.404]	[0.074*]

Notes: [1] is the amount offered in the Ultimatum Game minus the amount offered in the Offer Control Game. [2] Denotes a two-tailed Wilcoxon Rank-sum test. [3] Denotes a one-tailed t-test with unequal variances. Standard errors in parenthesis. p-values in brackets. * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

5 Conclusion

The self-interest hypothesis assumes that individuals care only their own payoffs. Their choices do not depend on other people's utility and the context in which they decide. However, the evidence presented in this paper also supports the existing literature on the existence of other-regarding preferences. Individuals trust in positive reciprocity, fear of negative reciprocity, respond the kind behavior with kind actions and punish the bad behavior even they all result in lower payoff for theirselves. Our main result suggests that emotions also result in a change in individuals' behaviour and it provides a useful tool for predicting the actions of agents. Social preferences are not stable with respect to emotions. Therefore, a simple perturbation of the environment would affect people's preferences. Specifically, we supported Hypothesis 3.1 and Hypothesis 3.2 which state that sad people are less motivated by the fear of rejection than happy people and than people in a neutral mood. We also supported Hypothesis 5.1 which states that sad people behave more altruistically than people in a neutral mood. A plausible explanation for these might be that good behaviour help sad people to recover their mood (Cialdini & Kenrick, 1976). Also, we find an evidence to support that happy people trust less than people in a neutral mood when we analyse only the data which comes from subjects who play the Trust Game before the others.

Since we put experimental limitations on the data, we also estimated Tobit models to make sure that non-linearity does not change our results. The results are similar to the main results we report above. Our research project provides an important tool for modeling and predicting the actions of economic agents. Since we show in Section 4 that different emotions have distinct effects on social preferences, it provides a systematic relation between emotions and decision making.

Appendix A

Emotional Arousal Survey

Film Clips 1

Please answer following questions according to the First Movie Clip you watched.

Did you watch/heard this movie before?

    Yes / No

Please rate the following statement: While I was watching the film, (1)"I felt no emotions at all" to (7)"I felt very intense emotions".

    1 / 2 / 3 / 4 / 5 / 6 / 7

For each group of adjectives below, please rate the extent to which you felt each state as you were watching the film clip. (1"not at all", 7"very intense")

    Interested, concentrated, alert _____

    Joyful, happy, amused _____

    Sad, down-hearted, blue _____

    Angry,irritated, mad _____

    Fearful, scared, afraid _____

Anxious, tense, nervous _____

Disgusted, turned off, repulsed _____

Disdainful, scornful, contemptuous _____

Suprised, amazed, astonished _____

Warm hearted, gleeful, elated _____

Film Clips 2

Please answer following questions according to the Second Movie Clip you watched.

Did you watch/heard this movie before?

Yes / No

Please rate the following statement: While I was watching the film, (1)"I felt no emotions at all" to (7)"I felt very intense emotions".

1 / 2 / 3 / 4 / 5 / 6 / 7

For each group of adjectives below, please rate the extent to which you felt each state as you were watching the film clip. (1"not at all", 7"very intense")

Interested, concentrated, alert _____

Joyful, happy, amused _____

Sad, down-hearted, blue _____

Angry,irritated, mad _____

Fearful, scared, afraid _____

Anxious, tense, nervous _____

Disgusted, turned off, repulsed _____

Disdainful, scornful, contemptuous _____

Suprised, amazed, astonished _____

Warm hearted, gleeful, elated _____

Film Clips 3

Please answer following questions according to Last Movie Clip you watched.

Did you watch/heard this movie before?

   Yes / No

Please rate the following statement: While I was watching the film, (1)"I felt no emotions at all" to (7)"I felt very intense emotions".

   1 / 2 / 3 / 4 / 5 / 6 / 7

For each group of adjectives below, please rate the extent to which you felt each state as you were watching the film clip. (1"not at all", 7"very intense")

Interested, concentrated, alert _____

Joyful, happy, amused _____

Sad, down-hearted, blue _____

Angry,irritated, mad _____

Fearful, scared, afraid _____

Anxious, tense, nervous _____

Disgusted, turned off, repulsed _____

Disdainful, scornful, contemptuous _____

Surprised, amazed, astonished _____

Warm hearted, gleeful, elated _____

Is there any scene that offends you? If yes, belong to which film? Explain why does it offend you.

No / Film 1 /Film 2 / Film 3 _____

General Questionnaire

Thank you very much for participating in our decision experiment. We would like to ask you a few questions. Your privacy is protected because your name will not appear on this questionnaire or on your decision tables. Your personal information is not shared with any other party. It is confidential. Please answer the questions below carefully.

1. What is your gender?

Male / Female

2. What is your age?

3. Are you now employed full-time, part-time, not employed, or retired?

Full time / Part-time / Not employed / Retired

4. Approximately, how much money you consume in a month?

5. Which best describes where you currently live?

Dorm / Off-campus housing / Living at home with family

6. What is your marital status?

Single / In a relationship / Married / Separated / Divorced / Widowed

7. How would you describe your political views?

Very conservative / Conservative / Moderate / Liberal / very liberal

8. How often do you participate in extreme sports? [Extreme sports include bungee-jumping, para-gliding, parachute jumping, gliding, rafting, diving and other dangerous sports.]

Never / A few times / Occasionally / Often / Every chance I get

9. Class status:

English Preparation / Freshman / Sophomore / Junior / Senior / Graduate Stu-

dent

10. What is your intended or declared area of specialization / major?

11. Your current GPA:

12. How many "Econ" coded courses have you taken (include currently enrolled)?

Appendix B

Talimatname

Bugünkü ekonomi deneyimize hoşgeldiniz. Bu çalışmada herhangi bir aldatmaca veya yanıltmaca bulunmamaktadır. Deneye katılan herkes 5 lira kazanacaktır. Ayrıca deney boyunca verdiğiniz kararlara bağlı olarak deneyin sonucunda bir miktar daha para kazanabilirsiniz. Şimdi deney başlıyor. Lütfen şu andan itibaren birbirinizle konuşmayınız, cep telefonlarını kullanmayınız ve bilgisayarlardan açılı olan ekran dışına çıkmayınız. Kuralların herhangi birine uyulmaması durumunda deney sonucunda kazanacağınız paradan men edileceksiniz. Çalışmanın birinci kısmında, sizlere 3'er dakikalık 3 farklı filmden alınmış film kesitleri izleteceğiz. İkinci kısımda ise sizden 9 farklı soruya yanıt vermenizi isteyeceğiz. Bu soruların doğru veya yanlış cevabı yoktur. Sorularla ilgili açıklamayı bilgisayar ekranında göreceksiniz. Lütfen verilen açıklamaları dikkatlice okuyun. Deneyin sonunda bu sorulardan bir tanesi rastgele seçilip sizin ve eğer var ise o soruda eşleştiğiniz kişinin kazanacağı paranın miktarını belirleyecektir. Her sorunun seçilme olasılığı aynıdır. Bu yüzden lütfen kararlarınızı dikkatli veriniz. Örneğin: Soru size X lirayı eşleştiğiniz kişi ve kendi aranızda paylaştırmanızı istiyor. Siz y lirasını karşıya gönderdiniz. Eğer bu task rastgele ödeme için seçilen task olur ise, deneyin sonu-

cunda siz X-y lira kazanacaksınız. Eşleştiğiniz kişi ise y lira kazanacak. Yani sizin verdiğiniz karar hem sizin hem de eşleştiğiniz kişinin kazanacağı miktarı etkileyecektir. Her soruda başka bir kişi işe eşleşeceksiniz. Bir kere eşleştiğiniz kişi ile bir daha eşleşmeniz mümkün değildir. Ne siz eşleştiğiniz kişinin kim olduğunu bilebilirsiniz, ne de eşleştiğiniz kişi sizin kim olduğunuzu bilebilir. Deney boyunca verdiğiniz cevaplar anonim olarak kaydedilecektir ve asla sizin kişisel bilgileriniz ile eşleştirilmeyecektir. Size verilen kullanıcı tanıtım kodlarıyla tanınacaksınız. Ödemeler deneyin sonunda özel olarak yapılacaktır. Eğer deney sırasında herhangi bir sorunuz olur ise, sadece elinizi kaldırınız. Bir kişi size yardımcı olmak için gelecektir.

Gönüllü Katılım Formu

Bu araştırma Sabancı Üniversitesi, SSBF Fakültesi yüksek lisans öğrencisi Ceren Bengü Çıbık ve öğretim üyelerinden Özgür Kıbrıs sorumluluğunda karar verme süreci ile ilgili bilgi toplamayı amaçlar. Bu çalışmada herhangi bir yanıltma veya aldatmaca bulunmamaktadır. Araştırmaya katılım tamamıyla gönüllük esasına dayanır. Bu çalışmaya katılan herkes otomatikman 5 lira kazanacaktır. Buna ek olarak bu çalışma sonucunda verdiğiniz kararlara bağlı olarak da bir miktar para kazanabilirsiniz. Katılımcının cevapları gizli tutulacak ve sadece araştırmacı tarafından değerlendirilecektir. Katılımcının çalışma sırasında verdiği herhangi bir cevap kendi kimlik bilgileriyle eşleştirilmeyecektir. Tüm soruların yanıtlanması yaklaşık olarak 30-40 dakika sürmektedir. Çalışmaya katılımınızın çalışma kapsamında incelenen konuya katkı sağlayacağı düşünülmektedir.Sonuçlarının yalnız bilimsel amaçlarla kullanılacak olan bu çalışmaya katılımınız tamamen sizin isteğinize bağlıdır. Genel olarak çalışma kişisel rahatsızlık verecek soruları içermemektedir. Ancak, sorulan sorulardan ya da herhangi başka bir nedenden ötürü

rahatsız olunması durumunda katılımcı görüşmeyi istediği zaman yarıda bırakıp çıkmakta serbesttir. Sizden herhangi bir kimlik bilgisi alınmayacak ve vereceğiniz bilgiler araştırmacının bilgisayarında güvenli bir şekilde saklanıp tamamen gizli tutulacaktır. Çalışmadan elde edilen veriler grup olarak değerlendirilecektir. Bu bilgiler sadece öğrencinin ve öğretim üyesinin araştırma projesinde ve yapacağı bilimsel yayınlarda kullanılacaktır. Çalışma başladığında sizlere bir takım filmlerden kısa kesitler izleteceğiz. Bu filmler cinsel veya şiddet içerikli olabilir. Herhangi bir nedenden dolayı rahatsızlık hissederseniz çalışmadan istediğiniz anda ve bir neden göstermeksizin ayrılabilirsiniz. Çalışma boyunca cevaplayacağınız sorular için doğru ya da yanlış cevap yoktur. Araştırma sonuçlarının sağlıklı olması için soruları eksiksiz ve içtenlikle, sizi tam olarak yansıtacak şekilde cevaplamanız çok önemlidir. Katkılarınızdan dolayı teşekkür ederim. Çalışma ile ilgili herhangi bir sorunuz olursa veya çalışmanın sonuçlarını öğrenmek isterseniz, Ceren Bengü Çıbık'a mail atabilirsiniz.(e-posta: cbengu@sabanciuniv.edu) Teşekkür ederiz.

Araştırma ile ilgili yukarıda belirtilen hususları okudum ve anladım. Araştırmaya yönelik tüm sorularım araştırmacı tarafından cevaplandı ve bana bu formun imzalı bir kopyası verildi. Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip bırakabileceğimi biliyorum. Verdiğim bilgilerin araştırmacının master tez çalışmasında ve de bilimsel amaçlı yayınlarında kullanmasını kabul ediyorum.

KATILIMCI :

ARAŞTIRMACI : CEREN BENGÜ ÇIBIK

Son Bilgilendirme Formu

Bugünkü çalışmamıza katıldığınız için teşekkür ederiz. Bu çalışmanın amacı farklı duyguların karar verme sürecindeki etkisini belirleyebilmektir. Günlük yaşan-

tılarımıza baktığımızda bireylerin sadece kendi materyal çıkarlarını değil ayrıca bir grupta veya toplumda bulunan diğer kişilerin materyal durumlarını önemsediklerini ve karar verme sürecinde de kıskançlık, sadakat, eşitlik gibi duyguları dikkate aldıklarını görebiliriz. Mutlu olan bir insan ile kızgın veya üzgün olan bir insanın karar verme süreçlerinin birbiriyle aynı olmadıklarını tahmin edebiliriz. Fakat bazı zamanlar her ne kadar belli duyguların etkisinde olup bu duygularımızın kontrolünü sağlamaya çalışsak da bu duygularımızın kararlarımızı etkilemesini önleyemeyebiliriz. Bunun başlıca nedeni duyguların karar verme sürecindeki etkilerini tam olarak saptamanın zor olması olabilir. Biz bu çalışmada duyguların karar verme sürecindeki etkilerini ekonomik olarak modellemek üzere yola çıktık. Bizim bugünkü deneyimizde sizler mutlu / üzgün veya nötr duygulardan oluşan 3 tane filmden parçalar izlediniz. Biz hepinize sosyal tercihlerle ilgili bazı sorular sorduk. Bu çalışmadaki amacımız sizlerin verdiği cevaplara göre mutlu olmanın, üzgün olmanın veya nötr duygu durumunda olmanın tanımadığınız bir kişiye iyilik yapmak, güven duymak ve o kişiyi ödüllendirmek / cezalandırmak gibi davranışlar üzerindeki etkisini incelemektir. Çalışmanın sonucunda elde etmeyi beklediğimiz sonuçlar şu şekildedir. Öncelikle duygu durumu nötr olan kişiler ile herhangi bir duygunun etkisinde olan kişilerin davranışlarının farklılık göstermesini bekliyoruz. Özellikle mutlu olan kişiler nötr duygu durumunda olan kişilere oranla daha çok sosyal olarak sorumlu davranışlar sergileyeceklerdir. Üzgün duygu durumunda olan kişiler ise nötr duygu durumda olan kişilere oranla kendilerine yapılan iyi bir hareketi daha çok ödüllendirmelerini ve kendilerine gösterilen kötü bir davranışı ise daha sert cezalandırmalarını bekliyoruz.

Bugünkü seansımızda topladığımız tüm veriler çalışmanın başında da belirtildiği gibi gizli ve güvende tutulacaktır. Sizin verdiğiniz bireysel cevaplarınızı kişilik bilgilerinizle eşleştirmemiz mümkün değildir. Ayrıca biz kişilerin bireysel cevaplarıyla değil, tüm cevaplar birleştirildiğindeki genel davranış şekli ile ilgilen-

mekteyiz. Çalışmamız bu deney seansından sonra tekrarlanacağı için verilerin gerçeği yansıttığından emin olabilmek adına çalışmanın amacını ve işleyişini lütfen çalışmaya katılması muhtemel olan üçüncü kişiler ile paylaşmayınız. Eğer bir sorunuz, endişeniz var ise veya çalışmanın sonuçlarıyla ilgili daha fazla bilgi almak istiyorsanız araştırmacı Ceren Bengü Çıbık ile cbengu@sabanciuniv.edu e-posta adresinden iletişime geçebilirsiniz. Yorum ve görüşlerinizi de duymaktan mutluluk duyarız.

Bu tarzda bir ekonomik çalışma Sabancı Üniversitesi'nde ilk defa yapıldığı için sizlere bu çalışmada gösterdiğiniz anlayış ve çabadan dolayı bir kere daha teşekkür ederiz.

Araştırma ile ilgili yukarıda belirtilen hususları okudum ve anladım. Araştırmaya yönelik tüm sorularım araştırmacı tarafından cevaplandı ve bana bu formun imzalı bir kopyası verildi. Bu çalışmaya tamamen gönüllü olarak katıldım ve istediğim zaman yarıda kesip bırakabileceğimi biliyordum. Verdiğim bilgilerin öğretim üyesinin master tez çalışmasında ve de bilimsel amaçlı yayınlarında kullanmasını kabul ediyorum.

KATILIMCI :
ARAŞTIRMACI : CEREN BENGÜ ÇIBIK

Appendix C

Z-TREE SCREENSHOTS

Figure 7: The Trust Game - 1

Siz bu oyunda, **ilk Hamleyi yapacak olan** oyuncu olarak rastgele atandınız.

Sınıftaki bir kişi ile rastgele eşleştirildiniz. Eşleştirildiğiniz kişi sizin kim olduğunuzu bilemez. Siz de onun kim olduğunu bilemezsiniz.

Siz ve bu oyundaki eşiniz **10'ar lira** ile oyuna başlıyorsunuz.

Birinci oyuncu olarak 10 liranızın **bir kısmını** ikinci oyuncuya verebilirsiniz. Verebileceğiniz bu miktar minimum 0 , maximum 10 liradır . Verdiğiniz bu miktar **3 ile çarpılıp** ikinci oyuncuya geçecektir.

İkinci oyuncu sizin transfer ettiğiniz miktarı gördükten sonra kendisi de sizin gönderdiğiniz paradan **geri size transfer yapabilir** . Bu miktar minimum 0, maximum ise sizin gönderdiğiniz paranın 3 katı olabilir.

Lütfen bu oyunda eşleştiğiniz oyuncuya transfer etmek istediğiniz miktarı yazınız.

Transfer etmek istediğiniz miktar: 3

Onayla

Siz bu oyunda, **İkinci Hamleyi yapacak olan** oyuncu olarak rastgele atandınız.

Sınıftaki bir kişi ile rastgele eşleştirildiniz. Eşleştirildiğiniz kişi sizin kim olduğunuzu bilemez. Siz de onun kim olduğunu bilemezsiniz.

Siz ve bu oyundaki eşiniz **10'ar lira** ile oyuna başlıyorsunuz.

Birinci oyuncu 10 lirasının **bir kısmını** size verebilir. Verebileceği miktar minimum 0 , maximum 10 liradır. Vereceği bu miktar **3 ile çarpılıp** sizin paranıza eklenecektir.

Siz birinci oyuncunun transfer ettiği miktarı gördükten sonra birinci oyuncuya bir miktarını **geri transfer edebilirsiniz** . Bu miktar minimum 0, maximum ise birinci oyuncunun size gönderdiği miktarın 3 katı ile birlikte toplam paranız kadar olabilir.

Bu oyundaki eşiniz size **3 lira** gönderdi.

Bu miktar 3 ile çarpılıp, sizin paranıza eklendi.

Birinci oyuncunun gönderdiği para ile birlikte toplam paranız **19 lira**

Birinci oyuncunun size para transfer ettikten sonra kalan parası **7 lira**

Lütfen bu oyunda eşleştiğiniz oyuncuya geri transfer etmek istediğiniz miktarı yazınız.

Transfer etmek istediğiniz miktar: 5

Onayla

Figure 8: The Trust Game - 2

Siz ikinci oyuncuya **3 lira** transfer ettiniz. Transfer ettiğiniz para 3 ile çarpılıp, ikinci oyuncunun parasına eklendi.

Bu oyundaki eşiniz size **9 liradan 5 lira** geri transfer etti.

Kazancınız = **12 lira** .

Tamam

İlk hamleyi yapan oyuncu size **3 lira** transfer etti. Bu para 3 ile çarpılıp sizin hesabınıza eklendi.

Siz bu oyundaki eşinize **9 liradan 5 lira** geri transfer ettiniz.

Kazancınız = **14 lira** .

Tamam

98

Figure 9: The Transfer Control Game

Siz **İlk hamleyi yapacak** oyuncusunuz.

Bu oyuna siz **19 lira** ile ve bu oyundaki eşiniz **7 lira** ile başlıyorsunuz.

Siz 19 liranızın **bir kısmını** diğer oyuncuya verebilirsiniz.

Diğer oyuncunun sizin kararınızı veto etme hakkı yoktur .

Verebileceğiniz bu miktar minimum 0 , maximum 19 liradır.

Lütfen bu oyunda eşleştiğiniz oyuncuya transfer etmek istediğiniz miktarı yazınız.

Transfer etmek istediğiniz miktar   0

Tamam

Siz bu oyundaki eşinize **0 lira** gönderdiniz.

Bu miktar 3 ile çarpılıp, diğer oyuncuya transfer edildi.

Sizin Kazancınız = **10 lira** .

Eşleştiğiniz kişinin Kazancı = **10 lira** .

Tamam

Figure 10: The Return Control Game

Siz **İlk hamleyi yapacak** oyuncusunuz.

Bu oyuna siz **19 lira** ile ve bu oyundaki eşiniz **7 lira** ile başlıyorsunuz.

Siz 19 liranızın **bir kısmını** diğer oyuncuya verebilirsiniz.

Diğer oyuncunun sizin kararınızı veto etme hakkı yoktur .

Verebileceğiniz bu miktar minimum 0 , maximum 19 liradır.

Lütfen bu oyunda eşleştiğiniz oyuncuya transfer etmek istediğiniz miktarı yazınız.

Transfer etmek istediğiniz miktar   5

Tamam

Siz bu oyundaki eşinize **5 lira** gönderdiniz.

Sizin kazancınız = **14 lira** .

Eşleştiğiniz kişinin kazancı = **12 lira** .

Tamam

Figure 11: The Ultimatum Game - 1

Siz bu oyunda **İlk Hamleyi yapacak olan** oyuncu olarak rastgele atandınız.

Sınıftaki bir kişi ile rastgele eşleştirildiniz. Eşleştirildiğiniz kişi sizin kim olduğunuzu bilemez. Siz de onun kim olduğunu bilemezsiniz.

Birinci oyuncu olarak **24 lirayı** kendiniz ve bu oyunda eşleştiğiniz kişi arasında nasıl paylaştıracağınıza karar vermeniz gerekmektedir.

İkinci oyuncu sizin paylaştırma kararınızı gördükten sonra , bu paylaşımı kabul edebilir veya reddedebilir.

Eğer kabul ederse, birinci oyuncunun verdiği paylaşım kararı sizlerin bu periyodun sonundaki materyal kazancınız olacaktır. Eğer reddederse, iki oyuncu da bu periyottan 0 (sıfır) lira alacaktır.

Lütfen bu oyunda eşleştiğiniz oyuncuya paylaştırmak istediğiniz miktarı yazınız ve Onayla tuşuna basınız.

Eşleştiğiniz oyuncuya paylaştırmak istediğiniz miktar | 10 |

Onayla

Siz bu oyunda, **İkinci Hamleyi yapacak olan** oyuncu olarak rastgele atandınız.

Sınıftaki bir kişi ile ratgele eşleştirildiniz. Eşleştirildiğiniz kişi sizin kim olduğunuzu bilemez. Siz de onun kim olduğunu bilemezsiniz.

Birinci oyuncunun **24 lirayı** kendisi ve sizin arasında nasıl paylaştıracağına karar vermesi gerekmektedir.

İkinci oyuncu olarak siz birinci oyuncunun paylaştırma kararını gördükten sonra , bu paylaşımı kabul edebilir veya reddedebilirsiniz.

Eğer kabul ederseniz, birinci oyuncunun verdiği paylaşım kararı sizlerin bu periyodun sonundaki materyal kazancınız olacaktır. Eğer reddederseniz, iki oyuncu da bu periyottan 0(sıfır) lira alacaktır.

Bu oyundaki eşiniz, 24 lirayı size 10 lira ve kendisine 14 lira olacak şekilde paylaştırdı.

Bu teklifi kabul etmek mi istiyorsunuz, reddetmek mi istiyorsunuz?   ⊙ Kabul et
⊙ Reddet

Onayla

Figure 12: The Ultimatum Game - 2

Periyot

1   1

Sizin teklifiniz kendiniz için 14 lira ve eşleştiğiniz kişi için 10 lira idi.

İkinci oyuncu bu teklifi kabul etti.

Kazancınız = 14 lira

Devam et

Periyot

1   1

Birinci oyuncunun teklifi sizin için 10 lira ve kendisi için 14 lira idi.

Siz bu teklifi kabul ettiniz.

Kazancınız = 10 lira

Devam et

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Figure 13: The Offer Control Game

Siz **İlk hamleyi yapacak** oyuncusunuz.

Birinci oyuncu olarak **24 lirayı** kendiniz ve bu oyunda eşleştiğiniz kişi arasında nasıl paylaştıracağınıza karar vermeniz gerekmektedir.

Bu sefer, diğer oyuncu sizin kararınızı **kabul veya reddedemez** . Yani sizin kararınızı veto etme hakkı yoktur.

Paylaşım kararınız direkt olarak sizin ve bu oyundaki eşleştiğiniz kişinin materyel kazançları olacaktır.

Lütfen bu oyunda eşleştiğiniz oyuncuya paylaştırmak istediğiniz miktarı yazınız.

Eşleştiğiniz oyuncuya paylaştırmak istediğiniz miktar: | 0 |

[Onayla]

Sizin teklifiniz kendiniz için 24 lira ve eşleştiğiniz kişi için 0 lira idi.

Kazancınız = 24 lira

[Tamam]

Figure 14: The Accept Control Game

1   1

Siz bu oyunda, **İkinci Hamleyi yapacak olan** oyuncu olarak rastgele atandınız.

Biraz önce oynadığınız oyunun aynısını oynacaksınız **fakat** bu sefer 24 liranın nasıl paylaşılacağına **birinci oyuncu değil bilgisayar** karar verecek.

İkinci oyuncu olarak siz **bilgisayarın paylaştırma kararını** gördükten sonra, bu paylaşımı kabul edebilir veya reddedebilirsiniz.

Bilgisayar rastgele olarak 0 ile 24 arasında size paylaştırdığı miktarı seçecektir. Her sayının seçilme olasılığı birbirine eşittir.

Eğer kabul ederseniz, bilgisayarın rastgele olarak verdiği paylaşım kararı sizlerin bu periyodun sonundaki materyal kazancınız olacaktır. Eğer reddederseniz, iki oyuncu da bu periyottan 0(sıfır) lira alacaktır.

Bilgisayarın sizin için teklifi: 8

Bilgisayarın rastgele olarak size paylaştırdığı miktar 8 lira ve bu oyundaki eşleştirildiğiniz kişiye paylaştırdığı miktar 16 lira.

Bu teklifi kabul etmek mi istiyorsunuz, reddetmek mi istiyorsunuz?   ⊙ Kabul et
                                                                     ○ Reddet

[Onayla]

1   1

Bilgisayarın rastgele olan paylaşım teklifi sizin için 8 lira ve eşleştiğiniz oyuncu için 16 lira idi.

Siz bu teklifi kabul ettiniz.

Kazancınız = 8 lira

[Tamam]

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Figure 15: The Dictator Game

1   1

Bu periyotta sizler bir hayır kuruluşu olan LÖSEV'e bağış yapabilirsiniz. LÖSEV, kan kanseri olan çocukların tedavi süreçlerine yardımcı olan bir dernektir.

Bu periyotta size verilen para 30 liradır.

Yapabileceğiniz bağış en az 0 (sıfır) lira en fazla 30 liradır.

Lütfen LÖSEV'e bağışlamak istediğiniz miktarı yazıp, Onayla tuşuna basınız.

Bağışlamak istediğiniz miktar   2

Onayla

Periyot

1   1

Bağışladığınız miktar 2.0 lira

Bağış yaptıktan sonra elinizde kalan para 28.0 lira

Tamam

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