Supplementary Material for: **Experimental Evidence on the Transmission of Honesty and Dishonesty: A Stairway to Heaven and a Highway to Hell**

Appendix

Section A.1. Experimental Instructions

(Translated from French)

General Instructions (*common for simultaneous & sequential)*

You are about to participate in an economic experiment. The experiment is conducted by the Department of Economics of the University of Lausanne.

For your participation in the experiment you will earn a payment of CHF 10 for sure. The experiment allows you to earn additional money. At the end of the experiment, you will be paid CHF 10 and any additional money you earned during the experiment. It is to your own benefit to read these explanations carefully.

You can perform the experiment at your own speed. It is prohibited to communicate with the other participants during the whole course of the experiment. If you do not abide by this rule you will be excluded from the experiment and all payments. However, if you have questions you can always ask one of the experimenters by raising your hand.

You can abort the experiment anytime you wish without giving any reasons. To do so, please raise your hand and tell the experimenters that you wish to abort the experiment. One experimenter will then guide you outside the laboratory. You are not eligible to any payments in case you abort the experiment.

Your anonymity is guaranteed.

At the end of the experiment, one experimenter will give you a payment sheet with the amount you will be paid. You will need to carry the payment sheet with you and present it to an experimenter outside the LABEX. The experimenter outside the LABEX does not know about any of the decisions you made during the experiment. This experimenter will then pay you according to your payment sheet. After that you will sign a form stating that you received the payment. Since the form you sign does not contain your participant number, there is no way any experimenter can determine your identity.

If you have any questions right now, please raise your hand. Otherwise, you can now proceed with the detailed explanations of the experiment.

Thank you very much for your participation!

Specific Instructions –*Simultaneous*-

We are now going to explain the task you will perform. For this task you are randomly and anonymously paired with another participant in this room. One participant is randomly assigned to the role of Person A and the other participant to the role of Person B. You will learn whether you have been assigned to the role of Person A or Person B in the end of these instructions. Person A and Person B will observe the outcome of an electronic six sided die-roll. Both Person A and Person B will observe the same outcome of this die-roll. The experimenter will also observe the outcome of this die-roll. This die-roll has six possible outcomes: 1, 2, 3, 4, 5, and 6.

Each outcome can be realized with a probability of 1/6. The table below summarizes the die-roll outcomes and their associated probabilities.

Outcome of the die-roll	1	2	3	4	5	6
Probability	1/6	1/6	1/6	1/6	1/6	1/6

Your task, and the other person's task, is the same: to report the outcome of the die-roll. Each person's monetary payment is only determined by his/her report. In other words, Person A's monetary payment is only determined by Person A's report and Person B's monetary payment is only determined by Person B's report. If you report number 1, then you are paid CHF 1, if you report number 2, then you are paid CHF 2, etc. Here is a table of how your report is associated with your monetary payment:

Your report	1	2	3	4	5	6
Monetary Payment in CHF	1	2	3	4	5	6

Once Person A and Person B have made their reports, each will be asked to make a guess. This will become clear during the experiment. If Person A's guess is correct, Person A will be paid an additional CHF 1. If Person B's guess is correct, Person B will be paid an additional CHF 1.Finally, Person A observes the report of Person B and Person B observes the report of Person A.

Therefore, the sequence of this experiment is as follows:

1. Person A and Person B observe the outcome of the die-roll
2. Person A and Person B make their reports
3. Person A and Person B make their guesses
4. Person A and Person B observe each other's reports

5. Person A is paid his/her report and Person B is paid his/her report

The three examples that follow should make it clear how Person A's report and Person B's report are related to the monetary payments in this experiment.

Example 1: Assume the outcome of the die-roll is 4, Person A reports 5, and Person B reports 4. In this example, Person A is paid CHF 5 and Person B is paid CHF 4.

Example 2: Assume the outcome of the die-roll is 2, Person A reports 4, and Person B reports 5. In this example, Person A is paid CHF 4 and Person B is paid CHF 5.

Example 3: Assume the outcome of the die-roll is 3, Person A reports 3, and Person B reports 3. In this example, Person A is paid CHF 3 and Person B is paid CHF 3.

It is important that you have a good understanding of the experimental instructions. To check that the instructions are clear to you we now ask you to answer a few questions. Your answers to these questions do not have any influence on the experiment itself or on the payment you will receive at the end of the experiment. The experiment will start once you and the person you are paired with have answered the questions correctly.

Questions to check your understanding:

1. If you report 5, how much are you paid?
2. If the outcome of the die-roll is 3 and you report 2, how much are you paid?
3. Does Person A observe a different outcome of the die-roll than Person B? Yes or No?
4. If the outcome of the die-roll is 2 and the person you are paired with reports 3, how much is the person you are paired with paid?
5. Does the report of one person influence the monetary payment of the other person? Yes or No?

Specific instructions –Sequential-

We are now going to explain the task you will perform. For this task you are randomly and anonymously paired with another participant in this room. One participant is randomly assigned to the role of Person A and the other participant to the role of Person B. You will learn whether you have been assigned to the role of Person A or Person B in the end of these instructions.

Person A and Person B will observe the outcome of an electronic six-sided die-roll. Both Person A and Person B will observe the same outcome of this die-roll. The experimenter will also observe the outcome of this die-roll. This die-roll has six possible outcomes: 1, 2, 3, 4, 5, and 6. Each outcome can be realized with a probability of 1/6. The table below summarizes the die-roll outcomes and their associated probabilities.

Outcome of the die-roll	1	2	3	4	5	6
Probability	1/6	1/6	1/6	1/6	1/6	1/6

Your task, and the other person's task, is the same: to report the outcome of the die-roll. Each person's monetary payment is only determined by his/her report. In other words, Person A's monetary payment is only determined by Person A's report and Person B's monetary payment is only determined by Person B's report. If you report number 1, then you are paid CHF 1, if you report number 2, then you are paid CHF 2, etc. Here is a table of how your report is associated with your monetary payment:

Your report	1	2	3	4	5	6
Monetary Payment in CHF	1	2	3	4	5	6

Once Person A and Person B have observed the outcome of the die-roll, Person A makes his/her report. After this, Person B observes Person A's report. Then, Person B makes his/her report. Finally, Person A observes Person B's report.

During the experiment Person A and Person B will also be asked to make a guess. This will become clear during the experiment. If Person A's guess is correct, Person A will be paid an additional CHF 1. If Person B's guess is correct, Person B will be paid an additional CHF 1.

Therefore, the sequence of this experiment is as follows:

1. Person A and Person B observe the outcome of the die-roll
2. Person A makes his/her report
3. Person A and Person B make their guesses
4. Person B observes Person A's report
5. Person B makes his/her report

6. Person A observes Person B's report
7. Person A is paid his/her report and Person B is paid his/her report

The three examples that follow should make it clear how Person A's report and Person B's report are related to the monetary payments in this experiment.

Example 1: Assume the outcome of the die-roll is 4, Person A reports 5, and Person B, after having observed Person A's report, reports 4. In this example, Person A is paid CHF 5 and Person B is paid CHF 4.

Example 2: Assume the outcome of the die-roll is 2, Person A reports 4, and Person B, after having observed Person A's report, reports 5. In this example, Person A is paid CHF 4 and Person B is paid CHF 5.

Example 3: Assume the outcome of the die-roll is 3, Person A reports 3, and Person B, after having observed Person A's report, reports 3. In this example, Person A is paid CHF 3 and Person B is paid CHF 3.

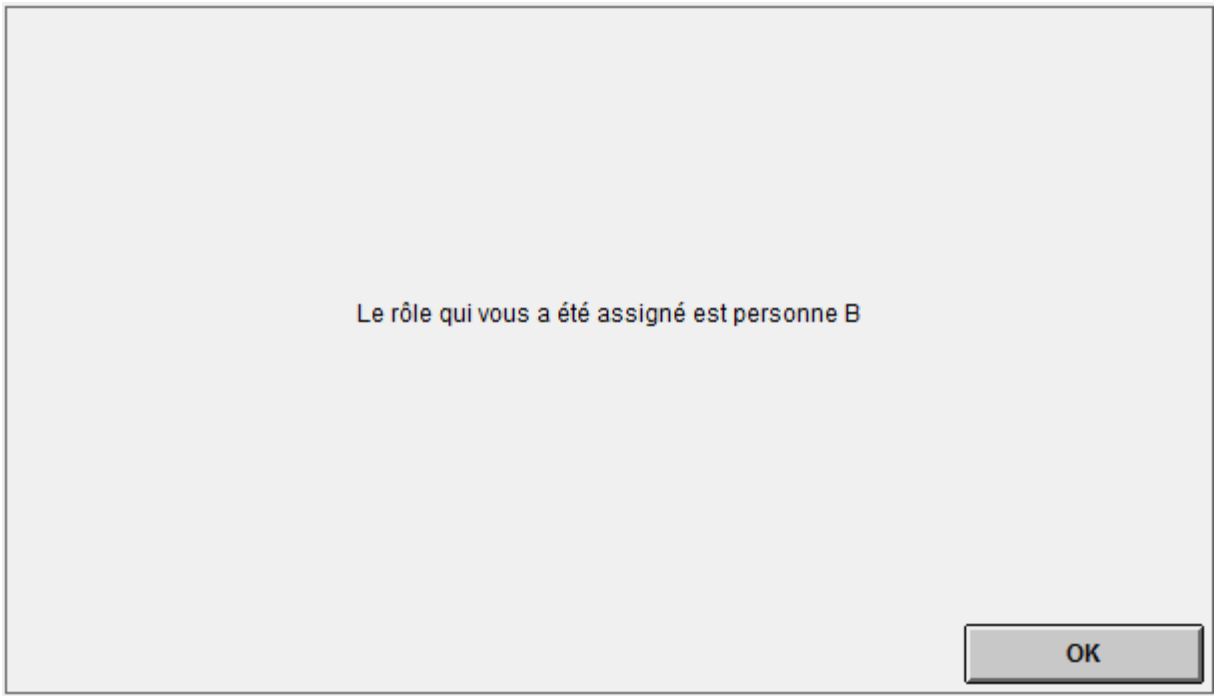
It is important that you have a good understanding of the experimental instructions. To check that the instructions are clear to you we now ask you to answer a few questions. Your answers to these questions do not have any influence on the experiment itself or on the payment you will receive at the end of the experiment. The experiment will start once you and the person you are paired with have answered the questions correctly

Questions to check your understanding:

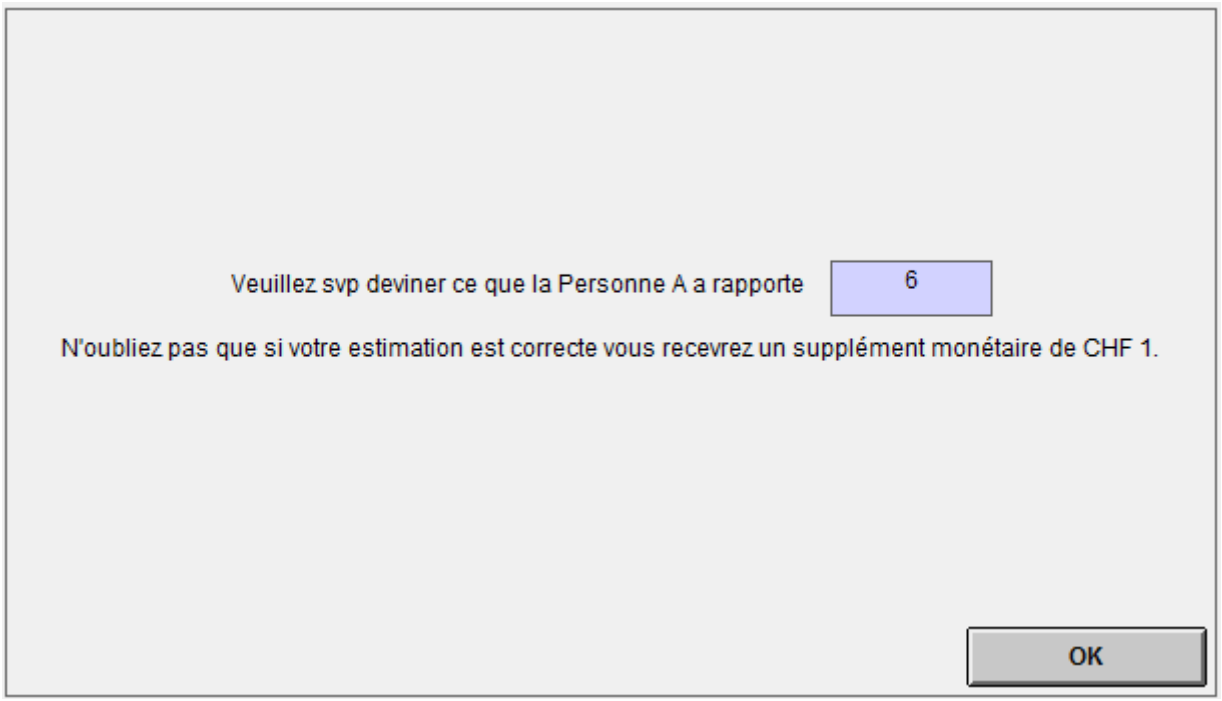
1. If you report 5, how much are you paid?
2. If the outcome of the die-roll is 3 and you report 2, how much are you paid?
3. Does Person A observe a different outcome of the die-roll than Person B? Yes or No?
4. Who is the first person to report the outcome of the die-roll? Person A or Person B?
5. Does the report of one person influence the monetary payment of the other person? Yes or No?

Appendix A.2. Ztree screenshots and demographic questions

Below we provide a few snips of the screens as seen by participants and we provide the English translation below each.

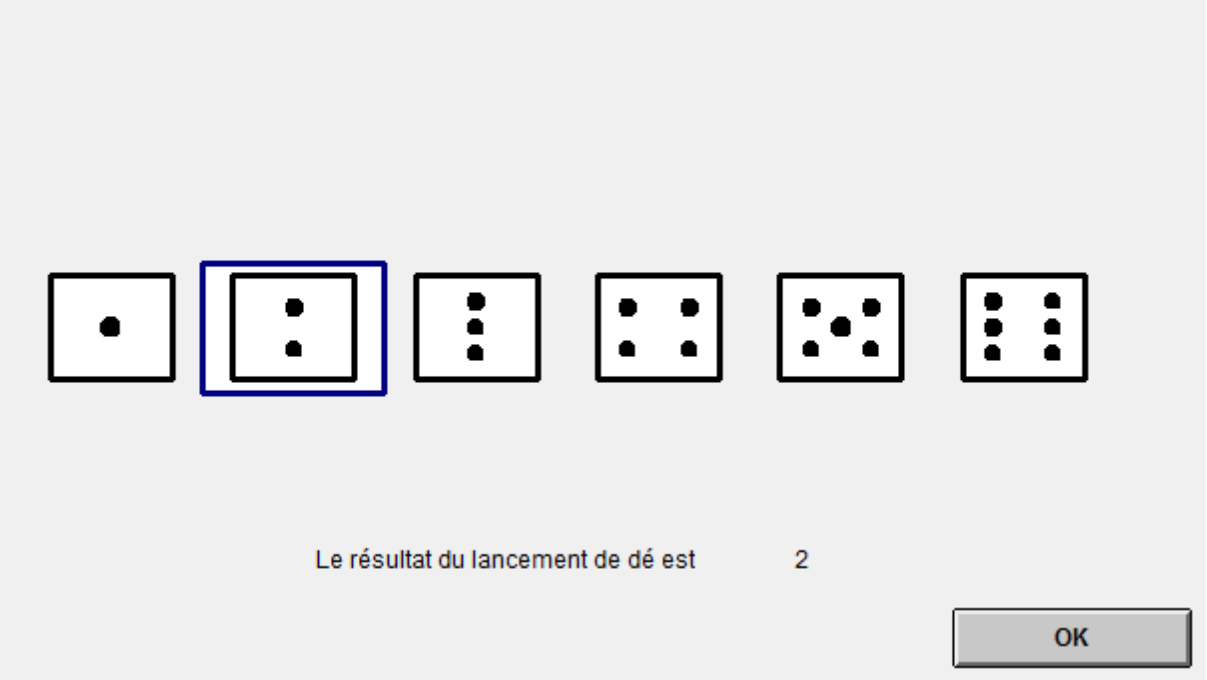


Screenshot 1: You have been assigned the role of Person B

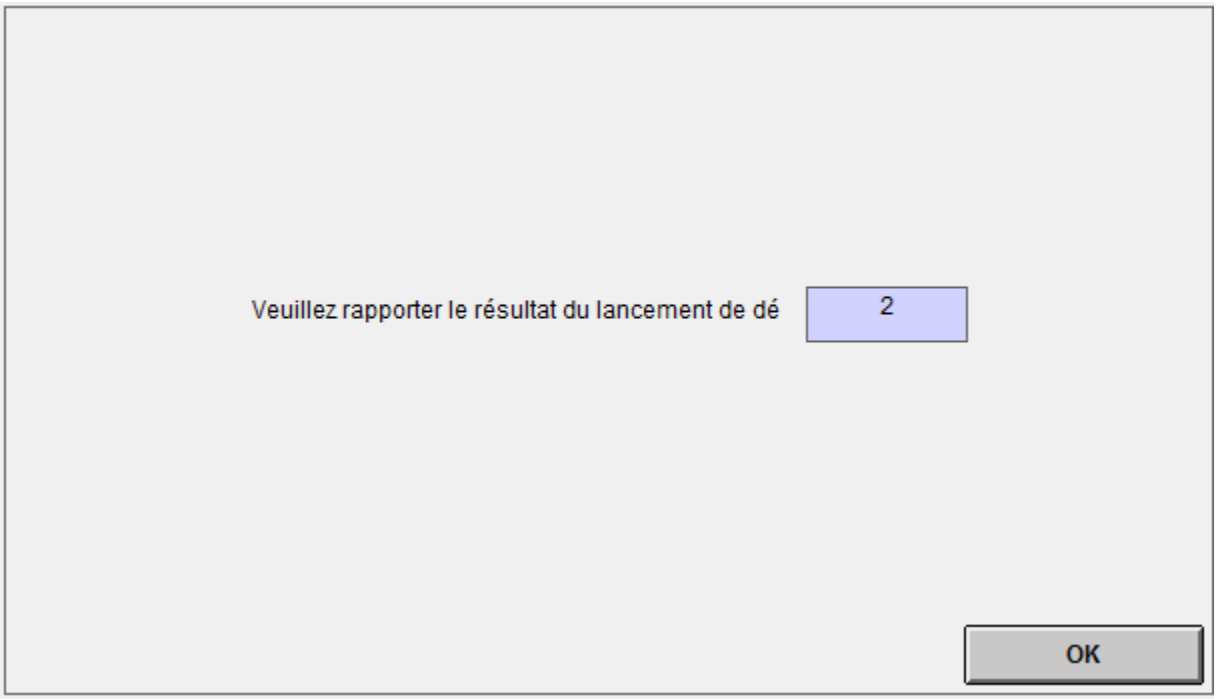


Screenshot 2: Please guess the report of Person A. Recall that if you guess right you will receive 1 CHF in addition

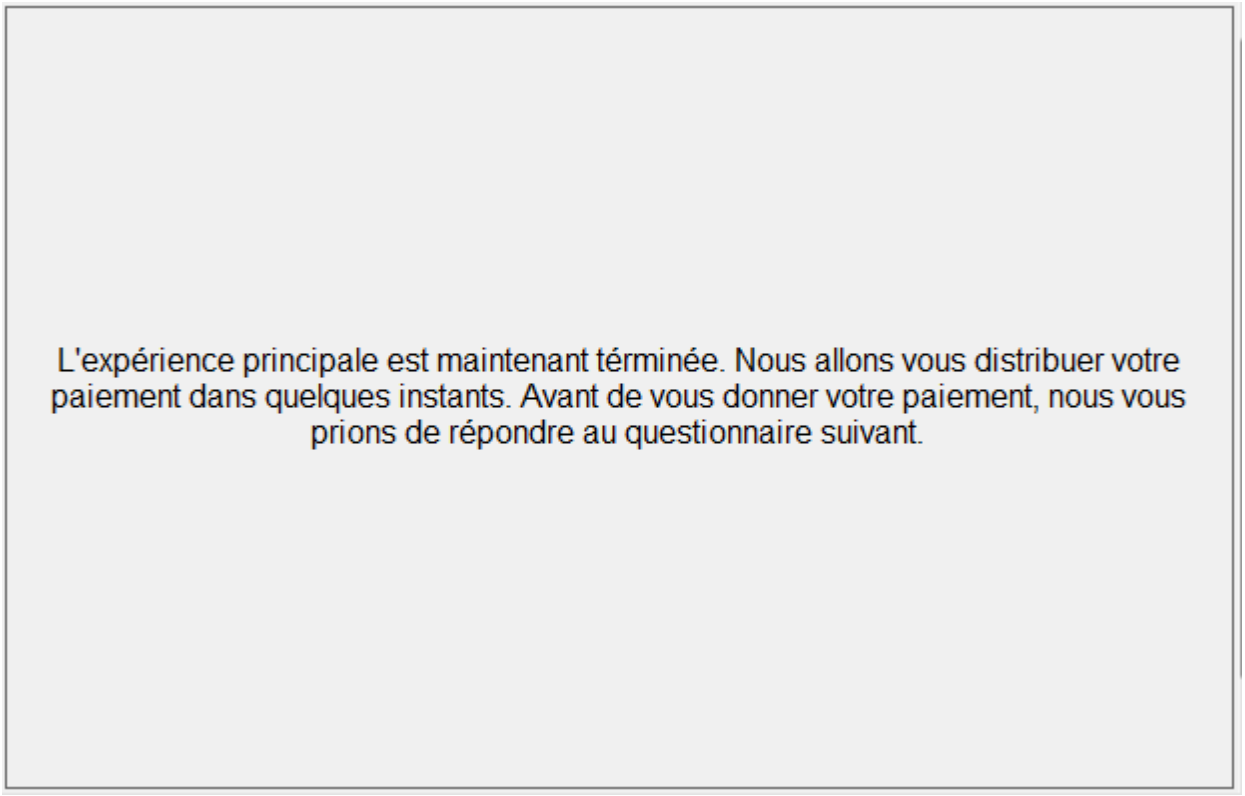
Screenshot 3: Person A reported 2. You have not guessed



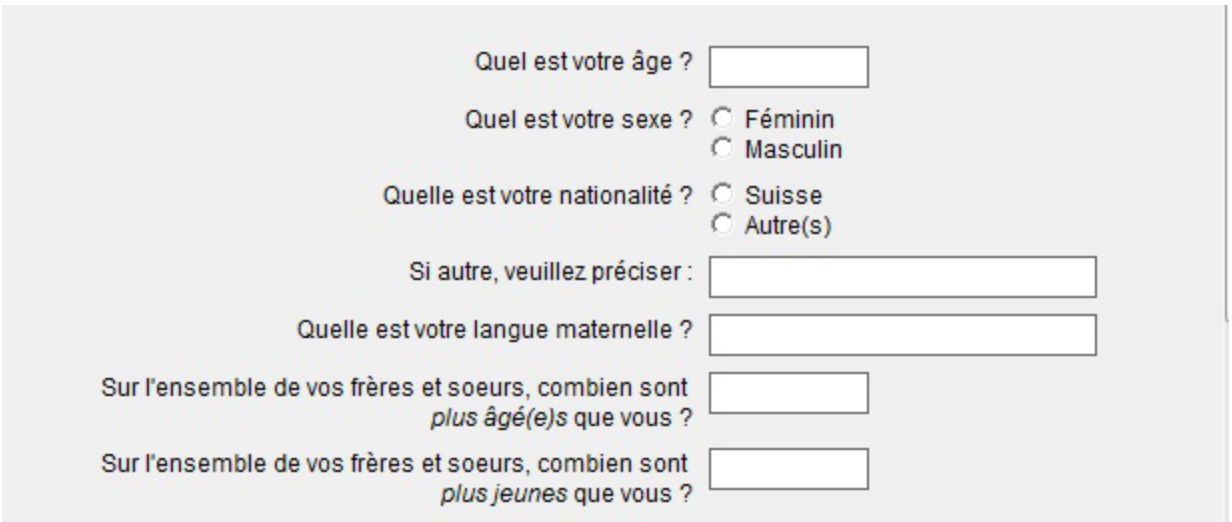
Screenshot 4: The outcome of the die roll is 2



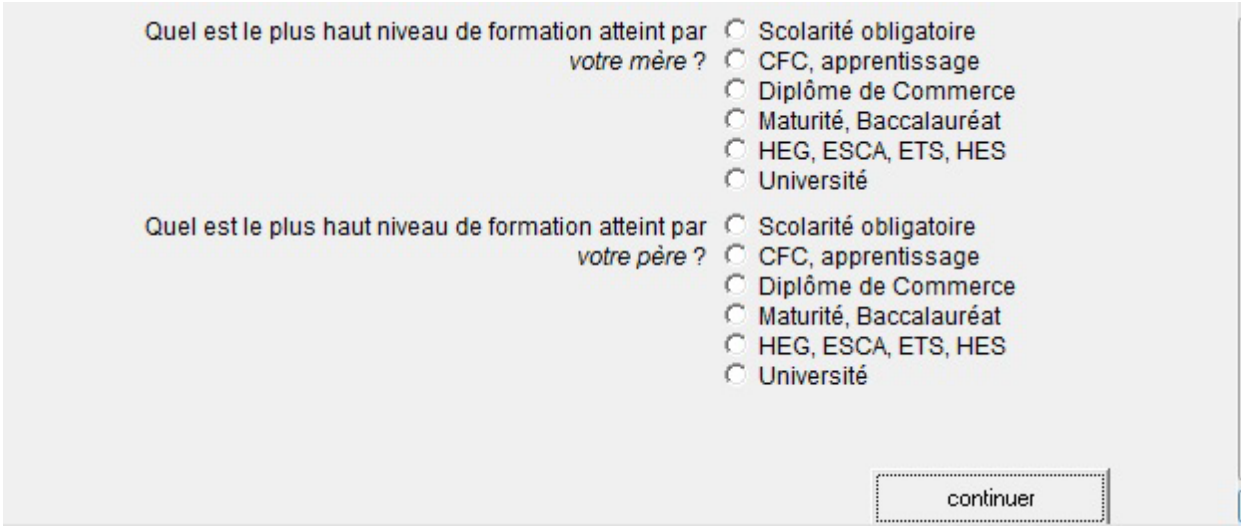
Screenshot 5: Please report the outcome of the die roll (here, a subject reports 2)



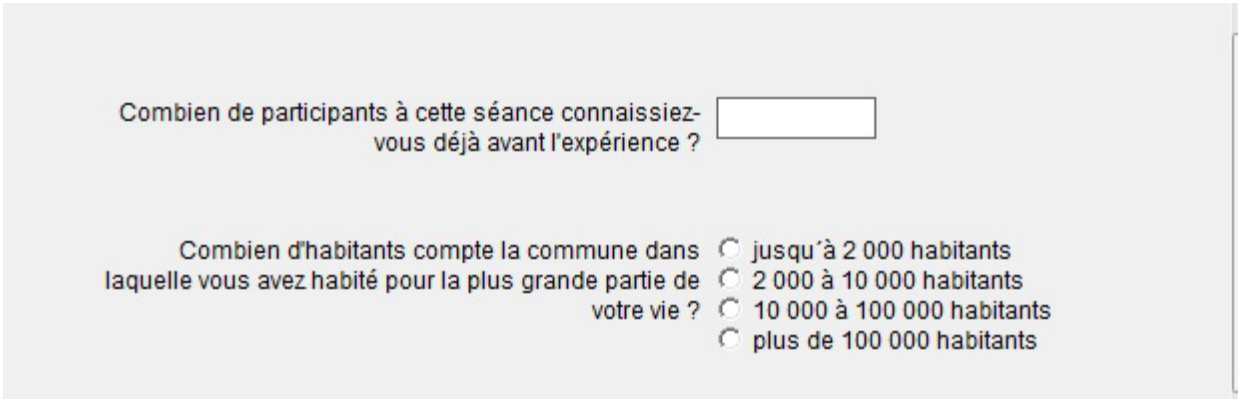
Screenshot 6: The experience is now over. We will soon give you your payment. Before giving you your payment, we kindly ask you to fill in the following questionnaire.



Screenshot 7: How old are you? What is your gender? Which is your nationality? Swiss/other - If other, please specify - What is your mother tongue? – Among your siblings, how many are older than you are? - Among your siblings, how many are younger than you?"

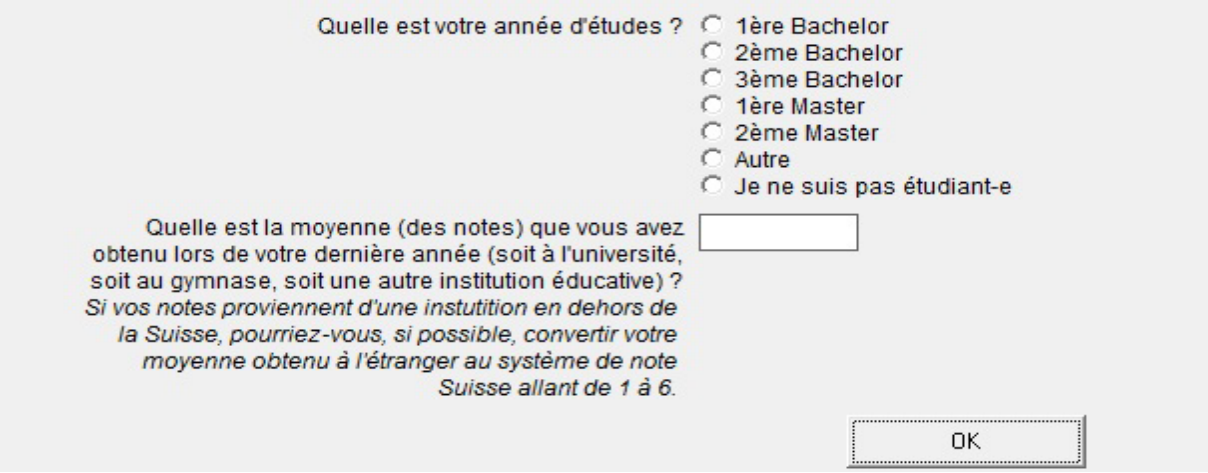


Screenshot 8: Which is the higher education level obtained by your mother? Compulsory school/ Internship / Vocational Education / High school / Bachelor degree / Master degree - Which is the higher education level obtained by your father? Compulsory school/ Internship / Vocational Education / High school / Bachelor degree / Master degree.

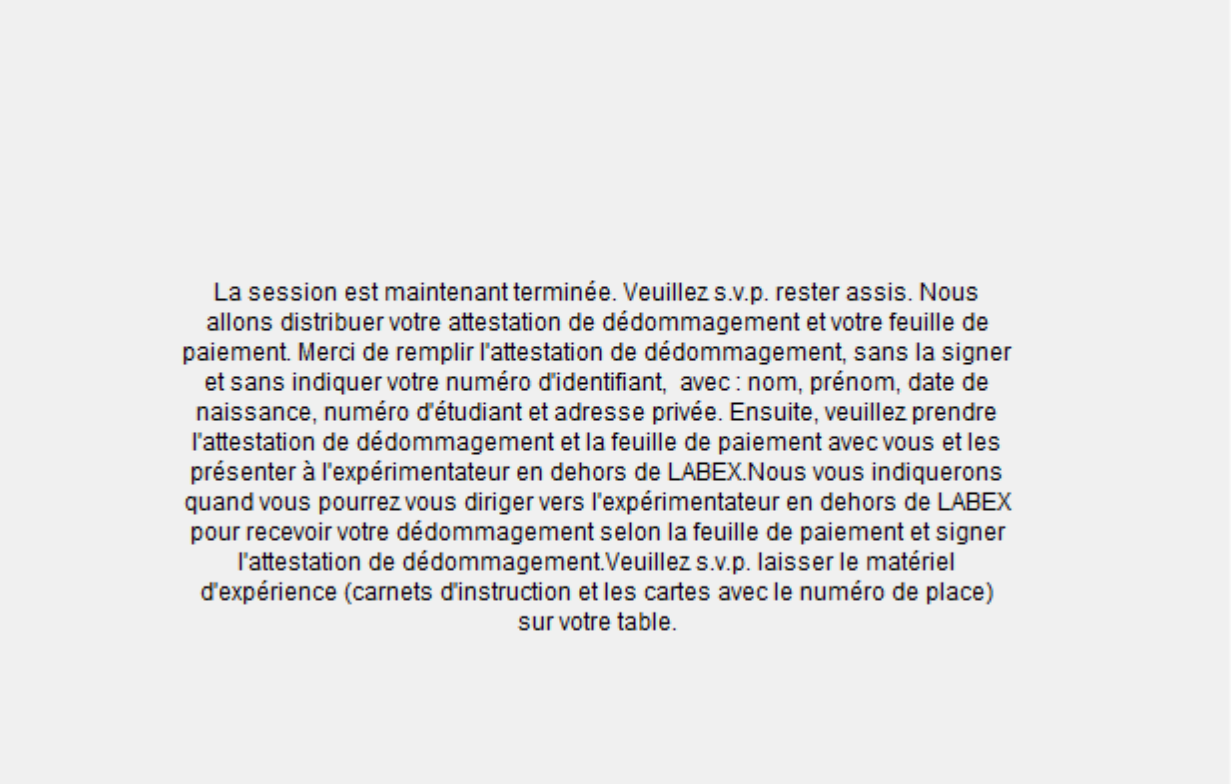


Screenshot 9: Among the participants to this experience, how many people did you already know? - How many inhabitants are there in the city you have spent most of your life in? up to 2000 / among 2000 and 10000 / among 10000 and 100000 / more than 100000

Screenshot 10: Where are you currently studying?



Screenshot 11: At which year of your current studies are you?



Screenshot 12: The experience is now over. Please remain seated. We are about to distribute you your payment sheet. Please fill the payment receipt, without signing it nor indicating your subject number, with your name, surname, student ID and address. Then please take the payment sheet and the payment receipt with you and show them to the experimenter outside of LABEX. We will tell you when to leave the room and reach the experimenter outside of LABEX to receive your compensation according to the payment sheet and sign the payment receipt. Please leave the experiment material (instructions and cubicle number cards) on your desk.

Appendix B. The Control Treatment and its Results

We also conducted a control treatment were subjects are not in pairs, and each subject observes and reports an electronic die-roll in an equivalent observability setting. Below we provide a description of this treatment.

Control Treatment Design

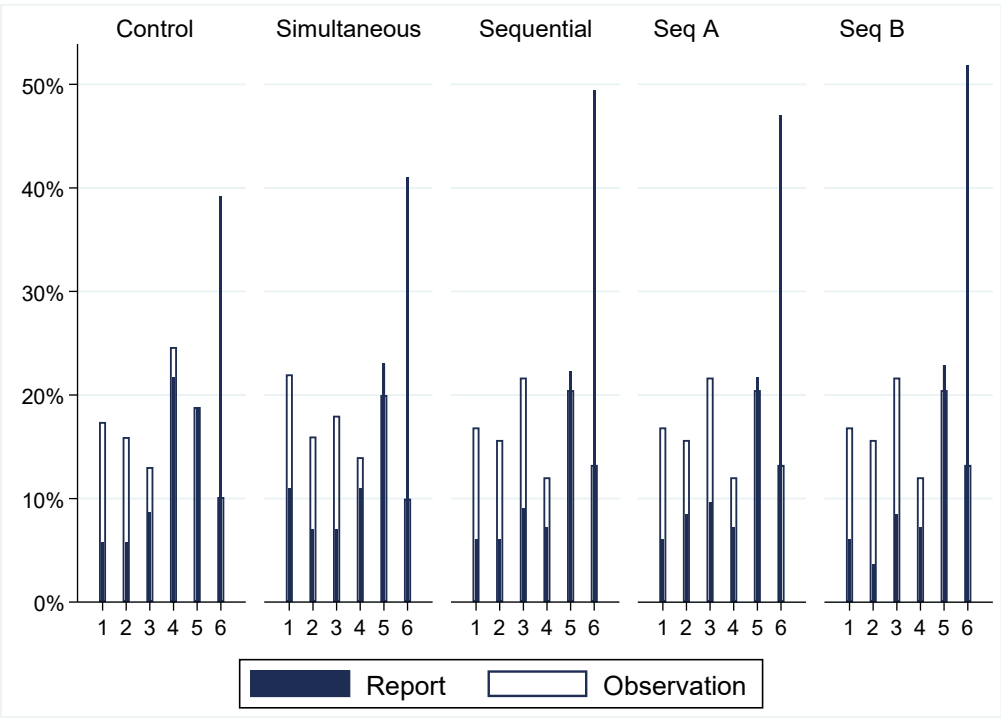
Similarly to the sequential and simultaneous treatments, in the control treatment subjects enter the lab, they are paired, and are assigned the role of A or B in a random fashion. Here, however, Bs are passive and they will not be engaging in reporting. Although both A and B in each pair observe a die roll outcome, only A will be reporting and his/her report will determine his/her payoff. Once A reports, B (whose presence is meant to

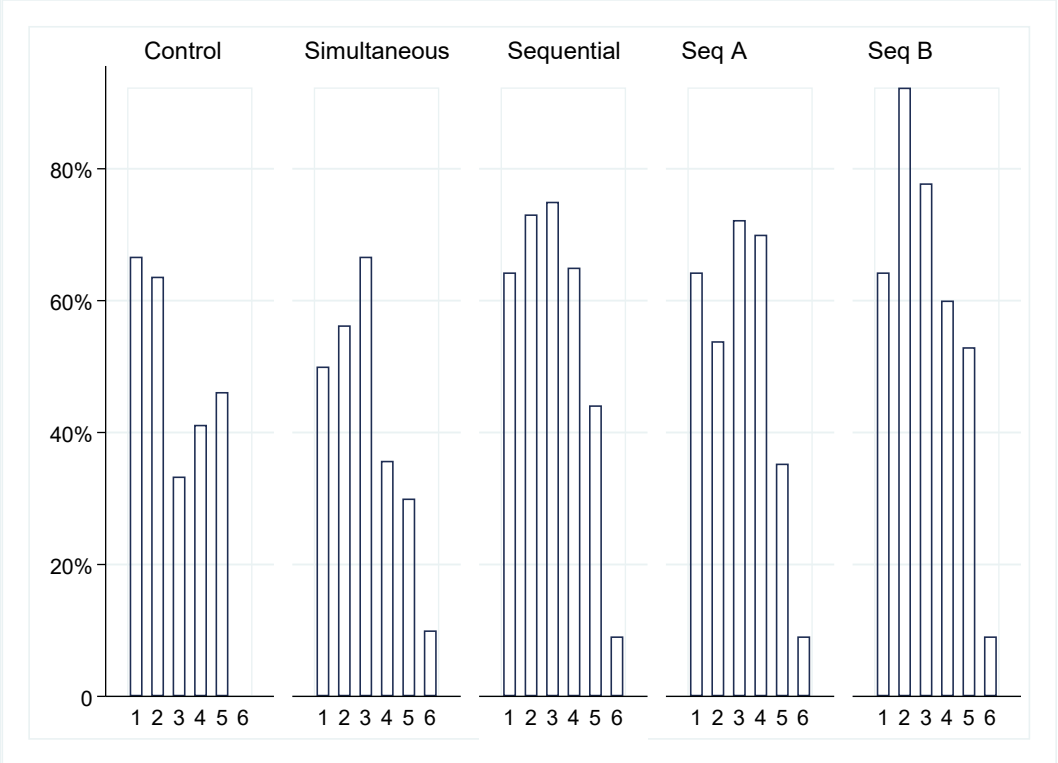
trigger similar audience effects as in the treatments) will observe A's report. B's payoff is determined as follows. Before subjects get paired and learn about their tasks, we describe to them the simultaneous treatment (in non-indicative language) which we call "Experiment 1". We explained that some students, from the same university as themselves, had already participated in "Experiment 1" and that we have kept their reports. Then, we explained that B's payoff would be determined by picking one of the reports of the subjects in "Experiment 1" who had observed the same die-roll outcome. For example, if a pair in the control observed a 3, A would receive a payoff equal to his/her report, and B would receive a payoff equal to the report of a B who participated in "Experiment 1" and had observed a die-roll of 3.

We decided to go with this rather non-straightforward control treatment for the following reasons. First, if in the sequential and the simultaneous treatments subjects' reports are observed by each other, then the same audience effects must apply for subjects in the control treatment. Second, passive Bs' payoffs in the control would have to be such that the induced other regarding preferences of As are constant across the control and the treatments. If, for example, we paid passive Bs in the control with a flat fee, inequality averse As might have been anchored to this flat fee and report according to it. In total, 138 subjects participated in the control but only half of them were active (As), the mean age of those half was 21 years, and 52.17% were female.

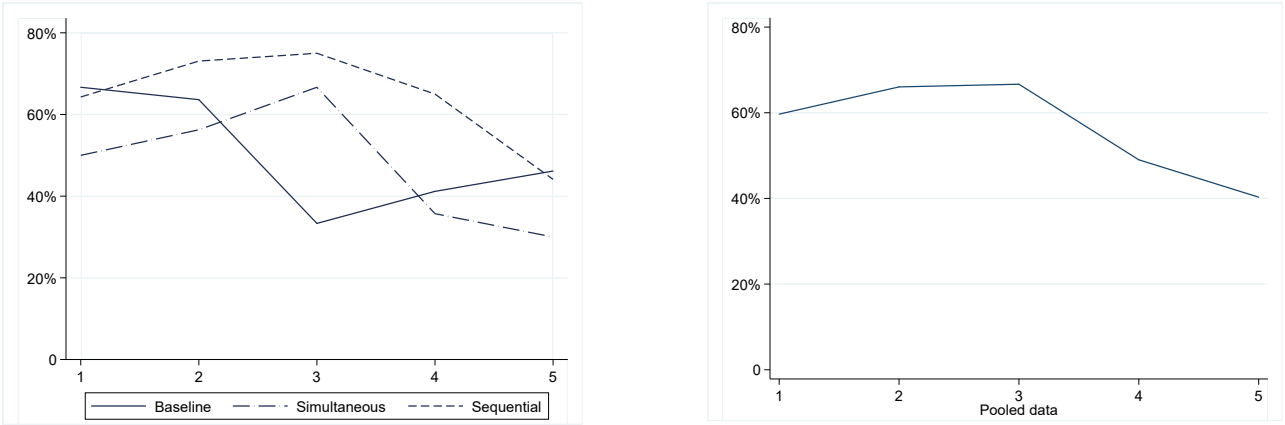
Appendix C. A Graphical Summary of Results

We use the section below to present a different graphical summary of our results. We start with the distribution of reported payoffs across the three experimental conditions and we proceed with a graph of percentage of liars conditional on the actual payoff. Then, we present the line of the percentage of liars conditional on different observations. Last, we provide a breakdown of maximal and partial liars among our three experimental conditions.





Appendix Figure 2 Fraction of Liars Conditional on the Actual Payoff



Appendix Figure 3 Line of % of liars conditional on observation

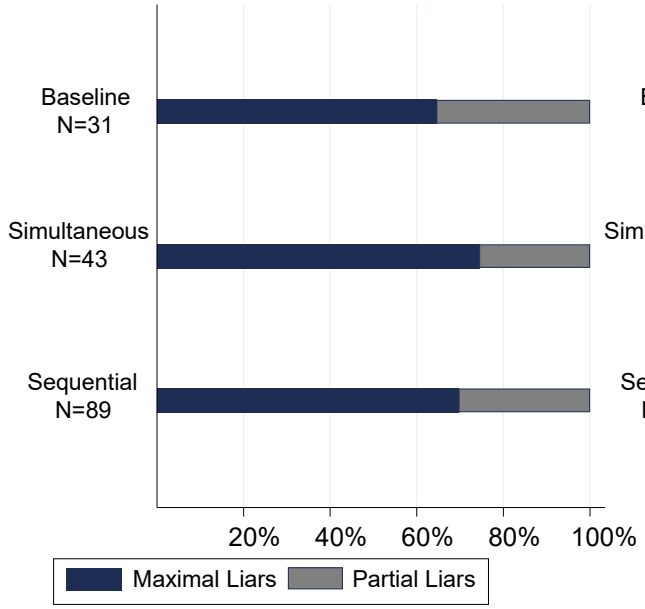


Figure 4: Maximal & Partial Lying among Liars

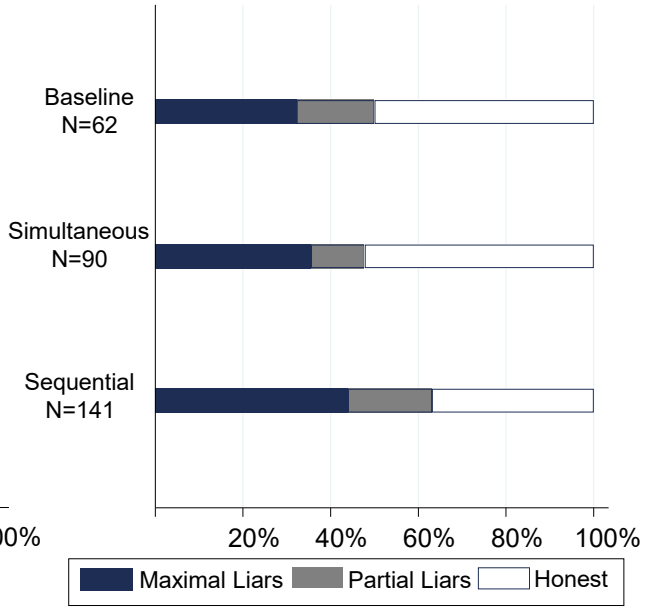


Figure 5: Maximal - Partial Lying & Honesty among Subjects

Below we engage in further analysis to evaluate the level of transmission of dishonesty but without considering Bs beliefs about As' behavior. In Figure 5a below we depict average lying in the simultaneous treatment, and average lying of Bs after observing an honest or dishonest A in the sequential treatment. In Figure 5b below we depict the proportion of subjects who were dishonest in the simultaneous treatment, and the proportion of Bs who lied after observing an honest or dishonest A in the sequential treatment.

In Figure 5a the bars stand for average lying, in Figure 5b the bars stand for fraction of subjects, and the spikes represent 95% confidence intervals.

Figure 5a: Average Lying Simultaneous/Sequential

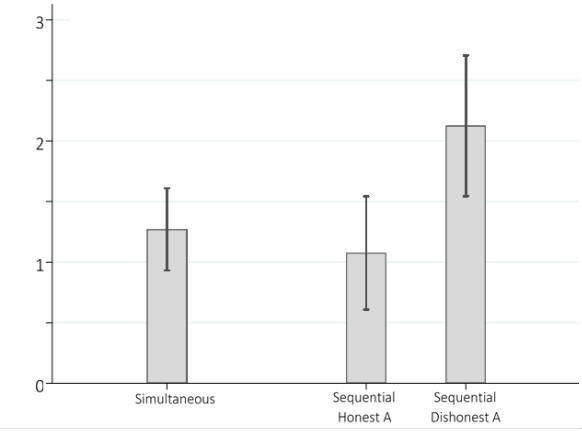
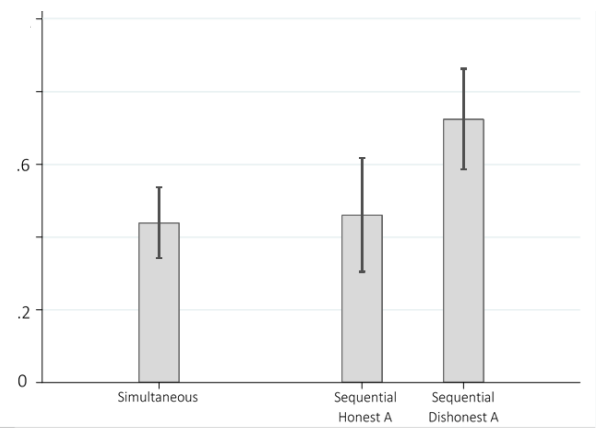


Figure 5b: Proportion of Liars Simultaneous/Sequential



In Figure 5a, the average lying in the simultaneous treatment (1.27) is not significantly different from the average lying of Bs who observe an honest A in the sequential treatment (1.07). However, it is significantly lower from the average lying of those Bs who observe a dishonest A (2.12) with $p < 0.01$. From the two last bars, it is clear that lying occurs more frequently and at higher levels when individuals observe others lying (regardless of their beliefs). If we consider average lying in the simultaneous treatment as a benchmark, we note that observing a dishonest A significantly increases average lying, while observing an honest A does not significantly reduce average lying.

In Figure 5b, we see that the proportion of liars in the simultaneous treatment (44%) is statistically not different from the proportion of Bs who lied after observing an honest A in the sequential treatment (46,15%). Yet it is significantly lower from the percentage Bs who lied after observing a dishonest A in the sequential treatment (72.5%) with $p<0.01$.

Again, when beliefs are not considered, the transmission effect of dishonesty appears much stronger than the transmission effect of honesty.

Appendix D. Regressions

The regressions bellow present results from the sequential treatment only. In the table, the parenthesis present p-values.

Regression (1) is a linear regression of the lying of B on a liar A dummy which equals 1 when A lies and 0 otherwise. We see that when A does not lie, B lies by 1.07 (given by the constant), while when A lies, there is an increase of 1.04 in B's lying. This coefficient is significant at a 1% level. To see the probability of B lying after observing a dishonest A, we regress a liar B dummy, on the liar A dummy as shown in linear regression (3). We see that the probability of B lying if A is honest is approximately 46% (given in the constant) and it increases by approximately 26% if A is dishonest which is significant in a 5% level. This means that a B who observes a dishonest A, will be dishonest approximately 7 out of 10 times. In linear regression (5), we see that Bs lie (given by the constant) is 0.99 which means that Bs lie approximately that much when As do not lie. The coefficient of As' lying, 0.44, is significantly different from zero in a 1% level. The coefficient could be interpreted as the marginal increase of Bs lying in As lying. In other words, Bs' lying increases by 0.44 for every unitary increase in As' lying. For the same regression, when fixed effects are considered (regression 7), The coefficient of As lying, 0.18, still significant at a 10% level, can be interpreted as the increase in the amount of lying of Bs, for every unitary increase in As' lying, for each observation. In regression (9), we see that observing a liar A does not increase the probability that B becomes a liar. However, guessing that an A would be a liar, B has a significant 40% probability of becoming a liar. In regression (10) we see that the size of As lying does not impact the size of lying of Bs. Yet, the guess of B about the size of the lie of A, significantly affects Bs lying. In particular, for every unitary increase in Bs belief about the size of A's lie As, Bs' lying increases by 0.45. In regression (11) the guesses of Bs seem to significantly affect the size of Bs lying, while whether these guesses where accurate does not affect behavior in this context. The last three results suggest that the interplay of guessing and observing might be the most important determinant of behavior in this set up, as we show more analytically in the main body of this manuscript.

	(1) LYING OF B	(2) LYING OF B	(3) LIAR B DUMMY	(4) LIAR B DUMMY	(5) LYING OF B	(6) LYING OF B	(7) LYING OF B	(8) LYING OF B	(9) LIAR B DUMMY	(10) LYING OF B	(11) LYING OF B
LIAR A DUMMY	1.04 (0.006)	0.67 (0.09)	0.26 (0.01)	0.10 (0.37)					0.04 (0.67)		
LYING OF A					0.44 (0.001)	0.37 (0.007)	0.188 (0.07)	0.18 (0.10)		0.08 (0.48)	
B'S GUESS IF A IS LIAR DUMMY									0.40 (0.01)		
BS' GUESS OF AS' LYING										0.45 (0.004)	0.54 (0.001)
DIF. BS' GUESS & AS' LYING											-0.08 (0.48)
INCLUDES THOSE OBSERVING 6	Yes	No	Yes	No	Yes	No	Yes	No	No	No	No
N	79	69	79	69	79	69	79	69	69	69	69
FIXED EFFECTS	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
CONSTANT	1.07 (<0.001)	1.44 (<0.001)	0.46 (<0.001)	0.62 (<0.001)	0.99 (<0.001)	1.26 (<0.001)	0.52 (0.25)	0.52 (0.28)	0.28 (0.04)	0.27 (0.04)	0.27 (0.04)