IS MISTRUST SELF-FULFILLING?

SUPPLEMENTARY MATERIAL

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ABSTRACT

This document contains the supplementary material for the paper Reuben, Sapienza, and Zingales (2009). Section 1 explains in detail the experimental design. Section 2 describes the experimental procedures. Section 3 contains an example of the experiment's instructions.

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1. Experimental Design

For the experiment, we use a variation of the traditional trust game (Berg et al., 1995) dubbed as the "lost wallet game" (Dufwenberg and Gneezy, 2000). The game has two players: a sender and a receiver. The sender is endowed with \$50 and decides whether to send the money (trust) or keep it to himself (if the money is not sent the receiver earns \$0). If the sender sends the \$50, the receiver receives \$150 and then decides how much to return to the sender, $r \in$ [\$0, \$150]. In this case, the earnings of the sender equal r, and those of the receiver equal \$150 – r.[1]

In order to convey the sender's true expectations in an incentive compatible way, we had *all* subjects make four decisions. Decision 1 consists of playing the above-mentioned lost wallet game in the role of the sender. As decision 2, subjects are informed that receivers will make their choice using the contingent response or 'strategy' method (i.e. they indicate beforehand how much to return if the sender sends money, Selten 1967), and then they are asked to indicate how much they expect their receiver to send back. Specifically, subjects are asked for a point estimate of the amount returned $E[r]$, and are paid according to their accuracy (their earnings in this decision equal max{\$75 – $|E[r] - r|$, \$0}).[2] As decision 3, subjects play again the lost wallet game but this time in the role of the receiver and make their choice using the strategy method. Given that the sender's decision is binary (either send \$0 or \$50), this corresponds to choosing the amount to be returned conditional on them receiving the \$150. Lastly, for decision 4 subjects play the lost wallet game once more (either as sender or as receiver). Subjects in the role of the sender are explained that the receiver with whom they play will be informed of their expected return (elicited in decision 2).

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[1] The differences with the original trust game of Kreps (1990) are: first, the receiver earns \$0 when the sender does not trust (instead of \$50), and second, the receiver can return any amount between \$0 and \$150 instead of having a binary choice between \$0 and \$75.

[2] We opted for a point estimate as it is much easier to communicate than a probability distribution. Similarly, the payment procedure was chosen because it is easily understood by subjects.

Receivers are told they will play once again and are informed of how much the sender they play with expects back (i.e. their answer to decision 2). This procedure is used to prevent the sender from manipulating their expected return (otherwise it is not a pure measure of trust) and at the same time give them the option to avoid any adverse effects of having a low expectation.

To avoid subjects from influencing each other, they are not informed in-between decisions of the behavior of other subjects. Furthermore, when making a decision they do not yet have the instructions for their future decisions. Subjects do know that there are four decisions and that one of them will be randomly picked for payment. This design guarantees that up until decision 4 all subjects make their decisions in the same order and with the same information. If decisions 1 or 2 are drawn for payment then they are randomly matched with the choice of a subject in decision 3, and vice versa. If decision 4 is drawn, they are randomly matched with the choice of someone from the opposite role in decision 4. In a similar way to Gächter and Thöni (2005), the role assignment for decision 4 depends of their choice in decision 2.[3] The role of sender is given at random among subjects who had either a very low expectation ($E[r] \leq \$10$) or a very high expectation ($E[r] \geq \$70$). Roughly half the receivers observed a low expectation and the rest observed a high expectation. This was done to have a clear difference in expectations in order to more easily appreciate their effect.[4] In total four subjects were chosen as senders for decision 4 (two with low and two with high expectations) and the rest played as receivers.

[3] Subjects were not aware that their choice might affect their future role. They were simply informed once they reached the last decision of the role they had been assigned. A similar procedure has been used by Gächter and Thöni (2005), Onesa and Putterman (2007), and Gunnthorsdottir, Houser, and McCabe (2007).

[4] One might worry that subjects who observe a low expectation face a sender who has a zero probability of sending the $50, which makes their choice irrelevant. However, given the multiple motivations to send (Cox, 2004), we consider there is a positive probability that the sender sends even if he is expecting little in return. In our experiment, 1 out of 4 subjects sent money expecting back $10 or less, and 3 out of 12 sent money expecting back less than $50.

2. Experimental procedures

The experiment was run as a single session on the 13th of October 2007. In total 56 subjects participated in the session. All the subjects were MBA students from the Kellogg School of Management, 63.5% of them were male. On average, subjects were paid $51.87 in addition to a $50 show-up fee.

Upon arrival subjects were randomly assigned to a seat by picking a USB drive with seat labels from a box. Once all subjects were seated, the experimenter reminded them not to communicate with one another and that their interaction with others will remain anonymous. Thereafter, they were asked to sign a consent form. Consenting to the study was voluntary and subjects have the option to opt out of the study at any time. The experiment was run from the subjects own laptop computers by double-clicking on a file located in the USB drive they just received. The experiment was programmed and run with zTree (Fischbacher, 2007). It lasted one and a half hours.

The subjects were first informed of the payment procedure (cash plus a check for the show-up fee) and the duration of the experimental session. In addition to the trust game variation (lost wallet game), subjects participated in a series of lotteries used to measure risk aversion, a beauty-contest game used to measure *k*-level thinking, and a set of choices used to elicit time preferences. Subjects participated in all these games in the same sequence and in order to prevent spillovers, they received no feedback in between games. The results presented in Reuben, Sapienza, and Zingales (2009) are not affected when we control for these variables.

Below we include the instructions for the experiment described in this paper. Each decision was described after the previous decision had been taken.

3. Instructions for the trust game variation (lost wallet game)

In this game you will make four different decisions. One of them will be randomly selected to determine your earnings for this game.

Decision 1

As your first decision you will play a game. You will be randomly paired with another participant (the *responder*). You have *$50* and you must decide whether to send them to the responder or not. If you don't send money, you keep the $50 (the responder gets $0). If you send the money, the responder receives *$150* and then decides how much to return to you. In this case, your earnings equal the amount returned to you by the responder (the responder's earnings equal $150 minus the amount he/she returns).

Example

Suppose that you decide to send the $50. This means that the responder receives $150 and must now decide how much to return to you. If, for example, the responder returns $30 his/her earnings equal 150 - 30 = $120 and yours equal $30. If instead the responder returns $100 his/her earnings equal 150 - 100 = $50 and yours equal $100.

Decision 2

For this decision, we ask you to *estimate* the behavior of the responder with whom you were paired in decision 1. Depending on the accuracy of your estimation, you can earn up to *$75*. Before knowing whether you sent $50 or not, the responder was asked to commit to the amount of money he/she would return if you sent the $50. Indicate below the amount of money you think the responder returned. Your earnings for this decision are equal to $75 minus the absolute difference between your prediction and the amount chosen by the responder. For example, suppose you estimate that the responder returns $90. If the responder decided to return $45, you earn 75 - | 90 - 45 | = $30.

Decision 3

For your third decision you play again the same game but now you play as a *responder*. You will be randomly paired with another participant. We refer to this participant as the *sender*. Note that, the sender is a *different* participant than the one with whom you were paired in decisions 1 and 2. The sender will decide to send you $50 or $0. If the sender does not send money he/she earns $50 and you earn $0. If he/she sends $50 you receive $150 and must decide how much to return to the sender. In this case, you earn

$150 minus the amount returned to the sender, and the sender earns the amount you returned. Indicate below how much would you like to return to the sender if he/she does send the $50. Your earnings will depend on the sender's decision and your answer below.

Decision 4 (Receivers)

The forth decision is similar to decision 3 except that *you are told how much the sender expects back from a responder when he/she sends money*. That is, the sender is a *different* participant than the ones with whom you were paired in decisions 1, 2, and 3. The sender will decide to send you $50 or $0. If he/she sends $50 you receive $150. Indicate below how much you would like to return to the sender if he/she does send the $50. Your earnings will depend on the sender's decision and your answer below.

Decision 4 (Senders)

The forth decision is similar to decision 1 except that the *responder will be told your expectation*. You will be randomly paired with yet another responder. That is, the responder is a *different* participant than the ones with whom you were paired in decisions 1, 2, and 3. You have *$50* and you must decide whether to send them to the responder or not. If you don't send them, you keep the $50. If you send them, the responder receives $150 and then decides how much to return to you. In this case, your earnings equal the amount returned.

Unlike in decision 1, before making his/her decision, the responder will be informed that, in decision 2, *you expected the responder to return $x*. Note that the responder will be informed of your expectation irrespective of whether you send the $50 or not.

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