1 Theoretical predictions

We are interested in how the back-transfer of the SM changes in the continuation probability p. Within a given treatment characterized by p there is a single information set where the SM is called upon to make a move – the information set that is reached when (i) the FM has decided to send the amount of $3 to the SM and (ii) nature has decided to continue the game. Consider the treatment with continuation probability p and denote the SM's choice at her unique information set in that game by $x(p)$. By design $x(p) \in [0, 15]$ for all values of p. Let $b^1(p)$ denote the FM's (initial) belief on $x(p)$ and let $b^2(p)$ denote the SM's estimate of $b^1(p)$ conditional on the FM having decided to send the $3 to the SM and on nature having chosen to continue the game.[1]

Sequential Reciprocity

We start by assuming that the SM has reciprocity concerns as modeled by Dufwenberg and Kirchsteiger (2004) and extended – by allowing for chance moves – by Sebald (2010). In line with the sequential reciprocity model presented in those papers we assume that at her unique information set the SM decides according to the utility function

(A1) $U_{SM}(x(p), b^2(p), p) = \pi_{SM}(x(p)) + Y_{SM}\, \kappa_{SM}(x(p))\, \lambda_{SM}(b^2(p), p)$,

where the first term on the RHS, $\pi_{SM}(.)$, is the SM's material payoff and the second term, $Y_{SM}\, \kappa_{SM}(.)\, \lambda_{SM}(.)$, is her expected psychological payoff. Since the SM has the last move in the game, her material payoff depends only on her own behavior. Specifically, we have $\pi_{SM}(x(p)) = 25 - x(p)$. The SM's psychological payoff is the result of the multiplication of three terms, the strictly positive reciprocity parameter, Y_{SM}, which 'measures' the SM's sensitivity to the (un)kindness of the FM, the SM's perception of the kindness of the own behavior, $\kappa_{SM}(x(p))$, and the SM's perception of the kindness of the sending behavior of the FM, $\lambda_{SM}(b^2(p), p)$.[2] In the sequential reciprocity theory by Dufwenberg and Kirchsteiger (2004) and its extension by Sebald (2010) the SM's perception of the own kindness (as assessed at her unique information set) is defined as the material payoff the SM intends to give to the FM by her transfer minus a reference payoff (the 'equitable payoff'), which is the average between the maximum and the minimum material payoff the SM could give to the FM by varying her back-transfer. Specifically, $\kappa_{SM}(x(p)) = \pi_{FM}(x(p)) - \pi^e_{FM}$, where $\pi_{FM}(x(p)) = 7 + x(p)$ is the payoff the SM gives to the FM and where $\pi^e_{FM} = (7 + 22)/2 = 14.5$ is the SM's perception of the equitable payoff for the FM. Thus, $\kappa_{SM}(x(p)) = x(p) - 7.5$, implying that the SM perceives herself as unkind if she gives less than 7.5 and kind if she gives more and that her "kindness increases in the size of the gift". Turning to the last term in the psychological payoff, the SM's perception of the kindness of the sending decision of the FM, $\lambda_{SM}(b^2(p), p)$, it is defined similarly. Specifically, $\lambda_{SM}(b^2(p), p) = \pi_{SM}(b^2(p)) - \pi^e_{SM}$, where $\pi_{SM}(b^2(p)) = 25 - pb^2(p)$ is the payoff the SM expects that the FM intends to give to her (by sending the $3) and $\pi^e_{SM} = [10 + 25 –

[1] Our focus throughout is on pure strategies and point beliefs. In the experiment the SM can choose only integer amounts between 0 and 15. Here, in the theory part, we allow her to choose from the interval [0, 15] to keep the exposition simple. As is easily seen, our main points do not depend on this simplification.
[2] The mathematical functions in the theory papers by Dufwenberg and Kirchsteiger (2004) and Sebald (2010) are slightly more complex but lead to a utility with the same best response correspondence. Also, the theory papers allow for $Y=0$ which represents the special case of selfish preferences. Since our aim is to compare the behavioral consequences of the theories of sequential reciprocity and simple guilt it does not make any sense to allow for selfish preferences in any of the models.

1

$pb^2(p)]/2$ is the average between the minimum and the maximum the SM believes the FM believes he can assign to the SM (the minimum is reached when the FM decides to keep the \$3 and the maximum is reached when the FM decides to send the \$3; only in the latter case does the payoff depend on the SM's second order belief). Thus, $\lambda_{SM}(b^2(p), p) = 7.5 - pb^2(p)/2$. Here it is important to note that the SM's perception of the kindness of the sending move by the FM depends on the continuation probability p: For a given second-order belief of the SM, the sending move by the FM is perceived as kinder if the continuation probability is lower.[3] Combining all the elements yields the function

$$\text{(A2)} \quad U_{SM}(x(p), b^2(p), p) = \pi_{SM}(x(p)) + Y_{SM}\,\kappa_{SM}(x(p))\,\lambda_{SM}(b^2(p), p)$$
$$= 25 - x(p) + Y_{SM}\,[x(p) - 7.5][7.5 - pb^2(p)/2].$$

Guilt Aversion

Consider now the alternative scenario where the SM is motivated by a desire to avoid 'simple guilt' as introduced by Charness and Dufwenberg (2006) and generalized and extended by Battigalli and Dufwenberg (2007). In the theory of simple guilt players experience a utility loss if they believe that they let others' payoff expectations down. Using the same notation as before we assume – in line with the mentioned papers – that at her unique information set the SM decides according to the utility function

$$\text{(A3)} \quad U_{SM}(x(p), b^2(p), p) = \pi_{SM}(x(p)) - \theta_{SM} D_{FM}(x(p), b^2(p), p),$$

where the first term on the RHS, $\pi_{SM}(.)$, is again the SM's material payoff and the second term, $\theta_{SM}D_{FM}(.)$, is her expected psychological payoff which now results from guilt from letting the FM's payoff expectations down. The SM's material payoff is again $\pi_{SM}(x(p)) = 25 - x(p)$. The SM's psychological payoff is now the result of the multiplication of two terms, the strictly positive guilt-sensitivity parameter θ_{SM}, which 'measures' the SM's sensitivity to letting the FM's payoff expectations down, and the expression $D_{FM}(.)$, which measures the damage done to the FM by the other players (the SM and nature). This latter term is defined as $D_{FM}(x(p), b^2(p), p) = \max\{0, E[\pi_{FM} \mid b^2(p), p]\} - \pi_{FM}(x(p))\}$, where $E[\pi_{FM} \mid b^2(p), p]$ is the SM's belief regarding the FM's payoff expectation (conditional on sending the \$3) for a given p and $\pi_{FM}(x(p))$ is the FM's actual payoff given the SM's actual back-transfer. Now, $E[\pi_{FM} \mid b^2(p), p] = 7 + pb^2(p)$ and $\pi_{FM}(x(p)) = 7 + x(p)$. Thus, $D_{FM}(x(p), b^2(p), p) = \max\{0, pb^2(p) - x(p)\}$, implying that (3) becomes

$$\text{(A4)} \quad U_{SM}(x(p), b^2(p), p) = \pi_{SM}(x(p)) - \theta_{SM} D_{FM}(x(p), b^2(p), p) =$$
$$= 25 - x(p) - \theta_{SM}[pb^2(p) - x(p)]^+,$$

where $[x]^+$ is x for $x > 0$ and 0 otherwise.

[3] Here it is important to note that – in line with the extension by Sebald (2010) of the sequential reciprocity concept by Dufwenberg and Kirchsteiger (2004) – at the SM's unique information set we let her evaluate the kindness of the sending move by the FM on the basis of her belief that the FM believes that nature will continue the game with probability p and not with probability 1. That is, in line with Sebald (2010) the SM does not update her belief about the FM's belief regarding the move by nature.

Predictions:

On the basis of the motivation functions (2A and 4A) we get to the following predictions:

Observation 1 (Common Knowledge that the SM is Motived by Sequential Reciprocity): *Consider two games (as displayed in Figure 1) characterized by their continuation probabilities p_1 and p_2, with $1 > p_2 > p_1 > 0$. Assume that it is common knowledge that the SM behaves in accordance with the sequential reciprocity theory as introduced by Dufwenberg and Kirchsteiger (2004) and extended by Sebald (2010), with known reciprocity parameter Y_{SM}. Further assume that the equilibrium involves* $x(p_i) \in (0, 15)$ *for at least one p_i. Then $p_2 b^2(p_2) > p_1 b^2(p_1)$ and $x(p_1) > x(p_2)$.*

Proof: The proof is by contradiction. Consider two continuation probabilities p_1 and p_2, with $p_2 > p_1$ and assume that the back-transfer in the SRE of the game induced by p_2 is weakly larger than the back-transfer in the SRE of the game induced by p_1. As in any SRE beliefs of all orders are correct, it must be the case that $b^2(p_1) = x(p_1)$ and $b^2(p_2) = x(p_2)$. But then $b^2(p_1) \leq b^2(p_2)$ and hence $[7.5 - p_1 b^2(p_1)/2] > [7.5 - p_2 b^2(p_2)/2]$. As a consequence, the SM perceives the transfer of \$3 by the FM as kinder in the SRE of the game with the smaller continuation probability p_1 than in the SRE of the game with the larger continuation probability p_2. But then the SM cannot return weakly more in the SRE of the game with the larger continuation probability because this is inconsistent with maximizing the function (2) which requires that $x(p)$ increases in the SM's perception of the kindness of the FM. ■

Discussion of Observation 1: Observation 1 tells us that for the special case where it is common knowledge that the SM is motivated by sequential reciprocity à la Dufwenberg and Kirchsteiger (2004) and Sebald (2010), the SM's second-order belief is increasing and her back-transfer is decreasing in the continuation probability. The requirement $x(p_i) \in (0, 15)$ for at least one p_i is needed for the result to exclude 'corner solutions' where the back-transfer is either 0 or 15 for both values of p_i. This happens if either $Y_{SM} \leq 2/15$ (in this case $x(p_1) = x(p_2) = 0$) or $Y_{SM} \geq 2/15(1-p_2)$ (in this case $x(p_1) = x(p_2) = 15$). This can be shown by deriving the conditions for the existence of the two 'corner solutions' and for the existence of an interior equilibrium with $x(p_i) \in (0, 15)$. A necessary and sufficient condition for a corner solution with $x(p_i) = 0$ is that the weight on $x(p)$ in the psychological term in (A2) is weakly smaller than 1 when $b^2(p_i)$ is set to 0. This condition translates to $Y_{SM} \leq 2/15$ for all $p_i \in (0, 1]$. The necessary and sufficient condition for a corner solution with $x(p_i) = 15$ is that the weight on $x(p)$ in the psychological term in (2) is weakly larger than 1 when $b^2(p_i)$ is set to 15. This condition translates to $Y_{SM} \geq 2/15(1-p_i)$ for all $p_i \in (0, 1)$. The necessary and sufficient condition for an interior equilibrium is that the weight on $x(p)$ in the psychological term in (A2) is exactly 1 when $b^2(p_i)$ is set to $x(p)$. This yields the condition $x(p_i) = (15Y_{SM} - 2)/\, p_i Y_{SM}$. These considerations together imply that the SRE is unique for any combination of $Y_{SM} > 0$ and $p_i \in (0, 1]$.

Now consider the other extreme where it is common knowledge that the SM is motived by simple guilt. For this special case we immediately get the following result:

Observation 2 (Common Knowledge that the SM is Motived by Guilt Aversion): *Consider the game displayed in Figure 1. Assume that it is common knowledge that the SM* *behaves in accordance with the theory of simple guilt as introduced by Charness and Dufwenberg (2006) and generalized and extended by Battigalli and Dufwenberg (2007). Then equilibrium necessarily involves $x(p) = 0$ for any $p < 1$. Indeed, common knowledge of rationality alone already implies that $x(p) = 0$ for any $p <1$.*

Proof: First note that in game p the term $D_{FM}(x(p), b^2(p), p)$ is equal to zero for $x(p) \geq 15p$ independently of $b^2(p)$. This follows from the fact that a FM who decides to send the \$3 cannot have a payoff expectation large than $7 + 15p$. Thus, in game p any back-transfer larger than $15p$ is dominated for the SM by the back transfer of $15p$ (because the higher back-transfer causes a material cost without yielding any benefit in terms of reduced guilt). If the FM correctly anticipates that in game p any back transfer larger than $15p$ is dominated, then he cannot have a payoff expectation large than $7 + 15p^2$, implying that the expectation of D_{FM} is zero for any $x(p) \geq 15p^2$ independently of $b^2(p)$. Proceeding with the same argument we see that common knowledge of rationality plus aversion against simple guilt together yield the prediction that $x(p) = 0$ for any $p <1$ and any arbitrary θ_{SM}! ■

Discussion of Observation 2: Observation 2 tells us that with 'simple guilt' à la Charness and Dufwenberg (2006) and Battigalli and Dufwenberg (2007) the back-transfer is zero for any arbitrary value of p_i. This is somewhat counterintuitive because one would expect that guilt aversion has some bite in this context and because intuition suggests that the bite should increase in the continuation probability simply because the payoff expectation increases in the continuation probability. Why does guilt aversion exactly nothing in the context under consideration? The problem seems to be that when the SM is actually deciding, she knows that nature has already been 'nice' to the FM. She does therefore not feel guilty for giving him less than what the FM initially expected her to give him (because even with a lower back transfer the payoff expectation of the FM is still met). One could argue that this is against the spirit of guilt aversion as introduced by Charness and Dufwenberg (2006) and generalized and extended by Battigalli and Dufwenberg (2007), and that the SM should feel guilty if she sends back less than what the FM expected her to send back. However, our aim here is not to develop an alternative theory of guilt aversion.

Discussion of Observations 1 and 2: Observations 1 and 2 consider two extreme cases, in one of them it is common knowledge that the SM is motivated by reciprocity concerns, in the other it is common knowledge that she is motivated by simple guilt. None of these scenarios is in line with the core assumption of the present paper, which is the assumption that SMs are heterogeneous in their reactions to second-order beliefs: Some SM are assumed to have preferences in line with equation (A2), others are assumed to have preferences in line with equation (A4), still others are assumed to be selfish (x(p) = 0 for all p) or altruistic (x(p) = k > 0 for all p). Let us now consider such a framework.

Heterogeneous Preferences: To keep the analysis simple suppose that it is common knowledge that there are exactly four types of SMs in the population, selfish (*S*) SMs who never send money back ($x_S(p) = 0$ for all p), altruistic (*A*) SMs who send a fixed amount k for any p ($x_A(p) = k$ for all p), guilt averse (*G*) SMs who behave according to the utility function (A4) with known $\theta_{SM} > 1$, and reciprocal (*R*) SMs who behave according to the utility function (A2) with known $Y_{SM} > 2/15$. Further suppose that the four types of agents have known relative frequencies α_S, α_A, α_G and α_R in the population. What are the requirements for equilibrium in this case? Since the FM does not know whether he is paired with a *S*, an *A*, a *G* or a *R* type, correct expectation means that $b^1(p)$ is the probability-weighted average of the back-transfers of the different SM types. Since the SM knows that the FM does not know which SM type he faces, $b^2(p) = b^1(p)$ for all SM types. This implies that in equilibrium the $b^2(p)$ for a given SM is no longer equal to the $x(p)$ of that SM. What does this imply for the (equilibrium) reaction of second-order beliefs and behavior to an exogenous change in the continuation probability? Proposition 1 addresses this question:

Proposition 1 (Common Knowledge that there is Heterogeneity in SM Preferences): *Consider two games (as displayed in Figure 1) characterized by their continuation probabilities p_1 and p_2, with $1 > p_2 > p_1 > 0$. Assume that it is common knowledge that there are four types of SMs in the population appearing with known strictly positive frequencies, selfish SMs who never send money back, altruistic SMs who send a fixed amount k for any p, guilt averse SMs who behave according to the utility function (A4) with known $\theta_{SM} > 1$, and reciprocal SMs who behave according to the utility function (A2) with known $Y_{SM} > 2/15$. Then the equilibrium involves $p_2 b^2(p_2) > p_1 b^2(p_1)$.*

Proof: First note that $x_S(p_1) = x_S(p_2) = 0$ and $x_A(p_1) = x_A(p_2) = k$. Next note that $\theta_{SM} > 1$ implies that $x_G(p_i) = p_i b^2(p_i)$. Also note that $x_R(p_i) = 0$ if $Y_{SM}[7.5 - p_i b^2(p_i)/2] < 1$, $x_R(p_i) \in [0, 15]$ if $Y_{SM}[7.5 - p_i b^2(p_i)/2] = 1$, and $x_R(p_i) = 15$ if $Y_{SM}[7.5 - p_i b^2(p_i)/2] > 1$. Finally note that in equilibrium $b^2(p_i)$ is equal to $b^1(p_i)$ and $b^1(p_i)$ is equal to the probability-weighted average of the $x(p_i)$s of the different SM types. That is, $b^2(p_i) = b^1(p_i) = \alpha_A k + \alpha_G p_i b^2(p_i) + \alpha_R x_R(p_i)$. Now it is easy to see that for each p_i there are three possible cases to consider, the case where $x_R(p_i) = 0$, the case where $x_R(p_i) \in (0, 15)$ and the case where $x_R(p_i) = 15$. For the case where $x_R(p_i) = 0$ we get $b^2(p_i) = b^1(p_i) = \alpha_A k/(1 - \alpha_G p_i)$ and the condition for the existence of such an equilibrium is $Y_{SM}[7.5 - p_i \alpha_A k/(2 - 2\alpha_G p_i)] < 1$. For the case where $x_R(p_i) = 15$ we get $b^2(p_i) = b^1(p_i) = (\alpha_A k + 15\alpha_R)/(1 - \alpha_G p_i)$ and the condition for the existence of such an equilibrium is $Y_{SM}[7.5 - p_i(\alpha_A k + 15\alpha_R)/(2 - 2\alpha_G p_i)] > 1$. For values of the reciprocity parameter Y_{SM} between $1/[7.5 - p_i \alpha_A k/(2 - 2\alpha_G p_i)]$ and $1/[7.5 - p_i(\alpha_A k + 15\alpha_R)/(2 - 2\alpha_G p_i)]$ the equilibrium involves $x_R(p_i) \in (0, 15)$ and in this case $x_R(p_i)$ is determined by the equation $Y_{SM}[7.5 - p_i(\alpha_A k + \alpha_R x_R(p_i))/(2 - 2\alpha_G p_i)] = 1$. From these considerations it follows that for each combination of Y_{SM} and p_i the equilibrium is unique. Keeping Y_{SM} fixed and comparing two games characterized by their continuation probabilities p_1 and p_2, with $1 > p_2 > p_1 > 0$, and taking into account the conditions for the existence of each of the three kinds of equilibria, we then get $p_1 x_S(p_1) = p_2 x_S(p_2)$, $p_1 x_A(p_1) < p_2 x_A(p_2)$, $p_1 x_G(p_1) < p_2 x_G(p_2)$, and $p_1 x_R(p_1) \leq p_2 x_R(p_2)$. The result then follows from the fact that $p_i b^2(p_i) = \alpha_A p_i x_A(p_i) + \alpha_G p_i x_G(p_i) + \alpha_R p_i x_R(p_i)$. ■

Discussion of Proposition 1: Proposition 1 tells us that for the case where it is common knowledge that there are four types of SMs in the population appearing with known strictly positive frequencies, equilibrium necessarily involves that the second-order belief of the SM is increasing in the continuation probability. No further conditions are needed to exclude corner solutions in this case because the fact that selfish and altruistic agents have positive probability mass alone already guarantees that $b^2(p_i) \in (0, 15)$ for each p_i.

2 Instructions

General Instructions

General Remarks
Thank you for participating in this experiment on decision-making. During the experiment you and the other participants are asked to make a series of decisions.
Please do not communicate with other participants. If you have any questions after we finish reading the instructions please raise your hand and an experimenter will approach you and answer your question in private. Please consider all expressions as gender neutral.

Three Roles
There are three roles in this experiment: **Player 1**, **Player 2** and the **Observer**. At the start of the experiment you will be assigned to one of these three roles through a random procedure. Your role will then remain the same throughout the experiment. Your role will only be known to you.

Earnings
Depending on your decisions, the outcomes of some random moves and the decisions of other participants you will receive money according to the rules explained below. All payments will be made confidentially and in cash at the end of the experiment.

Privacy
This experiment is designed such that nobody, including the experimenters and the other participants, will ever be informed about the choices you or anyone else will make in the experiment. Neither your name nor your student ID will appear on any decision form. The only identifying label on the decision forms will be a number that is only known to you. At the end of the experiment, you are asked to collect your earnings in an envelope one-by-one from a person who has no involvement in and no information about the experiment.

Decisions Per Period

The experiment is divided into **three periods**. You are asked to choose your preferred option in each of these periods. Only one period will be randomly selected for cash payments; thus you should decide which option you prefer in the given period **independently** of the choices you make in the other periods.

There are three roles in the experiment: Player 1, Player 2 and an Observer.

Player 1 and Player 2

In each period, Player 1 is randomly matched with one Player 2 but none of the participants will interact with the same other participant twice and no one will ever be informed about the identity of the participant he was paired with. Both players receive an endowment of $10 in each period.

The first move is made by **Player 1**. He is asked to choose whether he wants to send $3 of his endowment to Player 2 or not.

If Player 1 decides <u>to transfer</u> $3 to Player 2, his transfer will be multiplied by 5 while being sent. After Player 2 has received the $15, it is randomly determined whether the round is stopped at this point of time or if Player 2 has the opportunity to send money back to Player 1:

- With the probability $1 - p$, the round continues.
  In this case, **Player 2** can decide how much money he wants to send back to Player 1. He can choose any amount between $0 and $15. Player 1 then receives his remaining $7 plus Player 2's back-transfer as a payment. Player 2 earns his initial endowment ($10) plus the multiplied transfer ($15) minus the amount he has chosen to send back to Player 1.
- With a probability p, the round is stopped.
  In this case, Player 1 receives the $7 that are left from his initial endowment and Player 2 receives his initial endowment ($10) plus the by five multiplied transfer of Player 1 ($15).

If Player 1 decides <u>not to transfer</u> the $3 to Player 2, nothing happens and both players receive their initial endowment of $10.

The stopping probability p can take values of 10%, 30% or 50%. The realization of p will be stated to all players at the beginning of each period.

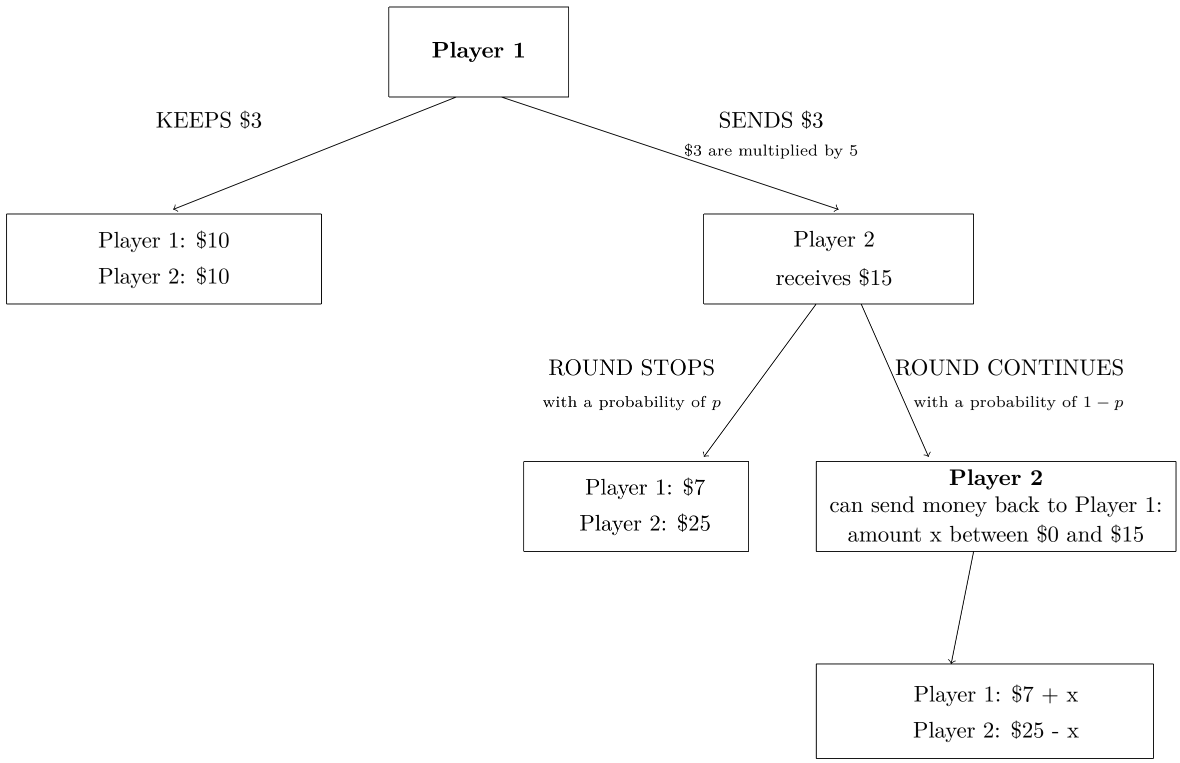
The decision procedure for Player 1 and Player 2 is illustrated by the graph on the following page.

Decision Task Player 1
If you are assigned the role of Player 1, you are asked to choose – in each of the three periods – whether or not to transfer $3 to Player 2.

Decision Task Player 2
If you are assigned the role of Player 2, you do not know what decision Player 1 is about to make nor what the outcome of the random draw will be. You are therefore asked to decide on how much money you would like to back-transfer to Player 2 assuming Player 1 transferred the $3 to you and the game was not stopped by the random draw. In each of the three periods, you can choose any amount between $0 and $15.

Information Disclosure
At the end of the experiment, one of the periods will be chosen randomly to calculate the cash payments. For this particular period, both players learn whether Player 1 made the transfer of $3. If he did, it is determined whether the round stops according to the stopping probability p of the chosen period. If the round is not stopped, both players also learn Player 2's decision about his back-transfer.

Decision Stages Player 1 and Player 2



The Observer

In each period, the Observer is asked to guess how much money the participants in the role of Player 2 send on average back to Player 1 assuming that Player 1 transferred the $3 and the random draw allows Player 2 to send money back (the round is not stopped).

Earnings

At the end of the experiment, only one of the periods will be chosen randomly to calculate the cash payments. The exact payments are determined according to the choices that were made and the stopping probability.

Earnings – Player 1 and Player 2
The table below summarizes the payoffs for Player 1 and Player 2 depending on their respective choices.

Choice Player 1	Random Draw	Choice Player 2	Payoff Player 1	Payoff Player 2
no transfer	-	-	\$10	\$10
transfer	game continues	back-transfer \$x	\$7 + \$x	\$25 - \$x
	game stops	-	\$7	\$25

Earnings – Observer
The Observer earns money depending on the accuracy of his guess. His payment depends on how much his guess differs from the (rounded) average of all Player 2s' actual choices on the back-transfer in the randomly selected period. The payoffs are summarized in the table below.

Deviation from the average stated back-transfers	Observer's Payoff
\$0	\$15
\$1	\$14.5
\$2	\$13
\$3	\$10.5
\$4	\$7
\$5	\$2.5
>\$5	\$0

3 Screenshots Experiment

Introduction

Thank you for participating in this experiment. The purpose of this experiment is to study how people make decisions. In case you should have questions at any time, please raise your hand. Please do not speak to other participants during the experiment and please turn off your mobile phone now. We also ask you not to reveal any details about the experiment after you have participated.

Your payment depends on the decisions you make in the experiment. It is therefore important that you pay attention to the instructions and make your choices thoughtfully. At the end of the experiment, you can collect your payment in cash privately in a sealed envelope from the Economics and Finance front office.

Please enter your 5-digit participant number here: 11111

Continue

Introduction

Thank you for participating in this experiment. The purpose of this experiment is to study how people make decisions. In case you should have questions at any time, please raise your hand. Please do not speak to other participants during the experiment and please turn off your mobile phone now. We also ask you not to reveal any details about the experiment after you have participated.

Your payment depends on the decisions you make in the experiment. It is therefore important that you pay attention to the instructions and make your choices thoughtfully. At the end of the experiment, you can collect your payment in cash privately in a sealed envelope from the Economics and Finance front office.

Please enter your 5-digit participant number here: 22222

Continue

Start of the experiment

You have been randomly assigned the role of **Player 2 .**

Did you read the instructions and do you understand what your role requires you to do?

Yes

No

Continue

Start of the experiment

You have been randomly assigned the role of **Player 1 .**

Did you read the instructions and do you understand what your role requires you to do?

Yes

No

Continue

Practice Questions

1. Suppose the stopping probability was 30%. So in 70 out of 100 times, the game continues if Player 1 decides to transfer the $3 to Player 2. Suppose further that all Player 1s indeed chose to make this transfer and the average back-transfer by Player 2 was $X. Which of the following statements is correct?

- In addition to their remaining $7, all Player 1s earn on average 0.7*$X.
- In addition to their remaining $7, all Player 1s earn on average $X.
- In addition to their remaining $7, all Player 1s earn on average $0.

2. Suppose now that the stopping probability was 50%. So in around 50 out of 100 times, the game continues if Player 1 decides to transfer the $3 to Player 2. Suppose further that all Player 1s again chose to make this transfer and the average back-transfer by Player 2 was $X. Which of the following statements are correct?

- All Player 1s earn on average less than if the stopping probability was 30%.
- All Player 1s earn on average more than if the stopping probability was 30%.
- All Player 1s earn on average more than if the stopping probability was 10%.

Next

Practice Questions

1. Suppose the stopping probability was 30%. So in 70 out of 100 times, the game continues if Player 1 decides to transfer the $3 to Player 2. Suppose further that all Player 1s indeed chose to make this transfer and the average back-transfer by Player 2 was $X. Which of the following statements is correct?

- In addition to their remaining $7, all Player 1s earn on average 0.7*$X.
- In addition to their remaining $7, all Player 1s earn on average $X.
- In addition to their remaining $7, all Player 1s earn on average $0.

2. Suppose now that the stopping probability was 50%. So in around 50 out of 100 times, the game continues if Player 1 decides to transfer the $3 to Player 2. Suppose further that all Player 1s again chose to make this transfer and the average back-transfer by Player 2 was $X. Which of the following statements are correct?

- All Player 1s earn on average less than if the stopping probability was 30%.
- All Player 1s earn on average more than if the stopping probability was 30%.
- All Player 1s earn on average more than if the stopping probability was 10%.

Next

Decision Player 2

In this period, the probability that the game stops after Player 1 made the transfer is **30%**. This means that Player 1 receives your back-transfer in 70% of the time and in 30% he earns his remaining $7.

Assume Player 1 transferred you the $3 and the game has not stopped so that you can send money back to Player 1.

How many of the received $15 would you want to send back to Player 1? Please enter a number between 0 and 15:

$ 5

Continue

Decision Player 1

You can now decide if you want to send $3 to Player 2.
If you do so your transfer gets multiplied by 5 before reaching Player 2.

In this period, the probability that the game stops after you made the transfer (and Player 2 cannot return any money) is **30%**.

What do you want to do?

send $3

keep $3

Continue

Decision Player 2

In this period, the probability that the game stops after Player 1 made the transfer is **50%**. This means that Player 1 receives your back-transfer in 50% of the time and in 50% he earns his remaining $7.

Assume Player 1 transferred you the $3 and the game has not stopped so that you can send money back to Player 1.

How many of the received $15 would you want to send back to Player 1? Please enter a number between 0 and 15:

$ 5

Continue

Decision Player 1

You can now decide if you want to send $3 to Player 2.
If you do so your transfer gets multiplied by 5 before reaching Player 2.

In this period, the probability that the game stops after you made the transfer (and Player 2 cannot return any money) is **50%**.

What do you want to do?

send $3

keep $3

Continue

Decision Player 2

In this period, the probability that the game stops after Player 1 made the transfer is **10%**. This means that Player 1 receives your back-transfer in 90% of the time and in 10% he earns his remaining $7.

Assume Player 1 transferred you the $3 and the game has not stopped so that you can send money back to Player 1.

How many of the received $15 would you want to send back to Player 1? Please enter a number between 0 and 15:

$ 9

Continue

Decision Player 1

You can now decide if you want to send $3 to Player 2.
If you do so your transfer gets multiplied by 5 before reaching Player 2.

In this period, the probability that the game stops after you made the transfer (and Player 2 cannot return any money) is **10%**.

What do you want to do?

send $3

keep $3

Continue

Final Payoff

The random draw determined period **1** for payments. The associated probability that the game stopped was **30%**. In this period, the following choices and random draws were made:

Decision Player 1	Round Stopped	Your Back-Transfer
send	NO	2

Your resulting final payoff is $23.

Continue

Final Payoff

The random draw determined period **2** for payments. The associated probability that the game stopped was **50%**. In this period, the following choices and random draws were made:

Your Choice	Round Stopped	Back-Transfer Player 2
send	NO	2

Your resulting final payoff is $9.

Continue

Questionnaire

What is your year of birth? -

Please indicate your gender. Male Female

What is your course of study? -

Have you ever participated in economic experiments before? Yes No

How many of the participants in this session do you know ? -

Where are you from?
- Australia
- China
- India
- Europe
- USA
- Other Asian Country
- Other Country

Next

Questionnaire

What is your year of birth? -

Please indicate your gender. Male Female

What is your course of study? -

Have you ever participated in economic experiments before? Yes No

How many of the participants in this session do you know ? -

Where are you from?
- Australia
- China
- India
- Europe
- USA
- Other Asian Country
- Other Country

Next

Questionnaire

Did you follow a specific strategy during the game?

Do you have any comments, ideas or improvement suggestions?

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Questionnaire

Did you follow a specific strategy during the game?

Do you have any comments, ideas or improvement suggestions?

Next

FINISHED

The experiment is finished now, please wait for instructions to collect your payment.

FINISHED

The experiment is finished now, please wait for instructions to collect your payment.

Guess Player 3

For this decision round the probability that the game stops after Player 1 made the transfer is 10%.

Assume Player 1 transferred Player 2 the $3 and the game has not stopped. Differently stated: Player 2 can send an amount between $0 and $15 back to Player 1.

How much money do you think the participants in the role of Player 2 send on average back to Player 1?

$

Continue

Guess Player 3

For this decision round the probability that the game stops after Player 1 made the transfer is 30%.

Assume Player 1 transferred Player 2 the $3 and the game has not stopped. Differently stated: Player 2 can send an amount between $0 and $15 back to Player 1.

How much money do you think the participants in the role of Player 2 send on average back to Player 1?

$

Continue

Guess Player 3

For this decision round the probability that the game stops after Player 1 made the transfer is 50%.

Assume Player 1 transferred Player 2 the $3 and the game has not stopped. Differently stated: Player 2 can send an amount between $0 and $15 back to Player 1.

How much money do you think the participants in the role of Player 2 send on average back to Player 1?

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Continue