Decomposing Trust and Trustworthiness

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What motivates people to trust and be trustworthy? Is trust solely an expectation of trustworthiness and trustworthiness reciprocity? Employing a within-subject design, we run investment and dictator game experiments in Russia, South Africa and the United States, controlling for risk preferences and expectations of return. Trust is not only related to expectations of return but also to unconditional kindness. Reciprocity plays only a small role for trustworthiness. However, substantial heterogeneity exists in motivation: Unconditional kindness is more important for men's trust and Russians' and South Africans' trustworthiness, while expectations of trustworthiness are more relevant for women and reciprocity for Americans.

Key Words: Trust, reciprocity, social preferences, gender, cross-cultural experiments (JEL C72, C91)

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I. Introduction

Recently, one of the authors found herself standing in line in a supermarket, with a basket full of groceries but no wallet. She decided to ask the person behind her whether he could lend her $20. He did and gave her his business card so that she could return the money. No questions asked.

In such a situation, one party, the trustor, makes himself vulnerable, i.e. takes a course of action creating incentives for the other party, the trustee, to exploit him. Such behavior is commonly referred to as trust and it is assumed that the trustor would not choose the risky course of action if he did not expect the trustee to honor trust. Indeed, a large body of work in many disciplines assumes that trust is a belief, namely the *expectation of trustworthiness* (e.g., Rotter 1980, Gambetta 1988, Yamagishi and Yamagishi 1994, Hardin 2002). Trustworthiness, in turn, is typically assumed to be *reciprocity* (e.g., Croson and Buchan 1999, Fehr and Gächter 2000, Ostrom and Walker 2003).[1]

While the dominant view, these assumptions have recently been challenged by various scholars in economics, political science and psychology (e.g., Kramer 1999, Mansbridge 1999, Dufwenberg and Gneezy 2000, Cox 2004).[2] Rather than being motivated by expectations of return, the lender in the supermarket may have given the money because he enjoys trusting others. And the borrower may have returned the money, not because she wanted to reciprocate the lender's kindness but rather because she derived personal satisfaction from doing so. Such *unconditional kindness* could be due to social preferences such as altruism (Andreoni and Miller 2002), inequity

[1] Reciprocity is defined as rewarding kindness with kindness and punishing unkindness with unkindness. Behavior conditional on one's counterpart's behavior or intentions has been formalized by Rabin (1993), Charness and Rabin (2002), Cox and Friedman (2002), Falk and Fischbacher (forthcoming), Dufwenberg and Kirchsteiger (forthcoming). It has been examined experimentally in a large number of studies (for a survey, see Fehr and Schmidt 2002).

[2] Kramer (1999, p. 573) argues that "trust needs to be conceptualized not only as a calculative orientation toward risk, but also a social orientation toward other people and toward society as a whole." Mansbridge (1999: 294) notes the importance of "altruistic trust": "To qualify as altruistic trust my move must… be motivated by a conscious or unconscious intent to benefit the other or an intent to uphold a principle that in the long run usually benefits others."

aversion (Fehr and Schmidt 1999, Bolton and Ockenfels 2000) or quasi-maximin preferences (Charness and Rabin 2002) or due to the psychological benefits, a "warm glow" (Andreoni 1990), which an individual derives from being kind to others. Social preferences and internalized norms could induce people to trust and be trustworthy—despite the fact that trust often does not "pay" monetarily, and trustworthiness never "pays" monetarily in one-shot interactions. In his survey on experimental outcomes, Camerer (2003, p. 87) writes: "The fact that the return to trust is around zero seems fairly robust."[3]

In fact, the data suggest that if people perceived trust only as an investment decision under uncertainty—as suggested by the name of the game most widely used to measure trust, the "investment game" (Berg, Dickhaut and McCabe 1995)[4]—they would keep making bad investments. Already in the first study by Berg et al. (1995), trustors lost money on average, a finding that by now has been replicated in many experimental studies (for surveys, see Camerer 2003 and Cardenas and Carpenter 2003). Even if subjects were informed of previous trustors' and trustees' behavior, the trust level did not decrease. This "social history" treatment was first used by Berg et al. (1995) and then replicated by Ortmann et al. (2000) who found that even if trustors were graphically shown that trust typically "does not pay," their trust was not affected. Ortmann et al. also elicited trustors' expectations of return. Only 29 percent of their trustors in the social history treatment expected to make money in this game.

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[3] Ernst Fehr recently presented results from neuroeconomics experiments (joint with Michael Kosfeld), also suggesting that trust is not only a belief: Trust is related to oxytocin levels, a hormone typically associated with love and pro-social behavior (ASSA meetings, January 2005).

[4] In the original investment game, every participant received a show-up fee of $10. Trustors were asked how much of this endowment they wanted to send to an anonymous counterpart in a differet room (the trustee). They were informed that any amount sent would be tripled by the experimenter. The trustees then had to decide how much to keep for themselves and how much to return to their respective trustors.

To better understand the role social preferences play in trust situations, behavior in the investment game has been compared with giving in otherwise identically structured dictator games (Kahneman, Knetsch and Thaler 1986) in recent studies. Dufwenberg and Gneezy (2000) and Cox (2004) find that only relatively small fractions of the money sent by the trustor and returned by the trustee are due to expectations of trustworthiness or reciprocity. Both studies use a between-subjects design. They assume that expectation-based trust and reciprocity are the additive difference between what is sent in the dictator and the investment games.

Our paper contributes to this discussion but does not make any such strong assumptions. Rather, we use a within-subject design where the same person participates in a dictator and an investment game (in varied order). We test whether the two decisions are related, controlling for expectations of trustworthiness and attitudes to risk.[5] While often used in experimental psychology but little in experimental economics, within-subject designs automatically control for individual differences. Given the substantial heterogeneity in social preferences observed (e.g., Andreoni and Miller 2002, Andreoni and Vesterlund 2001), we feel more comfortable with a within- rather than a between-subjects design.[6]

We run our study in three different countries, Russia, South Africa and the United States, with a racially heterogeneous sample of men and women from various socioeconomic backgrounds. To connect our research with earlier studies on trust,[7] we also confronted subjects

[5] We will refer to attitudes to risk to describe our subjects' behavior but are aware that we are dealing with relatively small stakes here and thus may want to describe behavior by attitudes to losses instead (Rabin 2000).

[6] "Many people think within-subject analysis is the only proper analysis in choice experiments, because expected utility requires consistency of individual preferences. But, of course, between-subjects tests are equally legitimate (though less powerful) if the subjects in different groups can be presumed to have the same distribution of tastes, up to sampling error, because they were drawn from a single population." (Camerer 1995: 633)

[7] Glaeser, Laibson, Scheinkman and Soutter (2000) first took up this point and compared the until then widely used survey measures of trust with behavioral measures from investment games run with Harvard undergraduates. They found little relationship between the two concepts. This finding has been replicated by Bellemare and Kroeger (2003) with a non-student sample in the Netherlands. In contrast, for a representative sample of Germans, Fehr, Fischbacher, Rosenbladt, Schupp and Wagner (2002) report that trust attitudes and trust behavior are related.

with the standard attitudinal trust question used in the World Values Survey and the General Social Survey: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?"[8] We focus on single-play anonymous interactions. While excluding important contextual features that may affect trust and trustworthiness in naturally occurring settings, they measure "pure trust and trustworthiness" and provide a benchmark for comparisons with more complex environments (Camerer 2003).

Our design allows us to measure the relative importance of beliefs (reciprocity) as compared to unconditional kindness and whether there is heterogeneity in the motivation accounting for observed trust (trustworthiness) behavior. A better understanding of what motivates people to trust is crucial for putting the recently discovered correlations between trust and efficiency, growth, social capital, cooperation within firms and even individual income into perspective (Fukuyama 1995, Putnam 1995 and 2000, Kramer and Tyler 1996, Knack and Keefer 1997, La Porta, Lopez-de-Silanes, Vishny and Shleifer 1997, Zack and Knack 2001, Slemrod and Katuscak 2002). Indeed, Putnam (1995) writes: "Since trust is so central to a theory of social capital, it would be desirable to have strong behavioral indicators of trends in social trust or misanthropy."

Whether the kind of trust that leads to the benefits identified above is based on kindness or based on expectations of return has policy implications. If policy makers wish to raise the level of trust, they need to know the determinants of trust. If trust is mainly a function of expected trustworthiness, they should focus on the level of trustworthiness and on beliefs about that level. In

[8] As we are interested in trust between strangers and as it is unclear which reference group people have in mind when thinking of "others," we also included the following question: "Generally speaking, which of the following people do you feel you could trust not to cheat you: members of your family, your friends, your colleagues, members of your religion, your neighbors, citizens of your country, foreigners? (Please check all that apply.)"

contrast, if trust is mainly motivated by unconditional kindness, they should focus on fostering of intrinsic rewards.

Policy makers should also be interested in the heterogeneity in motivation. If there are differences in the motivation to trust and to be trustworthy between demographic groups, group-specific policy interventions are asked for. A sizable number of earlier studies on trust suggests demographic differences in behavior but does not analyze the underlying motivations.[9] For example, Buchan, Croson and Solnick (2003) found in investment games run with students in the United States, that women were less trusting but more trustworthy than men. Koford (2001) found that Bulgarian students were more trusting and trustworthy than the American subjects in the experiments by Berg et al. (1995). Willinger, Keser, Lohmann and Usunier (2003) reported that the French trusted less than the Germans but that there was no difference in trustworthiness. Croson and Buchan (1999) reported no significant differences in trust or trustworthiness between China, Japan, Korea and the United States. Fershtman and Gneezy (2001) studied the effects of ethnic affiliation in Israeli Jewish society. Ensminger (2000) and Barr (2003) run the trust game in Africa with herders and villagers respectively. Among the Orma herders in Kenya, Ensminger probably found the lowest trust and trustworthiness levels so far.

This paper contributes to this literature but additionally analyzes motivational differences between demographic groups. While demographic characteristics can hardly be influenced by policy makers, motivations might. The paper is organized as follows. In the next Section II, we present the experimental design. Section III presents our conceptual framework. Section IV discusses the experimental results and Section V concludes.

[9] Examples focusing on attitudinal trust measured in surveys include, for example, Putnam et al. (1993), Fukuyama (1995), Knack and Keefer (1997), Smith (1997), Inglehart (1999), Robinson and Jackson (2001), and Alesina and La Ferrara (2002).

II. Experimental Design

The experiment consisted of an introduction page and five parts, which was common knowledge. After having signed a consent form, experimental participants received the introduction page detailing some general experimental rules. Subjects were informed that the experiment will consist of five parts, that they will receive the instructions for each part separately, that they will remain anonymous during the experiment (i.e. identified by code numbers) and that they will be randomly paid in the end. After having read the introduction, subjects were randomly assigned to two different rooms, one for the trustors and one for the trustees.[10]

In Part I, all subjects were asked to complete a questionnaire, collecting information on demographic characteristics and trust attitudes. Then, subjects were confronted with Parts II-V. The sequence in which subjects participated in Parts II, III and IV was varied. In half of our sessions, subjects played these parts in order; in the other half, subjects were confronted with Part IV first before participating in Parts II and III. In Part II, all subjects played a dictator game in the role of the dictator. The dictator was asked to allocate a fixed endowment S between herself and a recipient who did not receive any money. The dictator earned S-X and the recipient earned X. In Part III, all subjects played a triple dictator game in the role of the dictator. The only difference to the standard dictator game is that any amount X given to the recipient was tripled by the experimenter. Accordingly, the dictator's earnings were as before, S-X, but the recipient's earnings were 3X.[11]

In Part IV, subjects played the trust game—in room A in the role of the trustor and in room B in the role of the trustee. The only difference between the trust game and the triple dictator game

[10] The experimental instructions can be made available upon request.
[11] While everyone played the game in the role of the dictator, subjects were informed that at the end of the whole experiment one of them would be randomly chosen to be the dictator and one the recipient.

was that the trustee could send back any amount of money Y between 0 and 3X. The trustor's earnings thus were S-X+Y while the trustee earned 3X-Y. We used the strategy method where the trustees had to decide on a contingent action for every possible amount sent by the trustors.[12] In addition to indicating how much they wanted to send, we also asked trustors to report what they expected to get back.[13]

In Part V, all subjects had to indicate for six risky choice tasks whether they preferred the gamble or the certain amount. They could choose to bet on a 50%-chance of winning 300CU or nothing or to accept a certain amount that varied between 40CU and 140CU in the six choice tasks. The more people prefer the sure thing to the gamble, the more risk averse they are.[14]

Each part of the experiment was conducted like a "standard experiment": The instructions for each part, consisting of one decision form, were distributed one at a time. After subjects had read the instructions, the experimenter read the instructions aloud and reminded subjects to include their identification number on the top of the decision form. Participants were then invited to ask questions in private (hardly any questions were asked). Subjects then had to write down their decision, fold the decision form and put it into a box, which was passed around. Completed decision forms remained in the box in front of the room until the end of the experiment. The same procedure was repeated for each part.

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[12] Brandts and Charness (2000) report no significant differences between the strategy method and the standard experimental method where a trustee responds to the observed trustor's move.

[13] To decrease complexity in an already quite complex experiment, we chose not to reward subjects for accuracy of expectations. The evidence about whether payment increases accuracy or not is not conclusive. In a recent extensive study on the relationship between beliefs and actions, Costa-Gomes and Weizsäcker (2003) conclude that the effects of the belief elicitation procedure on actions is mostly insignificant. There is general agreement that subjects are more likely to take their counterpart's incentives into account when beliefs are elicited than when making action choices (e.g., Croson 2000, Costas-Gomez and Weizsäcker 2003).

[14] For a similar approach to measuring the relevance of attitudes to risk for trust decisions, see Eckel and Wilson (2004).

The endowment S was 100CU (currency units) in our experiments. Adjusted for purchasing power parity, this meant S = $100 in the United States, S = 1000 Roubles in Russia and S = 400 Rands in South Africa.[15] In the trust game, the strategy method was implemented as follows: trustors had to choose between 11 possible amounts to be passed on to the trustee (0, 10,…., 100 CU) and trustees had to indicate for each possible positive amount how much they would return. We did not restrict subjects' choices in the dictator games. They could send any amount between 0 and 100 CU.

Subjects were paid randomly at the end of the whole experiment; they did not learn about any results during the experiment. More specifically, for each game in parts II to IV, two people (a dictator and a recipient or a trustor and a trustee) were randomly selected and matched at the end of the experiment to be paid according to their choices in the corresponding game. For the individual decision task in part V, one person was randomly paid according to his or her choice.[16]

The experiments were conducted with 359 college students: 118 students from universities in Moscow, Russia,[17] 129 students from universities in Capetown, South Africa, and 112 students from universities in Boston, United States. We ran four experimental sessions in each country, two with the dictator games first and two with the trust game first. The experimenters who ran experiments in Russia and in South Africa also ran one session in the United States. No

[15] We chose denominations such that the monetary incentives relative to subject income and living standards were approximately equal across countries. The experiments were conducted in 2001. The average lunch in the student cafeteria cost $5 in Boston, 50 Roubles in Moscow and 20 Rands in South Africa.

[16] More specifically, the decision forms for each part were shuffled separately. A (blind-folded) experimental aide then picked one or two of the folded forms out, depending on the part of the experiment. Recent evidence supports the validity of the random-choice payments method. Laury (2002) found that subjects take (high) stakes at their stated value and do not scale-down to account for random payment.

[17] One of the experimenters fluent in both English and Russian translated the instructions into Russian. They were back-translated by an external translator not familiar with this research.

experimenter effects could be found.[18] The experiment took about one hour and thirty minutes. A show-up fee of 10CU was paid and subjects earned on average an additional 22CU.

A non-standard experimental format was required to test our hypotheses—a within-subject design to control for subjects' social preferences and expectations; cross-cultural comparisons to allow for heterogeneity in behavior and motivation more globally than just among American subjects; the strategy method to learn about each trustee's return function; and high stakes with random payment to make conducting such a long and complex experiment feasible. While we control for design effects to the best of our ability, we cannot exclude the possibility that our design affects behavior differently than other, more standard, designs. However, as we keep the experimental format constant across all our subjects, any heterogeneity in behavior or motivation that we observe cannot be attributed to the design. We have no reason to suspect that any subgroup responds systematically differently from others to the design.

III. Conceptual Framework

Trust is defined as the amount sent, X, and trustworthiness as the amount returned, Y, divided by the amount received, 3X, that is Y/3X. E(Y/3X) indicates trustors' expectations of the fraction returned. TDGgive is the amount sent in the triple dictator game and DGgive the amount sent in the dictator game. Table A.1 in the Appendix provides the specific definitions of all our variables. We estimate the following equations:

$$X = \alpha + \beta*E(Y/3X) + \gamma*TDGgive + \delta*controls, \quad (1)$$

$$Y/3X = \alpha + \beta*3X + \gamma*DGgive + \delta*controls, \quad (2)$$

[18] In order to ensure equivalence of experimental procedures across countries, we followed Roth et al. (1991) on designs for multinational experiments and controlled for experimenter, currency and language effects to the best of our ability.

We compare the following hypotheses for trust:

$H1_T$: Trust is only based on expectations of trustworthiness.

We take as evidence for $H1_T$ if X is related to the expected fraction returned, E(Y/3X), but not to the amount sent in the triple dictator game, TDGgive. Further support for H1 is provided if the constant is close to zero, indicating that trustors do not derive any intrinsic benefits, a warm glow, from trusting.

$H2_T$: Trust is only based on unconditional kindness.

$H2_T$ is supported if X is related to the amount sent in the triple dictator game, TDGgive, but not to the expected fraction returned E(Y/3X). Additional support for this hypothesis is provided if the constant is significantly positive, suggesting that people derive a warm glow from trusting.

For trustworthiness, we compare:

$H1_{TW}$: Trustworthiness is only based on reciprocity.

We take as evidence for $H1_{TW}$ if Y/3X is related to the amount received, 3X, but not to the amount sent in the dictator game, DGgive.[19]

$H2_{TW}$: Trustworthiness is only based on unconditional kindness.

$H2_{TW}$ is supported if Y/3X is strongly related to the amount sent in the dictator game, DGgive, but not to the amount received, 3X.

To be able to compare our results with earlier work (Dufwenberg and Gneezy 2000, Cox 2004), we use behavior in the dictator and the triple dictator games to assess our subjects' unconditional kindness. We acknowledge that this is a relatively crude step as we assume that kindness is unconditional on what one's counterpart's actions are (or are expected to be) as well as on the payoff-possibilities following those (expected) actions.

The approach is of particular concern for trustworthiness as the relative income positions of the trustee and the trustor may differ dramatically from the relative income positions of the dictator and the recipient. In contrast, in the trust and the triple dictator game situations, both, the trustor and the dictator, start with CU100 and the trustee and the recipient with zero (plus a show-up fee of 10CU in both cases). To test for the robustness of our results, we thus run two sets of regressions for trustworthiness, one where we include dictator game giving directly as a proxy for unconditional kindness and one where we impose a particular social preference profile on all trustees, namely fixed distributional preferences.[20] The latter provides us with a measure of how much subjects would remit in the trust game based solely on the distributional preferences they exhibited in the dictator game.

Holding a trustee's distributional preference constant means that her payoff must be related to her trustor's payoff in the same way her payoff as a dictator is related to her recipient's payoff. We call this the *predicted (distributional preference-based) remit function*:

$$\text{Ratio in Trust Game} = \frac{3X - Y}{100 - X + Y} = \frac{100 - DGgive}{DGgive} = \text{Ratio in Dictator Game.}$$

Accordingly, a trustee would have to return

$$Y = \frac{2X * DGgive}{100} + DGgive + X \text{ -100}.$$

The ratio to be remitted, predicted based on fixed distributional preferences, is Y/3X:

$$\frac{Y}{3X} = \left(\frac{2X * DGgive}{300X} \right) + \frac{DGgive + X \text{ -100}}{3X}.$$

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[19] A positive intercept can be interpreted similarly as above but we do not discuss it further as trustees could not return a positive amount when they received zero.

[20] Fixed distributional preferences are compatible with inequity aversion, see Fehr and Schmidt (1999) and Bolton and Ockenfels (2000).

Since the predicted ratio above can be negative, but Y<0 is not a feasible choice for the trustee, we assign zero to all predicted ratios that are negative:

$$predictedremit = \max\left\{\left(\frac{2X * DGgive}{300X}\right) + \frac{DGgive + X - 100}{3X}, 0\right\}.$$

Experimental evidence suggests substantial heterogeneity in subjects' preference profiles. Andreoni and Vesterlund (2001) and Andreoni and Miller (2002), for example, found evidence for the existence of at least three different types of players in dictator games when examining how dictators respond to the price of giving. Accordingly, we are somewhat uneasy about imposing one specific preference profile on all our subjects. We examine the degree of heterogeneity in our subjects' response modes by comparing our subjects' behavior in the dictator and the triple dictator games. Table 1 summarizes our subjects' preference profiles.

Table 1: Distribution of choices in the dictator games

TDGgive=DGgive		TDGgive<DGgive		TDGgive>DGgive
Give=0CU	Give>0CU	DGgive=50CU TDGgive=25CU	DGgive≠50CU or TDGgive≠25CU	
14%	16%	15%	24%	31%

14 percent of our subjects are selfish and do not send anything in either game. 16 percent send the same positive amount in the DG and the TDG. 39 percent send less in the TDG than in the DG, trying to (approximately) preserve whatever distributional preference they exhibited in the DG (for example, by sending 50CU in the DG and 25CU in the TDG). 31 percent respond to the decrease in the price of giving in the TDG by sending more in the TDG than in the DG. While we also notice substantial heterogeneity, a fixed distributional preference profile describes our subjects best.

IV. Experimental Results

We first present an overview of our behavioral data and trustors' expectations of return and then proceed with the specific results related to our hypotheses.

Overview: Behavior

On average, our trustors send 45CU of their endowment of 100CU to their trustees (N=179), and our trustees return 27 percent of the money received to their trustors (N=1790). As we used the strategy method, we have ten times as many data points for the trustees than for the trustors because the latter indicated how much they would return for each possible positive amount sent to them.[21] The method also keeps us from losing data due to those trustees who would not have received anything. In the dictator game, subjects send 25CU and in the triple dictator game 24CU (N=358) on average. The summary statistics are presented in Tables A.2a and A.2b in the Appendix.

We first note that the mean amounts sent and returned in our games are surprisingly close to the standard results in trust and dictator games despite the fact that our design substantially differs from earlier designs. We play more than one game with the same set of people, use the strategy method, offer high stakes with random payment and only give trustors (but not trustees) an endowment of S. Camerer (2003) reports in his survey of experimental results that typically dictators send about 20 percent while trustors send about 50 percent of their endowment and trustees return about the amount that trustors sent to them, i.e. about one third of the tripled amount on average. The triple dictator game has not been studied widely. Cox (2003) finds that subjects send 36 percent of their endowment on average, which is somewhat more than what we find.

[21] We cluster the data by individuals in the regressions.

The summary statistics in Tables A.2a and b do not suggest large differences in average behavior between our demographic subgroups in the three games. A Mann-Whitney and a Kolmogorov-Smirnov test reveal no significant differences in the means and the distributions of choices of men and women[22] and of Americans, Russians and South Africans in the three games. The biggest difference in behavior can be found between whites and nonwhites in the trust game, with nonwhite trustors sending 36CU and white trustors sending 48CU to their trustees (Mann-Whitney U-test, $p<0.01$, Kolmogorov-Smirnov test, $p=0.05$). Table A.2b shows that this result is mainly due to race effects in South Africa rather than in the United States (there is no variation in Russia as only whites participated in the experiment). In South Africa, the gap increases to nonwhites sending 33CU and whites sending 52CU while in the United States, it decreases to nonwhites sending 40CU and whites sending 43CU.

Figures 1a-1d present the distribution of choices in all games for the three countries.

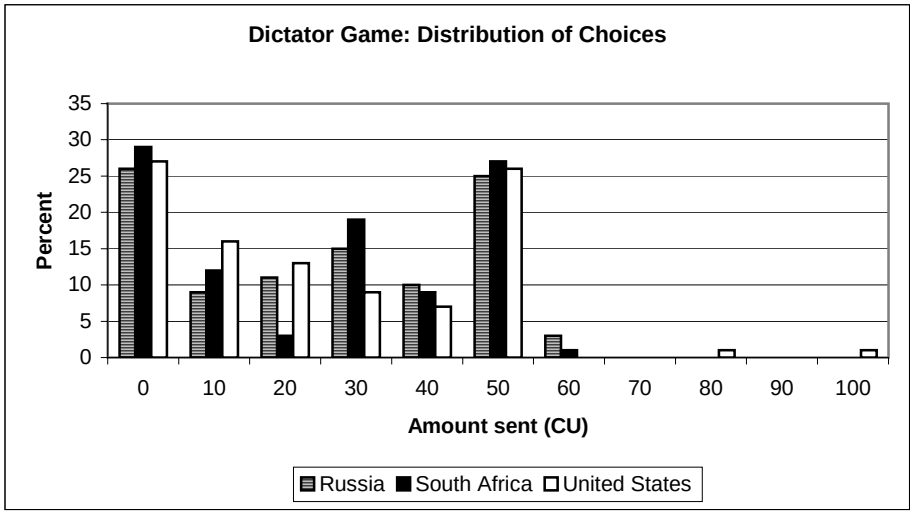

Figure 1a: Dictator game choices.

[22] The experimental evidence on gender is not conclusive. In dictator games, Bolton and Katok (1995) find no significant gender differences while Eckel and Grossman (1998) report that women send more than men. As discussed earlier, in most trust games, women tend be less trusting but more trustworthy than men.

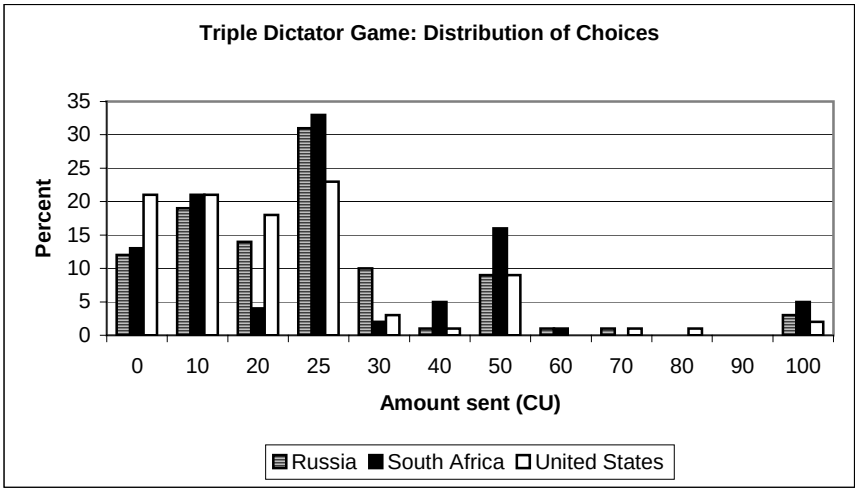

Figure 1b: Triple dictator game choices.

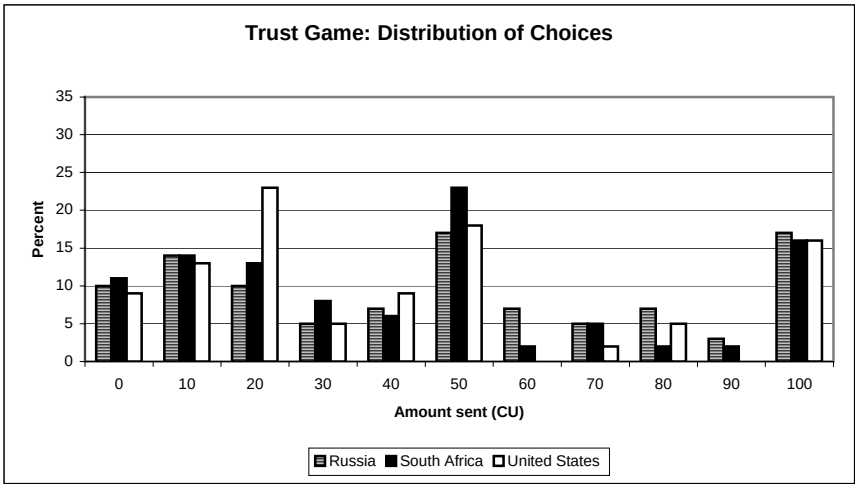

Figure 1c: Trust game choices - trustors.

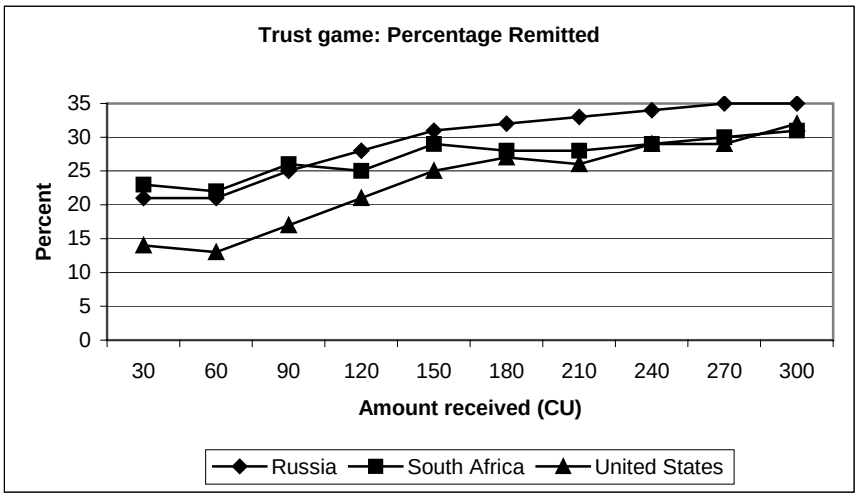

Figure 1d: Trust game choices - trustees.

Overview: Expectations of trustworthiness

159 of our 175 trustors[23]send a positive amount to their trustees. Out of those who trust, 38% expect to get back less than they sent, 26% expect to break even and 36% expect back more than they sent. On average, the first group, which is willing to give up own income to make the trustee better off, sends 30CU; the second group, which is hoping to break even while making the trustee better off, sends 45.5CU; and the third group, which expects to make money, sends 72.7CU. All differences are significant (Mann-Whitney U-test, $p<0.01$).

Table 2 shows the average amounts expected back for each possible amount sent. Expectations are generally lower than the amounts sent for small amounts and higher for large amounts sent. The difference between expectations and amounts sent is especially pronounced when sending the whole endowment of 100CU: Trustors expect back 1.5 times the amount sent on average, or put differently, they expect the trustee to split the surplus created by their trust equally. This general pattern applies to all countries. Trustors sending small amounts expect slightly less back in the US than in Russia and South Africa.[24]

[23] Out of the 179 trustors in our full sample, 2 did not answer the question to measure expectations of return, and 2 expected back a sum that they couldn't possibly get back because it was above 3 times the amount they sent.

[24] For amounts between 10CU and 30CU, Russians and South Africans expect to get back about 75% of the amount sent while Americans expect to get back only 24% (Mann-Whitney U-test, $p<0.01$).

Table 2: Amounts expected back by Trustor and returned by Trustee, **mean**, *(st.dev.)* {N}

Amount sent by Trustor	**All**		**Russia**		**South Africa**		**United States**	
	Amount		Amount		Amount		Amount	
	Expected	Returned	Expected	Returned	Expected	Returned	Expected	Returned
0	**0** {16}	**0** {179}	**0** {5}	**0** {59}	**0** {6}	**0** {64}	**0** {5}	**0** {54}
10	**6.65** *(9.02)* {23}	**5.82** *(5.73)* {179}	**9.75** *(10.51)* {8}	**6.21** *(6.44)* {59}	**6.88** *(9.98)* {8}	**6.94** *(5.38)* {64}	**2.86** *(4.88)* {7}	**4.13** *(4.99)* {56}
20	**7.50** *(9.51)* {26}	**11.45** *(10.91)* {179}	**8.00** *(8.37)* {5}	**12.73** *(12.47)* {59}	**13.13** *(12.23)* {8}	**13.25** *(10.17)* {64}	**3.85** *(6.50)* {13}	**8.05** *(9.25)* {56}
30	**22.27** *(12.72)* {11}	**20.48** *(16.01)* {179}	**30.00** *(10.00)* {3}	**22.28** *(18.10)* {59}	**20.00** *(15.41)* {5}	**22.97** *(15.60)* {64}	**18.33** *(10.41)* {3}	**15.73** *(13.11)* {56}
40	**34.81** *(17.33)* {13}	**29.82** *(20.30)* {179}	**30.00** *(18.26)* {4}	**33.17** *(23.38)* {59}	**30.63** *(17.37)* {4}	**30.46** *(19.20)* {64}	**42.00** *(17.89)* {5}	**25.55** *(17.43)* {56}
50	**49.29** *(21.21)* {35}	**42.61** *(25.51)* {179}	**40.00** *(21.08)* {10}	**46.53** *(28.75)* {59}	**51.67** *(19.40)* {15}	**43.45** *(24.75)* {64}	**55.00** *(22.97)* {10}	**37.52** *(22.13)* {56}
60	**64.17** *(24.17)* {6}	**52.14** *(30.62)* {179}	**75.00** *(17.32)* {4}	**57.60** *(35.88)* {59}	**42.50** *(24.75)* {2}	**50.44** *(27.71)* {64}	**-** (-) {0}	**48.32** *(27.35)* {56}
70	**63.33** *(32.51)* {6}	**61.29** *(37.40)* {179}	**56.67** *(37.86)* {3}	**68.82** *(45.01)* {59}	**55.00** *(28.28)* {2}	**59.37** *(32.98)* {64}	**100.00** *(0.00)* {1}	**55.55** *(32.34)* {56}
80	**103.21** *(12.81)* {7}	**72.82** *(42.70)* {179}	**100.00** *(20.00)* {3}	**81.17** *(51.48)* {59}	**112.50** *(0.00)* {1}	**68.81** *(37.21)* {64}	**103.33** *(5.77)* {3}	**68.59** *(37.53)* {56}
90	**91.67** *(33.29)* {3}	**85.19** *(49.50)* {179}	**100.00** *(42.43)* {2}	**96.18** *(59.63)* {59}	**75.00** *(0.00)* {1}	**80.29** *(43.81)* {64}	**-** (-) {0}	**79.21** *(42.30)* {56}
100	**146.55** *(29.67)* {29}	**98.75** *(55.47)* {179}	**145.00** *(15.81)* {10}	**105.59** *(66.50)* {59}	**150.00** *(40.82)* {10}	**94.56** *(49.98)* {64}	**144.44** *(30.05)* {9}	**96.34** *(48.53)* {56}

Expectations may be rational, too pessimistic or too optimistic. Table 2 also shows how expectations of return compare to the actual return received. While it would be a heroic assumption to expect trustors to be fully rational and know what they will get back for a given amount sent, trustors may have some idea about average returns or the social norms in their respective countries. Thus, we will take as evidence for optimism (pessimism) if an individual's

expectation for a given amount sent is significantly larger (smaller) than the average amount returned for a given amount sent in a country.

Expectations are surprisingly well calibrated, especially in Russia and in South Africa. Table 2 suggests no substantial differences between expectations and average amounts returned but for very large amounts sent, especially for X=100CU. While trustors expect to get back about 150CU, trustees only return about 100CU on average. This difference is significant, suggesting optimistic expectations (M-W U-test, $p<0.01$). Trust only pays in Russia, on average, when sending 80CU or more.

When the trustee is entrusted with the whole endowment of 100CU, there are no significant differences between the amounts returned in the three countries. For all other categories of amounts sent (10-30CU, 40-60CU and 70-90CU), Americans remit less than Russians and South Africans, on average (M-W U-test, $p<0.05$). Notably, American trustors expect back even less than they receive for small amounts sent (10-30CU, M-W U-test, $p<0.1$). Americans become optimistic when sending more (40-60CU, M-W U-test, $p<0.01$; due to the small sample size, we cannot analyze any country-level data for 70-90CU).

We conclude that in general, trustors' expectations of return are well calibrated and close to the average amount returned, the social norm, in a country. The most notable exception is "total trust," in which case trustors are too optimistic about returns.

Result 1: Trust: Expectations of trustworthiness or unconditional kindness?

In order to better understand what is driving the variation in our sample, we run multivariate regressions where in addition to expectations of return and unconditional kindness,

we control for attitudes to risk, a number of demographic variables, attitudes to trust and order effects. Correlations are presented in Table A.3 in the Appendix.

Table 3 below presents the regressions for the trustors. A basic model of demographic characteristics, trust attitudes and risk preferences explains little of the variation observed (15% of the total variation, see Column 1). This basic model suggests that risk preferences do not matter for trust,[25] that South African non-whites trust less than others and that there is an order effect: those who play the dictator game first, send less in the trust game. Column 2 presents a regression where we add the expected proportion returned, E(Y/3X), to the set of explanatory variables. The coefficient on expectations is highly significant statistically and economically: an increase in expected proportion returned by 1% increases the amount sent by 1.1CU, on average. Column 3 includes the amount sent in the triple dictator game in addition to the controls. TDGgive is highly significant. Those who send 1CU more in the triple dictator game tend to send 0.7CU more in the trust game.[26]

In Column 4, we find that trust decisions are related to both expectations of return and unconditional kindness, although the coefficients on both, proportion expected back and especially TDGgive, decrease in magnitude when the two are included together. In all specifications, the constant is significantly positive, suggesting that trustors derive satisfaction from trusting independent of amounts expected back. Column 4 also suggests a persistent race effect in South Africa: nonwhites trust less than whites in South Africa but not in the U.S. Our findings on race are in line with earlier results on race: It is the groups that historically felt discriminated against,

[25] Studies focusing on the relationship between people's willingness to take risk and trust behavior report mixed results. Eckel and Wilson (2004) found no relationship between risk-taking and trust behavior for American subjects while Schechter (2003) reported a strong correlation between attitudes to risk and behavior in a trust game run in Paraguay. Bohnet and Zeckhauser (2004) suggest that in addition to attitudes to risk, attitudes to betrayal have to be taken into account in the trust game.

which are less likely to trust (Alesina and LaFerrara 2002). At the beginning of the 21st century, such discrimination is more prevalent in South Africa than in the United States. The order in which the games were played is marginally significant at the 10%-level.

Including expectations of return and unconditional kindness substantially increases the variation explained. Adding expectations of return in Column 2 takes the R-squared from 0.15 to 0.58; adding the amount sent in the triple dictator game in Column 3 allows us to explain 31% of the variation. The full model, including both expectations of return and unconditional kindness, explains 62% of the variation in our sample.

Columns 5 and 6 show that those who send a lot in the trust game (50CU or more) are significantly more motivated by expected returns than those who send little (less than 50CU). The first group's trust is not related to triple dictator game giving. In contrast, unconditional kindness is very relevant for those who trust little. The latter group's decisions are also related to their risk aversion.

We conclude that overall, we have to reject both hypotheses. Expectations of trustworthiness account for most of the variance explained but unconditional kindness also matters for trust. Expectations of trustworthiness are particularly relevant for those who send a lot; expectations lose and unconditional kindness gains in importance for those who send little.

[26] Note that 24 of our trustors send less in the trust game than in the triple dictator game, suggesting that expectation-based trust is not just the additive difference between what is sent in the trust and the triple dictator game.

Table 3. Determinants of amount sent in the trust game[27]

	(1)	(2)	(3)	(4)	(5) X ≥ 50	(6) X < 50
Prop. expected back		112.774		101.291	83.924	34.922
		(8.969)***		(9.005)***	(16.300)***	(7.230)***
TDGgive			0.708	0.379	0.142	0.411
			(0.119)***	(0.093)***	(0.110)	(0.098)***
Risk aversion	-1.702	-1.054	-2.165	-1.368	0.421	-2.082
	(1.580)	(1.115)	(1.432)	(1.066)	(1.376)	(0.863)**
Dictator 1st (yes=1)	-17.227	-6.399	-15.410	-6.530	-0.799	-4.324
	(4.987)***	(3.618)*	(4.524)***	(3.449)*	(4.864)	(2.523)*
South Africa	12.728	9.196	6.345	6.143	1.621	0.349
	(9.128)	(6.438)	(8.330)	(6.183)	(8.534)	(4.476)
Russia	5.910	0.751	7.773	2.272	4.976	-5.755
	(7.882)	(5.570)	(7.140)	(5.322)	(7.611)	(3.675)
US non-white	-6.346	-0.963	-0.609	1.556	2.018	-0.174
	(8.979)	(6.342)	(8.184)	(6.078)	(9.128)	(4.008)
SA non-white	-28.447	-18.110	-19.241	-14.240	-13.032	-7.326
	(8.997)***	(6.394)***	(8.289)**	(6.169)**	(9.175)	(4.413)
Gender (male=1)	-5.128	-3.112	-6.079	-3.826	1.875	-2.990
	(5.405)	(3.813)	(4.895)	(3.639)	(5.548)	(2.448)
Age group (1-6)	-0.480	-1.046	-1.137	-1.340	-0.798	-1.237
	(4.167)	(2.937)	(3.773)	(2.800)	(3.537)	(2.176)
Econ. situation (1-6)	-3.985	-3.627	-3.149	-3.217	-1.115	-1.119
	(2.805)	(1.977)*	(2.542)	(1.887)*	(2.860)	(1.320)
Economics major	1.520	-4.354	4.178	-2.335	-2.256	-0.475
	(6.628)	(4.694)	(6.015)	(4.502)	(6.048)	(3.241)
# of organizations	-0.674	-1.393	-0.083	-1.003	1.964	-0.412
	(1.951)	(1.376)	(1.769)	(1.316)	(2.174)	(0.856)
Trust strangers	1.781	-0.582	-1.013	-1.835	-3.183	-6.198
	(6.787)	(4.786)	(6.160)	(4.573)	(5.736)	(3.678)*
Constant	74.334	39.410	55.618	32.960	34.225	28.541
	(16.562)***	(11.997)***	(15.317)***	(11.546)***	(16.502)**	(8.844)***
Observations	168	168	168	168	82	86
R-squared	0.15	0.58	0.31	0.62	0.35	0.47
Adjusted R-squared	0.09	0.55	0.25	0.59	0.22	0.37

The dependent variable is X, the amount sent in the trust game. Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.

[27] Our sample size for the trust regressions is 168. From our complete sample of 179, we lose 7 subjects because of missing observations for one of the independent variables, 2 subjects who expected to get back more than 3 times what they sent, and we exclude 2 outliers. These are a Russian man and a South African black woman who both send 10CU and expect to get back 30CU. If we include them, expectations of return become less correlated with amount sent while unconditional kindness gains in importance. While this would strengthen the message of this paper, we prefer our results not to be significantly influenced by these two outliers.

Why might trust behavior be more related to expectations of trustworthiness for some but for others more to unconditional kindness? We test for three possible conjectures: (i) Order effects: those who play the dictator games before they play the trust game may mentally anchor on the triple dictator game. If this were the case, these trustors would be less likely to take expected return into account and more likely to be motivated by unconditional kindness than trustors who play the trust game first. (ii) Expecting positive returns: those who expect to make money in the trust game may be more likely to base their decisions on expectations of return rather than on unconditional kindness. (iii) Demographic variables: Some subgroups may be more likely than others to base their decisions on expectations of return rather than on unconditional kindness.

We control for these possible effects in Table 4. We find no evidence that those who played the dictator games first are more influenced by unconditional kindness and less by expected return than others (Column 1). Similarly, those who expect to make money in the trust game are not motivated significantly differently than others (Column 2). Those who do not expect to make money may also care about expected returns because, as suggested by Table 1, many of our subjects have a social preference profile requesting the inclusion of amounts returned.

In contrast, Column 3 suggests that there is a gender difference in motivation: Men's trust is strongly affected by unconditional kindness while women's trust is not. Women are (marginally) more strongly motivated by their expectations of return than men are. Column 4 shows that our results for large amounts sent in Table 3 are mainly driven by women: It is the women who are only motivated by expected returns but not by unconditional kindness to send large amounts in the trust game, not the men. There are no gender differences for small amounts sent (Column 5). The difference in the motivation to trust between men and women is especially noteworthy as there are basically no differences in the distribution of men's and women's trust choices (see Figure A.1 in

the Appendix). Table A.4 in the Appendix shows that this gender difference is by far the most pronounced difference in motivation between demographic groups. Our findings accord well with Buchan et al.'s (2003) large-scale study on trust and gender where male trustors are more likely than women to report in a post-experimental questionnaire that trust is about cooperation (rather than competition).

Table 4. Subgroup differences in the determinants of amounts sent in the trust game

	(1)	(2)	(3)	(4)	(5)
				X ≥ 50	X < 50
Proportion expected back	95.560	76.691	115.781	70.271	46.436
	(13.274)***	(14.550)***	(12.009)***	(23.469)***	(10.857)***
TDGgive	0.501	0.480	0.074	-0.285	0.398
	(0.127)***	(0.120)***	(0.157)	(0.188)	(0.146)***
Risk aversion	-1.279	-1.633	-1.340	0.428	-2.061
	(1.067)	(1.065)	(1.047)	(1.323)	(0.864)**
Dictator 1st (yes=1)	-3.627	-6.325	-6.230	2.216	-4.530
	(6.547)	(3.455)*	(3.443)*	(4.836)	(2.534)*
Gender (male=1)	-4.525	-3.517	-7.373	-24.349	-0.810
	(3.698)	(3.616)	(6.397)	(15.673)	(4.410)
Trust strangers	-1.145	-1.974	-0.681	-0.060	-6.465
	(4.601)	(4.696)	(4.584)	(5.731)	(3.823)*
Dictator 1st x Proportion expected back	12.109				
	(18.880)				
Dictator 1st x TDGgive	-0.270				
	(0.188)				
Expected positive return		6.664			
		(26.728)			
Expected positive return x Proportion expected back		23.107			
		(54.194)			
Expected positive return x TDGgive		-0.220			
		(0.190)			
Male x Proportion expected back			-32.390	17.032	-19.985
			(17.394)*	(32.560)	(14.134)
Male x TDGgive			0.493	0.629	0.034
			(0.198)**	(0.232)***	(0.213)
Demographic controls	Yes	Yes	Yes	Yes	Yes
Constant	31.418	31.785	35.189	52.007	26.936
	(12.201)**	(11.658)***	(11.637)***	(18.735)***	(9.134)***
Observations	168	168	168	82	86
R-squared	0.63	0.64	0.64	0.42	0.49
Adjusted R-squared	0.59	0.59	0.60	0.28	0.37

The dependent variable is X, the amount sent in the trust game. Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Result 2: Trustworthiness: Reciprocity or unconditional kindness?

A trustee returns money to the trustor if she is motivated by reciprocity and/or unconditional kindness. The positive relationship between amounts received and amounts remitted has mostly been interpreted as an indicator for reciprocity, negative and positive, in the literature so far.[28] However, without further analysis the conclusion that a positive slope of the return function is an indicator for reciprocity seems only warranted for unconditionally selfish players who send nothing in the dictator game. Any positive fraction that they return in the trust game cannot be due to innate kindness. For everyone else, however, a positive relationship between amounts received and fractions remitted warrants further analysis.

Figure 2 provides suggestive evidence for the relevance of unconditional kindness. For illustrative purposes, we assume a fixed distributional preference profile for all our trustees. We present the relationship between amounts received and fractions remitted for three specific preference profiles, the selfish who do not send anything in the dictator game, egalitarian dictators who share the pie equally, and others.

[28] For example, Camerer and Fehr (2002, p. 18) write: "The amount trustees repay increases with y [the amount sent by trustors], which can be interpreted as positive reciprocity, or a feeling of obligation to repay more to an Investor who has exhibited trust."

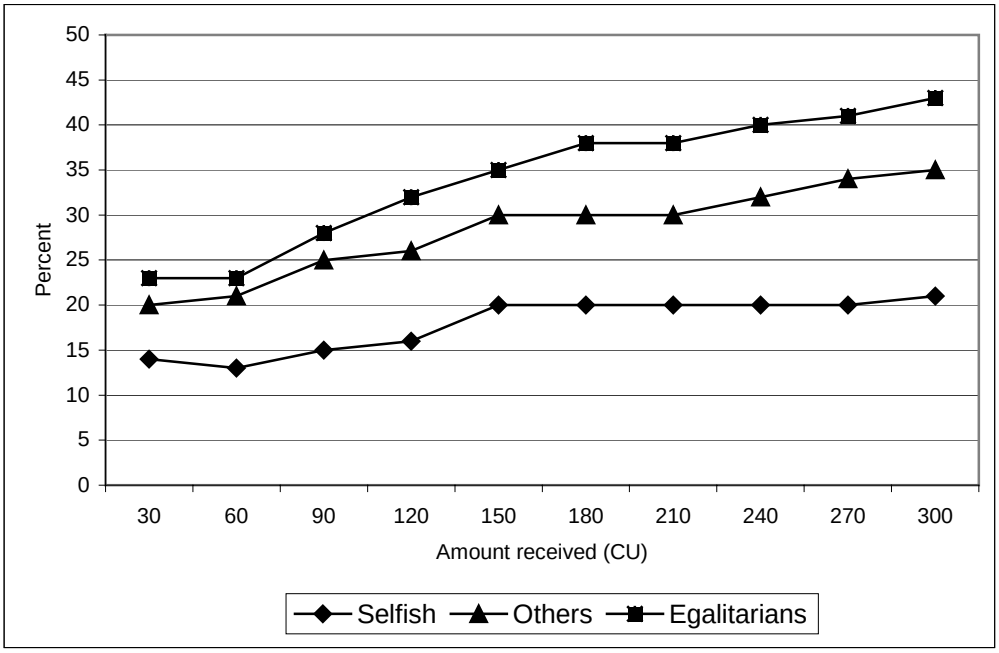

Figure 2: Fractions remitted in the trust game by distributional preference type

Egalitarian types remit substantially more than selfish types. While the positive fraction remitted by the selfish cannot be due to kindness, the egalitarians' (and others') increasing slope of the remit function could be related to unconditional kindness or to reciprocity. As trustors send more money to the trustees (and keep less for themselves), trustees have to return proportionally more money to live up to their distributional preferences. An egalitarian type with fixed distributional preferences, for example, would not remit any money for small amounts sent but would remit 50% if she received 300CU. Figure 3 illustrates how much an egalitarian type who sends 50CU in the dictator game would have to remit in the trust game according to the predicted remit function introduced above, i.e., if she were motivated by her distributional preferences only. The theoretical preference-based remit function is compared with the experimentally observed remit function.

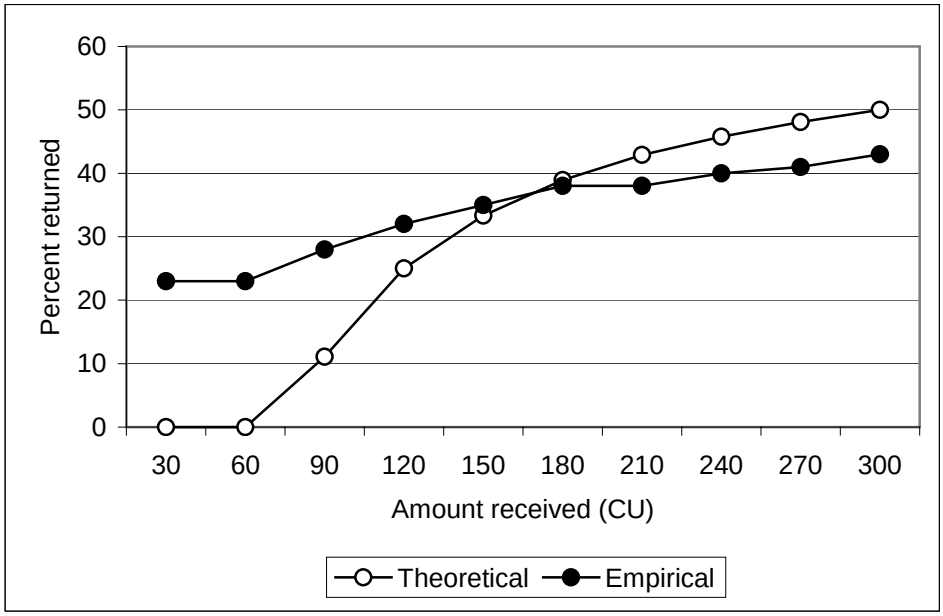

Figure 3: Fractions remitted by egalitarian types-based on their predicted (theoretical) and observed (empirical) remit functions.

Figure 3 shows that egalitarian types remit more than predicted by the preference-based theoretical remit function when sent small amounts and less when sent large amounts. This pattern does not suggest that these players are motivated by reciprocity.

In order to differentiate between the two motives more precisely, we run a regression. We take it as an indicator of reciprocity if the percent returned, Y/3X, increases with the amount received, 3X, controlling for kindness. To test for whether the specification of kindness affects results, in Table 5, we include the amounts sent in the dictator game directly into our regressions in Column 3 and use a fixed distributional preference profile in Column 4.

Table 5 presents the regression results for the trustees. Our control variables in Column 1 explain only 7% of the variation in our sample. Two control variables are significant. Russians remit more than others and "Trust strangers" is related to the percentage returned, suggesting that generally, the trust question picks up trustworthiness rather than trust. This finding is line with Glaeser et al.'s (2000) results for Harvard undergraduates. When our main explanatory variables –

amount received in the trust game, amount given in the dictator game and predicted distributional preference – are included, all have high statistical and economic significance. In Column 2, we find that one extra CU received increases the percentage of the money returned by 0.05%, which means that when a subject receives the full 300CU, she returns about 16% of the amount received. Column 3 shows that our subjects return 0.3% more of the amount received for every CU they send in the dictator game, meaning that an "egalitarian" person who splits the money equally in the dictator game will return 15% more than an egoist who keeps all the money in the dictator game.

When reciprocity (Amount received) and kindness (DGgive) are combined in Column 5, both variables maintain their levels and significance, suggesting that these two factors coexist in the decision process. However, if DGgive is replaced by predicted remit, based on distributional preferences, the effects of reciprocity disappear (Column 6). This suggests that the observed positive slope of percentage returned need not be based on people's willingness to reward trust by being kind in return. They may only care about their distributional preferences.

Independent of the specification, including the behavioral variables increases the variation explained to a bit more than 20%. We conclude that overall, we find reject both hypotheses. However, in contrast to trust, unconditional kindness accounts for most of the variance explained while reciprocity plays a comparatively small role.

Table 5. Determinants of percentage returned in the trust game[29]

	(1)	(2)	(3)	(4)	(5)	(6)
Received (3X)		0.00052			0.00052	0.00010
		(0.00006)***			(0.00006)***	(0.00009)
DGgive			0.003		0.003	
			(0.001)***		(0.001)***	
Predicted remit				0.442		0.416
				(0.051)***		(0.066)***
Risk aversion	-0.009	-0.009	-0.010	-0.009	-0.010	-0.009
	(0.009)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)
Dictator 1st (yes=1)	-0.023	-0.023	-0.014	-0.016	-0.014	-0.016
	(0.024)	(0.024)	(0.021)	(0.021)	(0.021)	(0.021)
South Africa	0.028	0.028	0.024	0.026	0.024	0.026
	(0.038)	(0.038)	(0.036)	(0.036)	(0.036)	(0.036)
Russia	0.073	0.073	0.061	0.060	0.061	0.061
	(0.033)**	(0.033)**	(0.030)**	(0.030)**	(0.030)**	(0.030)**
US non-white	0.011	0.011	0.033	0.022	0.033	0.021
	(0.035)	(0.035)	(0.036)	(0.035)	(0.036)	(0.035)
SA non-white	-0.019	-0.019	-0.023	-0.025	-0.023	-0.025
	(0.038)	(0.038)	(0.035)	(0.035)	(0.035)	(0.035)
Gender (1=male)	-0.004	-0.004	0.003	0.002	0.003	0.002
	(0.024)	(0.024)	(0.022)	(0.022)	(0.022)	(0.022)
Age Group (1-6)	0.001	0.001	0.001	0.001	0.001	0.001
	(0.021)	(0.021)	(0.019)	(0.019)	(0.019)	(0.019)
Economic situation (1-6)	-0.001	-0.001	0.003	0.004	0.003	0.004
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Economics major	0.044	0.044	0.026	0.027	0.026	0.028
	(0.031)	(0.031)	(0.028)	(0.029)	(0.028)	(0.029)
# of organizations	-0.002	-0.002	-0.002	-0.001	-0.002	-0.001
	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)
Trust strangers	0.085	0.085	0.054	0.057	0.054	0.059
	(0.028)***	(0.028)***	(0.025)**	(0.025)**	(0.025)**	(0.025)**
Constant	0.257	0.172	0.174	0.196	0.089	0.184
	(0.073)***	(0.074)**	(0.070)**	(0.068)***	(0.071)	(0.069)***
Observations	1770	1770	1770	1770	1770	1770
R-squared	0.07	0.13	0.18	0.22	0.24	0.23
Adjusted R-squared	0.06	0.12	0.18	0.22	0.24	0.22

The dependent variable is Y/3X, the amount returned divided by the amount received. Standard errors in parentheses; observations are clustered by individual. * significant at 10%; ** significant at 5%; *** significant at 1%

In Table 6, we split our sample into two categories: those who receive a lot (>150) and those who receive little (≤150). As we use the strategy method, we can see how trustees respond to each possible amount received. The results support the intuition in Figure 3. Behavior is more

[29] Our sample size for the trustworthiness regressions is 177. From our complete sample of 179, we lose 2 subjects

contingent on the trustor's actions for small than for large amounts received. Controlling for distributional preferences, reciprocity does not matter at all for large amounts received.

Table 6: Determinants of percentage returned for large and small amounts received in trust game

	3X>150	3X≤150	3X>150	3X≤150
Received (3X)	0.00034	0.00077	-0.00001	0.00036
	(0.00007)***	(0.00011)***	(0.00009)	(0.00015)**
DGgive	0.0041	0.0025		
	(0.0006)***	(0.0006)***		
Predicted remit			0.426	0.431
			(0.064)***	(0.101)***
Risk aversion	-0.011	-0.009	-0.011	-0.008
	(0.009)	(0.008)	(0.009)	(0.009)
Dictator 1st (yes=1)	-0.015	-0.013	-0.016	-0.016
	(0.023)	(0.023)	(0.023)	(0.024)
Trust strangers	0.049	0.059	0.051	0.065
	(0.026)*	(0.030)*	(0.026)**	(0.030)**
Demographic controls	Yes	Yes	Yes	Yes
Constant	0.097	0.101	0.192	0.176
	(0.078)	(0.076)	(0.078)**	(0.076)**
Observations	885	885	885	885
R-squared	0.27	0.18	0.26	0.16
Adjusted R-squared	0.26	0.17	0.25	0.14

The dependent variable is Y/3X, the amount returned divided by the amount received. Standard errors in parentheses; observations are clustered by individual. * significant at 10%; ** significant at 5%; *** significant at 1%

Are there any groups of people who base their decisions exclusively on unconditional kindness or reciprocity? Like in the trust regressions, we do not find any evidence that the order in which the games were played interacts with subjects' motivations for trustworthiness. An analysis of trustee behavior by subgroups (Table A.5, see Appendix) reveals that most demographic subgroups are motivated by reciprocity and unconditional kindness—with one exception: In the US, unconditional kindness is almost irrelevant, while the reciprocity effect is the strongest of all subgroups. Using distributional preferences instead of DGgive (Table A.6, see Appendix) produces similar results. All subgroups behave similarly except for the US: distributional preferences matter least for Americans; at the same time, this is the only subgroup that maintains a

because of missing observations for one of the independent variables.

significant reciprocity effect (Amount received). Based on the results in Tables A.5 and Table A.6 we conclude that Americans' trustworthiness is overwhelmingly driven by reciprocity rather than by unconditional kindness — in contrast to Russians' and South Africans' trustworthiness.

V. Conclusions

In his book on "Behavioral Game Theory", Colin Camerer (2003) suggests that one of the "Top Ten Open Research Questions" is the following: "What game do people think they are playing?" Our results suggest that many people may play a different game than researchers thought they were playing when confronted with the "investment game." Only 36 percent of the 159 trustors who decided to send any money in our "investment game" expected to make money.

Trust is based on beliefs of trustworthiness and on unconditional kindness; trustworthiness is related to unconditional kindness and reciprocity. The "trust-as-belief hypothesis" captures women's trust better than men's and the "trustworthiness-as-reciprocity hypothesis" explains Americans' trustworthiness better than that of Russians or South Africans. Overall, expectations of trustworthiness account for most of the observed variance in trust and unconditional kindness for most of the explained variation of trustworthiness behavior.

We would not have been able to estimate the relative importance of expectations of return and reciprocity had we only compared average behavior in a between-subject design. We also would have neglected the substantial heterogeneity in the motivations for trust and trustworthiness. We suspect that some of the mixed evidence on the possible determinants of trust and trustworthiness found in earlier experiments may be due to the characteristics of the subject pool and could be reconciled if it was checked for whom unconditional kindness, expectations of return, and reciprocity did or did not matter.

For example, while Cox (2004) and Dufwenberg and Gneezy (2000) found little evidence for reciprocity, McCabe, Rigdon and Smith (2003) found strong support for reciprocity. No conclusive evidence can be found in other experiments on rewarding behavior either. Reciprocity has been reported to play no or only a minor role in a gift exchange game (Charness 1996), in a sequential social dilemma experiment (Bolton, Brandts and Ockenfels 1998), and in a real life public goods experiment (Frey and Meier 2004), for example, while it has been found to affect behavior in a moonlighting game (Falk, Fehr and Fischbacher 2000).

Our experiments are a first attempt at better understanding what motivates people to do the things they do, by including preferences as revealed by behavior as explanatory variables. We believe that many other economic experiments could benefit from a combination of within- and between-subjects designs.

Our design allowed us to solve one of the important trust puzzles, namely that people trust even though hardly anyone makes money by doing so. We found that generally, people are aware of this. They trust even though they know it does not pay monetarily. They enjoy being kind to others, even to anonymous strangers. If these psychological returns of trust are taken into consideration, people may not make a bad investment when trusting.

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Appendix

Table A.1: Variable definitions

Concept	Variable Name	Variable Description	Range of values
Trust behavior	Send Trust	Amount trustor sends in Trust Game	0 to 100CU
Trustworthiness behavior	Percent remitted	Amount trustee returns, as a proportion of amount received	0 to 1
Warm-glow kindness for Trust	TDGgive	Amount subject sends in Triple Dictator Game	0 to 100CU
Warm-glow kindness for Trustworthiness	DGgive	Amount subject sends in Dictator Game	0 to 100CU
Social preferences for Trustworthiness	Predicted remit	Distributional preference subject exhibits in Dictator Game	0 to 1
Expectations of return	Prop. expected back	Amount trustor expects back, as a proportion of amount sent by trustor	0 to 1
Reciprocity	Received	Amount trustee receives in Trust Game, equals "Send Trust" * 3	0 to 300CU
Attitude to risk	Risk aversion	Number of risky gambles rejected in favor of sure thing by subject	0 to 6
Order effect	Dictator 1st	Whether the subject played the dictator game prior to the trust game	0 = No, 1 = Yes
South Africa	South Africa	Whether the subject participated in the experiment in South Africa	0 = No, 1 = Yes
Russia	Russia	Whether the subject participated in the experiment in Russia	0 = No, 1 = Yes
Race	Race	Whether the subject is non-white	0 = White, 1 = Non-white
Race in US	US non-white	Whether the subject is a non-white person in the US	0 = No, 1 = Yes
Race in SA	SA non-white	Whether the subject is a non-white person in South Africa	0 = No, 1 = Yes
Gender	Gender	Gender of the subject	0 = female, 1 = male
Age	Age group	Age of the subject	1 to 6 (1 = "Under 20", 6 = "Over 60")
Economic situation	Economic situation	Economic well-being of the subject	1 to 6 (1 = "Poor", 6 = "Wealthy")
Education	Economics major	Whether the subject majors in economics	0 = No, 1 = Yes
Organizational membership	# of organizations	Number of organizations the subject belongs to	Integer value
Trust attitude towards strangers	Trust strangers	"Generally speaking, which of the following people do you feel you could trust not to cheat you?"	1 – if subject trusts one of the following: members of one's religion, citizens of one's country, or foreigners. 0 – if subject does not trust any of the above groups

Table A.2a: Summary statistics

	ALL Mean (std. dev.) {N}	**WHITE** Mean (std. dev.) {N}	**NON-WHITE** Mean (std. dev.) {N}	**MALE** Mean (std. dev.) {N}	**FEMALE** Mean (std. dev.) {N}
Send Trust (CU)	44.50 (32.90) {179}	48.07 (33.08) {127}	35.77 (31.08) {52}	47.19 (33.83) {96}	41.39 (31.71) {83}
DGgive (CU)	25.18 (20.30) {359}	26.21 (20.01) {243}	23.02 (20.80) {116}	24.14 (19.82) {200}	26.66 (20.83) {158}
TDGgive (CU)	24.31 (20.70) {358}	25.21 (21.19) {243}	22.42 (19.57) {115}	25.93 (22.70) {199}	22.28 (20.83) {158}
Percent remitted (% of 3X)	26.67 (18.33) {1790}	27.66 (19) {1150}	25 (17) {640}	27.33 (16.67) {1050}	25.67 (16.67) {740}
Prop. expected back if sent positive amount (% of 3x)	30.51 (20.21) {159}	31.68 (19.27) {114}	27.42 (22.36) {45}	30.75 (19.91) {86}	30.23 (20.69) {73}
Prop. expected back if sent 0 or positive amount (% of 3x)	27.72 (21.18) {175}	28.89 (20.49) {125}	24.79 (22.77) {50}	28.13 (20.90) {94}	27.24 (21.62) {81}
Risk aversion (1-6)	3.74 (1.35) {321}	3.90 (1.34) {102}	3.90 (1.34) {102}	3.52 (1.34) {176}	4.0 (1.32) {145}
Dictator 1st	0.49 (0.50) {359}	0.53 (0.50) {243}	0.41 (0.49) {116}	0.46 (0.50) {201}	0.53 (0.50) {158}
Race (% non-white)	32 (47) {359}	0 (0) {243}	100 (0) {116}	23.38 (42.43) {201}	43.67 (49.76) {158}
Gender (% male)	56 (50) {358}	63.37 (48.28) {243}	40 (49.2) {115}	100 (0) {200}	0 (0) {158}
Age group (1-5)	1.61 (0.59) {357}	1.56 (0.61) {241}	1.72 (0.56) {116}	1.61 (0.56) {200}	1.62 (0.64) {157}
Economic situation (1-6)	3.26 (1.04) {356}	3.23 (1.04) {242}	3.33 (1.04) {114}	3.17 (1.02) {198}	3.38 (1.06) {158}
Economics major (% yes)	24.5 (43.08) {359}	20.99 (40.81) {243}	32.76 (47.14) {116}	15.92 (36.68) {201}	36.08 (48.17) {158}
# of organizations	1.93 (1.42) {358}	1.79 (1.37) {242}	2.22 (1.49) {116}	1.81 (1.46) {200}	2.08 (1.35) {158}
Trust strangers (% yes if trust citizens, same religion and foreigners)	20.01 (40.10) {359}	19.75 (39.89) {243}	20.69 (40.68) {116}	17.41 (38.02) {201}	23.42 (42.48) {158}

Table A.2b: Summary statistics

	RUSSIA Mean (s.d.) {N}	**SOUTH AFRICA** Mean (s.d.) {N}	**UNITED STATES** Mean (s.d.) {N}	**SA: WHITE** Mean (s.d.) {N}	**SA: NON-WHITE** Mean (s.d.) {N}	**US: WHITE** Mean (s.d.) {N}	**US: NON-WHITE** Mean (s.d.) {N}
Send Trust (CU)	49.15 (33.64) {59}	42.81 (32.54) {64}	41.51 (32.58) {56}	52.18 (32.69) {32}	33.43 (30.01) {32}	42.63 (32.67) {36}	39.5 (33.16) {20}
DGgive (CU)	26.06 (19.87) {118}	25.22 (19.64) {129}	24.21 (21.58) {112}	25.5 (18.87) {58}	24.98 (18.87) {58}	27.08 (21.42) {67}	19.93 (21.33) {45}
TDGgive (CU)	24.69 (20.01) {118}	27.43 (22.241) {128}	20.36 (19.04) {112}	29.71 (24.71) {58}	25.53 (24.71) {58}	22.22 (19.53) {67}	17.57 (18.12) {45}
Percent remitted (% of 3X)	29.33 (21.33) {590}	27 (16.67) {640}	23.33 (16.67) {560}	28.67 (16.33) {250}	26 (16.33) {390}	23.33 (15.33) {310}	23.33 (17.33) {250}
Prop. expected back if sent positive amount (% of 3x)	33.14 (19.44) {52}	31.47 (20.32) {56}	26.78 (20.70) {51}	33.50 (16.80) {29}	29.29 (23.67) {27}	27.79 (20.99) {33}	24.92 (20.61) {18}
Prop. expected back if sent 0 or positive amount (% of 3x)	30.23 (20.82) {57}	28.43 (21.46) {62}	24.39 (21.19) {56}	30.36 (18.80) {32}	26.37 (24.13) {30}	25.47 (21.53) {36}	22.43 (20.95) {20}
Risk aversion (1-6)	3.67 (1.41) {104}	3.54 (1.34) {108}	4.01 (1.27) {109}	3.32 (1.33) {50}	3.72 (1.32) {58}	3.92 (1.21) {65}	4.13 (1.33) {44}
Dictator 1st	0.49 (0.50) {118}	0.48 (0.50) {128}	0.50 (0.50) {112}	0.53 (0.50) {58}	0.44 (0.50) {71}	0.58 (0.50) {67}	0.38 (0.49) {45}
Race (% non-white)	0 (0) {118}	55.04 (49.94) {129}	40.18 (49.25) {112}	0 (0) {58}	100 (0) {71}	0 (0) {67}	100 (0) {45}
Gender (% male)	83.05 (37.68) {118}	45.74 (50.01) {129}	38.74 (48.94) {111}	56.90 (49.95) {58}	36.62 (48.52) {71}	34.33 (47.84) {67}	45.45 (50.37) {44}
Age group (1-5)	1.40 (0.49) {116}	1.64 (0.50) {129}	1.81 (0.72) {112}	1.59 (0.50) {58}	1.68 (0.50) {71}	1.84 (0.77) {67}	1.78 (0.64) {45}
Economic situation (1-6)	2.86 (0.77) {118}	3.78 (0.99) {127}	3.08 (1.11) {111}	4.24 (0.85) {58}	3.40 (0.93) {69}	2.98 (1.06) {66}	3.22 (1.18) {45}
Economics major (%)	1.69 (0.12) {118}	51.16 (50.18) {129}	18.75 (39.21) {112}	55.17 (50.17) {58}	47.89 (50.31) {71}	25.37 (43.84) {67}	8.89 (28.78) {45}
# of organizations	1.58 (1.29) {118}	2.02 (1.37) {129}	2.20 (1.54) {111}	1.78 (1.16) {58}	2.21 (1.50) {71}	2.17 (1.59) {66}	2.24 (1.48) {45}
Trust strangers (attitude)	13.56 (34.38) {118}	24.81 (43.36) {129}	21.43 (41.22) {112}	29.31 (45.92) {58}	21.13 (41.11) {71}	22.39 (42.0) {67}	20.0 (40.45) {45}

A.3: Correlations

	Send in Trust	DGgive	TDGgive	Proportion expected back	Risk aversion	Dictator 1st	South Africa
Send in Trust	1						
DGgive	0.3482	1					
TDGgive	0.3893	0.3453	1				
Prop. expected back	0.6044	0.2152	0.1901	1			
Risk aversion	-0.1282	-0.004	-0.0028	-0.0295	1		
Dictator 1st	-0.2158	-0.0381	-0.0377	-0.1333	0.0555	1	
South Africa	-0.0467	-0.1129	0.0869	0.0022	-0.0283	-0.0686	1
Russia	0.1385	0.0382	-0.0432	0.1225	-0.1186	0.0227	
Trust strangers	0.0762	0.0814	0.0889	0.0959	0.0792	-0.1226	0.1907
# of organizations	-0.1452	0.1162	-0.0855	-0.0481	0.0931	0.0552	0.1001
Gender (1=male)	0.0343	-0.0777	0.1348	0.0251	-0.1901	-0.0842	0.0472
US non-white	-0.0515	0.0026	-0.1078	-0.0783	0.113	-0.1173	
SA non-white	-0.2373	-0.1187	-0.1055	-0.1215	0.103	-0.0649	0.5731
Economic situation (1-6)	-0.0398	-0.0968	0.0044	0.0016	-0.0738	0.0508	0.4392
Age Group (1-6)	0.0243	0.0549	0.0959	-0.0235	-0.0286	-0.0536	-0.0715
Economics major	-0.0325	-0.0362	0.0072	0.0653	-0.0037	0.0739	0.4374
Percent remitted (Y/3X)		0.3480	0.2608		-0.0898	-0.0385	0.0254

	Russia	Trust strangers	# of organizations	Gender (1=male)	US non-white	SA non-white	Economic situation(1-6)
Russia	1						
Trust strangers	-0.2002	1					
# of organizations	-0.1748	0.2452	1				
Gender (1=male)	0.334	-0.154	-0.163	1			
US non-white		-0.0072	0.0932	-0.1725	1		
SA non-white		0.0278	0.1431	-0.0815		1	
Economic situation (1-6)	-0.308	0.0108	0.0205	-0.0561	-0.0143	-0.0047	1
Age Group (1-6)	-0.321	0.1623	0.0705	-0.042	0.1633	-0.0403	-0.1993
Economics major	-0.3318	0.2399	0.0472	-0.1819	-0.2054	0.2361	0.1466
Percent remitted (Y/3X)	0.0811	0.1666	0.0034	0.0365	-0.0640	-0.0061	0.0261

	Age Group (1-6)	Economics major
Age Group (1-6)	1	
Economics major	-0.0787	1
Percent remitted (Y/3X)	-0.0289	0.0396	1

Table A.4: Trust: Amount sent in trust game, by subgroups.

	(1) Men	(2) Women	(3) White	(4) Non-white	(5) Russia	(6) US	(7) South Africa
Prop. expected back	79.264	118.209	106.129	92.559	101.745	106.299	96.589
	(13.979)***	(12.057)***	(11.708)***	(15.017)**	(20.404)***	(14.496)***	(14.949)***
TDGgive	0.537	0.121	0.385	0.544	0.412	0.476	0.380
	(0.120)***	(0.166)	(0.112)***	(0.193)**	(0.287)	(0.164)***	(0.123)***
Risk aversion	-2.172	0.137	-1.058	-2.613	-1.348	0.276	-2.132
	(1.432)	(1.670)	(1.284)	(1.830)	(2.304)	(2.205)	(1.560)
Dictator 1st (yes=1)	-9.289	-2.321	-4.940	-13.867	-13.049	0.320	-5.778
	(5.024)*	(4.999)	(4.313)	(5.751)*	(7.232)*	(6.700)	(5.634)
South Africa	21.938	-2.329	9.941	-9.563			
	(10.290)**	(8.035)	(6.942)	(6.036)			
Russia	6.313	6.284	-1.088				
	(7.360)	(8.313)	(5.746)				
US non-white	0.571	-3.935				4.727	
	(11.084)	(7.518)				(6.205)	
SA non-white	-22.271	-6.829					-16.258
	(9.289)**	(8.538)					(5.947)***
Gender (1=male)			-3.884	-10.511	-1.520	-5.788	1.569
			(4.583)	(6.084)	(10.223)	(6.893)	(5.238)
Age Group (1-6)	0.917	-1.632	-4.887	13.746	-2.437	-1.540	-1.978
	(4.364)	(3.801)	(3.289)	(5.335)*	(7.568)	(4.152)	(5.417)
Economic situation (1-6)	-7.547	-2.742	-5.962	5.904	-1.077	-2.121	-4.864
	(3.300)**	(2.378)	(2.390)**	(3.050)	(6.182)	(2.857)	(3.145)
Economics major	-9.771	0.883	-6.695	6.171	19.327	-1.076	-11.419
	(7.258)	(5.925)	(5.715)	(6.933)	(19.804)	(7.994)	(5.716)*
# of organizations	-0.632	-0.475	-0.478	-2.202	-4.447	-3.302	4.542
	(1.969)	(1.832)	(1.597)	(2.197)	(3.295)	(2.112)	(2.173)**
Trust strangers	8.124	-7.084	-2.259	5.271	14.735	-5.678	1.721
	(7.009)	(6.453)	(5.591)	(8.121)	(13.911)	(7.778)	(6.582)
Constant	38.090	26.437	44.996	-13.883	33.953	21.434	41.004
	(16.545)**	(15.700)*	(14.338)***	(19.582)	(28.819)	(18.211)	(19.537)**
Observations	89	79	122	46	54	56	58
R-squared	0.67	0.66	0.62	0.72	0.57	0.71	0.72
Adjusted R-squared	0.62	0.59	0.58	0.63	0.47	0.63	0.65

The dependent variable is X, the amount sent in the trust game. Standard errors in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A.5. Trustworthiness: Percentage returned in the trust game, by subgroup, using DGgive.

	(1) Men	(2) Women	(3) White	(4) Non-white	(5) Russia	(6) US	(7) South Africa
Received (3X)	0.0005	0.0005	0.0006	0.0004	0.0006	0.0007	0.0003
	(0.0001)***	(0.0001)***	(0.0001)***	(0.0001)***	(0.0001)***	(0.0001)***	(0.0001)***
DGgive	0.004	0.003	0.004	0.002	0.005	0.001	0.003
	(0.001)***	(0.001)***	(0.001)***	(0.001)**	(0.001)***	(0.001)	(0.001)***
Risk aversion	-0.025	0.018	-0.013	-0.005	-0.020	-0.012	0.002
	(0.010)**	(0.011)*	(0.010)	(0.013)	(0.013)	(0.015)	(0.013)
Dictator 1st (yes=1)	-0.012	-0.000	-0.029	-0.009	-0.040	0.005	-0.037
	(0.028)	(0.039)	(0.027)	(0.040)	(0.038)	(0.043)	(0.034)
South Africa	0.020	0.038	0.008	-0.011			
	(0.042)	(0.053)	(0.038)	(0.035)			
Russia	0.096	-0.014	0.073				
	(0.034)***	(0.057)	(0.033)**				
US non-white	0.087	0.009				0.031	
	(0.044)*	(0.051)				(0.035)	
SA non-white	-0.018	0.007					-0.040
	(0.061)	(0.049)					(0.042)
Gender (1=male)			-0.002	-0.019	0.041	-0.012	-0.015
			(0.029)	(0.043)	(0.046)	(0.033)	(0.036)
Age Group (1-6)	0.003	0.015	0.020	-0.024	0.005	-0.008	0.009
	(0.026)	(0.025)	(0.023)	(0.033)	(0.038)	(0.031)	(0.034)
Economic situation (1-6)	0.005	0.017	0.016	-0.009	0.001	-0.000	0.004
	(0.015)	(0.021)	(0.014)	(0.018)	(0.021)	(0.016)	(0.025)
Economics major	0.050	-0.015	0.040	0.007	0.000	0.064	0.009
	(0.046)	(0.038)	(0.039)	(0.048)	(0.000)	(0.050)	(0.038)
# of organizations	-0.013	0.018	0.001	-0.005	-0.009	-0.001	0.004
	(0.009)	(0.011)*	(0.009)	(0.013)	(0.014)	(0.009)	(0.014)
Trust strangers	0.062	0.032	0.057	0.056	0.026	0.062	0.037
	(0.035)*	(0.035)	(0.033)*	(0.039)	(0.062)	(0.038)	(0.038)
Constant	0.112	-0.117	-0.004	0.235	0.121	0.124	0.130
	(0.085)	(0.115)	(0.094)	(0.115)**	(0.134)	(0.115)	(0.145)
Observations	1030	740	1140	630	590	540	640
R-squared	0.30	0.26	0.31	0.15	0.35	0.22	0.19
Adjusted R-squared	0.29	0.25	0.30	0.14	0.34	0.20	0.17

The dependent variable is Y/3X, the amount returned divided by the amount received.
Standard errors in parentheses; observations are clustered by individual.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A.6. Trustworthiness: Percentage returned in the trust game, by subgroup, using predicted remit

	(1) Men	(2) Women	(3) White	(4) Non-white	(5) Russia	(6) US	(7) South Africa
Received (3X)	0.00009	0.00013	0.00007	0.00011	-0.00005	0.00049	-0.00009
	(0.00011)	(0.00014)	(0.00012)	(0.00014)	(0.00016)	(0.00014)***	(0.00016)
Predicted remit	0.466	0.335	0.482	0.310	0.623	0.215	0.361
	(0.098)***	(0.083)***	(0.084)***	(0.099)***	(0.130)***	(0.089)**	(0.106)***
Risk aversion	-0.023	0.018	-0.011	-0.004	-0.015	-0.011	0.003
	(0.011)**	(0.011)	(0.011)	(0.013)	(0.014)	(0.015)	(0.014)
Dictator 1st (yes=1)	-0.008	-0.012	-0.024	-0.012	-0.023	0.003	-0.040
	(0.029)	(0.039)	(0.028)	(0.038)	(0.039)	(0.042)	(0.035)
South Africa	0.026	0.043	0.007	-0.005			
	(0.044)	(0.054)	(0.037)	(0.034)			
Russia	0.093	-0.007	0.071				
	(0.034)***	(0.061)	(0.033)**				
US non-white	0.067	0.006				0.028	
	(0.041)	(0.050)				(0.035)	
SA non-white	-0.028	0.005					-0.042
	(0.060)	(0.050)					(0.042)
Gender (1=male)			0.005	-0.023	0.047	-0.012	-0.019
			(0.030)	(0.042)	(0.049)	(0.033)	(0.037)
Age Group (1-6)	0.005	0.012	0.018	-0.022	0.006	-0.009	0.015
	(0.026)	(0.025)	(0.024)	(0.032)	(0.040)	(0.030)	(0.034)
Economic situation (1-6)	0.007	0.014	0.016	-0.008	0.006	-0.001	0.005
	(0.015)	(0.021)	(0.014)	(0.018)	(0.022)	(0.016)	(0.024)
Economics major	0.048	-0.011	0.051	0.003	0.000	0.066	0.008
	(0.048)	(0.039)	(0.039)	(0.049)	(0.000)	(0.049)	(0.040)
# of organizations	-0.011	0.017	0.002	-0.004	-0.004	-0.000	0.003
	(0.009)	(0.011)	(0.009)	(0.012)	(0.015)	(0.009)	(0.014)
Trust strangers	0.069	0.035	0.070	0.051	0.050	0.066	0.030
	(0.035)**	(0.036)	(0.032)**	(0.039)	(0.059)	(0.038)*	(0.038)
Constant	0.201	-0.004	0.106	0.289	0.221	0.163	0.223
	(0.080)**	(0.115)	(0.097)	(0.110)**	(0.139)	(0.108)	(0.143)
Observations	1030	740	1140	630	590	540	640
R-squared	0.29	0.23	0.27	0.16	0.32	0.23	0.17
Adjusted R-squared	0.28	0.22	0.27	0.15	0.31	0.21	0.15

The dependent variable is Y/3X, the amount returned divided by the amount received.
Standard errors in parentheses; observations are clustered by individual.
* significant at 10%; ** significant at 5%; *** significant at 1%

Figure A.1: Trust game choices by gender