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"It won't happen to me": Is there a link between trust and optimism?

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ABSTRACT

The importance of trust in facilitating economic interactions and its contribution to social welfare gives economists ample reasons to study trust. However, despite a long history of experimental studies of trust, its determinants are still not completely clear. We report evidence from an experimental study which suggests the existence of an optimism bias: players expect their partners to be more trustworthy than the average member of the population. This bias was positively and statistically significantly related to players' decision to trust. Our data also indicates a positive relation between the player's decision to trust and her expectations about the overall trust level: players who trusted their partners also believed that other players would trust more often.

Keywords: Trust, Trustworthiness, Expectations, Experiment, Optimism bias.

JEL Classification: D84, Z13

1. Introduction

In the world of incomplete contracts, trust and trustworthiness really underlie the success of most kinds of economic interaction. On the micro level, a more trusting person may obviously benefit from profitable opportunities more often than her more suspicious peers, with the cost of too little trust comparable to the income lost by forgoing college[1] (Butler et al., 2014). Within organizations, trust and trustworthiness have been shown to increase labor productivity by increasing the workers' readiness to exchange information, identify problems and set goals (Bialeszewski, Giallourakis, 1985; Moorman et al., 1992), increase efficiency by lower monitoring costs (e.g. Frank, 1988), lowering turnover (Dirks, Ferrin, 2002), and increasing uncompensated positive behavior from employees (Dirks, Ferrin, 2002; Konovsky, Pugh, 1994). On the more aggregate level, it has been shown that trust is positively correlated with economic growth and such economic development indicators as governance quality, tax collection rate and investment (La Porta et al., 1997; Knack, Keefer, 1997; Zak, Knack, 2001; Fetchenhauer, Van der Vegt, 2001) – although there is no sufficient evidence to suggest causality yet.

The most popular experimental model for studying behavioral trust and trustworthiness was proposed by Berg et al. (1995). In their trust game, which models a sequential exchange in which there is no contract to enforce agreements, both players receive an endowment of $10, are anonymously paired and assigned to either the role of a sender or a receiver. The sender, who moves first, may give any portion of her endowment to the receiver. The amount given is tripled by the experimenter. The receiver may then return any portion of the money he got back to the sender. The game models a deal, which can be mutually beneficial if the receiver returns at least as much as the sender gives. The portion of the endowment that the sender gives then characterizes trust, and the share that is returned by the receiver characterizes trustworthiness.

Despite the Nash equilibrium prediction of no trust and no trustworthiness, multiple experiments have demonstrated significant positive transfers by both senders and receivers, and the sizes of those transfers were positively correlated. This working paper is part of the literature that tries to expose the role of the participants' expectations in the emergence of this result.

[1] Although, as Butler *et al.* show, this relation is not monotonic: trust pays off only until the benefits from profitable opportunities offset the costs of possible exploitation that the trusting person subjects herself to.

The connection between expectations and trusting behavior matters, because many policy campaigns actually try to affect people's behavior by changing their expectations – for example, asserting the reality of climate change to promote energy efficiency, or making optimistic predictions about the country's economic growth to strengthen consumer and investor confidence. Experimental literature generally reports a positive correlation between trust and expected trustworthiness in the trust game (see, e.g., Fehr et al., 2003; Bellemare, Kröger, 2007; Sapienza et al., 2013). These results don't yet indicate causality – it could be that trust and expected trustworthiness are both driven by some unobserved common variable. For example, if people thought that trusting and returning trust is a social norm and there is punishment associated with violating it, their decision to trust and their expectations about the others' trust and trustworthiness would depend on the probability of such punishment. If this were the case, we would observe positive correlation between trust and expected trustworthiness if the probability of punishment is high, but no correlation if the probability of punishment is low.

However, a recent experimental study by Costa-Gomez et al. (2014) indicates that higher expectations about the partner's trustworthiness may actually increase the level of trust. In their design, both players were told that the amount returned by the receiver will be randomly increased or decreased with the mean of the shift being zero, but the receivers were only told of the distribution of this random variable, whereas senders also knew its realization. Thus, assuming that this manipulation didn't influence the receivers' behavior, and only influenced the senders' behavior through their expectations about the level of repayment[2], a positive and statistically significant effect of this instrumental variable on trust, which was indeed found, would imply a causal link between expected trustworthiness and trust.

This evidence promotes the interest towards some counterintuitive interrelations between trust, trustworthiness and expectations present in the experimental literature. One of these has been described by Fetchenhauer and Dunning (2009), who found that players grossly underestimated the proportion of their peers who would return money, prompting them to forgo profitable decisions to trust – but at the same time, trusted too much, given their expectations about trustworthiness and levels of tolerance for risk.

[2] In the continuous version of the trust game used by Costa-Gomez et al. (2014), this manipulation indeed only affected the senders' expectations. However, for the binary version of the trust game (which is what we used in our experiment), it failed the tests for invasiveness (the reasons are extensively documented in Costa-Gomes, Weizsäcker, 2008) so we do not use it.

In this paper, we further investigate this mismatch between a relatively high level of trust and underestimated level of trustworthiness, and propose a hypothesis that could explain it. Using a binary game, which, with respect to the senders' actions and payoffs, was very similar to that of Fetchenhauer and Dunning (2009) we were able to qualitatively reproduce some of their results. A prominent feature of our experiment design is that we elicit the players' expectations about their partners' behavior twice: once at the very moment they are making their choice and then shortly afterwards, in the post-experimental survey[3]. We found that many players overestimated the "trustworthiness" of their anonymous partner compared to an average experiment participant: while the average expected share of players who would send back was 0,42, the average expected probability of one's partner sending back was 0,53. One of the hypotheses that could possibly explain such irrational overconfidence in one's anonymous partner is "optimism bias" – people's proneness to think that they are less at risk of experiencing a negative event compared to others. In the economic literature, this phenomenon has been studied from the theoretical perspective, where it constitutes a specific case of "rational self-deception"), but our paper is the first to examine "optimism bias" in the context of trust, or, more generally, the mismatch between one's actions and stated expectations.

The rest of the paper is structured as follows. Section 2 describes the game we used and outlines the experiment procedure. Section 3 gives a very brief review of the psychological and economic literature on the nature of optimism bias and proposes a quantitative measure of this effect in the context of our experiment. In Section 4, we examine the correlation between the players' degree of optimism bias and their decision to trust, and investigate the relation between the players' expectations about the prevalence of trust and their expectations about the percentage of experiment participants who intend to send back. Section 5 summarizes our results.

2. Experiment procedure

The game that we used was similar to the binary trust game used by Fetchenhauer and Dunning (2008). In their game, the sender got an endowment of 5 units, which she could either keep to herself, or send to the receiver (in the latter case, the experimenter added another 15 units to the amount sent). The receiver could then either keep all 20 units to herself, or send 10 units back to her

[3] We know of only one other paper where such double elicitation of beliefs would be used for a one-shot game (He et al., 2015) – but since their experiment relied heavily on communication, which is entirely missing from our design, we can't meaningfully compare their results to ours.

partner. Each unit was equivalent to $1. Our game was very similar in the size of the payoffs and the choices available to the sender, but different in terms of choices available to the receiver.

Payoff structure for the Fetchenhauer & Dunning (2008) binary trust game

		Send back?	
		Y	N
Send?	Y	10; 10	0; 20
	N	5; 0	5; 0

Payoff structure for our game

		Send back?	
		Y	N
Send?	Y	10; 10	0; 15
	N	5; 5	5; 0

In the binary trust game used by Fetchenhauer and Dunning, "Not send back" was a weakly dominant strategy for the receiver. In our game, payoffs for this strategy have been reduced by 5 units, creating somewhat stronger incentives to send back. By doing this, we wanted to model the costs that would be incurred by an opportunistic business partner just to set up a fraud, and account for the fact that in most real-life economic interactions the decision to exploit your partner is, indeed, a risky one. We believe that this modification of the payoff structure doesn't make our game different from a binary trust game from the sender's point of view: the sender is still choosing between retaining her endowment for sure or facing a mixed prospect of either doubling it or losing it all at the will of the receiver. Therefore, a sender's decision of passing its endowment to the receiver in our game can reasonably be interpreted as a decision to trust, which allows meaningful comparisons to the vast literature on binary trust games in terms of what the senders do.

The receivers' behavior in our game is more difficult to interpret. It is definitely not comparable to the behavior of receivers in a classic trust game, where the receiver makes her decision while already knowing what the sender chose; the very salient reciprocity motive is seriously weakened if not eliminated altogether in our design. However, we still think that a receiver's decision to send back in our game can be interpreted as "trustworthiness" for those players who actually estimated the likelihood of their partner sending them money to be high.

To check for the possible influence of inequity aversion on the part of senders and loss aversion on the part of the receivers, we used two different descriptions of the game's payoff structure. In the "punishment" scenario, a receiver was said to have an initial endowment of 5 units, which he lost if he chose not to send anything back to the sender. In the "reward" scenario, a receiver was said to have an initial endowment of zero, but received a "reward" of 5 units for choosing to send back.

The experiment was run in 2012 in the National research university Higher School of Economics, Moscow, Russian Federation and involved 69 second-year undergraduate students of the world economy and international politics program. The whole procedure lasted for approximately one hour. After an oral debriefing, at which the experimenter explained the general rules, the participants were given printed instructions and answer sheets. Each participant also received a card with a code word, which the players used to sign the answer sheets. Payments were handed out by another experimenter, in sealed envelopes labeled with code words; the participant had to present her code word card to get the envelope. The experiment procedure was double blind: the participants had no way of finding out whom they was matched with, and the experimenters were unable to associate code words with specific participants' identities.

35 of the participants got the "punishment" version of the game instructions; another 34 got the "reward" version. Participants were told that, after they have made their choices, their answer sheets would be randomly matched into pairs, where one player will be randomly assigned the role of a sender and the other – the role of a receiver. On the answer sheet, each participant had to indicate (i) her choice in the role of a sender and in the role of a receiver, and (ii) her expectations about the likelihood that their anonymous partner would send/send back, on a base-5 scale ranging from "very unlikely" to "very likely"[4]. These answers were then recoded as 0 ("very unlikely"), 0,25, 0,5, 0,75 and 1 ("very likely").

Each participant had to indicate her strategy in both roles: that of a sender and that of a receiver.[5] Such designs are not uncommon in the literature on trust (see, e.g., Chaudhuri *et al.*, 2002, Burks *et al.*, 2003 or Fetchenhauer and Dunning,

[4] The choice of a base-5 scale with verbal description of probabilities was driven by (i) our wish to reduce the cognitive load and minimize noise in the expectations data (which was very prominent in our previous experiment with a similar game where we asked the players to give their estimates of probabilities as exact numbers) and (ii) the fact that our experiment participants didn't have a course in probability theory and presumably had weak background in statistics.

[5] Our game was, thus, a simultaneous one: choosing his strategy as sender, a player didn't know, how his receiver partner would act, and vice versa.

2008). Theoretically, they could promote higher levels of trust and trustworthiness: imagining herself in both roles may remind the player of the "golden rule" ("you should treat the other as you would like the other to treat yourself"). Surprisingly enough, empirical data shows the opposite (Burks et al., 2003).[6] As an explanation for this counterintuitive result, Burks *et al.* have suggested that equal probability of finding oneself in the role of a sender or a receiver could weaken a player's sense of responsibility for the welfare of his partner, making it easier to behave in an opportunistic way.

After filling and handing in their answer sheets, the participants got a post-experimental survey sheet where they were asked to predict the percentage of players who chose to send/send back, on a base-10 interval scale (0 to 10%, 10 to 20%, 20 to 30% etc.). These answers were then recoded as 0,05, 0,15, 0,25 etc. Accurate predictions were incentivized: a player got $2 for hitting the correct interval, and $1 for hitting an interval right below or above the correct one, so, a player could get an additional $1, $2, $3 or $4 depending on the accuracy of her forecasts. On average, our participants earned $9,65 (with a standard deviation of $4,7).

3. Optimism bias

3.1 Theories and empirical evidence

Optimism bias, first described by Weinstein (1980) and Perloff and Fetzer (1986) is a phenomenon well-known in the psychological literature, which consists in people's proneness to overestimate the probabilities of positive events and underestimate the probabilities of adverse events for themselves, compared to an average person. Well-known real-life examples of optimism bias are people underestimating their probability to become a crime victim, smokers underestimating their likelihood to develop lung cancer compared to other smokers, stock market traders underestimating their chances of facing losses compared to an average trader (Weinstein et al., 1996).[7] Interestingly enough, people's proneness to optimism bias doesn't seem to depend on their intelligence – e.g., a survey of faculty at the university of Nebraska showed 94% respondents to believe their abilities were "above average" (Klein, 2002).

[6] It must be noted that Burks et al. (2003) have used a classic, dynamic version of the trust game in continuous strategies, where the sender moves first and the receiver acts after observing the sender's move, so "trust" is measured by the proportion of the sender's endowment sent to the receiver and "trustworthiness" is measured as the proportion sent back to the sender.

[7] Note that optimism isn't necessarily detrimental to an individual's welfare. There is some evidence saying that optimists tend to work harder, retire later, save and invest more (Puri, Robinson, 2006).

The most popular psychological explanation of optimism bias, provided by Chambers and Windschitl (2004), is that when comparing their risk to that of others, people are egocentric in that they focus more on their own risk factors than on those of the peers to whom they are comparing. Weinstein (1985) also proved that by showing that reduction of such egocentrism seems to dampen the bias. Yurak and Vredenburg (1995) found that bias is more likely to occur when people compare themselves with aggregated targets such as "an average person" than with more individualized comparison targets such as a friend or even a randomly chosen person. Optimism bias has also been linked to a person's emotional state: for example, people are more likely to be optimistically biased when angry and less likely when fearful or sad (Lerner, Keltner, 2001; Salovey, Birnbaum, 1989). There are also reasons to believe that optimistic biases derive from motivational causes such as a need to protect self-esteem because people engage in numerous strategies to protect these and related beliefs when challenged (e.g., Boney-McCoy et al., 1999). There have also been some studies of physiological mechanisms behind optimism bias. For example, Sharot et al. (2007) discovered that the neural activity in the brain's mood centers was markedly higher when the subjects were imagining positive future events than when they were imagining negative future events.
The reasons underlying optimism bias have also been studied in the economic literature, where it is often perceived as a specific case of a more general phenomenon of rational self-deception. We can identify three general causes that economists proposed to explain its existence.

The first and most obvious cause is the hedonic one: people like to think favorably of themselves and their circumstances. It was used in a variety of economic models, first by Akerlof and Dickens (1982) who introduced it to explain the tendency of employees in dangerous professions to disregard safety by their wish to underestimate the risks they face, and then, in different contexts, by Rabin (1995), Weinberg (2006) and the well-known paper by Kőszegi (2006), where self-deception was a dynamic consequence of a person's unwillingness to look for information which hurts her self-esteem. A common feature of all these theories is that their focus is not on the causes of self-serving beliefs, but on their behavioral consequences.

The second potential cause of rational self-deception, introduced in the seminal paper of Bénabou and Tirole (2002) is the potential benefit that an individual with higher self-esteem level might get from looking better in the others' eyes.

The third ("motivational") cause, introduced in the same paper stems from the benefit of reaching more ambitious goals that people with high self-esteem tend to set for themselves. In the game-theoretic model developed by Bénabou and

Tirole, self-deception emerges as an equilibrium in a dynamic strategic interaction of two players: "current self" and "future self". The current self receives a signal characterizing its current ability, and can then bias that signal to motivate the future self to apply effort that will benefit both of them.

Considering the simultaneous, anonymous, one-shot nature of our game, it seems unlikely that the "optimism bias" observed in our data was driven by the players' wish to signal something to their partners. "Motivational" cause seems just as unlikely – in a one-shot game like ours, a participant's choice could hardly influence their future to a significant degree.

In sum, although experimental economics literature doesn't say anything on optimism bias in the context of trust, optimism bias can potentially explain both a part of the many deviations from the Nash equilibrium predictions in trust games and the irrationally high levels of trust given low expected trustworthiness that we see in some experiments. In the light of optimism bias, this behavior would be explained by some participants expecting at least some part of the other players to be trustworthy and overestimating their own personal chances of meeting a trustworthy partner.

3.2 Measuring optimism bias

There are two common approaches to the measurement of optimism bias. A direct approach would imply asking people to compare their own likelihood to succeed with that of the other people (in our case, we could ask participants to compare their probability of getting money back with that of other participants, with answers ranging from “significantly below average” to “significantly above average” with “average” as the midpoint). If the majority of answers fell into are “above average” category, we could suggest the presence of an optimism bias (assuming that our sample is representative of the reference group, and that actual risk is not highly skewed).

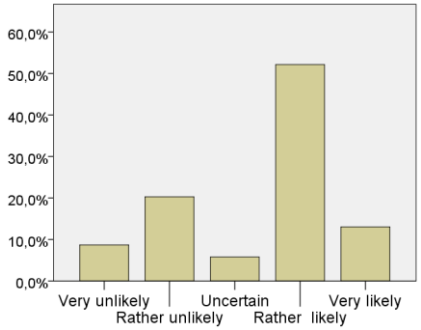
The indirect approach that we used in our study would require the participants to give separate estimates of their own risk and the risk that an average person would be facing; then these two would be compared. This method of measuring optimism bias is considered to be more neutral, and it gives somewhat lower estimates of the degree of optimism bias (Otten, van der Pligt, 1996). As described in Section 2, each participant was asked to state her expectations about the others' behavior twice – once at the very moment of choice (on a base-5 scale), and then in the post-experimental survey (on a base-10 scale). The histograms below illustrate the distributions of these estimates.

Visually, there is no immediate difference between the senders' expectations about the likelihood of trust on behalf of their personal partner and their

expectations about the prevalence of trusting behavior in the population: Graphs 1 and 3 show roughly the same distributions. However, it can be observed that the participants of our experiments felt significantly more optimistic about the likelihood of their personal (although anonymous and randomly picked) partner sending them back 10 units (see Graph 2) than about the prevalence of such behavior in the population (Graph 4).

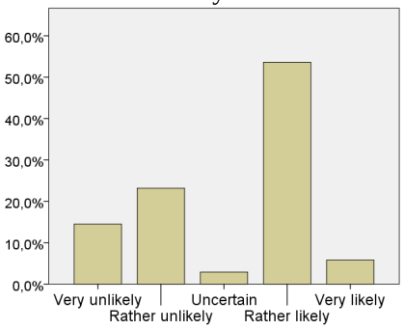
Graph 1

"Estimate the likelihood that your partner will send you 5 units?"



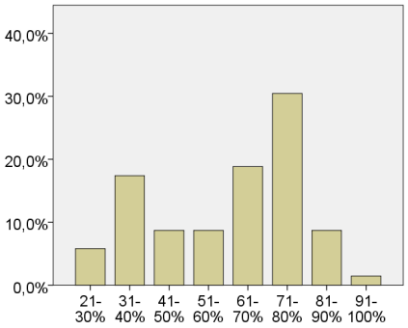
Graph 2

"Estimate the likelihood that your partner will decide to send 10 units back to you?"



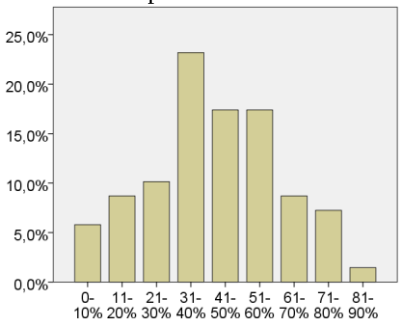
Graph 3

"Estimate the percentage of players that will send 5 units to their partners?"



Graph 4

"Estimate the percentage of players that will send 10 units back to their partners?"



The size of the difference between the stated likelihood of receiving 10 units back from one's partner and the expected percentage of receivers that will send 10 units back can be used as a quantitative measure of this optimism bias. If we recode the base-5 and base-10 answers of our players as described in the end of Section 2 and compare the averages, we can see that the average stated probability of one's partner sending back (0,53) is bigger than the average stated percentage of receivers that send back (0,42), and this difference is statistically significant (Wilcoxon's Z-statistic is -2,906, p-value = 0,004).[8]

It is important to note that the difference between the stated probability of one's partner sending back and the expected percentage of receivers that will send back was stronger for those players who actually chose to trust their partners ($Z = -4{,}152$, p-value $< 0{,}001$), compared to those who chose not to trust ($Z = -2{,}812$, p-value = 0,005). This difference in the degree of optimism bias in those who trusted and those who didn't suggests that optimism bias could actually influence the players' decision to trust their partner. We will examine this deeper in the next section.

4. Optimism bias and trust

4.1 Expectations, optimism bias and the decision to trust

Our data shows some evidence of optimism bias in the expectations about the likelihood of the potential partner sending them back 10 units. To check if this bias has a statistically significant correlation with the player's decision to trust, controlled for the influence of other parameters of the experiment, we estimate the following equation:

$$P(SEND=1) = \Phi(\alpha_0 + \alpha_1 BIAS + \alpha_2 EST\_RETURNRATE + \alpha_3 EST\_SENDRATE + \alpha_4 FEM + \alpha_5 REC\_END\_P)$$

where:

Φ – normal distribution function,

SEND – equals 1, if (in the role of sender) player *i* chose to trust her partner.

BIAS – the difference between the expected probability of player *i*'s own partner sending back and the expected percentage of receivers player *i* thinks will send back.

[8] There was no statistically significant difference in the average stated probability of trusting behavior on behalf of one's partner and the average stated percentage of trusting players.

EST_RETURNRATE – expected percentage of receivers player *i* thinks will send back.

EST_SENDRATE – the percentage of players that player *i* thinks will trust (i.e., send 5 units) their partner,

FEM – 1 for female.

REC_END_P – 1, if the instruction received by player *i* said that the receiver initially had the same endowment as sender (5 units) but faced a "cost" of 5 units for the mere intention to keep whatever is sent to him to himself.

Our hypotheses with respect to the coefficients' signs are:

i) Is a greater degree of optimism bias positively correlated with a greater likelihood of trusting one's partner?

At the moment of writing this paper, we could not find a reference to any study of optimism bias in the context of the trust game or its varieties in the literature. Intuitively, we expect that optimism bias will be positively correlated with the probability of trusting one's partner. We also control for the expected percentage of receivers player *i* thinks will send back (EST_RETURNRATE).

ii) Is the decision to trust one's partner correlated with the expectations about others' decision to trust?

There are at least two reasons to expect a positive correlation between a player's decision to trust and her expectations about other players' decision to trust. First, when trying to predict others' behavior, people often think how would they behave in their place (projection bias). This leads to a potential bias in expectations: people who are more prone to trust may overestimate the prevalence of trusting behavior in others. Second, players' behavior could be influenced by their desire to conform to a perceived social norm: if we think that most of our peers trust their partners, we may view trust as "the right thing to do".

These reasons suggest two directly opposite causality relations between expectations and trust: whereas the projection bias suggests that personal inclination to trust causes higher expectations about the prevalence of trusting behavior in others, "conformism" suggests that a subjective belief that many people exhibit trust may induce a person to trust her partner as well. Irrespective of the relative importance of these motives, though, we have a reason to expect a positive correlation here.

iii) Is the player's decision to trust affected by gender?

The literature generally tells that male players exhibit more trust in the trust game[9] than females (Buchan et al., 2008; Croson, Gneezy, 2009; Johnson, Mislin, 2011). The principal explanation is that females tend to be more risk-averse.

iv) Is the player's decision to trust affected by her partner's endowment?

From the sender's point of view, the principal difference between the two versions of the game description we used is in the initial endowment. In the "punishment" scenario, both players were said to have an initial endowment of 5 units, while in the "reward" scenario, sender had an endowment of 5 and the receiver had an initial endowment of zero. As suggested by economic theories of prosocial behavior that are based on inequality aversion[10], this could induce the sender to "share" with her "deprived" partner, in the hope of ultimately attaining an equitable (10, 10) distribution of payoffs. Results of the meta-analysis of over 150 experiments with different versions of the trust game (Johnson, Mislin, 2011) indicate that trust was negatively correlated with the size of the receiver's initial endowment[11], although this result was not robust. As for our experiment, which is close to the binary version of the trust game, we don't expect inequality aversion to be a very significant factor. The reason is that, although equitable (10, 10) outcome is theoretically possible, sending the receiver 5 units just for the hope of reducing the inequality could just as well lead to an outcome of (0, 15) – that is, even greater inequality and sender's disadvantage.

With this taken into account, we expect a negative sign of α_5, although its statistical significance could be weak. Table 1 below summarizes the results.

Table 1. The results of probit regression

Variable	Coefficient	St.err.	z-statistic	P-value	Marginal effect
const	– 1,780	0,958	– 1,858	0,063	
BIAS	5,192	2,193	2,367	0,018	0.483
EST_RETURNRATE	2,410	1,879	1,282	0,199	0.224
EST_SENDRATE	4,375	1,986	2,203	0,027	0.407
FEM	0,994	0,726	1,369	0,171	0.093
REC_END_P	– 1,315	0,702	– 1,872	0,061	– 0.122
Avg. value of the dependent variable		0,826			
Log. likelihood		– 11,778			

[9] Or its continuous-strategies version - the "Investment game".

[10] See Fehr and Schmidt (2001) for a useful review.

[11] A similar influence was observed in the behavior of players in other games. For instance, in the "Dictator" game most people gave less to their partner when their initial endowments were closer to each other, and gave nothing when their initial endowments were equal (Korenok et al., 2008).

As Table 1 suggests, a positive and statistically significant (5%) influence of BIAS doesn't allow us to reject the hypothesis that optimism bias increased the likelihood of our players to trust their partners in the role of a sender. Thus, optimism bias may partially explain both the divergence of players' behavior from the Nash equilibrium predictions and the level of trust which is too high, given the players' stated expectations about the behavior of an average population member. An attempt to separately control for the expected percentage of receivers that would send back (EST_RETURNRATE) didn't reveal any statistically significant correlation with the decision to trust.

In line with our conjectures above, a player's decision to trust shows a positive and statistically significant (5%) correlation with her expectations about other players' decision to trust (EST_SENDRATE), although our data is insufficient to judge on the existence and direction of causality here.

We can also observe a negative but less statistically significant (10%) correlation between trust and REC_END_P, meaning that players whose experiment instructions said that initially both the sender and the receiver were endowed equally (5 units) were less likely to send 5 units to their partner as senders than players whose instructions said that receiver initially had nothing. This results generally conforms with what we find in the existing literature on trust games.

Somewhat surprisingly, the gender dummy (FEM) doesn't have a statistically significant correlation with trust.

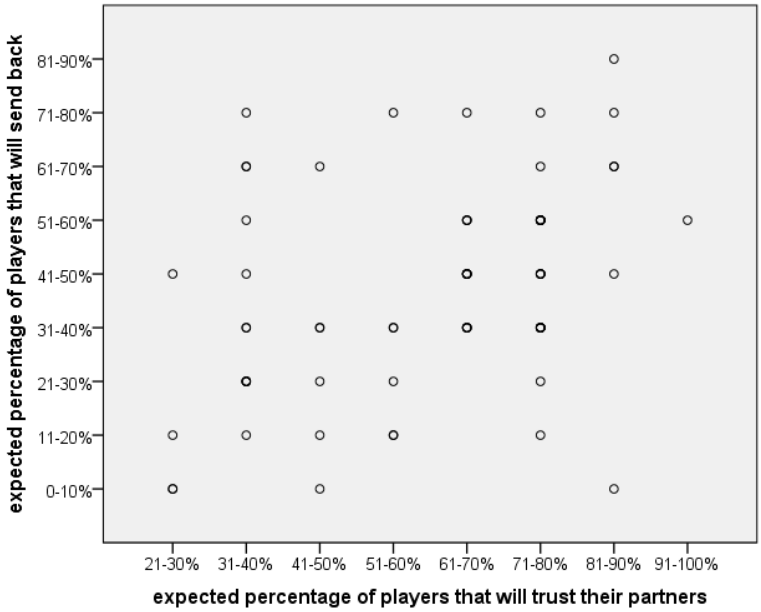
4.2 Expectations about trust and the percentage of receivers sending back

Intuitively, a person's disposition to trust and her disposition to send back should be positively correlated – and this is what we see in the experimental literature on trust games (Kovacs, Willinger, 2010). Looking into the behavior of the same people in the role of senders and receivers in the trust game, these authors found that i) the share that the person sent back in the role of a receiver was positively correlated with the amount sent in the role of a sender, and ii) players who demonstrated a higher level of trust also demonstrated a higher level of trustworthiness. On the other hand, Chaudhuri and Gangadharan (2007) reported that the level of trustworthiness among the players who trusted much wasn't greater than among players who trusted little, but found trustworthy players to be more trustful. This can be seen as evidence in favor of a hypothesis that trustworthiness increases trust, but not vice versa. The results received by Glaeser et al. (1999) say that the size of the amount sent to the receiver has a positive and statistically significant (although not large) effect on the share that the receivers sent back. Experiments with other versions of the trust game show

evidence of positive correlation between the amount sent and the amount returned (Güth et al., 2001; Bellemare, Kroeger, 2007; Schotter, Sopher, 2006; Bornhorst et al., 2010). But does a person who thinks most of her partners are trustworthy also think that most of her partners are more trustful? This wouldn't be too difficult to rationalize – for instance, a person who thinks most people are trustworthy would trust her partner and think, due to projection bias, than others share his opinion and will act the same as she does.

Graph 5 below shows the joint distribution of the players' expectations about the percentage of the population that will trust their partners and the percentage that will send back. Indeed, our results show significant positive correlation between them (Spearman's rank correlation coefficient equals 0,540 and is statistically significant on 1% level).

Graph 5. Joint distribution of the players' expectations about the percentage of population that would trust and the percentage that would send back.



5. Conclusions

Our results suggest that people's decision to trust in the trust game may be partially driven by the excessive optimism (optimism bias) that they hold

towards their particular partner, as opposed to an average member of the population (a version that, to the best of our knowledge, hasn't been discussed in the economic literature). An additional advantage of this hypothesis over the other ones is that it also helps to explain levels of trust that are irrationally high, given the players' stated expectations about the average trustworthiness of their potential partners.

Another important result that our data demonstrates is a strong positive correlation between one's decision to trust a partner and the expected prevalence of trusting behavior in the population. A similar correlation was observed between the players' own decision to send back and their expectation about the percentage of other players sending back. The direction of causality here is clearly ambiguous, and could be the subject of future research. On one hand, this positive correlation could stem from the players' desire to follow the majority and behave like they expect most other people will behave. On the other hand, it could be a result of projection bias – people often try to predict others' behavior by imagining how they would behave in their place.

We have also discovered a strong positive correlation between players' expectations about the overall prevalence of trusting behavior in the population and the expected percentage of receivers that would send back. This could possibly be explained by the fact that optimistic players, who feel sure that most people will be kind and send back, choose to trust their personal partner and (due to projection bias) expect the others to do the same.

In contrast with most of the literature on trust games, our data didn't show a significant influence of gender on a player's decision to trust.

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