European Journal of Scientific Research
ISSN 1450-216X / 1450-202X Vol. 151 No 2 December, 2018, pp. 241-258
http://www. europeanjournalofscientificresearch.com

The Influence of the Leader in the Behavior of the Group

Mariana Pereira Bonfim
Accounting Department, Fluminense Federal University
Desembargador Ellis Hermydio Figueira Street, Volta Redonda
Rio de Janeiro, 27213-145, Brazil
E-mail: marianapbonfim@gmail.com

César Augusto Tibúrcio Silva
Accounting and Actuarial Department, University of Brasília,
University Campus Darcy Ribeiro, Brasília, 70910-900, Brazil
E-mail: cesaraugustotiburciosilva@gmail.com

Abstract

Knowing that leadership has a fundamental role of influence in its leaders, the objective of this research was to analyze if the existence of an individual in a situation of superiority would influence the dishonest behavior of a group. For this, an experiment was carried out with 180 students, in November 2017 at the University of Brasília, based on the works of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017). In the experiment, the participants should inform the number shown by the data, and their remuneration was tied to the number informed and not to the number seen, making dishonesty possible. First, the respondents made decisions collectively, and second, under the influence of a leader, whose pay was doubled before the others. The results found that individuals were more dishonest when they were under the influence of a leader (44%) than when they were not (36%). Although the research has some limitations, such as the leader's random choice or even the absence of a coercive mechanism on the other participants, it is proposed to be an initial step in the search for understanding the role of the leader in the dishonest behavior of individuals.

Keywords: Dishonesty, Experiment, Behavioral Finance, Leader.

1. Introduction

The study about leadership in business has become a challenge to be addressed in order to understand the behavioral phenomena that occur in an organization. Regarding leadership, in the areas of administration, sociology, psychology and anthropology, several researches have been conducted in order to understand its effects on organizations (Katz & Kahn, 1978; Yukl, 2002; Bass, 1990; Siqueira & Amaral, 2006; Lucas, Diener & Suh, 1996; Sparrowe & Liden, 1997; Mueller & Lee, 2002).

The concept of leader can be understood as the person who has great responsibility, able to solve problems and balance the different personalities that reside in a work environment, through their experience and knowledge (Cooke, 2000). Because of this connection between leader and led, the psychological well-being of employees is associated with the management model adopted by the organization, that is, the company's human capital is under constant influence of its leaders, whether these are positive or negative influences.

Yukl (2002) understands leadership as a process of mutual influence between leader and led, the actions taken by both the leader and the ones led are the basis of a mutual relationship in which both are influenced. Being the people responsible for deciding, creating and innovating within a company, the continuous investment in the human capital of organizations, in relationships and interpersonal exchanges is of vital importance.

For a company to be considered ethical, it is necessary for its employees to perform ethical actions. If the leader is able to influence his/her employees, it is imperative, for a company that seeks transparency in its processes, to have ethical leaders (Sá, 2001).

Recently, a number of corporate corruption scandals have become prominent, especially through unethical practices taken by top corporate executives. Internationally, cases such as Enron, WorldCom, Volkswagen, Deutsche Bank and WalMart have an impact not only on the industry but also on the local economy. The Brazilian case involving large companies like Petrobras, Furnas and companies in the construction industry (e.g. OAS, Odebrecht, Queiroz Galvão) not only damage the advancing in several national projects, especially connected to infrastructure, but also affects the politics and unemployment in the country. All these corruption scandals have in common the fact that these dishonest attitudes were not committed by a single individual but by a group of members of the company, in which, in many cases, were the ones leading.

In the international literature, there are studies on dishonesty committed by groups of people (Charness & Sutter, 2012; Sutter, 2009; Kugler, Bornstein, Kocher & Sutter, 2007; Fischbacher & Föllmi-Heusi, 2013; Kocher, Schudy & Spantig, 2017), but none that puts the leader on the spotlight.

Against the recent scandals of corruption involving companies, in which are involved several people in the company, including the leaders, and knowing that the leadership has a key role of influence in their team, the following research problem arose: What is the influence of the leader about the dishonest behavior of the groups?

Thereby, the purpose of this research is to analyze whether the existence of an individual in a position of superiority (e.g., boss or high executive) would influence the dishonest behavior of a group. To achieve this objective, the methodology of die-rolling, suggested in the studies of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017) will be used and adapted. In previous work on dishonesty, none of them tested the leader's element and his possible influence on the decision of the others, which makes this research substantially different from the others.

This paper is structured as follows: the next section presents the theoretical foundation, regarding the concepts about the Theory of Marginal Utility, Prospect Theory and organizational financial fraud; then the research methodology, the details of the experiment and its stages, as well as the sample composition; then the results of the study are presented; and, finally, the conclusions.

2. Literature Review

In the XVIII and XIX centuries, scholars emerged with the desire to research the effect of psychology on finance, but it was only in the XX century, on the occasion of the Neoclassical Revolution, that it took place. Thereby, there are three main Theories of Finance: a) The Traditional Theory of Finance (TTF) which consists of the understanding that the market is irrational and the efficient investor is the one with speculative vision and invests in assets that provide above average returns; b) Modern Finance Theory (MTF), also known as Neoclassical, has the assumption that the man is rational, uses quantitative tools to prove his studies and relies heavily on the Theory of Marginal Utility and The Theory of Efficient Markets; and, at last, c) Behavioral Finance Theory (BFT) based on the idea that man is not completely rational, instead, much of his decisions are irrationally made, influenced by emotions and cognitive errors.

As stated, MTF has as its basic assumption the view that man decides rationally (Von Neumann & Morgenstern, 1944) and his studies are based on the Theory of Marginal Utility. According to this theory, the value of an item is not determined by a price, but by the its utility, and this can be different

for individuals. Moreover, based on this theory, the agent makes the risky decisions through a rational analysis, being risk averse and seeking to maximize the expected utility (Bernoulli, 1954). In this way, the investor will always make rational decisions aimed at maximizing the usefulness of the item.

However, even the classical scholars of the Modern Theory of Finance were already challenging the full rationality advocated by the model (Von Neumann & Morgenstern, 1944; Damodaran, 2006), noting the frequency with which speculative bubbles have appeared in the market and the resulting collapses.Therefore, the authors suggest the existence of other phenomena in the markets that cannot be explained by the premise of rationality (Ferreira, 2016).

Simon (1957) was one of the pioneers in the study of limited rationality: he proposed the idea of replacing the maximization of utility expected by a truer view of human capacity, considering the complexity of decisions made by individuals and companies. Based on these assumptions, Kahneman and Tversky (1979) developed the Prospect Theory, being a landmark for the Economy and for the Behavioral Finances.

In Prospect Theory, when an individual needs to make a decision that involves risk, it goes through two phases of thinking: editing (in which information is deciphered and simplified) and evaluation (in which the alternatives are compared and the one with larger value is chosen). However, the decision-making process is influenced by the preferences of the individual, which causes anomalies in their decisions (Kahnemann & Tversky, 1979). While the expected results in the Theory of Marginal Utility can be weighted by their probability of occurrence, Prospect Theory reveals that individual preferences violate this axiom and this result can be altered by a series of anomalies.

Kahneman and Tversky (1979) then carried out a study presenting two problems in which situations presented similar solutions by the theory developed by Bernoulli (1954), since the "expected value" in both cases was equivalent. However, the authors realized that people in general are averse to risk in the case of gains and bet on the risk in case of losses. That is, people feel more the pain of loss than pleasure with an equivalent gain (Melo, 2014).

The Prospect Theory, therefore, brings out three points which violate the axioms of theory marginal utility: the first is that individuals' decisions are taken on the basis of profit and loss, and not from the equity variation; second, the utility function is concave with respect to gains and convex with respect to losses (the graph of the value function is represented by an asymmetric function in S); and, finally, individuals feel more the pain of loss than the pleasure of gain.

Thus, through traditional economic theory, the individual would commit dishonest acts based on the maximization of marginal utility, taking into account aspects such as the benefits of dishonest behavior, punishments, and the risk of being caught (Becker, 1968). These assumptions consider only external aspects to the individual, however, the psychology, the sociology and behavioral economics also consider internal aspects as influencing the decision making of individuals, about dishonesty. Nowadays, the current legal system is based on the Theory of Marginal Utility, which considers factors to inhibit corruption and fraudulent acts, increased detection or applicable punishment, being more effective in increasing detection than in punishment (Nagin & Pogarsky, 2003; Melo Segundo, 2016).

Recent studies (Mazar & Ariely, 2006; Mazar, Amir & Ariely, 2008; Ariely, 2012) have shown that individuals have self-concepts about self-honesty, which is taken into account when making decisions. That is, even if the proposal meets the assumptions of modern economic theory (great benefits by fraud, no probability of being detected or low punishment) people do not cheat to the fullest, for they respect an existing threshold internally of their own view of honesty. This behavior is similar to that described by Freud about the part of the brain called Superego, which represents the social norms within the mind of each individual, capable of punishing or rewarding him for each attitude (Mazar & Ariely, 2006).

The literature is rich in relation to the study of individual dishonesty (Mazar, Amir & Arely, 2008; Mazar & Ariely, 2006; Gino, Ayal & Ariely, 2013; Santos, 2011; Castillo, Petrie, Torero & Viceisza, 2014; Lima, Avelino & Cunha, 2017; Tomazelli, 2011; Abeler, Becker & Falk, 2014; Ruffle & Tobol, 2014; Lewis, Bardis, Flint, Mason, Smith, Tickle & Zinser, 2012; Lundquist, Ellingsen, Gribbe & Johannesson, 2009; Childs, 2012).

Internationally, authors have verified that people behave more dishonestly in a group than individually (Baeker & Mechtel, 2015; Chytilová & Korbel, 2014; Conrads, Irlenbusch, Rilke & Walkowitz, 2013; Muehlheusser, Roider & Wallmeier, 2015; Sutter, 2009; Fischbacher & Follmi-Heusi, 2013; Kocher, Schudy & Spantig, 2017) and factors such as the division of responsibility (Wiltermuth, 2011; Mazar & Aggarwal, 2011), likelihood of benefitting other individuals (Schweitzer & Hsee, 2002) and the decrease in loss for the deceived person (Gneezy, 2005) influence dishonest behavior. There are few researches about this theme and none about the leader worldwide.

With the growing corruption scandals in companies, involving groups of people, and given the still incipient research in the literature on collective dishonesty, it is necessary to study this. In addition, no research has been found that analyzed the influence of the leader in this dishonest behavior, however, it is important to verify this factor, since the leader has power to interfere over the other members of an organization.

With more than a century of scientific research about this theme (Bass, 2008) and being one of the most studied topics in Social Sciences (Day & Antonakis, 2012), leadership is present in several everyday scenarios, not only in companies, as well as in schools or in any social groups. Therefore, studying the role of leadership in social dynamics is of fundamental importance for understanding collective achievements (Turano & Cavazzote, 2016), especially as it is fundamental in creating value for companies (Schein, 2007) and in the execution of strategies of the organizations (Kotter, 2001).

According to Burns (1978) there are more than 130 different definitions of leadership. However, there is consensus on some aspects that characterize leadership (Turano & Cavazzote, 2016): a) dynamic interaction between leaders and followers; b) a process of influence; c) promotion of some degree of transformation in a given social context; and d) the pursuit of specific goals or objectives. That is, leaders are able to influence the ones they lead to achieve the desired goals, either honestly or dishonestly.

The leader figure has the power to influence people, whether positively or negatively, and the dishonest decisions made by members of a company are responsible for the growing corporate corruption scandals. Knowing that decision making is not something purely rational and this process suffers from anomalies arising from the preferences of each individual, the following research hypotheses are presented:

H_1: Honesty of the group is influenced by the presence of the leader.

3. Experimental Design

To achieve the objective of the research, which consists of analyzing if the existence of a leader influences the dishonest behavior of a group, the experiment will be used and adapted, based on a die-rolling test of Fischbacher and Föllmi-Heusi (2013) and Kocher, Schudy and Spantig (2017). The experiment is divided into two stages, in which participants watched a video with the die-rolling and given, on the next screen, the number seen. The remuneration of the participants is linked to the number informed and not to the number seen, thus enabling them to be dishonest in their responses.

Throughout the experiment, the participants were divided into two types of groups, each consisting of three people: *GroupPC* and *GroupNoPC*. The difference between the groups consists in the form of remuneration: those who belong to *GroupPC* must inform the same number of the dice; if at least one member reports a different number, all other members of the group earn zero points. In *GroupNoPC*, the remuneration is individual, that is, each participant earns the amount reported, regardless of the answer of the other members of the group.

In the first stage of the experiment the individuals observed, on the computer screen, the die-rolling and then had two minutes to talk with the other members of the group through an online chat. Later, they informed the number, taking into account what was spoken during the chat. At no time were the participants allowed to identify with the other members of the group or to mention any information that facilitated the identification.

In the second stage of the experiment, the members of the group remain the same, however a member has been chosen by the system, randomly, as the leader of the others. The leader has received information on this position and also about his/her differentiated remuneration (the leader receives double the points he/she reports), however, it will be at the discretion of the leader to comment with the other members of the group about their position and/or remuneration, through chat: members of the group who are not leaders, are aware of the existence of one, but do not know exactly who the leader is; it is up to him to choose whether or not to mention this information to the others. The inclusion of a leader in the group is aimed at verifying whether this individual will encourage or discourage the other members of the group, or if there is any kind of change in their own degree of dishonesty, from the moment that some trust is given to him due to its position.

For exemplifying, assuming there are three members in a group characterized as *GroupPC*, and all group members report the value 5 (five) for a die-rolling, the leader will receive 10 (ten) points, while the other members of the group will receive only 5 (five) points. This differentiated remuneration also resembles the gains that leaders obtained in companies: in general, executives at management positions receive a differentiated remuneration of the other employees, as an incentive to their work.

It is important to emphasize that there are limitations on the figure of the leader inserted in this experiment, because, in the presented context, the leader is assigned randomly by the system: people may not be prepared for this function to end up exercising it, unlike what happens on the day-to-day business, although the lucky element is a possibility in the management of a company (Liu & De Rond, 2016). In addition, the leaders in the experiment also do not have the power to decide on the group, only through persuasion and the other members of the group will only know who the leader is if the leader warns them, these factors could diminish the influence of the leader over his subordinates, a fact that is different from that presented in daily life, so these questions present themselves as a limitation in the design of the experiment.

Table 1 assists in visualizing the design of the experiment:

Table 1: Design of the experiment

Treatments	**Part 1 (without leader)**	**Part 2 (with leader)**
	GroupPC	*GroupPC*
	GroupNoPC	*GroupNoPC*

Source: prepared by the authors.

Throughout the experiment, communication between the participants was not allowed (except during the chat). Before each stage of the experiment, the respondents received instructions on the computer screen about the following instructions and also had to answer the questions about understanding the next stage. The participants just had access to the following steps when they respond properly to control questions.

Before starting the experiment, each participant also answered personal questions such as gender, study institution and family income, in order to obtain an overview of the respondents. At the end of the experiment, appeared on the computer the sum of the points that the participant has achieved, its identification code, and the amount, in reais, to be received, being that each point equals BRL 1.00 (one real). The participant then, transcribed this data in the paper located on their desk, hand it over to the Applicator of the experiment that gave the amount in cash. Thus, the participant sees different opportunities to be dishonest: in the first stage of the experiment, in the second and at the moment of transcription of the amount on the paper.

Table 2, helps in understanding the experiment:

Table 2: Stages of the experiment

PHASES	DESCRIPTION
General Instructions	Instructions are given to the participants to guide them how to proceed in the experiment, such as pay, anonymity and chat interaction.
Questionnaire	The participants answer a questionnaire with personal information, such as age, study institution, family income.
PART 1 OF THE EXPERIMENT	
Instructions	The system automatically and randomly divides the participants into the two groups (*GroupPC* and *GroupNoPC*) and sends instructions on the next step to each participant, taking into account the type of group to which it is inserted. Participants should also inform if they understood the task to be performed.
Die-Rolling	Participants watch (individually) a video with the die-rolling. In this stage, the video was the same for all the participants presenting the number 1 (one).
Instructions for group interaction	Participants received instructions about how the chat will work, such as the time they would have to talk and the prohibition of identifying themselves.
Group interaction	Participants interact in a virtual chat, without the possibility of identifying the other members of the group.
Decision Making	The participants individually report the result of dice, considering that the remuneration is tied to the number they report.
PART 2 OF THE EXPERIMENT	
Instructions	Participants remain divided into the same group in which they answered part 1 of the experiment, however, one member of each group is chosen, automatically and randomly by the system, to be the leader. Instructions are given about how to proceed in the next step and respond if they have understood the task.
Die-Rolling	Participants watch (individually) a video with the die-rolling. Members of the same group watch the same video. Also in this step, the video is the same for all participants, presenting the number 2 (two).
Instructions for group interaction	Participants received instructions about how the chat will work, such as the time they would have to talk and the prohibition of identifying themselves.
Group interaction	Participants interact in a virtual chat, without the possibility of identifying the other members of the group.
Decision making.	The participants individually report the result of the data entry, considering that the remuneration is tied to the number they inform and the group in which it is inserted.
FINAL PART	
Payment	The participant is informed of the sum of points and the amount of reais he received at the end of the experiment. The participant write these amounts down on paper and delivers them to the Applicator to receive their remuneration.

Source: prepared by the authors.

The sessions of the experiment were carried out in the computer lab of the University of Brasília (UnB), Darcy Ribeiro campus, in Brasília, Federal District, as a result of the accessibility, from November 22th to 28th, 2017, with undergraduate students in Accounting Sciences.

Data were collected in 17 rounds, with 180 participants in total, with mean age of 22 years. As the system did not present failures in its execution, all the answers were used in the research. Each session of the experiment lasted about 45 minutes (from the preparation of the experiment, providing instructions to the participants until delivery of the value received), each participant took an average of 15 minutes to complete the experiment.

The total amount spent, in reais, was BRL 1,275.00, an average of BRL 7,08 for each participant. The experience was programmed and conducted through the online software, created especially for this research, and can be accessed through the link http://experiment-parte2.firebaseapp.com.

Afterwards, the conversations that the participants carried out in the chats were also analyzed: the conversations were divided in the groups (*PC* and *NoPC*) and wordclouds were elaborated, through the site www.wordclouds.com. The purpose of making these clouds was to identify the most used words in the dialogues and if these expressions could somehow help in the interpretation of the data.

To test the hypothesis of the research, the McNemar test, a non-parametric test, was performed in IBM SPSS® software (version 20), which aims to analyze, in dependent samples and categorical variables, whether there was a significant difference between the two moments: with and without the influence of the leader.

4. Results

In the experiment, all participants watched the same video with the die-rolling: in the first part, the dice presented the value 1 (one) and, in the second part, the value was 2 (two). This means that non-leaders whose total points at the end of the experiment had a value greater than 3 (three) were dishonest in their responses. Leaders, as their score was doubled in the second stage of the experiment, should receive a score of 5 (five) to be considered honest.

The system did not allow the participant to enter a number greater than 6 (the largest number found in a dice), so the maximum dishonesty for non-leader participants was 12 (twelve), and for the leaders participants was 18 (eighteen).

At the end of the experiment, 56% of respondents were dishonest in the answers (101 people) and 44% were honest (79 people). This means that, of the BRL 1,275.00 spent on remuneration to the participants, BRL 615.00 was paid for the dishonesty of the respondents; if everybody was honest, the expense would be BRL 660.00.

When the analysis is performed by each part of the experiment, it is possible to perceive an increase in dishonesty when a leader was inserted in the group: in the first stage of the experiment, when there was still no leader, 36% (65) of the participants were dishonest; in the second stage, with the leader, 44% (80) were dishonest. These data show that the honesty of the group is influenced by the behavior of the leader, indicating that the leader influenced those led, being the basis of this relationship (Yukl, 2002; Cooke, 2000).

Interesting information concerns the 115 participants who were honest in the first stage of the experiment, when in a group, but without the influence of the leader: 31% of them, that is, 36 participants were dishonest in the second stage. Moreover, all these 36 respondents were honest the first stage indicating that the dice had shown the number 1, and were thoroughly dishonest in the second stage, indicating that the dice displayed the number 6, while the same number 2 was presented on the screen. These data were compiled and are included in the Table 3:

Table 3: Matrix of responses

	Honest – part 2	**Dishonest – part 2**
Honest – part 1	79	36
Dishonest – part 1	21	44

Source: prepared by the authors.

In order to test whether the increase in dishonesty from 36% to 44% , due to the presence of the leader, is significant, the non-parametric McNemar test was performed and the following data were obtained:

Table 4: McNemar statistics

Frequency	**Without leader**	**With leader**
Honest	63,9%	55,6%
Dishonest	36,1%	44,4%
Chi-Square	3,439	
McNemar test	0,063	
N of valid cases	180	

Source: prepared by the authors.

The McNemar test did not present statistical significance (0.063) at 5%. In these cases, where the McNemar test displays a close value, it is necessary to perform another test with a more powerful performance, such as the Cochran's Q test. In doing so, it was possible to verify a p-value of 0.047, so one could reject the null hypothesis of the test and assume that, for the sample surveyed, individuals were more dishonest with the influence of the leader than without this influence.

The experiment was performed in 180 people, 51% are men and 49% are women. Of the 92 men who participated, 62% were dishonest, while 50% of the women were dishonest. Both genders were more dishonest in the second stage of the experiment (with the leader) than in the first, with a dishonesty increase of 11% among men and 6% among women.

Regarding the leader, 32% of the participants performed this function during the experiment and the data showed that 60% of leaders were dishonest in their answers, compared with 40% of non-dishonest leaders.

Considering the groups, 78 people (43%) participated in the *GroupPC*, which is where all the participants must inform the same number of the die-rolling to receive the remuneration, and 102 people (57%) were part of the *GroupNoPC*, where the choice of the group is performed automatically by the system, randomly. Of those who were part of the *GroupPC*, 55% were dishonest compared to 58% of dishonesty in the *GroupNoPC*. Although there were differences in the form of gratification between the groups, the difference was not great, presenting a value 3% higher for the group in which the combination of the value to be informed was not necessary.

The McNemar test was also applied to the sample, in the categories gender, income and group type, *PC* or *NoPC* and the data are described in Table 5:

Table 5: McNemar statistics by category

Frequency	Men		Women		Income ≤ 5,000		Income > 5,000		*GroupPC*		*GroupNoPC*	
	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2	Part1	Part2
Honest	60,9	50	67,0	61,4	66,2	56,3	62,4	55,0	64,1	59,0	63,7	52,9
Dishonest	39,1	50	33,0	38,6	33,8	43,7	37,6	45,0	35,9	41,0	36,3	47,1
McNemar		0,110		0,424		0,189		0,243		0,585		0,052
N		92		88		71		109		78		102
Cochran'Q		0,077		0,317		0,127		0,182		0,465		0,034

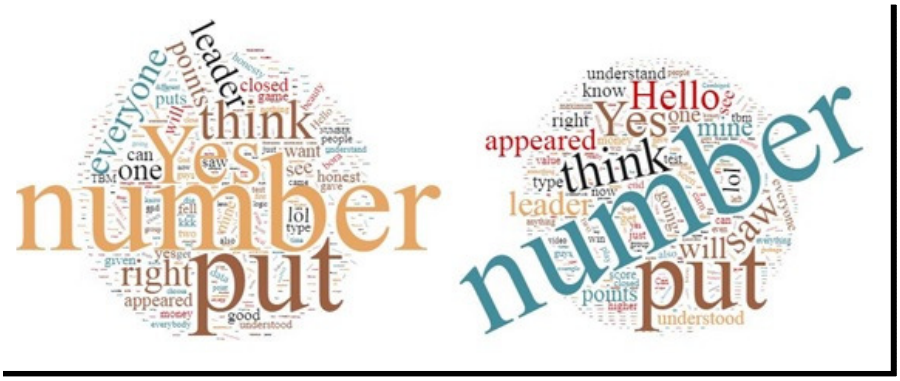
Source: prepared by the authors.

In addition, some participants had some peculiar reactions: **a)** a boy wrote down all the stages of the experiment while playing and he said he wanted to know more about the program; **b)** a girl, when leaving, asked the Applicator if, in case she placed 12, she would win BRL 12.00; when she had an affirmative answer, the girl informed that she should have put 12; **c)** two girls reported that, if they could, they would return in the next day's rounds only to receive BRL 12.00; **d)** a boy asked if the experiment was about honesty because he thought about being honest; **e)** only one person did not accept to receive the money (this person was honest); **f)** a teacher, who gave up the space of his class for the experiment, was amazed at how people left the laboratory happily; **g)** a man, who had earned BRL 13.00, waited for the Applicator at the exit to return the money as soon as it knew that the money belonged to the project participants; the Applicator did not accept the return; **h)** a person entered the experiment to play, outside the hours of the rounds; there was no damage to the data because the system is locked; **i)** before beginning a round of the experiment, the space-giving teacher would talk to the students about ethics and they would also discuss about this; a student mentioned that he worked for years in one of the companies that today are involved in corruption schemes in Brazil, and even the CEO is arrested (the student said to be a personal friend of this CEO), but he resigned the company after the schemes were discovered because he did not agree with the money destinations; at the end of the experiment, this same student had put the maximum value of dishonesty (as he was the leader, he received BRL 18.00); **j)** the majority of the participants believed that the experiment was even about

dishonesty (at no time was it informed to them about what the experiment really was, at the risk of influencing the answers, the participants were informed that it was an experiment about decision making); only a few believed that it was about persuasion.

Through the analysis of the conversations in the chat, it was possible to elaborate wordclouds, in which they were separated by the groups, *PC* and *NoPC*:

Figure 1: Wordcloud experiment - *GroupPC* and *NoPC*



Source: prepared by the authors.

The *GroupPC* is the group in which the participants must place the same number of the die-rolling, otherwise the group participants receive 0 (zero) points. By the wordcloud formed through the conversations in the chat, it is possible to identify the predominance of the words "number" (being the most mentioned: 54 times) and "leader" (mentioned 16 times). This may indicate a combination of the participants in that group with respect to the number that they will report on the computer, indicating possible agreements between members to inform the same number of the dice and to obtain greater gains in the game. In addition, the words "money" (6 times) and the words "honest" (4 times) and "honesty" (5 times) are mentioned too.

In the *GroupNoPC*, in which there was no need to combine the votes, since each participant would receive the amount of points informed, regardless of the ones chosen by the other members of the group, there was the preponderance of the words "number" (mentioned 84 times), and "leader" (21 times), which also indicates a strong combination of values to be described and the influence of the leader in this combination. In both groups was characterized the union of the members to indicate only a number referring to the die-rolling, and it is possible to observe the predominance of the words "number", "put", "points", "value" and "appeared" in the dialogues.

Additionally, some excerpts from the dialogues made by the participants were taken from the chat: **a)** "Do you think the game rewards honesty? Or the highest number of points?"; **b)** "It will be nice is if it is a test of honesty and we take zero"; **c)** "Do you want to earn money or be honest?"; **d)** "–and then, we must decide if we say that it is 1 or if it is more, to receive the money. What are we going to choose?" "–I want money!"; **e)** "–Let's put 6" "–Ok, 6" "–We lose nothing, at most we get more points"; **f)** "then we should all put 6 because it is worth more"; **g)** "–We are all corrupt" "–I realize this"; **h)** "–We combine at 6, again?" "–We have to follow the given task, we cannot think only about the result" "–More or less" "–We can do whatever we want" "–It's a matter of making the same decision" "–It certainly has nothing to do with honesty test" "–I think it does not have any problem being different to the die-rolling" "–That's because: there's no penalty, nor does it affect other people negatively ""–I think what is being tested here is if we make the same decision and if we keep it and also in the explanation, and another in our answer"; **i)** "I think we have to be honest, we should keep ourselves honest. I am the leader" "–Last group gained less by being honest LOL" "–So, I follow the leader then. Honesty, isn't it?" "–Always, honest people earn less""–We do not disagree, because no one gain anything"; **j)** "I think that honesty can be part of the game"; **k)** "I think the idea is to test the will to make money"; **l)** "–this is a test where you earn more if you lie" "– Let's bet higher?" "–So,

6""–Ok!"; **m)** "–here's the deal, it is 6 for all stages and it's over"; **n)** "– as far as I understand, all we have to do is 2 of us to inform the number (6), which is the maximum amount the points and the other report the correct number. And in the end we share everything equally" "–But it would not be honest, right?!" "–I think this is just the proposal" "–I'll go for the correct one then and you will the 6"; **o)** "– you're sure to get caught, but do you want to see what?" "–The honesty in decision-making"; **p)** "–let's get the evening snack"; **q)** "–What is this test testing? Your power to lie? Be honest or not?" "–It's a decision, too."

The extract seen in dialogue (h) expresses an exemplified way what has been shown in previous works: one participant tries to convince others to be dishonest, justifying, mainly, that there is no penalty for their dishonest behavior and that does not penalize them. Bandura (2014), Bandura, Barbaranelli, Caprara & Pastorelli (1996) and Conrads *et al.* (2013) have already identified this type of behavior in earlier researches, claiming that it seems easier to commit dishonest acts in group by the diffusion of responsibility and the possibility of unethical behavior being obscured.

Here are some summary data about the experiment:

a) **Number of participants** – 180
b) **Average age** – 22 years old
c) **Number of dishonest people** – 101 (56%, 36% without the leader, 44% with the leader)
d) **Average total amount received** – BRL 7.08
e) **Average amount received from "dishonest" participants** – BRL 9.94
f) **Average time taken to complete the experiment, per participant** – 15 minutes
g) **Average nº of attempts to understand the experiment, per participant** – 2 in each step
h) **Total amount spent** – BRL 1,275.00
i) **Amount spent more for dishonesty** – BRL 615.00

5. Conclusions

Unlike the Traditional Finance Theory and the Modern Finance Theory, Behavioral Finance Theory is based on the assumption that people do not make their decisions in a completely rational way, but rather are influenced by emotions and cognitive errors. Within organizations, an important element that is capable of influencing the behavior of others is the leader, not only through their inherent power of persuasion, but also by their position over other collaborators.

The results found in this research identify that when there is a figure of a leader in a group, people tends to take more dishonest decisions than without the leader. When faced with a situation in which dishonesty was an option, 36% of the participants chose to be dishonest when the decision was to be taken in a group, in which all members had the same hierarchical functions in the group. When an element in top position is inserted and this element receives double the remuneration, the percentage of dishonesty people raised to 44% of the total.

These data show that when one individual is in a position of superiority over others (leader), this influences the dishonest behavior of the whole group, making their decisions more dishonest than without his presence. That is, in some way, the existence of a leader influences the other participants, either by the persuasion that it exerts, by the motivation or even by the power of control.

Although research data have shown that a leader's influence interferes with dishonest behavior, this study has some limitations regarding the leadership component: the leader was chosen randomly by the system, which can lead to the choice of someone who is not prepared and/or do not feel comfortable with this position; in addition, leaders also have no coercive power over other participants, which differs substantially from the reality of companies, where bosses have a relative interference by maintaining the employment of their subordinates.

In addition, a study could be conducted with different types of leaders in an attempt to better understand the influence of the leader in the decision making process of the other members of the group. For this, the ideal would be to place three types of leaders: in the first situation, the leader

receives the same remuneration as the other participants, that is, there is no difference in the payment; in the second, a similar situation with the present experiment, in which the leader receives double, causing an incentive to the dishonest leaders; and the third situation, in which leaders receive more independent of the informed value, just by being a leader, could encourage honest leaders.

Aware of these limitations, the present research proposes to be an initial step in the search for understanding the role of the leader in the dishonest behavior of individuals, leaving room for future research to fill these gaps and to deepen the findings of this study. Further, possible mechanisms that inhibit the dishonesty can be tested in order to find ways to reduce them in companies and also in society.

References

[1] Abeler, J., Becker, A., & Falk, A. (2014). Representative evidence on lying costs. *Journal of Public Economics*, 113, 96-104.

[2] Ariely, D. (2012). *A mais pura verdade sobre a desonestidade*. Rio de Janeiro: Campus.

[3] Baeker, A., & Mechtel, M. (2015). Peer settings induce cheating on task performance (No. 06/2015). *IAAEU Discussion Paper Series in Economics*.

[4] Bandura, A. (2014). *Social cognitive theory of moral thought and action*. In Handbook of moral behavior and development (pp. 69-128). Psychology Press.

[5] Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology*, 71(2), 364.

[6] Bass, B. M. (1990). *Handbookof Leadership*. New York.

[7] Bass, B. M. (2008). *The Bass handbook of leadership: theory, research, and managerial applications* (4th ed.). New York: Free Press.

[8] Becker, G. S. (1968). *Crime and punishment: An economic approach*. In The economic dimensions of crime (pp. 13-68). Palgrave Macmillan, London.

[9] Bernoulli, D. (1954). A new theory on the measurement of risk (L. Sommer, Trans.). *Econometrica*, 22, 23-36.

[10] Burns, J. M. (1978). *Leadership*. New York: Harper & Row Publishers

[11] Castillo, M., Petrie, R., Torero, M., & Viceisza, A. (2014). Lost in the mail: a field experiment on crime. *Economic Inquiry*, 52(1), 285-303.

[12] Charness, G., & Sutter, M. (2012). Groups make better self-interested decisions. *Journal of Economic Perspectives*, 26(3), 157-76.

[13] Childs, J. (2012). Gender differences in lying. *Economics Letters*, 114(2), 147-149.

[14] Chytilova, J., & Korbel, V. (2014). Individual and group cheating behavior: a field experiment with adolescents (No. 06/2014). *IES Working Paper*.

[15] Conrads, J., Irlenbusch, B., Rilke, R. M., & Walkowitz, G. (2013). Lying and team incentives. *Journal of Economic Psychology*, 34, 1-7.

[16] Cooke, M. (2000). *O líder natural: criando novas realidades em benefício do todo*. São Paulo: Peirópolis.

[17] Damodaran, A. (2006). *Filosofias de investimento: estratégias bem-sucedidas e os investidores que as fizeram funcionar*. Rio de Janeiro: Qualitymark.

[18] Day, D. V., & Antonakis, J. (2012). *The nature of leadership* (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

[19] Ferreira, S. G. (2016). Finanças comportamentais: processo decisório e a heurística da ancoragem em investimentos imobiliários em fundos de pensão. *Dissertação* (Mestrado em Gestão Empresarial), Escola Brasileira de Administração Pública e de Empresas, Fundação Getúlio Vargas, Rio de Janeiro, Brasil.

[20] Fischbacher, U., & Föllmi-Heusi, F. (2013). Lies in disguise—an experimental study on cheating. *Journal of the European Economic Association*, 11(3), 525-547.

[21] Gino, F., Ayal, S., & Ariely, D. (2013). Self-serving altruism? The lure of unethical actions that benefit others. *Journal of Economic Behavior & Organization*, 93, 285-292.
[22] Gneezy, U. (2005). Deception: The role of consequences. *American Economic Review*, 95(1), 384-394.
[23] Kahneman, D.; & Tversky, A. (1979). Prospect theory: An analysis of decisions under risk. *Econometrica*, 47, 278.
[24] Katz, D., & Khan, R. L. (1978). *Psicologia Social das Organizações*. 2" ed. São Paulo: Atlas.
[25] Kocher, M. G., Schudy, S., & Spantig, L. (2017). I lie? We lie! Why? Experimental evidence on a dishonesty shift in groups. *Management Science*.
[26] Kotter, J. P. (2001). What leaders really do. *Harvard Business Review*, 79(11), 85-96.
[27] Kugler, T., Bornstein, G., Kocher, M. G., & Sutter, M. (2007). Trust between individuals and groups: Groups are less trusting than individuals but just as trustworthy. *Journal of Economic Psychology*, 28(6), 646-657.
[28] Lewis, A., Bardis, A., Flint, C., Mason, C., Smith, N., Tickle, C., & Zinser, J. (2012). Drawing the line somewhere: An experimental study of moral compromise. *Journal of Economic Psychology*, 33(4), 718-725.
[29] Lima, G. A. S. F., Avelino, B. C., & da Cunha, J. V. A. (2017). Narcissism: are accounting students using their personality traits to perform better?. *Revista de Contabilidade e Organizações*, 31, 58-74.
[30] Liu, C., & De Rond, M. (2016). Good night, and good luck: perspectives on luck in management scholarship. *The Academy of Management Annals*, 10(1), 409-451.
[31] Lucas, R. E., Diener, E., & Suh, E. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology*, 71(3), 616.
[32] Lundquist, T., Ellingsen, T., Gribbe, E., & Johannesson, M. (2009). The aversion to lying. *Journal of Economic Behavior & Organization*, 70(1-2), 81-92.
[33] Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research*, 45(6), 633-644.
[34] Mazar, N., & Ariely, D. (2006). Dishonesty in everyday life and its policy implications. *Journal of Public Policy & Marketing*, 25(1), 117-126.
[35] Mazar, N., & Aggarwal, P. (2011). Greasing the palm: Can collectivism promote bribery?. *Psychological Science*, 22(7), 843-848.
[36] Melo, C. L. L. D. (2014). Determinantes da aversão à perda em decisões financeiras: uma investigação por meio de modelos de equações estruturais. *Tese* (Doutorado em Ciências Contábeis), Programa Multiinstitucional e Interregional de Pós-Graduação em Ciências Contábeis da Universidade de Brasília, Universidade Federal da Paraíba e Universidade Federal do Rio Grande do Norte, Brasil.
[37] Melo Segundo, A. D. C. M. (2016). Determinantes da fraude financeira: a relação entre os aspectos de racionalidade e a desonestidade. *Dissertação* (Mestrado em Ciências Contábeis), Programa Multiinstitucional e Interregional de Pós-Graduação em Ciências Contábeis da Universidade de Brasília, Universidade Federal da Paraíba e Universidade Federal do Rio Grande do Norte, Brasil.
[38] Muehlheusser, G., Roider, A., & Wallmeier, N. (2015). Gender differences in honesty: Groups versus individuals. *Economics Letters*, 128, 25-29.
[39] Mueller, B. H., & Lee, J. (2002). Leader-member exchange and organizational communication satisfaction in multiple contexts. *The Journal of Business Communication*, 39(2), 220-244.
[40] Nagin, D. S., & Pogarsky, G. (2003). An experimental investigation of deterrence: Cheating, self-serving bias, and impulsivity. *Criminology*, 41(1), 167-194.
[41] Ruffle, B. J., & Tobol, Y. (2014). Honest on Mondays: Honesty and the temporal separation between decisions and payoffs. *European Economic Review*, 65, 126-135.
[42] Sá, A. L. (2001). *Ética Profissional*. Atlas.

[43] Santos, P. F. D. (2011). A desonestidade de pessoas honestas: um experimento no Brasil. *Dissertação* (Mestrado em Economia), Universidade de Brasília, Brasília, Brasil.
[44] Schein, E. (2007). *Cultura organizacional e liderança*. São Paulo, SP: Atlas.
[45] Schweitzer, M. E., & Hsee, C. K. (2002). Stretching the truth: Elastic justification and motivated communication of uncertain information. *Journal of Risk and Uncertainty*, 25(2), 185-201.
[46] Simon, H. (1957). *A behavioral model of rational choice*. Models of man, social and rational: Mathematical essays on rational human behavior in a social setting. New York: Wiley.
[47] Siqueira, M. M. M.; Amaral, D. J. (2006). Relações entre estrutura organizacional e bem-estar psicológico. *Revista Eletrônica de Administração* – REA, 5 (1).
[48] Sparrowe, R. T., & Liden, R. C. (1997). Process and structure in leader-member exchange. *Academy of Management Review*, 22(2), 522-552.
[49] Sutter, M. (2009). Deception through telling the truth?! Experimental evidence from individuals and teams. *The Economic Journal*, 119(534), 47-60.
[50] Tomazelli, K. G. (2011). Desonestidade acadêmica e profissional: avaliação das percepções de estudantes de Administração e Contabilidade. *Trabalho de Conclusão de Curso* (Bacharel em Administração), Universidade Federal do Rio Grande do Sul, Porto Alegre, Brasil.
[51] Turano, L. M., & Cavazotte, F. (2016). Conhecimento científico sobre liderança: uma análise bibliométrica do acervo do The Leadership Quarterly. *RAC-Revista de Administração Contemporânea*, 20(4).
[52] Von Neumann, J. V., & Morgenstern, O. (1944). *Theory of games and economic behavior*. Princeton Univ. Press.
[53] Wiltermuth, S. S. (2011). Cheating more when the spoils are split. *Organizational Behavior and Human Decision Processes*, 115(2), 157-168.
[54] Yukl, G. (2002). *Leadership in Organizations*, Fifth Edition. New Jersey, Prentice Hall.

Appendix – Experiment Information's

Appendix includes information about the experiment (in Portuguese). Initially, participants received instructions for the experiment on the computer screen

Instruções Gerais

Bem-vindo a esse experimento e obrigado por participar!

Por favor, a partir de agora, NÃO FALE com nenhum outro participante!

Procedimentos Gerais

Nesse experimento, estamos estudando tomadas de decisões econômicas. Você pode ganhar dinheiro participando. O que você irá ganhar será pago ao final do experimento, de forma individual e privada, e em dinheiro. O experimento consiste em duas partes no qual você deve tomar decisões independentes. No começo de cada etapa, você receberá instruções detalhadas de como proceder. Se você tiver qualquer dúvida durante o experimento, por favor, levante a sua mão. Um instrutor irá até você e responderá a sua dúvida, em particular.

Durante o experimento, você e os outros participantes terão que tomar decisões e, possivelmente, você terá que interagir (através do *chat*) com outros participantes também. O seu pagamento será determinado por suas decisões e pelas decisões dos outros participantes.

Pagamento

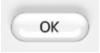
Em algumas partes do experimento, não será mencionado sobre "Reais", mas sim sobre "pontos". Seus ganhos serão calculados em pontos. No final do experimento, os pontos serão convertidos em Reais, com uma taxa de conversão de:

1 ponto = 1 Real

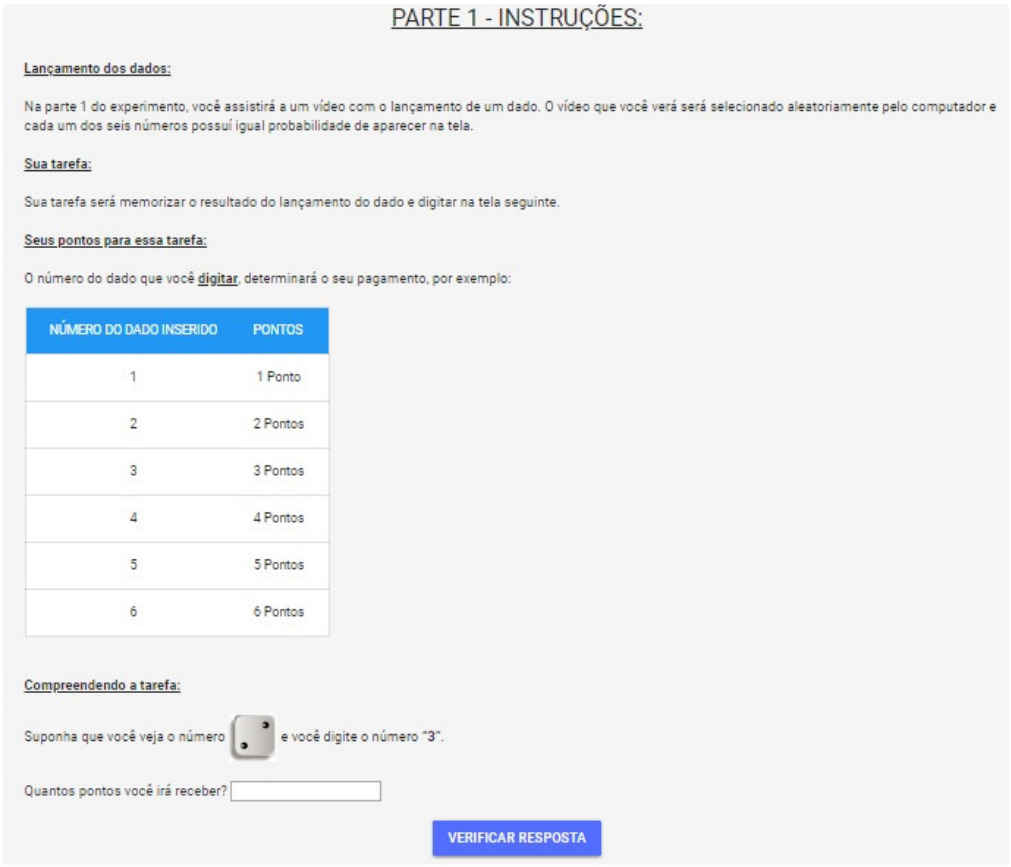
O seu pagamento acontecerá no final do experimento. Cada participante será chamado pelo seu código de identificação, para pagamentos individuais. Nenhum outro participante saberá sobre o seu pagamento e você também não saberá sobre o pagamento de nenhum outro participante.

Anonimato

A análise do experimento será feita anonimamente. **NÃO SERÁ REALIZADO NENHUM LINK ENTRE O SEU NOME E OS DADOS GERADOS NO EXPERIMENTO!** Você não saberá a identidade de nenhum participante, nem antes nem após o término do experimento. Também os outros participantes não saberão a sua identidade. Durante todo o experimento, sua única forma de identificação será através do código de identificação que você receberá no início do experimento. Ao teclar em "OK", você está concordando em participar do experimento:



On screen instructions: Instructions for Part 1 (for Individual)



PARTE 1 - INSTRUÇÕES:

Lançamento dos dados:

Na parte 1 do experimento, você assistirá a um vídeo com o lançamento de um dado. O vídeo que você verá será selecionado aleatoriamente pelo computador e cada um dos seis números possuí igual probabilidade de aparecer na tela.

Sua tarefa:

Sua tarefa será memorizar o resultado do lançamento do dado e digitar na tela seguinte.

Seus pontos para essa tarefa:

O número do dado que você digitar, determinará o seu pagamento, por exemplo:

NÚMERO DO DADO INSERIDO	PONTOS
1	1 Ponto
2	2 Pontos
3	3 Pontos
4	4 Pontos
5	5 Pontos
6	6 Pontos

Compreendendo a tarefa:

Suponha que você veja o número e você digite o número "3".

Quantos pontos você irá receber?

VERIFICAR RESPOSTA

Decision Screen Part 1 (displayed after individuals observed the video)

PARTE 1 – TOMADA DE DECISÃO

Agora, digite o resultado do lançamento do dado.

Número visto:

O resultado do lançamento do dado que você informou determinará o seu pagamento, como abaixo:

NÚMERO DO DADO INSERIDO	1	2	3	4	5	6
PONTOS	1 Ponto	2 Pontos	3 Pontos	4 Pontos	5 Pontos	6 Pontos

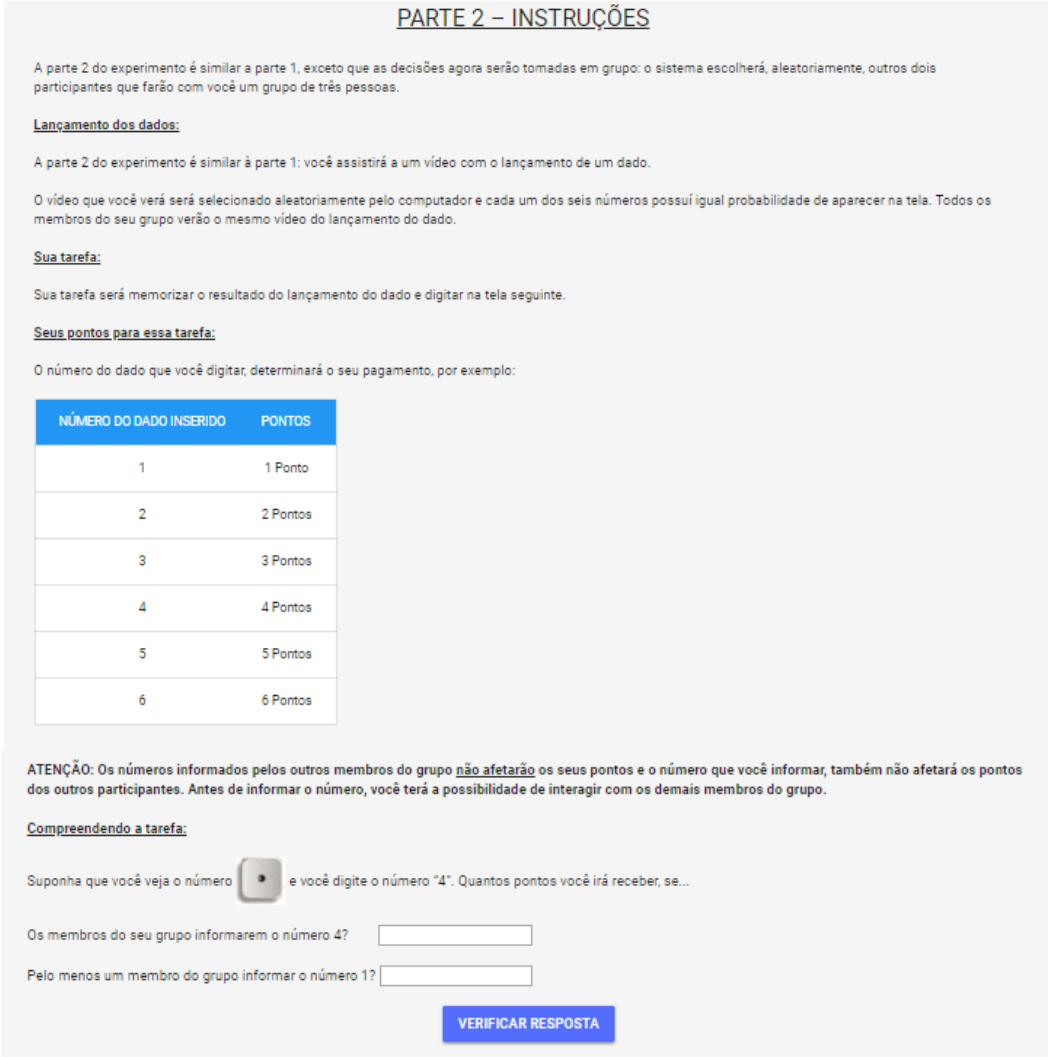
SALVAR

Instructions for Part 2: *GroupNoPC*

[for *GroupPC*, instructions were identical except for part called "Attention". In *GroupPC*, the text was: "ATTENTION: You must enter the same number as the other participants in your group. All members of the group must report the same number: if at least one participant reports a different number, all members of the group will receive 0 (zero) points. Before informing the number, you will have the possibility to interact with the other members of the group".

In the second experiment, the instructions for the leaders contained this: "Your task: You have been randomly selected to be the leader of your group, which will consist of two other members. Your role will be to guide the conversations with the other members of the group. Because of your leadership role in this task, your pay will be doubled at this stage of the experiment. The other members of the group do not know that your remuneration will be doubled: it is up to you to comment with them or not. You must memorize the result of the dice roll and enter the next screen"]

Instructions for chat (displayed after Instructions and the video in Part 2)



PARTE 2 – INSTRUÇÕES

A parte 2 do experimento é similar a parte 1, exceto que as decisões agora serão tomadas em grupo: o sistema escolherá, aleatoriamente, outros dois participantes que farão com você um grupo de três pessoas.

Lançamento dos dados:

A parte 2 do experimento é similar à parte 1: você assistirá a um vídeo com o lançamento de um dado.

O vídeo que você verá será selecionado aleatoriamente pelo computador e cada um dos seis números possuí igual probabilidade de aparecer na tela. Todos os membros do seu grupo verão o mesmo vídeo do lançamento do dado.

Sua tarefa:

Sua tarefa será memorizar o resultado do lançamento do dado e digitar na tela seguinte.

Seus pontos para essa tarefa:

O número do dado que você digitar, determinará o seu pagamento, por exemplo:

NÚMERO DO DADO INSERIDO	PONTOS
1	1 Ponto
2	2 Pontos
3	3 Pontos
4	4 Pontos
5	5 Pontos
6	6 Pontos

ATENÇÃO: Os números informados pelos outros membros do grupo não afetarão os seus pontos e o número que você informar, também não afetará os pontos dos outros participantes. Antes de informar o número, você terá a possibilidade de interagir com os demais membros do grupo.

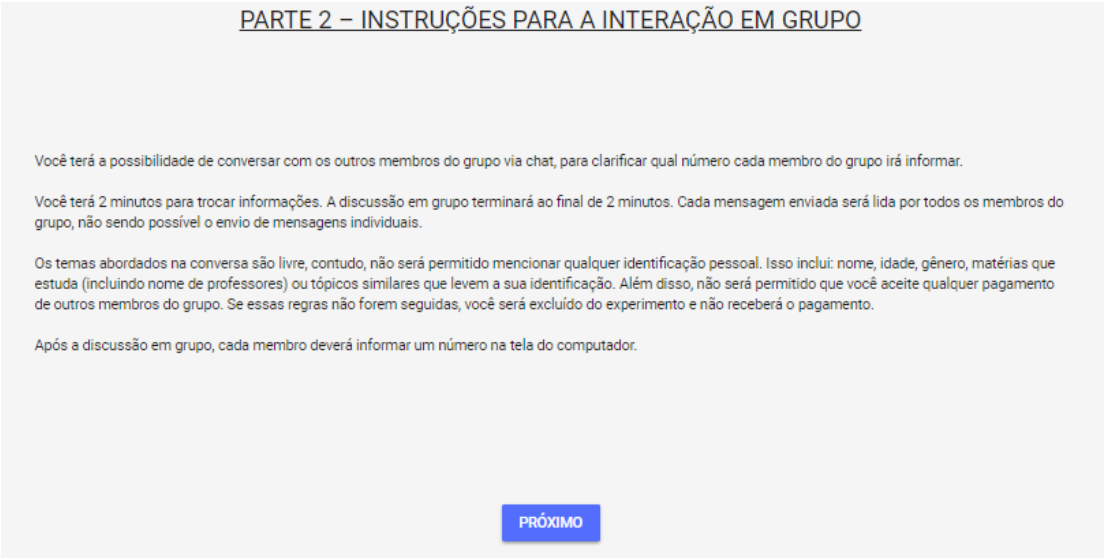
Compreendendo a tarefa:

Suponha que você veja o número e você digite o número "4". Quantos pontos você irá receber, se...

Os membros do seu grupo informarem o número 4?

Pelo menos um membro do grupo informar o número 1?

VERIFICAR RESPOSTA



Chat Screens

Final Part – last screen with identification code, sum of points and amount to receive