Do Expectations Matter?

An Experimental Analysis of Trust and Reciprocity

by

Shiva Shirazi-Kia

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Dr. Daniel Rondeau, Supervisor (Department of Economics)

Dr. Herb Schuetze, Department Member (Department of Economics)

Dr. Martin Farnham, Department Member (Department of Economics)

University of Victoria

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Abstract

Economists have tried to explain deviations from the sub game perfect Nash equilibrium observed in Trust Games since it was first introduced. This is because players are not playing as the theory suggests they should. By conducting an experiment where expectations are elicited and transferred between players, I try to explain the deviation through a model driven by expectations. This paper finds that expectations are a driving force behind trust and reciprocity. This can have implications for social welfare, modeling behavior, and further experiments.

1. Introduction

How often have you had high expectations and been let down? Whether it's a certain way you were expecting someone to act, a reaction you were hoping they would have, or something you were hoping they would buy for you, expectations are everywhere. When we have high expectations for something and are let down, there is always someone nearby to say "You should lower your expectations; if you keep your expectations low, then you cannot be let down". But is this the right way to approach relationships?

Consider a simple example. You are visiting a city that you have never been to before. You have a friend who lives in this city, and you ask them whether they would be willing to pick you up from the airport. Even though your friend agrees, you are still a bit worried that they might not be there to pick you up, because this friend is not very reliable. However, you have high expectations that your friend will be there to pick you up, and you trust them to do so. By

this I mean that you have not made any back up plans; you have not looked up where your hotel is, and you have not planned for any other ride.

When you get off of the airplane, you try calling, but your friend does not pick up, so you begin to worry. Is your friend more likely to fulfill your expectations and be there to pick you up if you have somehow signaled or told them your expectation? Is your friend more likely to pick you up if he knows you have not made any back up plans and he is your only available ride? In this paper, I will try to determine through an experiment whether people are more likely to fulfill trust if they believe it is expected of them, or, more specifically, do expectations affect the amount of trust observed in a Trust Game?

Explaining the deviation from the sub game perfect Nash Equilibrium in Trust Games is important because doing so would explain what drives people to trust each other in economic transactions. Without trust, many transactions that are mutually beneficial to all parties would never take place. This would cause a general loss of social welfare (Putman et al., 1993). Therefore, if we could understand why people trust even though the theory suggests that they should not, we might be able to find ways to further promote trust. One argument against this point could be that trust is not necessary for economic transactions. We could just implement contracts and force trust by suing when one party to a contract does not meet the obligation. However, contracts are expensive to create and to enforce. Creating more trust would at least partially eliminate the need to rely on contracts for specific behavior. Also, it is important to maintain some trust in society. If individuals stop trusting, and trust can only be obtained through things such as contracts, then trust will continue to diminish. This could have important

implications for things such as e-commerce where we buy something online, sight unseen; or paying workers above market clearing price expecting them to work harder.

In the standard two-person Trust Game, a Player 1 must give up an initial amount to pass money onto Player 2. Player 2 must then give up some of the money they received in order to reciprocate to Player 1. If both players cooperate, if Player 1 trusts and Player 2 reciprocates, then both players will be better off then they would have been had they not cooperated. The sub game perfect Nash Equilibrium predicts that the initial amount sent should be zero, and no cooperation should be observed amongst players through backwards induction, assuming that all players are rational and motivated only by financial gains. Although this is what the theory predicts, experiment which conduct the Trust Game see large deviations from the sub game perfect Nash Equilibrium. While many economists have tried to offer explanations for this deviation, there is no consensus. It is obvious that players are deviating from the Nash equilibrium, but it is unclear why this is happening (Holt, 2005). This paper will argue that the deviations observed from the sub game perfect Nash equilibrium in Trust Games can be partly explained by player's expectations. This would imply that signaling expectations would increase trust, which would benefit society.

I will try to answer the question of whether trust is more likely to be fulfilled if there is a high expectation of reciprocation by conducting two Trust Games (the Involuntary Trust Game and the Voluntary Trust Game), with a control and a treatment of each. In the control group expectations play no role, whereas in the treatment group players expectations are shared as new information. The experimental results showed that there was less cooperation in the

Involuntary Trust Game, which was consistent with previous experiments (McCabe et al., 2003), and that expectations did play a role on the level of trust and reciprocity in the Voluntary Trust Game (at a 10% level).

This paper will be organized in the following way: Section 2 will review the relevant literature; Section 3 will describe the basic two-person Trust Game; Section 4 will describe the Expectation-Based Model; Section 5 will introduce my experimental design and the procedures of the game; Section 6 includes my predictions and hypotheses; Section 7 will show my results; and finally Section 8 will have my conclusion and discussion.

2. Literature Review

The first Trust Game was conducted by Berg, Mikhaut and McCabe in 1995. They wanted to see what factors increased and decreased trust, because of its importance in economic transactions. They played a two-person Trust Game where Player 1 was given an initial amount of $10, and the amount sent was multiplied by 3. They found that 30 out of 32 of their Player 1 participants sent money, and that an average of $5.16 was sent. Out of the 30 Player 2's who received money, 11 of them returned more than Player 1 had sent. With these results Berg et al. were able to easily show that deviations from the sub game perfect Nash equilibrium exist, since the Nash equilibrium predicts that players should not send or reciprocate any money.

Bolle (1998) performed a similar experiment several years later, with slight modifications. In his experiment, Player 1's were told that if they sent a minimum amount of 80 Denmarks to Player 2, then the amount sent would be doubled. Otherwise, the amount sent

would not be multiplied by any factor. Bolle also observed a deviation from the Nash equilibrium because three-quarters of the Player 1's sent 80DM. There are several more examples of trust experiments which have resulted in deviations from the sub game perfect Nash equilibrium (McCabe et al., 1998; Guth et al., 1990; Roth, 1995; Fehr et al., 1993; Berg et al., 1995; McCabe et al., 1996). Since it was shown that these deviations exist, economists started to design experiments and models to explain the deviation observed.

The two most popular models that attempt to describe the deviations observed from the theoretical predictions are the *intention-based models* and *outcome-based models*. *Outcome-based models* (Levine, 1998; Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000) focus primarily on other player's behavior and therefore on the outcomes of the game, assuming that players' intentions have no impact on the outcome of the game. It follows that two games which have identical payoffs based on the last decision of the game should have identical or similar results, regardless of how players have made decisions prior to the final decision. The *outcome-based models* are the most common models. Deviations from equilibrium behavior are explained by "altruism" or "spitefulness" based on participants' behavior in the game. *Intentions-based models* (McCabe and Smith, 2000; Dufwenberg and Kirchsteiger, 1998; Falk and Fischbacher, 1998) tell a very different story. They postulate that two games which have identical payoffs based on the last decision could have completely different results depending prior decisions made by participants. These models usually describe players as reading the other's intentions and motives, and adjusting their own behavior accordingly.

Since these are two competing models with very different explanations, McCabe, Rigdon and Smith (2003) ran an experiment to test the two theories against each other. They designed a very simple experiment where in one game, the Involuntary Trust Game, Player 1 had no choice but to trust Player 2, and then Player 2 decided how to split the money. In the other game, the Voluntary Trust Game, Player 1 could choose to deviate or trust. If Player 1 chose to trust, then Player 2 again decided the outcome of the game. The game trees are shown below.

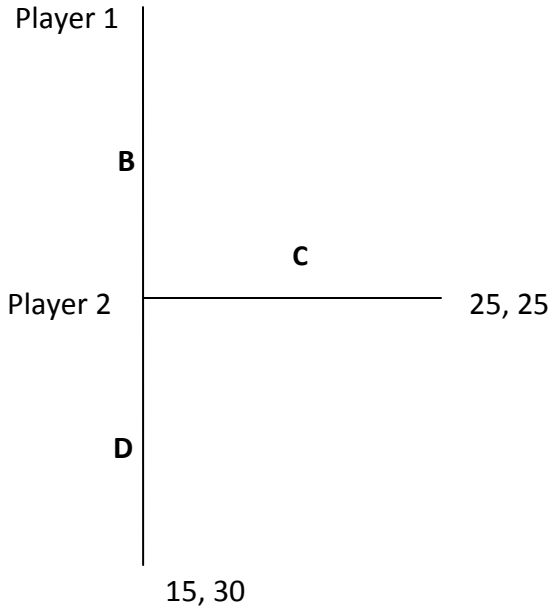

Figure 1. Involuntary Trust Game (ITG)

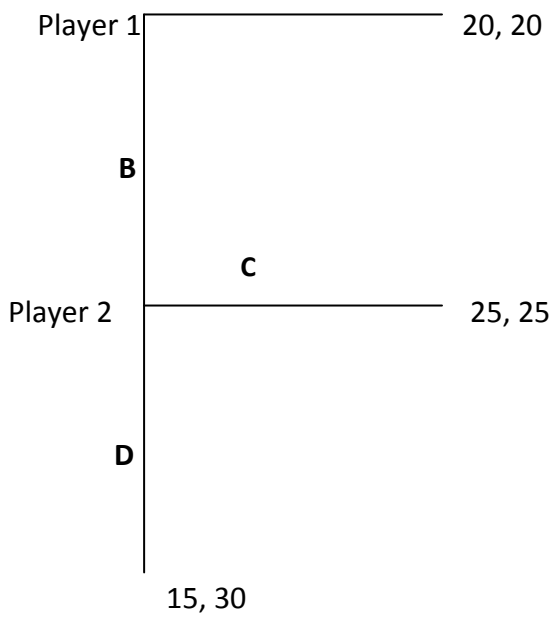

Figure 2. Voluntary Trust Game (VTG)

This experiment tested the two competing models because Player 2 had identical options for the last decision of the game in both cases. The *outcome-based model* would predict that Player 2's decisions should be the same in the Involuntary Trust Game and the Voluntary Trust Game, since Player 2 has identical choices at the last node. The *intention based model* would predict that if Player 1 chose to trust Player 2 then this sent a signal to Player 2, and Player 2 would be more likely to trust. This meant that if there were different results in the two games McCabe et al. could reject the *outcome based model* and conclude that Player 1's motives were read by Player 2, and the *intention-based model* is correct in explaining the difference. Otherwise, if the results were similar, then the *outcome-based model* would be correct in saying that two games with identical outcomes based on the last decision should have the same results, since players do not read each other's motives. What they found was that in the Involuntary Trust Game (where Player 1 was forced to trust Player 2), there was less cooperation. The difference was significant at all levels and using a bootstrap test. Therefore, McCabe et al. concluded that

outcome-based models were incorrect, and so the *intentions based model* must be a superior model of the Trust Game.

However, these results would have been expected. The Involuntary Trust Game is in fact a Dictator Game where Player 2 decides how to split the money, and less cooperation is always observed in the Dictator Game than in the Trust Game. They explain Player 1 choosing to trust Player 2 as Player 1 sending a "signal" that they want to enter into a *reciprocal-trust relationship* (269). Although some of the cooperation observed could be explained by this theory, it cannot be the only thing causing Player 2 to cooperate. There are likely other factors involved since not everyone playing is reading signals.

Bacharach, Guerra and Zizzo (2001) present a hypothesis explaining the deviation from the sub game perfect Nash equilibrium that is consistent with the *intentions based model*. They describe the act of fulfilling trust because it is expected of you as *trust responsiveness.* Bacharach et al. describe two elements in the informal explanation of trust responsiveness. The first is Player 1's "outcome disappointment". This is when Player 1 is expecting Player 2, but Player 2 does not cooperate and Player 1 is left with a lower monetary payoff. Player 2 will want to fulfill the expectation for the outcome since it yields them secondary utility. The second element is "person disappointment". This is when Player 1 is expecting Player 2 to be a trustworthy person by cooperating, and Player 2 does not do so. Player 2 will want to fulfill the trust in this case because they do not want Player 1 to think that they are not trustworthy. For their experiment, they conducted three different versions of the Trust Game to see first,

whether trust responsiveness exists, and second, to see whether the parameters of the games would have an impact on trust responsiveness.

In their three variants of the Trust Game, Player 1 was always given a choice between Trust and Withhold, and Player 2 was always given a choice between Fulfill and Violate. Each game had different payoff schemes to see whether this would affect the level of trust responsiveness. Their experiments were all computer-based, and in every experiment they first asked Player 1 to give their expectation of Player 2 cooperating or reciprocating. Similarly, Player 2 was asked to make a guess about their partners' expectations. They ran three treatments of their experiments. In the first, expectations were collected but not transferred. In the second, expectations were collected and transferred to Player 2. In the third, expectations were collected and transferred to Player 2, and then Player 2 had a chance to change their decision of whether or not to cooperate in response to being shown Player 1's expectations. In the treatments where Player 1's expectations were transferred, Player 2 did not receive their actual partner's expectation, but an average of all the Player 1's expectations minus their actual partner's. Bacharach et al. excluded the actual expectations of Player 2's partner to control for Player 1's exaggerating their expectations of cooperation.

There are some strong points and some weaknesses with the Bacharach et al. paper. The strength is in their third treatment where player 2 first made a choice, then was shown the expectation of Player 1, then given a chance to change their choice in response. This allows them to see whether Player 2 will adjust their choice depending on Player 1's expectations. This treatment is not done in my experiment due to time constraints and the difficulty of running

the experiment on paper. However, I find two weaknesses in their experimental design which I have tried to fix in my own. The first is that Player 2 did not receive their actual partners' expectation, but a "report" which was an average of expectations. In my experiment, Player 1's expectations are transferred to their actual partner since this is likely to have more of an impact. This is because the model has to be that Player 2 responds to Player 1's expectations, not to the expectations of the whole group. So knowing the average Player 1 expectations may correct Player 2's beliefs. This is a diffuse signal rather than the specific signal that corresponds to the model. The problem of Player 1 exaggerating their expectations is not a concern in my experiment since Player 1 will not be told that their expectations will be transferred. The second weakness is that Player 2 makes their guess about Player 1's expectation *after* being shown the report of the expectations. This encourages Player 2 to make a guess that is close to the report, rather than making a genuine prediction. In this paper, Player 2 will make a guess about expectations based on their own predictions, and will not be given any information about other players' actual expectations prior to guessing.

3. Trust Game

The standard two-person trust game is played as follows. Player 1 gets an initial amount of money. They are given the choice to send some of this money to their partner, Player 2. The amount sent by Player 1 to Player 2 is multiplied by some factor, usually three. Player 2 is then given the choice to return some of the money sent by Player 1, if any. The hope is that Player 2 will return enough money to make Player 1 at least as well off as he was before, or to make them better off. Often, in the literature, the act of Player 1 sending money is described as *trust*,

and the act of Player 2 returning money is called *reciprocity,* as long as the amount returned makes Player 1 at least as well off as they were before they sent money. The game tree is drawn below. This game tree is drawn for a game where Player 1 is given an initial amount of $10 and the money sent is multiplied by 3 (Holt, 2005). The sub game perfect Nash Equilibrium is found by backwards induction of the game tree.

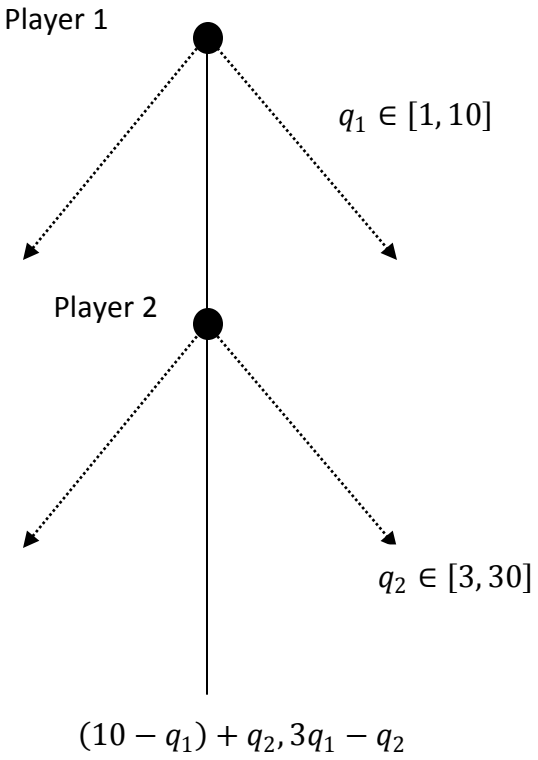

Figure 3. Trust Game represented in a game tree

Player 1 is a rational player who is trying to maximize his monetary payoff, $(10 - q_1) + q_2$. They know that Player 2 is also a rational player who is trying to maximize their monetary payoffs, and that Player 2 knows that Player 1 a rational player. Knowing this, Player 1 knows that if they send Player 2 any amount of money, Player 2 will not reciprocate since doing so would not maximize earnings. This means that if Player 2 is trying to maximize the payoff $3q_1 -$

q_2, by choosing an amount of money to return, q_2, this amount should be zero. If Player 1 is also trying to maximize their monetary payoff, if q_2 is equal to zero, they are best off by making q_1 zero and sending nothing. So the sub game perfect Nash equilibrium is for no initial amount to be sent by Player 1.

There are four elements that need to be satisfied to make a game of exchange a Trust Game (Bacharach et al., 2001).

1. If Player 2 is not going to reciprocate, Player 1 is better off not trusting.
2. If Player 2 is going to reciprocate, then Player 1 is made better off trusting.
3. If Player 1 trusts, then Player 2 is made better off by not reciprocating.
4. If Player 1 trusts and Player 2 reciprocates, then both players can be made better off.

If all four elements hold, then it is a Trust Game. What is important to note is point 4, that if Player 1 sends money and Player 2 reciprocates, then both players can be made better off. The more money that Player 1 sends initially, the more money there is available in this "society" to be split between the two players. For Player 1 to send money to Player 2 to create more money in the society, he must trust that Player 2 will reciprocate and return some of the money sent.

4. Expectation Based Model

The *expectation-based model* describes the deviation from the theoretical prediction in Trust Games in the following way. Player 2 is more likely to fulfill trust if they believe that Player 1 expects such behavior. In terms of utility functions, the expectations model says that Player 1's utility function includes not only their monetary payoff, but also satisfaction of expectations.

If Player 1's expectations are met, they are made better off and their utility increases. Similarly, if they have expectations which are not met, their utility decreases. However, Player 2's utility function also includes a function of Player 1's expectations. If Player 2 meets Player 1's expectations, then Player 2's utility increases as well as Player 1's. Similarly, if Player 2 does not meet Player 1's expectations then their utility decreases.

In the context of the Trust Game this means that if Player 1 sends some amount of money expecting that Player 2 will reciprocate and Player 2 does not reciprocate, then Player 1 is not only losing money, but also losing more utility because they expected Player 2 to reciprocate and Player 2 did not. However, since Player 2's utility function also includes something about meeting Player 1's expectations, if Player 1 can send a signal of what they expect to their partner, then it will be more likely that Player 2 will cooperate.

5. Experimental Design

To test whether or not Player 2 is more likely to cooperate if Player 1 expects them to, I will run an experiment where Player 1's expectations are transferred to Player 2 to see whether this has an impact on cooperation. I build the two games which were used by McCabe, Rigdon and Smith in their 2003 paper which was testing the *outcome-based model* versus the *intention-based model*. The two games are called the Involuntary Trust Game (ITG) and the Voluntary Trust Game (VTG). The Involuntary Trust Game is presented in Figure 2 below.

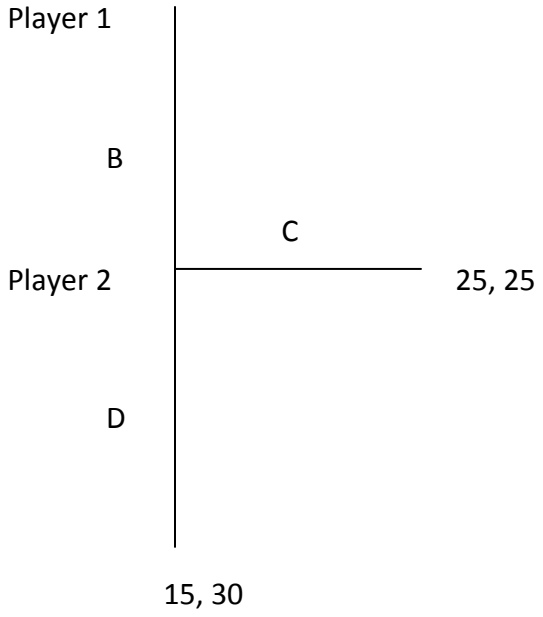

Figure 4. Involuntary Trust Game (ITG)

The ITG is actually a Dictator Game where Player 2 is the dictator. A Dictator Game is a game where one player decides how to split the money, and the other player has no choice to make. From the game tree above you can see how the ITG is played. Player 1 has no choice to make; they have to choose B. Player 2 then has to choose between C and D. If Player 2 chooses C then the payoffs are [25, 25]. If Player 2 chooses D then the payoffs are [15, 30]. So if Player 2 chooses C, both players get equal payoffs.

The Voluntary Trust Game, which is represented below in Figure 3, is a true Trust Game in the sense that it meets all the necessary criteria for Trust Games.

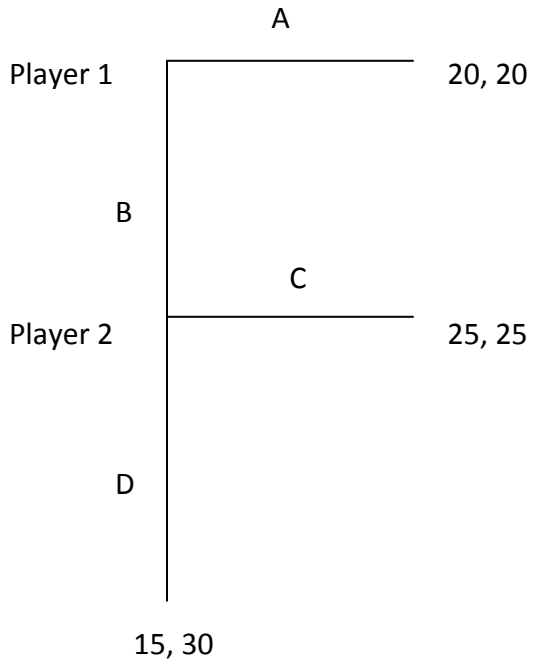

Figure 5. Voluntary Trust Game (VTG)

In the VTG Player 1 now has an outside node option of A, where the payoffs are [20, 20]. However, they can still choose B and pass down to Player 2. You can see that Player 1 is giving up a guarantee of $20 for a chance of getting $25, and risks of getting only $15. However, by passing down to Player 2 they are also allowing Player 2 to increase their monetary payoffs since both 25 and 30 are bigger than 20. If Player 1 chooses B, then Player 2 faces the same choices they had in the ITG. Player 2 can choose C where the payoffs are [25, 25], or they can choose D where the payoffs are [15, 30].

Both games included a control and a treatment. In the control Player 1 was asked for their expectation that Player 2 will choose C, but this information was not transferred. In the treatment Player 1 was asked for their expectation that Player 2 would choose C, and then the

information was passed on to Player 2 before they made their decision. In both the control and treatment Player 2 was asked to make a guess about Player 1's expectations.

5.2 Notation

Here is the notation that I will use to describe the terms in the experimental design, and that I will later use to explain my hypotheses and predictions.

ITG Control:

f_{IC}^{*}: Player 1's expectation of Player 2 f_{IC}'s

f_{IC}: Player 2 probability of C.

f_{IC}^{**}: Player 2 guesses of Player 1 f_{IC}^{*}

ITG Treatment:

f_{IT}^{*}: Player 1's expectation of Player 2 f's

f_{IT}^{**}: Player 2 guesses of Player 1 f_{IT}^{*}

f_{IT}: Player 2 probability of C.

VTG Control:

t_{VC}: Player 1 probability of B.

f_{VC}^{*}: Player 1 expectation of Player 2 f_{VC}'s

f_{VC}^{**}: Player 2 guesses of Player 1 f_{VC}^{*}

f_{VC}: Player 2 probability of C

VTG Treatment:

t_{VT}: Player 1 probability of B

f_{VT}^{*}: Player 1 expectation of Player 2 f_{VC}'s

f_{VT}^{**}: Player 2 guesses of Player 1 f_{VT}^{*}

f_{VT}: Player 2 probability of C

5.3 Subject Recruitment and Experimental Procedures

Subjects were recruited from 1st year Undergraduate Economics courses at the University of Victoria. The ITG control and treatment were played with a 100 level Introduction to Game Theory course; 80 students played in total, 42 in the control group and 38 in the treatment group. Both the VTG control and treatment were played with a 100 level Introduction to Macroeconomics courses; 94 students played in total, 60 in the control group and 34 in the treatment group. Each subject was randomly chosen to be either a Player 1 or a Player 2. Instructions and decision sheets were paper based. Players were told that some of them would be chosen at random and paid their actual payoffs from the game. Participants were not told the probability of being chosen.

Experiments took place in the Clearihue and David Strong buildings at the University of Victoria in March 2010. Upon entering the classrooms, subjects were divided into two groups on either side of the classroom and instruction and decision sheets were distributed accordingly. Players were told that they were taking part in an economics experiment for an honors thesis, and were told that their participation was voluntary. Once all the participants were seated and ready, the instructions were read out loud to all the Player 1's; Player 2's could also listen. Once Player 1's completed their decision sheets, these sheets were collected, and instructions were read to the Player 2's. Once the Player 2's completed their task, their decision sheets were also collected. Participants were asked to keep their instruction sheets with their player ID number so that they could be paid later if randomly selected. The detailed

explanation of game procedures are described below. Instructions and decision sheets appear in the Appendix.

5.4 Game Procedures

The procedure for the ITG control group was as follows.

(1) Player 1 was asked for their f^* (their expectation that Player 2 would choose C). This information was collected.
(2) Player 2 was asked for their f^{**} (their guess of Player 1's expectation). This information was collected.
(3) Player 2 was asked to make a choice between C and D. Their choice was collected.

The procedure of the ITG treatment went as follows:

(1) Player 1 was asked for their f^* (their expectation that Player 2 would choose C). This information was collected.
(2) Player 2 was asked for their f^{**} (their guess of Player 1's expectation). This information was collected.
(3) All of the Player 1 f^*'s were distributed to their Player 2 partner.
(4) Player 2 was asked to make a choice between C and D. Their choice was collected.

The procedure of the VTG control went as follows:

(1) Player 1 was asked to make a choice between A and B. Their choice was collected.
(2) Player 1 was asked for their f^* (their expectation that Player 2 would choose Fulfil). This information was collected.
(3) Player 2 was asked for their f^{**} (their guess of Player 1's expectation). This information was collected.
(4) Player 2 was asked to make a choice between C and D. Their choice was collected.

The procedure for the VTG treatment went as follows:

(1) Player 1 was asked to make a choice between A and B. Their choice was collected.
(2) Player 1 was asked for their f^* (their expectation that Player 2 would Fulfil). This information was collected.
(3) Player 2 was asked for their f^{**} (their guess of Player 1's expectation). This information was collected.
(4) All of the Player 1 f^*'s were distributed to their Player 2 partner.
(5) Player 2 was asked to make a choice between C and D. Their choice was collected.

In all four games, Player 1 was told that if they correctly guessed how many Player 2's played C they would earn an additional $5. Similarly, Player 2's were told that if they correctly guessed their Player 1 partners expectations they would earn an additional $5. This provides monetary incentives for players to accurately report their best assessment of the other player's behaviour. In order to obtain as much data as possible, we applied the strategy method to all the Player 2's. This means that instead of telling them what their partner chose and leaving them with no decision to make if Player 1 chose A, we asked Player 2's what they would do *if* their partner chose B.

6. Predictions and Hypotheses

The data from these experiments allows the systematic testing of three hypotheses.

Hypothesis 1: There should be less cooperation (playing at C) by Player 2 in the ITG than in the VTG. This is expected simply because the ITG is really a Dictator Game; there is no reason for Player 2 to cooperate. The results from other Dictator Games support this hypothesis because they show that there is often less cooperation in the Dictator Game than in the Trust

Game (Holt, 2005). Also, since we are replicating the experimental design used by McCabe et al. (2003), we should expect similar results. They were able to reject the null hypothesis that two games with identical payoffs will have similar results and show that there was significantly more cooperation observed in the VTG than in the ITG. The formal test of this hypothesis is:

$$H_O: f_{IC} - f_{VC} \leq 0$$

$$H_A: f_{IC} - f_{VC} > 0$$

Hypothesis 2A: Player 1's expectations in the VTG treatment should have an impact on Player 2's choice. If the *expectation-based model* is correct in explaining player's preferences, then transferring Player 1's expectation to Player 2 in the treatment groups should impact Player 2's choice between C and D. Specifically, if Player 1 has a high expectation that Player 2 will choose C then transferring this information should make Player 2 more likely to choose C.

$$H_0: B_1 = 0$$

$$H_A: B_1 \neq 0$$

Where $B_1$is Player 1's expectation.

Hypothesis 2B: Player 1's expectations in the ITG treatment should have an impact on Player 2's choice, but this effect should be of lower magnitude than in the VTG. Since the *expectation-based model* is more directed at Trust Game, and the ITG is actually a Dictator Game, I do not expect to see the same results from the impact of expectations. Although some

Player 2's in the ITG might still take Player 1's expectations into account, it is less likely than in the VTG.

$$H_0: B_1 = 0$$

$$H_A: B_1 \neq 0$$

Where $B_1$is Player 1's expectation.

7. Results

7.2 General Results

ITG:

There were 39 Player 2's in the ITG. 21 of these players were in the control group, and 18 of these players were in the treatment group.

Variable	Value
$\boldsymbol{f_{IC}}$	0.1429
$\boldsymbol{average\ f^{*}_{IC}}$	0.226891
$\boldsymbol{average\ f^{**}_{IC}}$	0.090336
$\boldsymbol{f_{IT}}$	0.2222
$\boldsymbol{average\ f^{*}_{IT}}$	0.216374
$\boldsymbol{average\ f^{**}_{IT}}$	0.111111

VTG:

There were 47 Player 2's in the VTG. 30 of them were in the control group, while the remaining 17 were in the treatment group.

Variable	Value
t_{VC}	0.2333
f_{VC}	0.3333
$average\ f^{*}_{VC}$	0.263703
$average\ f^{**}_{VC}$	0.231605
t_{VT}	0.3529
f_{VT}	0.2941
$average\ f^{*}_{VT}$	0.278639
$average\ f^{**}_{VT}$	0.241486

7.3 Hypothesis Tests

Hypothesis 1: Less cooperation in the ITG than in the VTG

To see whether there was less cooperation in the ITG than in the VTG, I used the following test of proportions.

$$z_1 = \frac{\hat{f}_{IC} - \hat{f}_{VC}}{\sqrt{\frac{\hat{f}_{IC}(1-\hat{f}_{IC})}{n_1} + \frac{\hat{f}_{VC}(1-\hat{f}_{VC})}{n_2}}}$$

where $f_{IC} = \frac{3}{21} = 0.142857\ and\ n_1 = 21$

and $f_{VC} = \frac{10}{30} = 0.33333\ and\ n_2 = 30$

Asymptotically, this statistic follows a standard normal distribution. I calculated a z-statistic of -1.65548, and was able to reject the null hypothesis at both a 10% and 5% significance level. This validates my first hypothesis that there should be less cooperation observed in the ITG control than in the VTG control. It is also consistent with the findings of McCabe et al. (2003), which means that my instructions did a good job of replicating their experimental design.

Hypothesis 2A: Player 1's expectations should have an impact on Player 2's choice in the VTG

To see whether Player 1's expectations have an impact on Player 2's choice I used a logistic model. A logistic model is a regression where the left-hand side is a binary variable, which in this experiment is the Player 2's choice of C or D. In all the regressions I used a dummy variable for whether players were in the control (treatment=0), or in the treatment (treatment=1).

Test 1:

The first regression I performed related to the VTG and included the following regressors:

$$f_{VT} = B_0 + B_1 f^{*}_{VT} + B_2 f^{**}_{VT} + B_3\, treatment + B_4 f^{*}_{VT} * treatment + B_5 f^{**}_{VT*} treatment + \varepsilon$$

Table 1. VTG Test 1

Variable	Coefficient	Standard Error	Marginal Effects (dy/dx)	Standard Error (of dy/dx)
Constant	-2.842	**1.388** (.0406)**		
f^{*}_{VT}	0.314	2.106 (0.8814)	0.054	0.336 (0.872)
f^{**}_{VT}	7.994	**3.518** (0.0231)**	1.375	**0.6398** (0.032)**
Treatment	-4.103	3.756 (0.2746)	-0.535	0.357 (0.134)
f^{*}_{VT}***Treatment**	9.274	**4.906** (0.0587)*	1.595	**0.906** (0.078)*
f^{**}_{VT}***Treatment**	1.8897	6.647 (0.7762)	0.325	1.116 (0.771)

R-squared: 0.345551 n=47

This regression suggests the following: Player 1's expectations, Player 2's guess, Player 1's expectations in the treatment group, and Player 2's guess in the treatment group all had a

positive impact on Player 2 cooperating and playing at C. The only variable which had a negative impact on Player 2 cooperating was being in the treatment group. Since it is a logistic model, the coefficients do not have as much of a meaning as the marginal effects. The largest marginal effect was Player 1's expectation for those in the treatment group. This was also significant at a 10% level. The other significant variable, at a 5% level, was Player 2's guess of Player 1's expectations.

Test 2:

Since in my first regression f_{VT}^{*}*Treatment was significant at a 10% level, I wanted to see whether breaking the data into treatment and control groups would give me a larger significant impact.

For the first regression I only used the control group data.

$$f_{VT} = B_0 + B_1 f_{VT}^{*} + B_2 f_{VT}^{**} + \varepsilon \; if \; t = 0$$

Table 2. VTG Test 2

Varibale	Coefficient	Standard Error	Marginal Effects (dy/dx)	Standard Error (of dy/dx)
Constant	-2.841844	**1.3880** (.0406)**		
$\boldsymbol{f_{VT}^{*}}$	0.3141	2.106 (0.8814)	0.0643	0.3999 (0.872)
$\boldsymbol{f_{VT}^{**}}$	7.994	**3.5178** (0.0231)**	1.6376	**0.6868** (0.017)**

R-squared: 0.337239 n=30

This regression found that only Player 2's guess was significant, again at a 5% level. This is consistent with the results from Test 1. Since this only includes players from the control group, Player 1's expectations should not have a large impact on Player 2 cooperating.

I also did the same regression using only the treatment group.

$$f_{VT} = B_0 + B_1\, f_{VT}^{*} + B_2 f_{VT}^{**} + \varepsilon \;\; if \;\; t = 1$$

Table 3. VTG Test 2

Varibale	Coefficient	Standard Error	Marginal Effects (dy/dx)	Standard Error (of dy/dx)
Constant	-6.9453	**3.4906** ** **(0.0466)**		
$\boldsymbol{f_{VT}^{*}}$	9.5883	**4.4306** ** **(0.0305)**	1.0959	**0.6128* **(0.074)**
$\boldsymbol{f_{VT}^{**}}$	9.8841	**9.8841* **(0.0797)**	1.1297	**0.5806* **(0.052)**

R-squared: 0.358507 n=17

This regression was also consistent with Test 1. Player 1's expectations and Player 2's guess both had a statistical significance. Although the marginal effect of Player 1's expectation decreased a bit from Test 1, it was still significant. This means that if you were in the treatment group, for every 1% increase in Player 1's expectations, Player 2 was more likely to cooperate by 1.0959%.

These results are all consistent with the *expectation based model* which said that if Player 1 signaled their expectations to Player 2, then Player 2 would be more likely to cooperate and fulfill Player 1's trust.

Hypothesis 3B: Player 1's expectations should have an impact on Player 2's decision, but this will not be statistically significant

Test 1:

Again, to see whether expectations had an impact on Player 2's choice I used a logistic regression with a dummy variable for the treatment group; t=0 for control and t=1 for treatment. In the first regression I included all the available regressors. However, since whenever f_{IT}^{**} was positive, Player 2's chose C, a linear dependency was present. This prevented the inclusion of treatmentf_{IT}^{**}. As a result, this regressor was dropped and the following equation was estimated.

$$f_{IT} = B_0 + B_1 f_{IT}^{*} + B_2 f_{IT}^{**} + B_3\, treatment + B_4 f_{IT}^{*} * treatment + \varepsilon$$

Table 4. ITG Test 1

Variable	Coefficient	Standard Error	Marginal Effects (dy/dx)	Standard Error (of dy/dx)
Constant	-4.7250	**1.2702*** (0.0002)**		
$\boldsymbol{f_{IT}^{*}}$	3.0408	2.3660 (0.1987)	0.2951	0.2777 (0.288)
$\boldsymbol{f_{IT}^{**}}$	12.8799	**3.7325*** (0.0006)**	1.2501	**0.7107* (0.079)**
Treatment	2.4051	1.5421 (0.1230)	0.2699	0.2815 (0.338)
$\boldsymbol{f_{IT}^{*}}$***Treatment**	-4.9589	2.9644 (0.1294)	-0.4364	0.7026 (0.535)

R-squared: 0.541762 n=39

In this regression, all the variables had a positive impact on Player 2 cooperating except for Player 1's expectations for the treatment group. This means that if Player 1 increased their

expectations, then Player 2 was less likely to cooperate. The only statistically significant variable was Player 2's guess.

Test 2:

For the second test I dropped the insignificant regressors to see whether this would have an impact on whether Player 1's expectations had an impact on Player 2's choice.

$$f_{IT} = B_0 + B_1 f_{IT}^{*} + B_2 f_{IT}^{**} + \varepsilon$$

Table 5. ITG Test 2

Variable	Coefficient	Standard Error	Marginal Effects (dy/dx)	Standard Error (of dy/dx)
Constant	-3.5655	**0.8398*** (0)**		
f_{IT}^{*}	1.5990	2.2538 (.4780)	0.1630	0.2407 (0.498)
f_{IT}^{**}	11.7274	**2.7263*** (0)**	1.1954	**0.5912** (0.043)**

R-squared: 0.507043 n=39

This regression had similar impacts to Test 1. Player 1's expectations were not statistically significant and Player 2's guess was found to be statistically significant, at a 5% level.

These regressions were also consistent with the *expectation based model.* Since the ITG is a Dictator game, there is no reason to believe that Player 1's expectations should have a vaery large impact on Player 2's decision to cooperate.

8. Conclusion and Discussion

The *expectation based model* described players as being more likely to fulfill trust if they believe that it is expected of them. In this paper, I designed an experiment to see whether expectations had an impact on the level of trust and reciprocity. In the experiment I observed behavior in two versions of the trust game, the ITG which was truly a Dictator Game, and the VTG which was a simple version of the Trust Game. In all the experiments I elicited Player 1's expectations of Player 2 cooperating, (f^*), and Player 2's guess of Player 1's expectations (f^{**}). In the control group, Player 1's expectations were not shared with Player 2, and in the treatment group they were.

Previous literature and the *expectation based model* lead to several hypotheses which could be tested. The first thing which I expected was to see less cooperation in the control group of the ITG than in the control group of the VTG. The second hypothesis, which had two parts, was more specific to expectations. If the *expectation based model* was correct in describing player's behavior, then in the treatment group, f^* should have had a positive impact on f.

My analysis of the data found that (i) there was less cooperation in the ITG than in the VTG (Hypothesis 1) ; (ii) the *expectation based model* was right in describing player's behavior in the Trust Game and Player 1's expectations had a significant impact on Player 2 cooperating (the marginal effect was 1.595 and significant at a 10% level) (Hypothesis 2A); (iii) the *expectation based model* cannot describe players behavior in the Dictator Game, and Player 1's expectations did not have a significant impact on Player 2 cooperating in the ITG (Hypothesis

2B); and (iv) Player 2's guess of Player 1's expectations was statistically significant in every test, usually at a 5% level.

8.2 Implications

This experiment has implications for future experiments as well as models. It was shown that expectations of trust do have a positive impact on reciprocation. This means that if I expect you to do something, you will be more likely to do so if you know how much I am expecting it. It was also shown that I will try to fulfill whatever expectations I think you have. This variable, which was Player 2's guess, was the most robust result because it was statistically significant in every regression. What this implies is that Player 2 will fulfill whatever expectation they guessed Player 1 to have. Although this is not exactly what the *expectation based model* described, this is still a form of Player 2 trying to fulfill Player 1's expectations. Player 2 is trying to fulfill the expectation that they believe Player 1 should have. This may be why in the ITG, your expectation if you were in the treatment group actually had a negative impact on Player 2 cooperating. This may be because Player 1's expectations were higher than Player 2 thought they should be, so Player 2 cooperated less as a form of punishment. Still, Player 2's guess being statistically significant in all the tests means that Player 2 is not purely trying to maximize their own monetary payoffs, as the theory suggests. Player 2 is taking into consideration what Player 1 expects, even if it is what they think Player 1 should expect that impacts their decision. If Player 2 only cared about their payoffs, then their guess of Player 1's expectations should have no relationship with what they choose.

There are a few ways to expand on this experiment. The first would be to try the game trees with different payoffs at the nodes to see whether the fulfilling property of trust increased or decreased with the payoffs. Another thing that could be done is to add a third treatment similar to the one used by Bacharach et al. (2001) where Player 2 is given the chance to change their choice after being shown Player 1's expectation. This would allow us to see whether seeing the expectations will actually cause Player 2 to change their decision.

However, by showing expectations are in fact an important factor in trust and reciprocity we can make implications. If we could use the signal of expectations to enhance fulfillment rates, then things such as internet purchases and workers' payments could be made better off. For example, if employers' made it clear to workers what is expected of them, less monitoring could be required which would reduce monitoring costs (Bacharach et al., 2001).

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Appendix A-Instructions

ITG-P1-INS

This is an experiment in the economics of decision making. Follow these instructions closely and you can earn money.

Please do not communicate with any other student during the experiment.

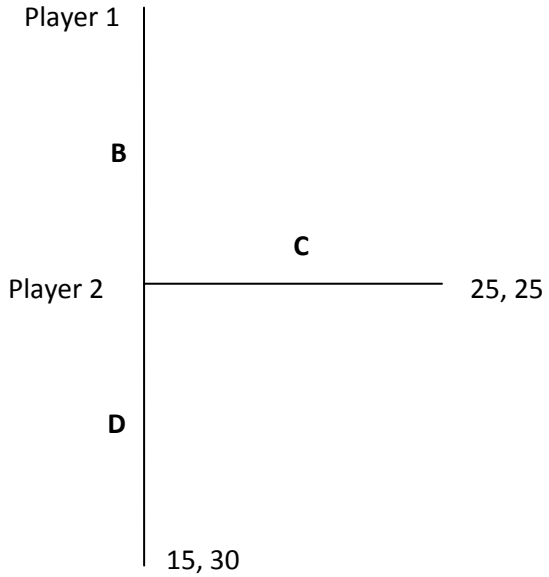
In this experiment you and each other player have been randomly assigned to be either a "Player 1" or a "Player 2".

You are a PLAYER 1.

You have been paired at random with a player of the other type. You will not be told who this person is and they will not be told who you are.

Today's experiment is a series of decisions leading to payoffs for you and the player you are matched with.

The decision sequence is graphically illustrated below. Numbers at the end of each branch indicate the earnings of Player 1 and Player 2 respectively for each of the actions taken.



In today's experiment, a Player 1 has no alternative but to choose "B".

Player 2 must then choose between two actions: "C" or "D".

The game has two possible outcomes:

First Possible Outcome: Player 1 chooses "B" (no choice) and Player 2 chooses "C". Player 1 gets $25, and Player 2 gets $25.

Second Possible Outcome: Player 1 chooses "B" (no choice) and Player 2 chooses "D". Player 1 gets $15, and Player 2 gets $30.

Before the Players 2 make their choices, you, Player 1, will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". If your guess is correct, you will earn an additional $5.

This information will remain confidential. The total number of Player 2's in your group today's experiment is written up on the board. Please make sure that the sum of your guesses matches that number.

The actual number of Players 2 choosing "C" will be reported with the data and your personal payoff in class next week. A Player 1 who guesses the correct number will receive an additional $5.

On the following page you will find your decision sheet. Once everyone has completed the form, they will be collected. This will end the experiment for you.

Once the experiment is completed, pairs will be randomly assigned and a few will be drawn for REAL MONETARY PAYMENTS OF EARNINGS. Earnings from the experiment will be paid at the end of class on Wednesday.

Your are only identified by a participant number, your name will never be associated with your decisions.

It is very important that you understand these instructions. Raise your hand if you have any questions.

ITG-P2-INS

This is an experiment in the economics of decision making. Follow these instructions closely and you can earn money.

Please do not communicate with any other student during the experiment.

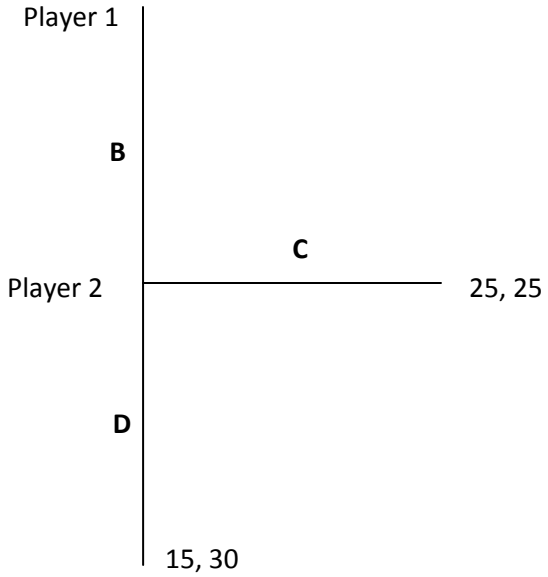
In this experiment you and each other player have been randomly assigned to be either a "Player 1" or a "Player 2".

You are a PLAYER 2.

You have been paired at random with a player of the other type. You will not be told who this person is and they will not be told who you are.

Today's experiment is a series of decisions leading to payoffs for you and the player you are matched with.

The decision sequence is graphically illustrated below. Numbers at the end of each branch indicates the earnings of Player 1 and Player 2 respectively for each of the actions taken.



In today's experiment, a Player 1 has no alternative but to choose "B".

Player two must then choose between two actions: "C" or "D".

The game has two possible outcomes:

First Possible Outcome: Player 1 chooses "B" (no choice) and Player 2 chooses "C". Player 1 gets $25, and Player 2 gets $25.

Second Possible Outcome: Player 1 chooses "B" (no choice) and Player 2 chooses "D". Player 1 gets $15, and Player 2 gets $30.

Before you make your choice, your Player 1 partner will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". Player 1 will receive $5 if the guess is correct.

You also have a chance to make an additional $5. Before you decide on action C or D, you must guess the answer that your player 1 partner wrote down. In other words, you have to guess what the Player 1 you are playing with guessed when he or she was asked *how many Player 2's will choose "C" and how many Player 2 will choose "D"*. If your guess corresponds to your partner's guess, you will receive an additional $5.

The total number of Player 2's is written up on the board. The actual number of Players 2 choosing "C" and "D", as well as your partner's guess will be reported with the data and your personal payoff in class next week.

On the following page you will find two identical decision sheets. Please complete both of them. Once everyone has completed the forms, they will be collected. This will end the experiment.

Once the experiment is completed, pairs will be randomly assigned and a few will be drawn for REAL MONETARY PAYMENTS OF EARNINGS. Earnings from the experiment will be paid at the end of class on Wednesday.

Your are only identified by a participant number, your name will never be associated with your decisions.

It is very important that you understand these instructions. Raise your hand if you have any questions.

ITGT-P1-INS

This is an experiment in the economics of decision making. Follow these instructions closely and you will earn money.

Please do not communicate with any other student during the experiment.

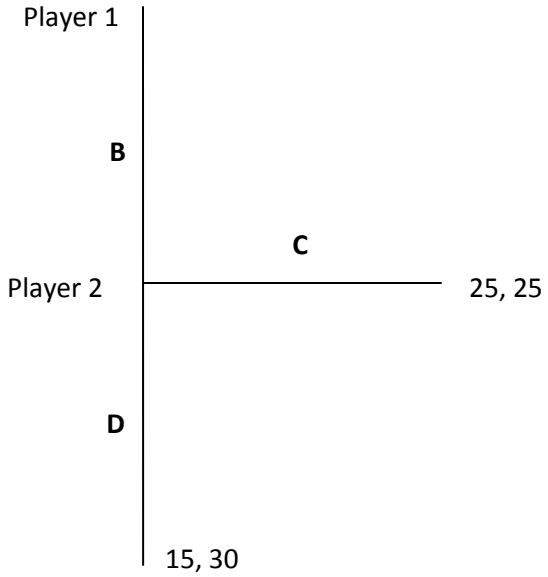
In this experiment you and each other player have been randomly assigned to be either a "Player 1" or a "Player 2".

You are a PLAYER 1.

You have been paired at random with a player of the other type. You will not be told who this person is and they will not be told who you are.

Today's experiment is a series of decisions leading to payoffs for you and the player you are matched with.

The decision sequence is graphically illustrated below. Numbers at the end of each branch indicates the earnings of Player 1 and Player 2 respectively for each of the actions taken.



In today's experiment, a Player 1 has no alternative but to choose "B".

Player 2 must then choose between two actions: "C" or "D".

The game has two possible outcomes:

First Possible Outcome: Player 1 chooses "B" (no choice) and Player 2 chooses "C". Player 1 gets $25, and Player 2 gets $25.

Second Possible Outcome: Player 1 chooses "B" (no choice) and Player 2 chooses "D". Player 1 gets $15, and Player 2 gets $30.

Before the Players 2 make their choices, you, Player 1, will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". If your guess is correct, you will earn an additional $5.

The total number of Player 2's in your group today's experiment is written up on the board. Please make sure that the sum of your guesses matches that number.

The actual number of Players 2 choosing "C" will be reported with the data and your personal payoff in class next week. A Player 1 who guesses the correct number will receive an additional $5.

On the following page you will find your decision sheet. Once everyone has completed the form, they will be collected. This will end the experiment for you.

Once the experiment is completed, pairs will be randomly assigned and a few will be drawn for REAL MONETARY PAYMENTS OF EARNINGS. Earnings from the experiment will be paid at the end of class on Wednesday.

Your are only identified by a participant number, your name will never be associated with your decisions.

It is very important that you understand these instructions. Raise your hand if you have any questions.

ITGT-P2-INS

This is an experiment in the economics of decision making. Follow these instructions closely and you will earn money.

Please do not communicate with any other student during the experiment.

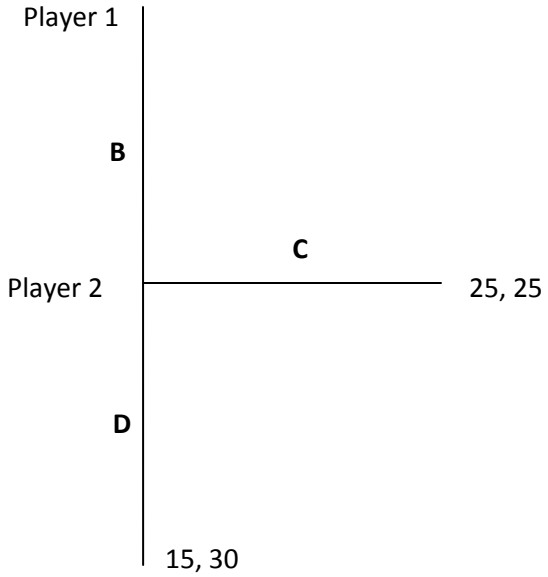
In this experiment you and each other player have been randomly assigned to be either a "Player 1" or a "Player 2".

You are a PLAYER 2.

You have been paired at random with a player of the other type. You will not be told who this person is and they will not be told who you are.

Today's experiment is a series of decisions leading to payoffs for you and the player you are matched with.

The decision sequence is graphically illustrated below. Numbers at the end of each branch indicates the earnings of Player 1 and Player 2 respectively for each of the actions taken.



In today's experiment, a Player 1 has no alternative but to choose "B".

As a Player 2, you must then choose between two actions: "C" or "D".

The game has two possible outcomes:

First Possible Outcome: Player 1 chooses "B" (no choice) and Player 2 chooses "C". Player 1 gets $25, and Player 2 gets $25.

Second Possible Outcome: Player 1 chooses "B" (no choice) and Player 2 chooses "D". Player 1 gets $15, and Player 2 gets $30.

Before you make your choice, your Player 1 partner will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". Player 1 will receive $5 if the guess is correct.

This information will be passed on to you. But before that information is revealed you also have a chance to make an additional $5.

You also have a chance to make an additional $5. Before you decide on action C or D, you must guess the answer that your player 1 partner wrote down. In other words, you have to guess what the Player 1 you are playing with guessed when he or she was asked *how many Player 2's will choose "C" and how many Player 2 will choose "D"*. If your guess corresponds to your partner's guess, you will receive an additional $5.

The total number of Player 2's is written up on the board. The actual number of Players 2 choosing "C" and "D", as well as your partner's guess will be reported with the data and your personal payoff in class next week.

On the following page you will find two identical decision sheets. Please complete both of them. Once everyone has completed the forms, they will be collected. This will end the experiment.

Once the experiment is completed, pairs will be randomly assigned and a few will be drawn for REAL MONETARY PAYMENTS OF EARNINGS. Earnings from the experiment will be paid at the end of class on Wednesday.

Your are only identified by a participant number, your name will never be associated with your decisions.

It is very important that you understand these instructions. Raise your hand if you have any questions.

VTG-P1-INS

This is an experiment in the economics of decision making. Follow these instructions closely and you can earn money.

Please do not communicate with any other student during the experiment.

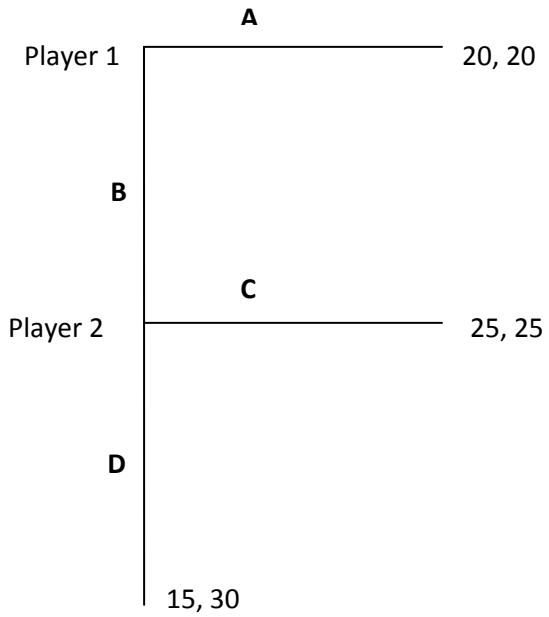
In this experiment you and each other player have been randomly assigned to be either a "Player 1" or a "Player 2".

You are a PLAYER 1.

You have been paired at random with a player of the other type. You will not be told who this person is and they will not be told who you are.

Today's experiment is a series of decisions leading to payoffs for you and the player you are matched with.

The decision sequence is graphically illustrated below. Numbers at the end of each branch indicate the earnings of Player 1 and Player 2 respectively for each of the actions taken.



In today's experiment Player 1 has to make a choice between "A" and "B".

If Player 1 chooses B, Player 2 would then have to choose between "C" or "D".

The game has three possible outcomes:

First Possible Outcome: Player 1 chooses "A". The game is over and Player 2 has no choice to make. Player 1 receives $20, and Player 2 receives $20.

Second Possible Outcome: Player 1 chooses "B" and Player 2 chooses "C". Player 1 gets $25, and Player 2 gets $25.

Third Possible Outcome: Player 1 chooses "B" and Player 2 chooses "D". Player 1 gets $15, and Player 2 gets $30.

All Player 2's will be asked to indicate which of "C" or "D" they wish to choose if, once matched with a Player 1, Player 1 chose B.

As a Player 1 you will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". If your guess is correct, you will earn an additional $5 for the experiment. This information will remain confidential.

The total number of Player 2's in your group is written up on the board. The actual number of Players 2 choosing "C" and “D” will be reported with the data and your personal payoff in class next week.

On the following page you will find your decision sheet. Once everyone has completed the form, they will be collected. This will end the experiment for you.

Once the experiment is completed, pairs will be randomly assigned and a few will be drawn for REAL MONETARY PAYMENTS OF EARNINGS. Earnings from the experiment will be paid at the end of class on Wednesday.

Your are only identified by a participant number, your name will never be associated with your decisions.

It is very important that you understand these instructions. Raise your hand if you have any questions.

VTG-P2-INS

This is an experiment in the economics of decision making. Follow these instructions closely and you can earn money.

Please do not communicate with any other student during the experiment.

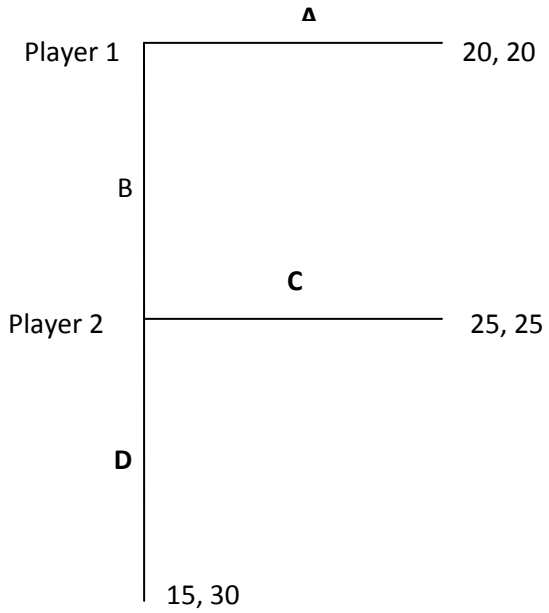
In this experiment you and each other player have been randomly assigned to be either a "Player 1" or a "Player 2".

You are a PLAYER 2.

You have been paired at random with a player of the other type. You will not be told who this person is and they will not be told who you are.

Today's experiment is a series of decisions leading to payoffs for you and the player you are matched with.

The decision sequence is graphically illustrated below. Numbers at the end of each branch indicates the earnings of Player 1 and Player 2 respectively for each of the actions taken.



In today's experiment Player 1 has to make a choice between "A" and "B".

If Player 1 chooses B, Player 2 would then have to choose between "C" or "D".

The game has three possible outcomes:

First Possible Outcome: Player 1 chooses "A". The game is over and Player 2 has no choice to make. Player 1 receives $20, and Player 2 receives $20.

Second Possible Outcome: Player 1 chooses "B" and Player 2 chooses "C". Player 1 gets $25, and Player 2 gets $25.

Third Possible Outcome: Player 1 chooses "B" and Player 2 chooses "D". Player 1 gets $15, and Player 2 gets $30.

All Players 2 must decide, before knowing Player 1's choice, whether to choose "C" or "D". If the Player 1 you are matched with chose "A" your decision will have no impact on the outcome. However, if Player 2 chose B your choice of "C" or "D" will determine the outcome of the game and the payoffs.

Before you make your choice of "C" or "D", your Player 1 partner will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". Player 1 will receive $5 if this guess is correct.

You also have a chance to make an additional $5. Before you decide an action "C" or "D", you must guess the answer that your Player 1 partner wrote down. In other words, you have to guess what the Player 1 you are playing with guessed when he or she was asked *how many Player 2's will choose "C" and how many Player 2's will choose "D".* If your guess corresponds to your partner's guess, you will receive an additional $5.

The total number of Player 2's is written up on the board. The actual number of Players 2 choosing "C" and "D", as well as your partner's guess will be reported with the data and your personal payoff in class next week.

On the following page you will find your decision sheet. Once everyone has completed the form, they will be collected. This will end the experiment for you.

Once the experiment is completed, pairs will be randomly assigned and a few will be drawn for REAL MONETARY PAYMENTS OF EARNINGS. Earnings from the experiment will be paid at the end of class on Wednesday.

Your are only identified by a participant number, your name will never be associated with your decisions.

It is very important that you understand these instructions. Raise your hand if you have any questions.

VTGT-P1-INS

This is an experiment in the economics of decision making. Follow these instructions closely and you can earn money.

Please do not communicate with any other student during the experiment.

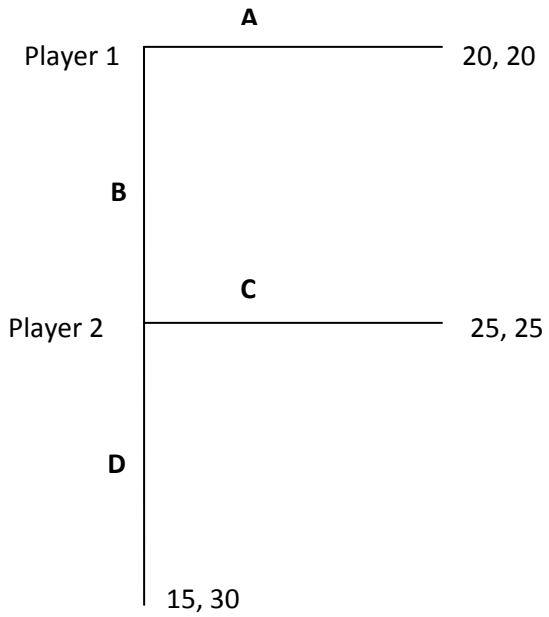
In this experiment you and each other player have been randomly assigned to be either a "Player 1" or a "Player 2".

You are a PLAYER 1.

You have been paired at random with a player of the other type. You will not be told who this person is and they will not be told who you are.

Today's experiment is a series of decisions leading to payoffs for you and the player you are matched with.

The decision sequence is graphically illustrated below. Numbers at the end of each branch indicate the earnings of Player 1 and Player 2 respectively for each of the actions taken.



In today's experiment Player 1 has to make a choice between "A" and "B".

If Player 1 chooses B, Player 2 would then have to choose between "C" or "D".

The game has three possible outcomes:

First Possible Outcome: Player 1 chooses "A". The game is over and Player 2 has no choice to make. Player 1 receives $20, and Player 2 receives $20.

Second Possible Outcome: Player 1 chooses "B" and Player 2 chooses "C". Player 1 gets $25, and Player 2 gets $25.

Third Possible Outcome: Player 1 chooses "B" and Player 2 chooses "D". Player 1 gets $15, and Player 2 gets $30.

All Player 2's will be asked to indicate which of "C" or "D" they wish to choose if, once matched with a Player 1, Player 1 chose B.

As a Player 1 you will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". If your guess is correct, you will earn an additional $5 for the experiment. This information will remain confidential.

The total number of Player 2's in your group is written up on the board. The actual number of Players 2 choosing "C" and “D” will be reported with the data and your personal payoff in class next week.

On the following page you will find your decision sheet. Once everyone has completed the form, they will be collected. This will end the experiment for you.

Once the experiment is completed, pairs will be randomly assigned and a few will be drawn for REAL MONETARY PAYMENTS OF EARNINGS. Earnings from the experiment will be paid at the end of class on Wednesday.

Your are only identified by a participant number, your name will never be associated with your decisions.

It is very important that you understand these instructions. Raise your hand if you have any questions.

VTGT-P2-INS

This is an experiment in the economics of decision making. Follow these instructions closely and you can earn money.

Please do not communicate with any other student during the experiment.

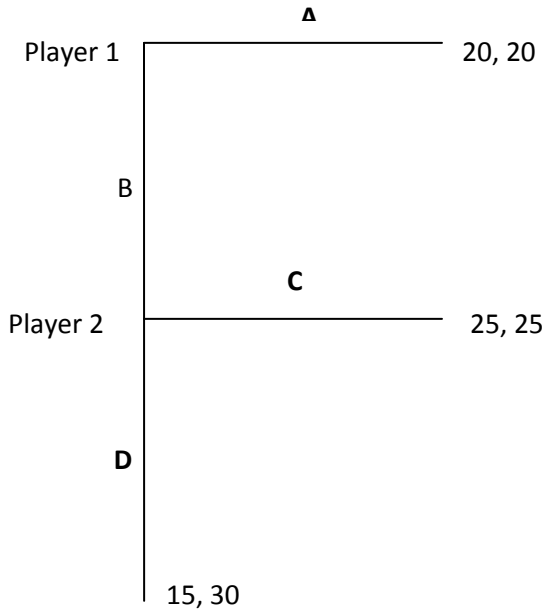
In this experiment you and each other player have been randomly assigned to be either a "Player 1" or a "Player 2".

You are a PLAYER 2.

You have been paired at random with a player of the other type. You will not be told who this person is and they will not be told who you are.

Today's experiment is a series of decisions leading to payoffs for you and the player you are matched with.

The decision sequence is graphically illustrated below. Numbers at the end of each branch indicates the earnings of Player 1 and Player 2 respectively for each of the actions taken.



In today's experiment Player 1 has to make a choice between "A" and "B".

If Player 1 chooses B, Player 2 would then have to choose between "C" or "D".

The game has three possible outcomes:

First Possible Outcome: Player 1 chooses "A". The game is over and Player 2 has no choice to make. Player 1 receives $20, and Player 2 receives $20.

Second Possible Outcome: Player 1 chooses "B" and Player 2 chooses "C". Player 1 gets $25, and Player 2 gets $25.

Third Possible Outcome: Player 1 chooses "B" and Player 2 chooses "D". Player 1 gets $15, and Player 2 gets $30.

All Players 2 must decide, before knowing Player 1's choice, whether to choose "C" or "D". If the Player 1 you are matched with chose "A" your decision will have no impact on the outcome. However, if Player 2 chose B your choice of "C" or "D" will determine the outcome of the game and the payoffs.

Before you make your choice of "C" or "D", your Player 1 partner will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". Player 1 will receive $5 if this guess is correct.

You also have a chance to make an additional $5. Before you decide an action "C" or "D", you must guess the answer that your Player 1 partner wrote down. In other words, you have to guess what the Player 1 you are playing with guessed when he or she was asked *how many Player 2's will choose "C" and how many Player 2's will choose "D".* If your guess corresponds to your partner's guess, you will receive an additional $5.

The total number of Player 2's is written up on the board. The actual number of Players 2 choosing "C" and "D", as well as your partner's guess will be reported with the data and your personal payoff in class next week.

On the following page you will find your decision sheet. Once everyone has completed the form, they will be collected. This will end the experiment for you.

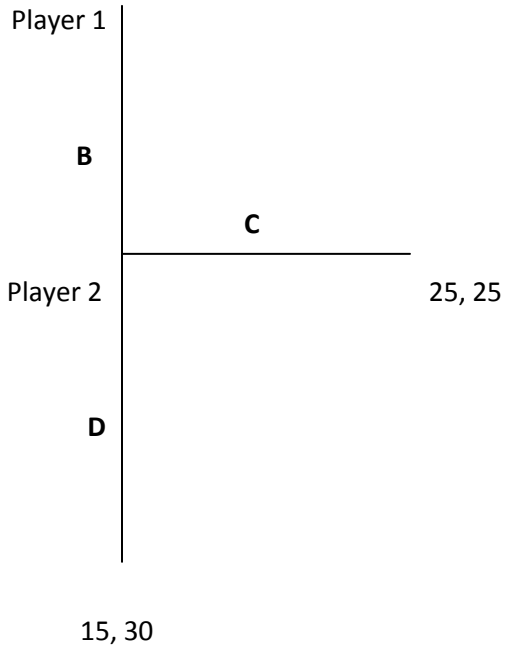
Once the experiment is completed, pairs will be randomly assigned and a few will be drawn for REAL MONETARY PAYMENTS OF EARNINGS. Earnings from the experiment will be paid at the end of class on Wednesday.

Your are only identified by a participant number, your name will never be associated with your decisions.

It is very important that you understand these instructions. Raise your hand if you have any questions

ITG-P1-DS

The decision sequence is graphically illustrated below.



Please write down on the lines below how many out of the total number of Player 2's you think will choose C and how many you think will choose D.

The total number of Player 2's is written up on the board. The total of the two numbers you enter must equal the total number of Players 2 written on the board.

If you guess correctly, you will earn an additional $5.

C: _____

D: _____

ITG-P2-DS1

Player 1 was asked to guess how many Player 2 in today's group will choose "C" and how many will choose "D". The sum of these numbers must equal the total number of Players 2 in today's experiment, as indicated on the board.

You must now guess the answer that the player 1 you are matched with wrote down. In other words, you have to guess what the Player 1 you are playing with guessed when he or she was asked *how many Player 2's will choose "C" and how many Player 2 will choose "D"*.

Please write down on the lines below what your partner said about how many Player 2's they thought would choose "C" and how many Player 2's they thought would choose "D". The total number of Player 2's is written up on the board.

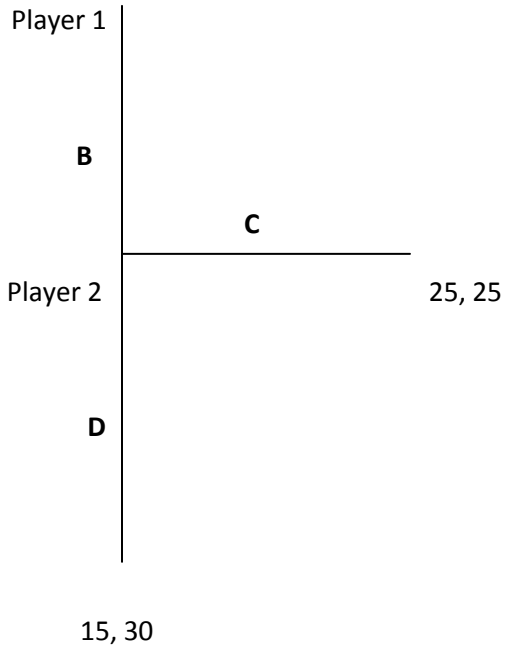
If your guess corresponds to Player 1's guess, you will receive an additional $5.

C: _____

D: _____

ITG-P2-DS2

The decision sequence is graphically illustrated below.

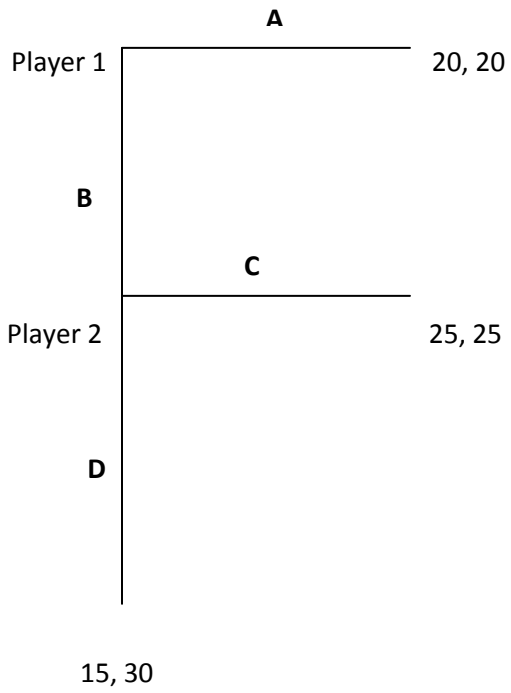


Please write down on the line below whether your choice is "C" or "D".

_____

VTG-P1-DS1

The decision sequence is graphically illustrated below.

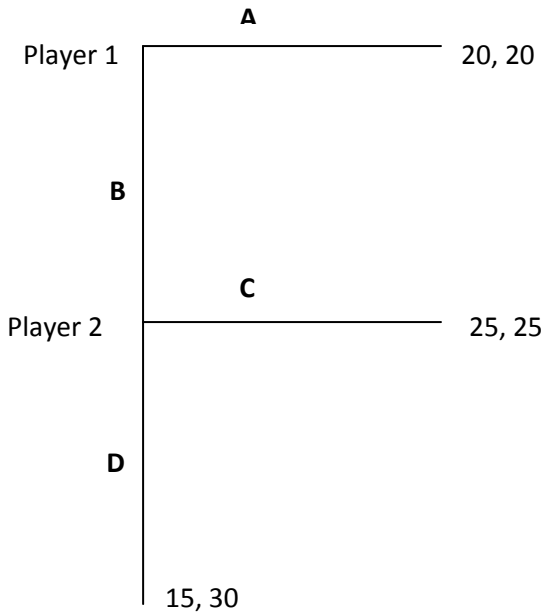


Please write down on the line below whether your choice is "A" or "B".

_____

VTG-P1-DS2

The Decision Sequence is illustrated below.



All Players 2 in your group will be asked to make a choice between “C” and “D”. As a Player 1, you must guess how many of Players 2 in your group would choose "C" and how many would choose "D" if they had to make the decision.

Please write down on the lines below how many out of the total number of Player 2's you think will choose C and how many you think will choose D.

The total number of Players 2 in your group is written up on the board. The total of the two numbers you enter must equal the total number of Players 2 written on the board for your group.

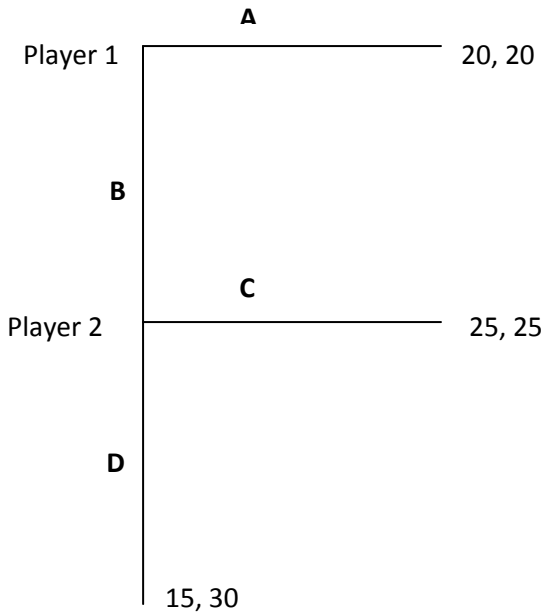
If you guess correctly you will earn an additional $5.

C: _____

D: _____

VTG-P2-DS1

The Decision Sequence is illustrated below.



All Players 2 must decide, before knowing Player 1's choice, whether to choose "C" or "D". If the Player 1 you are matched with chose "A" your decision will have no impact on the outcome. However, if Player 2 chose B your choice of "C" or "D" will determine the outcome of the game and the payoffs.

Before you make your choice of "C" or "D", your Player 1 partner will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". Player 1 will receive $5 if this guess is correct.

You also have a chance to make an additional $5. Before you decide an action "C" or "D", you must guess the answer that your Player 1 partner wrote down. In other words, you have to guess what the Player 1 you are playing with guessed when he or she was asked *how many Player 2's will choose "C" and how many Player 2's will choose "D".* If your guess corresponds to your partner's guess, you will receive an additional $5.

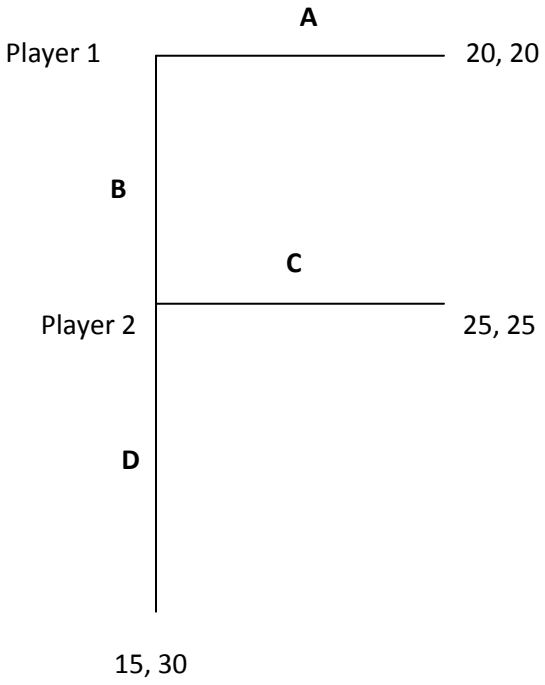
The total number of Player 2's is written up on the board. The total of the two numbers you enter must equal the total number of Players 2 written on the board for your group.

C: _____

D: _____

VTG-P2-DS2

The decision sequence is graphically illustrated below. If the Player 1 you are matched with chose “B” would you choose "C" or "D"?

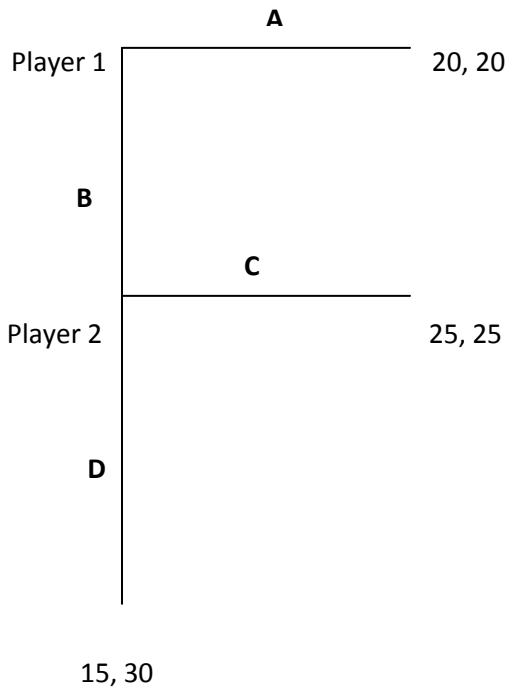


Please circle your choice of "C" or "D" if Player 1 chooses “B”:

MY DECISION IS (CIRCLE ONLY ONE): C or D

VTGT-P1-DS1

The decision sequence is graphically illustrated below.

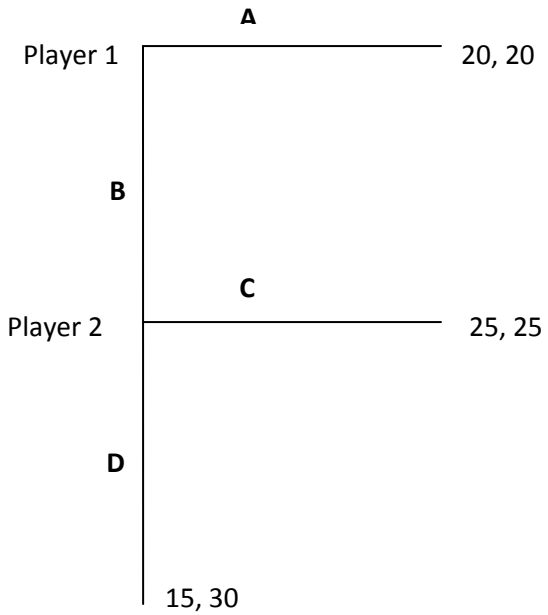


Please write down on the line below whether your choice is "A" or "B".

_____

VTGT-P1-DS2

The Decision Sequence is illustrated below.



All Players 2 in your group will be asked to make a choice between “C” and “D”. As a Player 1, you must guess how many of Players 2 in your group would choose "C" and how many would choose "D" if they had to make the decision.

Please write down on the lines below how many out of the total number of Player 2's you think will choose C and how many you think will choose D.

The total number of Players 2 in your group is written up on the board. The total of the two numbers you enter must equal the total number of Players 2 written on the board for your group.

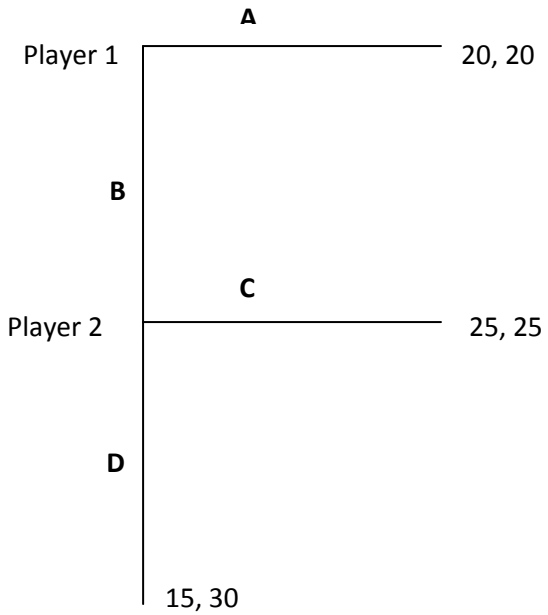
If you guess correctly you will earn an additional $5.

C: _____

D: _____

VTGT-P2-DS1

The Decision Sequence is illustrated below.



All Players 2 must decide, before knowing Player 1's choice, whether to choose "C" or "D". If the Player 1 you are matched with chose "A" your decision will have no impact on the outcome. However, if Player 2 chose B your choice of "C" or "D" will determine the outcome of the game and the payoffs.

Before you make your choice of "C" or "D", your Player 1 partner will be asked to guess how many Players 2 in your group will choose "C" and how many will choose "D". Player 1 will receive $5 if this guess is correct.

You also have a chance to make an additional $5. Before you decide an action "C" or "D", you must guess the answer that your Player 1 partner wrote down. In other words, you have to guess what the Player 1 you are playing with guessed when he or she was asked *how many Player 2's will choose "C" and how many Player 2's will choose "D".* If your guess corresponds to your partner's guess, you will receive an additional $5.

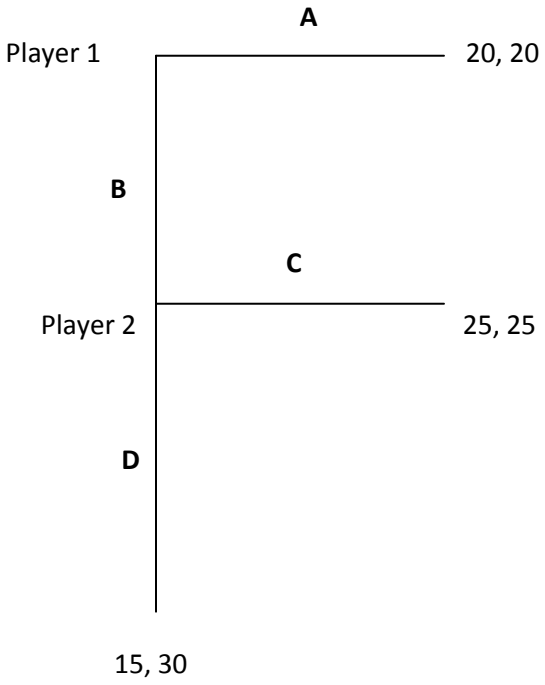
The total number of Player 2's is written up on the board. The total of the two numbers you enter must equal the total number of Players 2 written on the board for your group.

C: _____

D: _____

VTGT-P2-DS2

The decision sequence is graphically illustrated below. If the Player 1 you are matched with chose “B” would you choose "C" or "D"?



Please circle your choice of "C" or "D" if Player 1 chooses “B”:

MY DECISION IS (CIRCLE ONLY ONE): C or D