Universitat Autònoma de Barcelona

TITLE: MEN ARE FROM MARS, WOMEN FROM VENUS, ONLY WITH INCENTIVES

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ABSTRACT

This paper is an experiment where we will find gender differences defining personalities through game theory. Using basic games as the Prisoner's Dilemma, Dictator's game, Lotteries, we can define a personality that allows us to predict how a person is going to interact in future games as Travelers' dilemma. Furthermore, we make a comparison with the literature, where are used incentives, and with this experiment, where they are not used, to demonstrate that women and men have different kinds of personalities that vary whether there are incentives or not.

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1. INTRODUCTION

Since 1970 the fight against rights inequality between genders had been a social matter that had been more latent in the recent years. In a culture where men had been the dominant figure it is difficult to make the step to the equality where the salaries are equal for both for the same job, having the same opportunities, etc. In this paper I demonstrate that although we should be equal towards the law, we are different inside. Our attitudes and behaviors can be classified in accordance with our gender. The objective of this paper is to demonstrate that women and men behave differently in the different economic games, and incentives are important to demonstrate it, because social factors have a strong influence on them.

In order to do so, I use economic games. The literature had demonstrated that we can define personalities through game theory and experimental economics. It is important to use both because game theory is not always functioning due to individuals' rationality is not always consistent with the theory because of environmental factors not considered in the theoretical reasoning. In this paper, I use the prisoner's dilemma, where the individual has to choose between cooperate or not in a situation where there are incentives to not cooperate, and what will be the economic optimal, but we will see that individuals do not react as predicted. Through this game, we can know if an individual is cooperative or not.

I also use lotteries, where the individual has to play in a game choosing a card or another with different rewards and probabilities (making one safer and the other riskier) during the different steps of the game, and with that I measure the risk aversion degree. Theoretically, individuals who are not influenced by risk, should start choosing a card and changing to the other where the probabilities are 50/50 (in our experiment; from now on 50/50 will be used to simplify the probabilities 50% in one case and 50% in the other), but thanks to people not behaving like that we can classifying them into the different attitudes towards risk.

To add up, I also include the dictator's game, where the individual has to split a given amount of money with a peer; depending on the amount they give, they will be classified as more generous or less; economical explanations tell us the individuals should give nothing to the peer but we will see also that people do not react consistently with the

literature.

Finally, I relate all this individual characteristics and behaviors with the Travelers' dilemma, as Brañas-Garza, P., Espinosa, M. P., & Rey-Biel, P. (2011) did in the Traveler's Types paper, but focusing in the different attitudes regarding men and women and making distinction between them. The Travelers' dilemma is important to identify attitudes and behaviors because two individuals are asked to say the value of their lost baggage with a penalty-reward system, making individuals to have incentives to say the lowest value, again the economic optimal, but we observe that individuals say values through all the interval what make us able to classify them into the different categories and make this experiment to be worth it.

This is considered an experiment because it is a controlled situation where certain individuals have to take decisions, and it is observed how they take their decisions (through the written reasoning on their answers) and what characteristics of the experimental design influence in them (Rey-Biel, P. 2006).

It is important to note that this paper shows how cultural factors affect our lives. How we show to be in a way or another under different conditions and how we try to avoid social discrimination. I compare the results of this paper, without incentives, with the ones of the literature, with incentives; and I observe that there are great differences.

In the prisoner's dilemma, in the literature they not cooperate as basis but women cooperate more than men, which is only consistent with our experiment the part of women cooperating more than men. But both genders cooperate more than not cooperating.

In the lotteries, literature had demonstrated that women are more risk averse than men even women depend more of the conditions of the experiment; but in our paper, even though both genders are risk averse; women are more risk loving than men.

In the dictator's game, the vast majority of the sample gave half of the given amount to their peer, while in the literature the 76% (Iriberri and Rey-Biel; 2013) of the individuals have a selfish position and give anything to their peers. It is important to mention that women are more inequality averse and they give more in dictator's games (Selten and Ockenfels; 1998), and under conditions of anonymity they give almost twice as much as man (Eckel and Grossman; 1998).

Finally, in the Travelers' dilemma individuals behave, again, contrary to the theory, where they should all say the lowest value but we find individuals saying a value along the whole interval. At least, this time, it is consistent with other experiments done with incentives (Brañas-Graza, P. et al. 2011)

We can attribute those differences to the lack of incentives and therefore social factors appearing. Individuals have the social concern of showing themselves as generous, cooperative, fair, etc. because since we live in a society we should be like that because we are said to do so, but when we include incentives in the experiment, we see that appear, more frequently selfish attitudes, being no cooperative and less fair. Those differences, maintaining the anonymity, appear because of the lack of incentives and the social factors modifying and biasing the experiment. In order to make the results more consistent we should run the same experiment but with incentives.

2. STAGES OF THE EXPERIMENT

Basing myself on the paper of Rey-Biel (2006), I follow the steps to run an experiment. Those steps start with the design of the question (section 2.1.), follows with the design of the experiment (section 2.2.), continues with subjects' selection (2.3.); and after running the experiment, we analyze the data (section 2.4.) and we end up with results and conclusions (section 3).

First I got information about experiments and game theory reading the articles of Rey-Biel and the Gibbons (1992) book.

2.1. Question

The first step when running an experiment is to find a question that we want to answer and then design an experiment in accordance with the questions and that allows us to know the answer.

The question appeared in an entrepreneurship class where we had to do expositions and our peers had to punctuate us (with a percentage of the grade given by the professor) and I wonder why none of us suggest to cooperate and giving a 10 to all our peers. I tried to run the experiment but it didn't work because of schedule problems. After that, I start thinking about a similar question but including also gender differences and when I read the "Why axis" (Gneezy, 2014) and the Travelers' types (Brañas-Garza et ál.,

2011) I conclude with the following questions:

- Are there different kinds of people or personalities? So, can we predict their behavior?
- Are there significance differences between men and women personalities? Or in other words, are there factors that are more likely to belong to one specific gender?

With the first question we want to know if it is true that there are different personalities and therefore we can classify people in accordance with their behavior and attitudes and, with the second question, we want to know if, assuming that there are different personalities, if we can classify those identities to being more characteristic from men or from women.

Once we have the questions we need to design the experiment.

2.2. Design

Since I am a student and I cannot access to too many resources, I decided to do a questionnaire (using Google Forms), in Spanish in order to get more answers and less misleading, without monetary incentives and then, compare the results in the travelers' dilemma with the Brañas-Garza et al. (2011) that has been run with incentives.

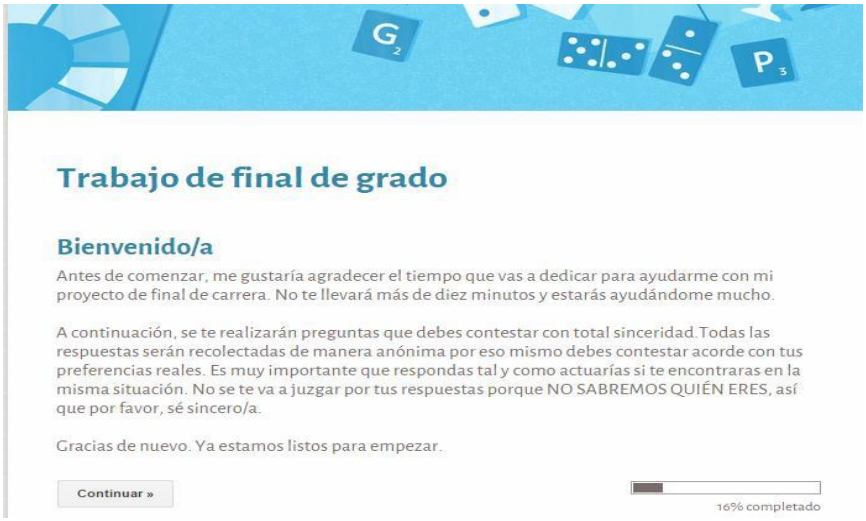
In their experiment they use the grades as incentives and the games used to define people were different from mine. They use the GRE (math test), questions about expectations (expected grade in GRE and average grade in their exams), and the traveler's dilemma.

Individuals were sent the following link http://goo.gl/forms/NkbZDrcPbL (See Annex A for seeing the complete questionnaire), where they found the questionnaire. The first image they found (Figure 1) is where the objective of the experiment was presented.

The second page they found a set of general questions related with age, gender, and number of brothers. Those questions were included to have a general view of the sample I was analyzing. The average age was 25.837 (Std. dev. 9.827).

In the third page they had to choose in a modified prisoner's dilemma if they wanted to put effort (cooperate) or not (not cooperate).

Figure 1. Questionnaire



After that, they have a set of lotteries simulating the multiple price list (MPL) method that Holt and Laury (2002) ran, where they have to choose between a green card (riskier) and a red card (safer), to identify attitudes towards risk.

Then, individuals have to deal with the dictator's game, having to split a given amount of 10€ with a peer, to identify the degree of selfishness. Finally they find the traveler's dilemma, where they have to give a monetary value to their lost luggage between the values of an interval, with a penalty-reward system.

2.2.1. Prisoner's dilemma

In the second page of the questionnaire I include the Prisoner's Dilemma (PD). The prisoner's dilemma is a 2x2 game that says the following:

"You and a friend have committed a crime and have been caught. You are being held in separate cells so that you cannot communicate with each other. You are both offered a deal by the police and you have to decide what to do independently. Essentially the deal is this:

- *If you betray your partner and he/she remains silent, you go free and your partner goes to prison for ten years, and vice versa.*
- *If you both betray the other, you will serve six years each.*
- *If you both remain silent, both go 1 year to prison.*

What will you do?"

We can present this exercise in a 2x2 table (for this reason is called 2x2 game) like this one:

Table 1. Prisoner's dilemma

B / A	Cooperate (Silent)	No Cooperate (Betray)
Cooperate (Silent)	- 1 / - 1	Free / - 10
No Cooperate (Betray)	- 10 / Free	- 6 / - 6

The optimal point is both remaining silent, since both will just remain in prison for 1 year, but since there are incentives to betray the other, the final result will be (-6,-6), so no cooperation, and this is the Nash equilibrium. The Nash equilibrium is the best strategy for an *i*-player towards the strategies of the other n-1 players (Gibbons, 1992). So, in the PD the best strategy for A is "No cooperate" in order to be set free, and for B the same. Therefore, since both choose "No cooperate", it's the Nash Equilibrium.

I tried to replicate the experiment with monetary outcomes instead of using "years in prison". The cooperation is translated to effort ("Puts effort"/ "Does not put effort"). My PD says as follows:

"A peer and you, have to do a work jointly, without opportunity to communicate each other. You will receive a remuneration based on the common results. If both of you put effort you will receive 90€ each. If just one of you put effort, the one putting effort will receive 50€ and the one that not, will receive 100€. If any puts effort, you receive 60€ each."

And this can be summarized in this table:

Table 2. Modified Prisoners' dilemma

B / A	Puts effort	Not put effort
Puts effort	90€ / 90€	100€ / 50€
Not put effort	50€ / 100€	60€ / 60€

Again, in this case the better option for both is to put effort, since they will be gaining

90€, but since they have incentives to not putting effort due to the gain of money the Nash Equilibrium is found in the point 60€-60€ since both would choose "No cooperate".

Moreover, they are asked to justify their answer because since it is the most known dilemma from the ones I am using, I need to make sure that no one gives the correct answer (Nash equilibrium) because they know economic theory.

2.2.2. Lotteries

In the third page, it is asked a set of lotteries simulating the one Holt and Laury (2002) did. They created a lottery with two options (A and B) where they participants have to choose one. The options where always the same and what changed were the probability of winning with the chosen option. With the table below (Table 3) they measure the degree of aversion to risk people have considering when they change from option A (safer, with less reward) to option B (riskier, with more reward).

Table 3. Holt and Laury (2002). Risk analysis

Row. No	Option A		Option B		RRA if row was last choice of A and below	Proportion of choices payoffs x1	Proportion of choices payoffs x20
	Outcome A1 $2.00	Outcome A2 $1.60	Outcome B1 $3.85	Outcome B2 $0.10			
1	Prob. 1/10	Prob. 9/10	Prob. 1/10	Prob. 9/10	[-1,71;-0,95]	0,01	0,01
2	Prob. 2/10	Prob. 8/10	Prob. 2/10	Prob. 8/10	[-095;-0,49]	0,01	0,01
3	Prob. 3/10	Prob. 7/10	Prob. 3/10	Prob. 7/10	[-0,49;-0,14]	0,06	0,04
4	Prob. 4/10	Prob. 6/10	Prob. 4/10	Prob. 6/10	[-0,14; 0,15]	0,26	0,13
5	Prob. 5/10	Prob. 5/10	Prob. 5/10	Prob. 5/10	[0,15; 0,41]	0,26	0,19
6	Prob. 6/10	Prob. 4/10	Prob. 6/10	Prob. 4/10	[0,41; 0,68]	0,23	0,23
7	Prob.7/10	Prob. 3/10	Prob.7/10	Prob. 3/10	[0,68; 0,97]	0,13	0,22
8	Prob. 8/10	Prob. 2/10	Prob. 8/10	Prob. 2/10	[0,97; 1,37]	0,03	0,11
9	Prob. 9/10	Prob. 1/10	Prob. 9/10	Prob. 1/10	[1,37; ∞)	0,01	0,06
10	Prob. 10/10	Prob. 0/10	Prob. 10/10	Prob. 0/10	Non-monotone	0,00	0,00

The way of classifying people with this table, would be looking at the relative risk aversion coefficient but to simplify it is: The risk averse people will start choosing A and they will change to B after the row 5; the risk neutral people will start choosing A and they will change to B in row 5; and risk loving people will start choosing A and will change to B before row 5. This is because of the expected income of the game calculated as follows:

$$O_A = P_{A1j} \cdot 2\$ + P_{A2j} \cdot 1.60\$$$

$$O_B = P_{B1j} \cdot 3.85\$ + P_{B2j} \cdot 0.10\$$$

Where:
P_{A1j} and P_{A2j}: are the probabilities of outcomes A1 and A2 (respectively) and where j={1,…, 10} is the Row No. (from the table).

P_{B1j} and P_{B2j}: are the probabilities of outcomes B1 and B2 (respectively) and where j={1,…, 10} is the Row No. (from the table).

So if we substitute the variables we obtain the following table:

Table 4. Expected outcomes from Holt and Laury (2002)

Row No.	1	2	3	4	5	6	7	8	9	10
A ($)	1.64	1.68	1.72	1.76	1.8	1.84	1.88	1.92	1.96	2
B ($)	0.475	0.85	1.225	1.6	1.975	2.35	2.725	3.1	3.475	3.85

The cells in blue is the path to follow in order to be risk neutral, since all the time the expected income is bigger than the other option. So a risk neutral person will start choosing A and in the row 5 (where the probabilities are 50/50) will change to the option B as I commented before.

The only variation in my questionnaire is that the values used are the ones they used multiplied by two: A1=4€, A2= 3.20€, B1=7.70€, and B2=0.20€ (exchange rate not applied); because in that way seems that the returns are higher and the penalty is higher so it is clearer and easier to decide. In this question I wanted to know the risk aversion coefficient from those individuals who answered the survey.

2.2.3. Dictator's game

The fourth question is the Dictators' game where the first player called "Dictator" has to decide how to split something (generally, money) with another player "recipient". The "recipient" just can accept the amount of money given. This experiment is used to measure the degree of generousness of people, although the economic theory affirms that "Dictators" will allocate the maximum quantity of the good on themselves.

In the questionnaire I make respondents to split 10€ with a hypothetic player. We have to keep in mind that since there are not economic incentives we have to trust in the good faith of people saying the truth. In order to get a real result we would include incentives, as Iriberri and Rey-Biel (2013), or Eckel and Grossman (1998) did in previous experiments.

2.2.4. Traveler's Dilemma

The Traveler's Dilemma (TD) first introduced by Basu (1994) is as follows:

"Two travelers lose their luggage during a flight. Each traveler's luggage contains exactly the same object. To compensate damages, the airline manager ask each traveler to independently make a claim for the value of the lost object between $\underline{b}$ *and* $\bar{b}$*. To discourage false claims, the manager offers to pay each traveler the minimum of the two claims, plus a reward of p to the lowest claimant and minus a penalty of p to the highest claimant".*

The game consists on saying a value below the other traveler in order to get the reward *p*, but the other traveler will think the same, so if both of them say a unit before the other's one, the optimal will reach the lowest value $\underline{b}$.

In the TD used in the questionnaire they have to choose between 0 and 100 with a penalty-reward of 20€ because I wanted to leave the opportunity to, not only be competitive but also, tease the other, because if, for example, someone choose an option of 5€ the other should pay 15€ to the airline agency.

Moreover they have to justify their answer in order to avoid people justifying their answer with the economic optimal (Nash equilibrium) and to analyze their responses to relate them with the other games.

2.3. Subjects selection

The principal sample of that experiment is university students, but since the first data collection was too low, I lengthened the sample to all individuals that wanted to answer. The media to send that questionnaire was through social media as Facebook, Twitter, Whatsapp, Forums and face-to-face method. I asked to answer the online questionnaire and to share to their friends to obtain as maximum responses as possible, since it is always better to have a large sample to results be more consistent.

2.4. Data analysis

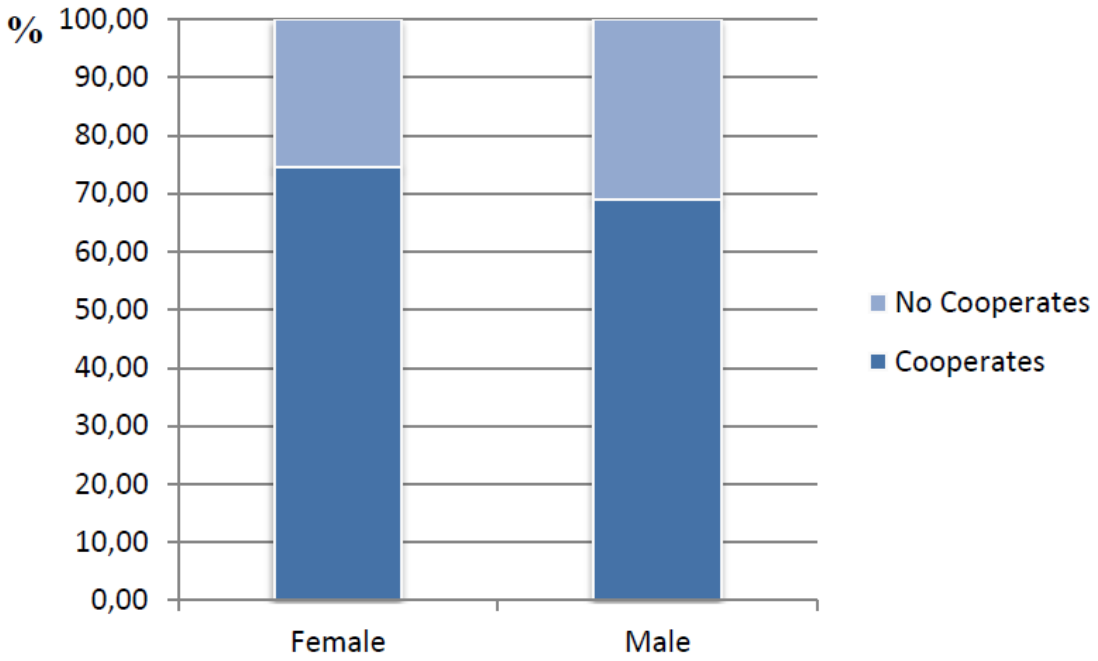
I received 280 responses, but I had to eliminate 5 of those ones because they knew about economic theory and answer the questions with the Nash Equilibrium, therefore I end up with a sample of 275 valid responses, where 149 (54,18%) were women and the

others 126 (45,82%) were men. All data was included in an Excel file in order to be treated.

2.4.1. Prisoner's dilemma

Here, I obtain the following answers:

Graph 1. Prisoner's dilemma answers



We can observe here that even they act similarly, women cooperate a little bit more than men. What it is more impressive is that the Nash equilibrium (the economic optimal) is the action "No cooperate" but we observe here, that both genders choose that action less than "Cooperate". This can be due to a social factor of giving a better impression of themselves because of the lack of incentives. Furthermore, if it was the case of not understanding the question between choosing "No cooperate" and "Cooperate" obviously the action they will choose to be well seeing is "Cooperate". Continuing with the social factor, we can observe that there are people that even there are not economic incentives they choose "No cooperate", that could be because they are able to put them in situation, or because they give no importance to the social environment.

Moreover, I can also mention than even there are more women than men answering that question the number of people answering "No cooperation" is similar one gender to the other (25.5% with a sample of 38 women vs. 30.95% with a sample of 39 men), meanwhile the "Cooperation" is slightly higher in women (74.5% with a sample of 111 women vs. 69.05% with a sample of 87 men)

Furthermore, since it was a voluntary questionnaire, the fact of women answering more than men (149 women against 126 men) would be another reason to argue that women cooperate more than men.

In an experiment run by Frank R., Thomas, G., & Dennis, R. (1993) showed that women cooperate significantly more than men in PD games. So, even there are no incentives in my experiment the results related with the hypothesis of women being more cooperative than men is consistent with the literature.

2.4.2. Lotteries

In this game I used two options as the one used in Holt and Laury (2002) where Option A was the "Red card" (less risky) and Option B was the "Green Card" (more risky). The normal behavior was to start with the red one and in probability 50/50 change to the green one. Changing before or after determines the risk characteristic of the person.

In order to know which is the crucial I did again the table with the expected income for each option based on the Holt and Laury (2002; Table 4):

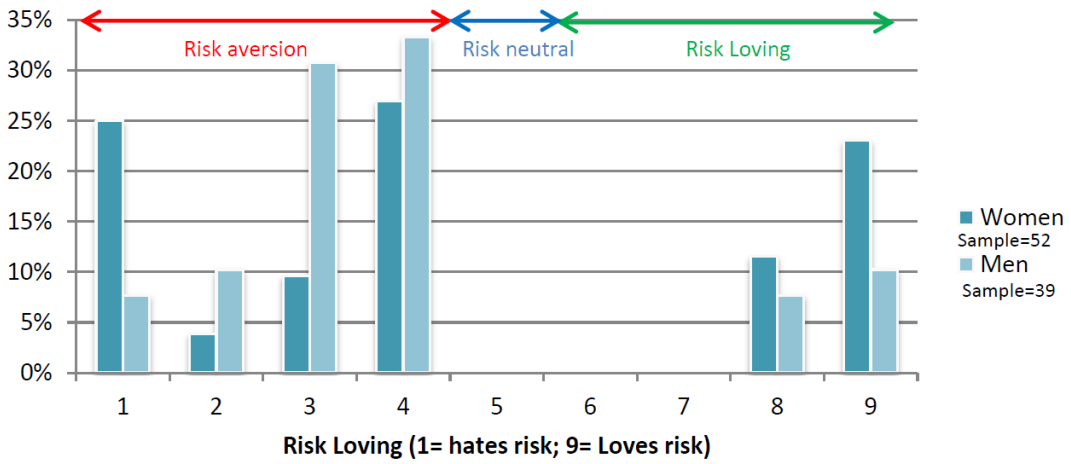
Table 5. Outcome expectations in lotteries

Row No.	1	2	3	4	5	6	7	8	9	10
Red (€)	3,28	3,36	3,44	3,52	3,6	3,68	3,76	3,84	3,92	4
Green (€)	0,95	1,7	2,45	3,2	3,95	4,7	5,45	6,2	6,95	7,7

And the expected behavior (risk neutral) is to start choosing the red card and in the row 5 (50/50 probabilities) change to the green one. There were cases of people answering first the red card, changing to the green, and then choosing again the red card. Since just one change is possible considering the rationality of the economic theory, those answers were eliminated; therefore I end up with total valid answers of 91 out of 275. This value represents the 33,09% of the sample, from this percentage 57,14% (N= 52) were women and 42,86% (N= 39) were men.

Contrary of what Eckel and Grossman (2008) showed in their experiments women seem to be more risk loving than men in my questionnaire. Finucane (2000) found that there could be cultural biases what make gender differences.

Graph 2. Risk classification. Answers from lotteries game.



In order to see if the difference between genders is consistent I ran a Chi square test, being the null hypothesis "They are independent variables" and the alternative hypothesis "They are not independent variables" and with an alpha of 5% we can reject the null hypothesis (Pearson = 0,0212 <5%). So I can say that in my experiment women are more risk loving than men. Even though there is a major amount of women in the extremes than men. It is true that both genders are risk averse but if we compare one with the other, the outcome is women being more risk loving than men. I have also to mention that none of the observations give the optimal outcome, changing in the probability 50/50. Except the safest and riskier extremes the others are dominated by the male sector, what it is not consistent with the literature. That difference can be due to two factors: One could be that there is a misleading in the instructions and that biased the results or; since there are not real incentives women did not feel the risk as in the literature's experiments felt it and, therefore, the results were the contrary because they wanted to show that they were more riskier that what they really were. In order to solve this, I could run another experiment with real incentives but with the same instructions, if the results are the same ones, could be because of the instructions; if they are different it is because of the lack of incentives.

2.4.3. Dictator's game

Even there are more women than men participating in this game the average of people giving the 50% of the money received is the same in both genders.

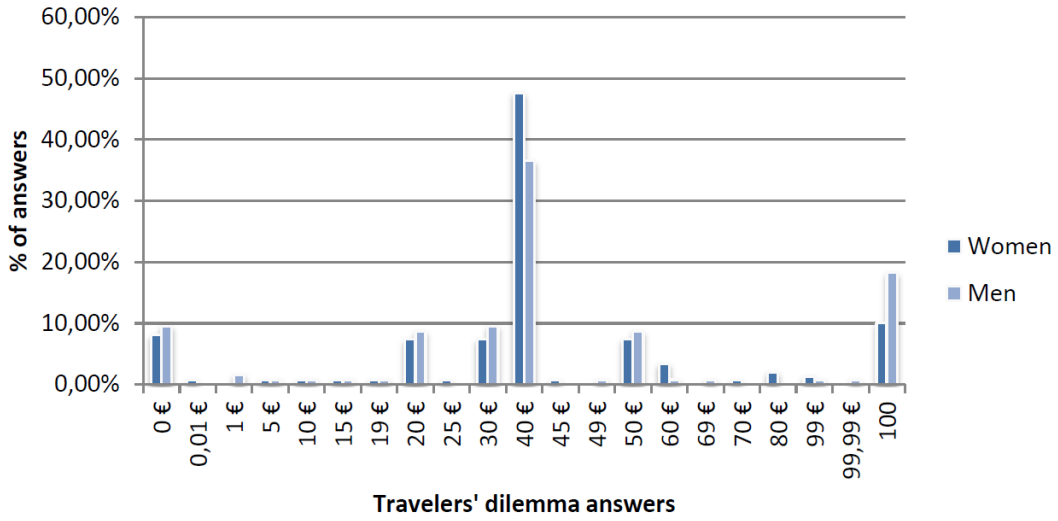
Moreover, I can mention that although there are values along the entire interval not relevant amount of individuals give more than 5€.

Graph 3. Dictator's game answers

In the literature is demonstrated that women use to give more than men, almost twice as much as men in conditions of anonymity (Eckel and Grossman, 1998) which was the case of the questionnaire. Women are concerned about equalizing earnings and men are more efficient maximizers. We can observe those differences in the graph but are not relevant because the sample is small and there were not incentives in game which leads to a social well-appearance demonstration as I mentioned before in the PD. Since we were kids we were told that "Sharing is living" therefore, in an experiment like that where money don't play any role, they have to demonstrate that they are well educated with this social convention of sharing.

2.4.4. Travelers' dilemma

Graph 4. Travelers' dilemma answers



As expected, there are values along the entire interval but with certain peaks in the clue values that are: 0€, 20€, 30€, 40€, 50€ and 100€. After applying the Chi Square test, considering an alpha of 5%, (P>0.4899), I can say that the variables are independent

with each other, what means that even we see that women focus more in one values than in others, it is not a relevant variable to consider gender differences.

In almost all values men use to be more present than women, except for the case of 40€ where women are, by far, more present than men.

I asked people to argument their answers in this game in order to know why they were choosing those values and after, classifying them into the different variables that Barañas-Garza, et al., (2011) did in their experiment, I kept the ones having a weight higher or equal than 5% and it result the following table:

Table 6. Variables in the written answer of the TD

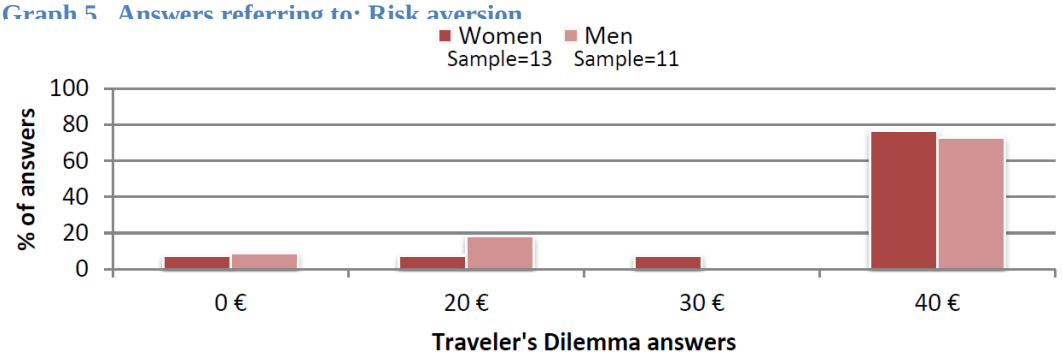
Variables	Variable Definition	Number of answers	%
Risk1	Risk aversion	24	8,73%
Win1	Win Loving	45	16,36%
Penalty1	Penalty averse	15	5,45%
Aspi1	Expects high value	16	5,82%
Low1	Choice is low	27	9,82%
Low2	Choice is high	21	7,64%
High1	Beliefs rival will say higher	25	9,09%
Soci1	Equality	41	14,91%
Fair1	Belief their value is fair	69	25,09%
Rand_Noise	Didn't understand the game.	36	13,09%

Starting with the risk aversion (Risk1; Graph 5) where were included all answers considering risk aversion and fear to lose in their value choice, 8.73% of the total sample gave this variable as a justification of their choice which is surprisingly low since 73.5% of the sample is risk averse. These figures gave us another point to reconsider the instructions of the lotteries experiment.

Looking at the graph we can observe that no one gave a value over the 40€ in the TD. Moreover, more than 50% of the sample gave a value of 40, trying to avoid being the one giving a higher value and be punished with the penalty, for this reason the values are so low. Both genders act similarly regarding risk aversion.

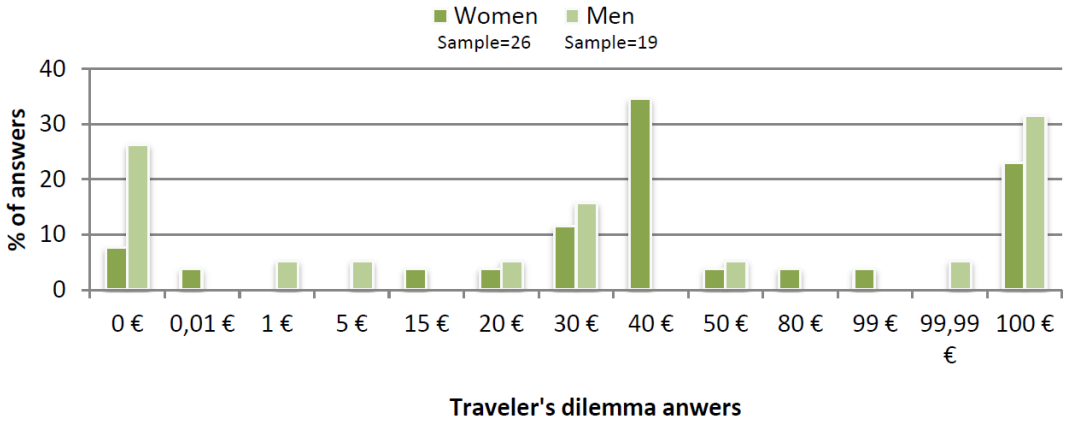
In our TD reference experiment (Brañas-Garza, et. al., 2011) people justifying their answer with risk aversion were giving the lowest value of the interval, in this case should be 0€. We see that even here there are people allocated in this value, they are more focused in the 40€ value.

Graph 5 Answers referring to: Risk aversion



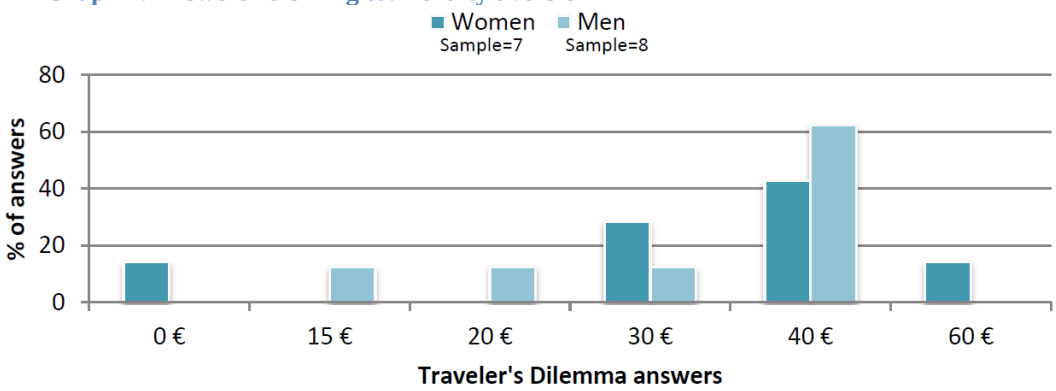
In the win loving variable (Win1; Graph 6) where were included all answers justifying their choice with arguments related to win or strategies to do so, 16.36% of the total sample gave this variable as a justification of their choice. It is curious because even the vast majority of the sample gave 5€ in the dictators game and cooperated in the prisoner's dilemma, now feel the motivations to win. Here the values are along the entire interval because there are different approaches to win because the strategy can be either say a low value to be the lowest value or give a higher value expecting the other behaving equally and therefore obtaining the maximum income. I can mention that they weight in 40€ is only from women and the values like 0€ and 100€ are dominated by man. This is because even women like to win; they have the social factor of inequality aversion so they expect to win a fair value, while men enter in the competition. This social difference is due to the nurture and culture we had as stated in Gneezy and List (2014).

Graph 6. Answers referring to: Win lovin



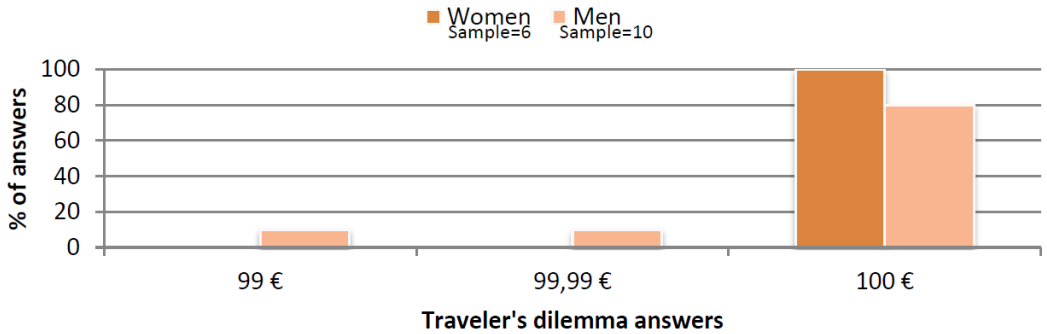
People mentioning the penalty (Graph 7) aversion or considering it too high in their answers, is really low (5.45%) but we see that the highest value is in case of women (60€) being higher than men answers (40€). The common reason was "in the worst case I had nothing, but hopefully the other will say higher number or the same".

Graph 7. Answers referring to: Penalty aversion



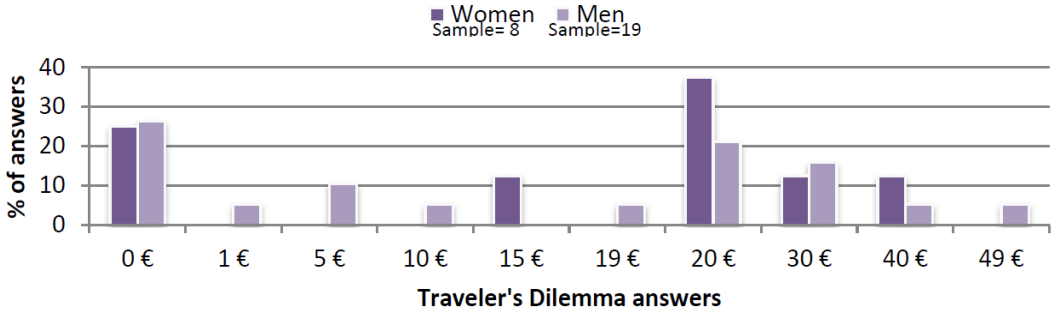
In the case of expecting a high value (Aspi1; Graph 8), what means that in their answers were mentioning that expect the final result of both strategies be high, has also a low percentage of references (5.82%), considering the huge amount of people cooperating in the Prisoner's dilemma, which means that the majority of the people should be saying higher numbers so the final outcome should be higher, so they should be argument their answer with that. Both genders expect that both say a high number, for this reason they give a higher value, because in that way both individuals will obtain a great amount of money, even they avoid the bonus (because both giving the same value). We see that men undercut more than women, in the graph is shown that all women mentioning this variable say 100€ for the value of the luggage, but men say more rare numbers like 99€ or 99,99€ in order to take advantage of the reward.

Graph 8. Answers referring to: High Value expectations



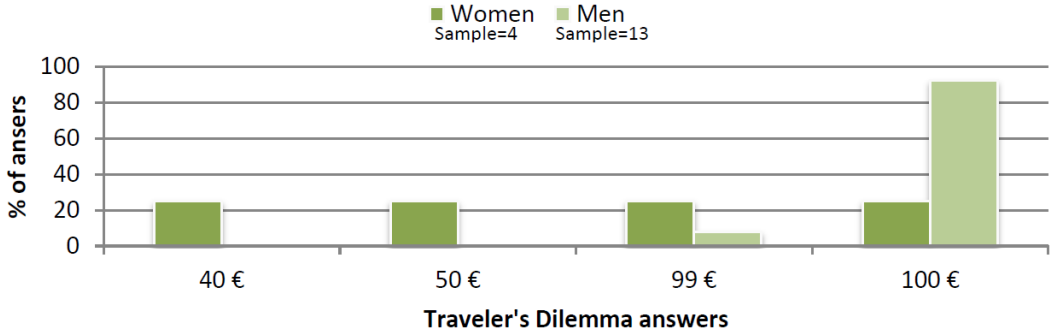
In the variable where they reason their choices with giving a low value (Low1), we obtain the following graph 9. All the values given are lower than 50€. I have to mention that women refer to round values mean men are giving more undercutting values as 1€, 5€ or 19€ taking advantage of having the bonus for saying the lower value. The greatest proportion of people saying that the value given is low is in 0€ and 20€ (the value of the penalty).

Graph 9. Answers referring to: Giving a low value



In the contrary case (Low2; Graph 10) where they reason they are choosing a high value we obtain an interesting result. Women belief that giving values like 40€, and 50€ are high values; also I have to mention that women referring to this variable were 4 and equally distributed to the four represented values in the graph. Men, contrarily, say real high numbers as 99€ and 100€, reaching almost the 100% in the last case.

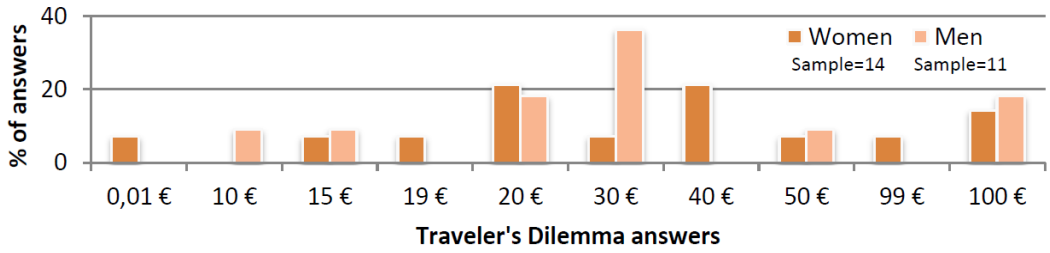
Graph 10. Answers referring to: Giving a high value



When dealing with expectations we have again (Graph 11) values along the interval. Both genders expect the other saying also a high number. The majority of the answers is below 50€ because if the other says a high number there are more possibilities to obtain the bonus; and then a little proportion in values like 99€ and 100€. In this last value they expect the other to say the same number as them and in that way obtaining a great amount, and the bonus in the case of 99€.

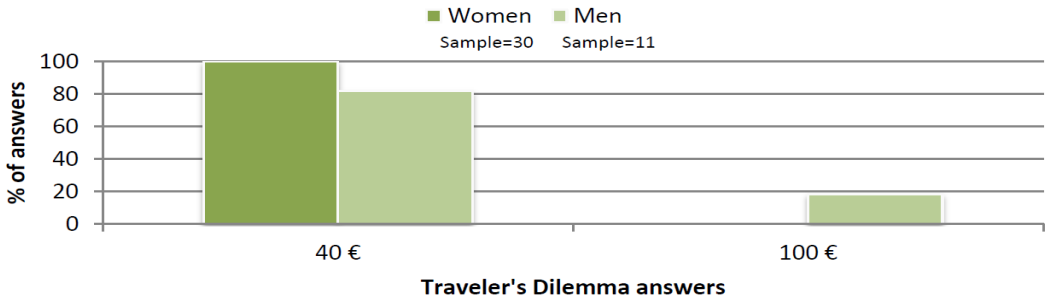
Again, considering the cooperation in the PD and generousness in the dictators game, in the TD, values should had been really high. I could mention that the lowest values is because of the risk aversion but the percentage of people giving this reasoning is really low compared with the people being risk averse, therefore they answers in the TD are not consistent with their answers in the previous games which it is another prove that they were socially conditioned.

Graph 11. Answers referring to: Rival giving high number



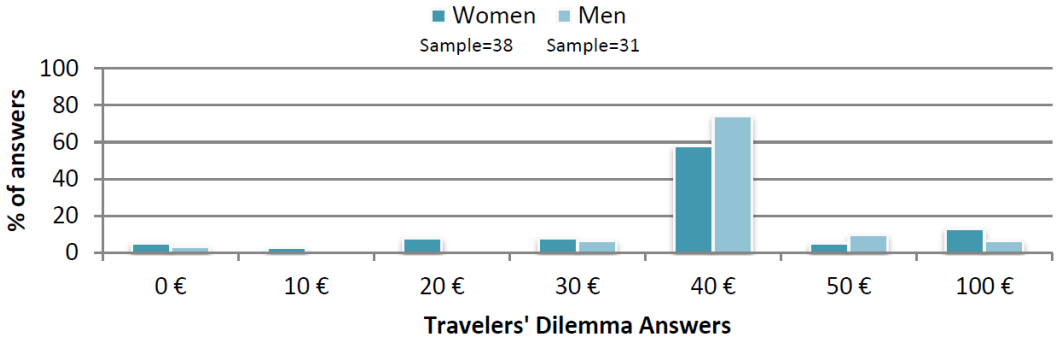
Finally, we enter to analyze the variables concerning social ethics that had been present along the entire project. In the first case, we find people reasoning their answer with the variable of equalizing earnings (Soci1; Graph 12), what means that they prefer to receive the same amount since both luggages were containing the same. We observe, that women referring to this variable is greater than men but they stay in the 40€ amount, mean a little proportion of men refer also to 100€. Considering the logic of the whole experiment, this variable (14.91%) should be the one with the highest percentage but it is even lower than winning (16.36%). The results in this graph, considering the amount of generous people we had in the sample should be focused in the 100€ value.

Graph 12. Answers referring to: Equalizing earnings



But as we observe in the other graph (Graph 13) where they reason that the value of the luggage they are giving is "fair" and the average value is 40€. In the graph, we observe that there are really low values, justified in the written answer as "I put this value because I don't know the real value of the luggage but I would be fair", others say that will take advantage from the other's fairness to get the bonus.

Graph 13. Answers referring to: Being fair



Apart of all the variables, we have a great amount of people answering the TD but randomly or not understanding the instructions. I'm talking about 36 individuals answering randomly, this represent 13.09% of the sample. In their written answers they show they were trying to help but they didn't understand the instructions.

I need also to mention, that the modification of the instructions also affected to the understanding of it. The majority of the people was assuming that they couldn't give a value below 20€ because then the other, in case of saying a higher value, would have to pay. Just one person used this reasoning to tease the other individual.

3. CONCLUSIONS

I can then conclude that incentives are important. We see great differences between what the literature demonstrate along the time and the results I obtained. First, with the prisoners' dilemma, where people, according with the economical theory, were supposed to not cooperate but they did it in a majority. At least, it coincides with the literature on women being more cooperative than men. Second, in the lotteries, women being more risk loving than men, when in other experiments (Finucane, 2000) was demonstrated just the contrary. I have to remind that there is the possibility of misunderstanding of the experiment and therefore it should be repeated with incentives in order to make sure if it was because of misleading or because of women being more risk loving than men. Third, with the dictator's game, where people turned to be all generous and inequality averse when the literature demonstrated that 76% of individuals were selfish and, just 14% were creating welfare (Iriberri & Rey-Biel, 2013). Finally, in the TD, were the highest percentage of reasoning was being fair and giving the majority of the values in the middle of the interval. It make sense from the point of view of fairness but it is not consistent with the whole experiment since all the answers were straight away to give high values in the TD but it turned out not being like that.

Through game theory and experimental economics we found out that trying to indentify personalities in people to know how they will react in certain circumstances makes no sense without incentives, therefore the personality test done by psychologists in any job interview is useless from the moment people lies to make them better that what they really are because of the cultural factors surrounding us, and the education we have grown with.

The conditions of the experiment are also important because it is not the same to be in a lab where you can ask your questions to the experimenter than in your own in front of a computer were your doubts won't be solved and then your answers will bias the results.

This experiment had been an example for me of how to run an economical experiment using game theory. I dealt with the difficulties of requesting people to answers my questionnaire, all the work that is behind an experiment and that the results are not always as suitable as you would like to. I learned that the economic theory is not always right defining individuals' rationality and through experimental economics you can check whether they are right and not, even more, you can play with the different variables that affect the results.

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ANNEX A

(It is in Spanish to capture more answers. If you need any translation feel free to contact the author: nlopezm93@gmail.com)

Trabajo de final de grado

Bienvenido/a

Antes de comenzar, me gustaría agradecer el tiempo que vas a dedicar para ayudarme con mi proyecto de final de carrera. No te llevará más de diez minutos y estarás ayudándome mucho.

A continuación, se te realizarán preguntas que debes contestar con total sinceridad.Todas las respuestas serán recolectadas de manera anónima por eso mismo debes contestar acorde con tus preferencias reales. Es muy importante que respondas tal y como actuarías si te encontraras en la misma situación. No se te va a juzgar por tus respuestas porque NO SABREMOS QUIÉN ERES, así que por favor, sé sincero/a.

Gracias de nuevo. Ya estamos listos para empezar.

Continuar »

16% completado

Datos estadísticos

Antes de comenzar me gustaría que respondieses a estas preguntas estadísticas simples.

Sexo: *

- Masculino
- Femenino

Edad *

¿Cuántos hermanos tienes? *

No debes incluirte

¿Cuál de los hermanos eres? *

¿Cuál de los hermanos eres? (Debes responder según el orden de nacimiento, si fuiste el primero en nacer, debes contestar con un 1, si fuiste el segundo, con un 2, y así sucesivamente)

« Atrás | Continuar »

33% completado

Esfuerzo y recompensas

Un compañero y tú tenéis que hacer un trabajo juntos sin oportunidad de comunicaros. Recibiréis una remuneración basada en los resultados comunes. Si ambos os esforzáis, recibís una cantidad de 90€ cada uno. Si uno de los dos se esfuerza, pero el otro no, el que se esfuerza recibe una compensación de 50€ y el que no de 100€. Si ninguno de los dos se esfuerza, tenéis una compensación de 60€ cada uno. ¿Qué haces? *

- Me esfuerzo
- No me esfuerzo

		Él	
		Se esfuerza	No se esfuerza
Tú	Te esfuerzas	90 90	100 50
	No te esfuerzas	50 100	60 60

Explica brevemente por qué has elegido esa opción. *

« Atrás | Continuar »

50% completado

Dinero gratis

Imagina que estás emparejado con otra persona en un experimento y te dan 10 euros para repartir. ¿Cuánto le darías? *

(En caso de ser "nada" introduce "0" en la casilla)

« Atrás | Continuar »

66% completado

Casino

Imagina que vas a un casino y te encuentras que tienes que jugar con las fichas verde y roja. Indica, dependiendo de cada probabilidad, con qué ficha te quedarías en cada caso.

Tarjeta Roja
Hay una posibilidad de diez (1/10) que te toquen **4,00 €**
Hay nueve posibilidades de diez (9/10) que te toquen **3,20 €**

Tarjeta Verde
Hay una posibilidad de diez (1/10) que te toquen **7,70 €**
Hay nueve posibilidades de diez (9/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay dos posibilidades de diez (2/10) que te toquen **4,00 €**
Hay ocho posibilidades de diez (8/10) que te toquen **3,20 €**

Tarjeta Verde
Hay dos posibilidades de diez (2/10) que te toquen **7,70 €**
Hay ocho posibilidades de diez (8/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay tres posibilidades de diez (3/10) que te toquen **4,00 €**
Hay siete posibilidades de diez (7/10) que te toquen **3,20 €**

Tarjeta Verde
Hay tres posibilidades de diez (3/10) que te toquen **7,70 €**
Hay sieste posibilidades de diez (7/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay cuatro posibilidades de diez (4/10) que te toquen **4,00 €**
Hay seis posibilidades de diez (6/10) que te toquen **3,20 €**

Tarjeta Verde
Hay cuatro posibilidades de diez (4/10) que te toquen **7,70 €**
Hay seis posibilidades de diez (6/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay cinco posibilidades de diez (5/10) que te toquen **4,00 €**
Hay cinco posibilidades de diez (5/10) que te toquen **3,20 €**

Tarjeta Verde
Hay cinco posibilidades de diez (5/10) que te toquen **7,70 €**
Hay cinco posibilidades de diez (5/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay seis posibilidades de diez (6/10) que te toquen **4,00 €**
Hay cuatro posibilidades de diez (4/10) que te toquen **3,20 €**

Tarjeta Verde
Hay seis posibilidades de diez (6/10) que te toquen **7,70 €**
Hay cuatro posibilidades de diez (4/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay siete posibilidades de diez (7/10) que te toquen **4,00 €**
Hay tres posibilidades de diez (3/10) que te toquen **3,20 €**

Tarjeta Verde
Hay siete posibilidades de diez (7/10) que te toquen **7,70 €**
Hay tres posibilidades de diez (3/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay ocho posibilidades de diez (8/10) que te toquen **4,00 €**
Hay dos posibilidades de diez (2/10) que te toquen **3,20 €**

Tarjeta Verde
Hay ocho posibilidades de diez (8/10) que te toquen **7,70 €**
Hay dos posibilidades de diez (2/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay nueve posibilidades de diez (9/10) de que te toquen **4,00 €**
Hay una posibilidad de diez (1/10) que te toquen **3,20 €**

Tarjeta Verde
Hay nueve posibilidades de diez (9/10) que te toquen **7,70 €**
Hay una posibilidad de diez (1/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

Tarjeta Roja
Hay diez posibilidades de diez (10/10) que te toquen **4,00 €**
Hay cero posibilidades de diez (0/10) que te toquen **3,20 €**

Tarjeta Verde
Hay diez posibilidades de diez (10/10) que te toquen **7,70 €**
Hay cero posibilidades de diez (0/10) que te toquen **0,20 €**

En este caso ¿Cuál eliges? *

- ○ La roja
- ○ La verde

« Atrás Continuar »

83% completado

Maletas perdidas

Imagina que te encuentras en la siguiente situación: Has perdido la maleta y cuando vas a reclamarla, resulta que hay otra persona que ha perdido también su maleta. Por casualidades de la vida, en ambas maletas había exactamente lo mismo. Por eso mismo, el de objetos perdidos os pide a ambos, por separado, que le digáis el valor monetario de vuestra maleta teniendo en cuenta lo siguiente:

- De las dos cantidades que me digáis, se os entregará a los dos la de menor valor.
- Si ambos me decís el mismo número, ambos recibiréis la cantidad de dinero que me habéis dicho.
- El que me diga el valor más alto, recibirá la cantidad de dinero que haya dicho su compañero menos 20€. Por el contrario, el que diga el valor más bajo, recibirá la cantidad que ha dicho más 20€ de bonificación.

Para que quede claro:

- Si tú (A) me dices que el el valor de la maleta es de 30€ y tú (B) me dices que el valor es de 40€. "A" recibirá 30€ + 20€ = 50€ y "B" recibirá 30€ - 20€, es decir, 10€.

- Si tú (A) me dices que el valor de la maleta es de 50€ y tú (B) me dices que el valor es de 20€. "A" recibirá 20€ - 20€ = 0€ y "B" recibirá 20€ + 20€, es decir, 40€.

- Si ambos mes decís 40€, recibiréis 40€ cada uno.

¿Qué valor tiene la maleta?

¿Por qué has elegido ese valor? *