

FRANCESCO FARINA[§]
University of Siena

NIALL O'HIGGINS
University of Salerno

PATRIZIA SBRIGLIA
University of Naples II

***Suit the action to the word, the word to the action*¹:**
ELICITING MOTIVES FOR TRUST AND RECIPROCITY BY
ATTITUDINAL AND BEHAVIOURAL MEASURES

[§] Corresponding author: Francesco Farina, Department of Economic Policy, Finance and Development, Faculty of Economics "R. Goodwin", University of Siena, P.zza S. Francesco 7, 53100 Siena (Italy), tel. +39.0577.232637; fax: +39.0577.232793; e-mail address: farina@unisi.it.

¹ Shakespeare, Hamlet, Act 3, Scene 2, 1601.

1.Introduction

In the words of James Coleman, “social capital (...) is embodied in the *relations* among persons” (Coleman, 1990, p.304; italics in the text). Two well-known primitives of social capital, perhaps the most important ones, are the disposition to trust and reciprocate exhibited in social life. To investigate relations among persons we may rely on attitudinal and behavioural evidence. As for the first, the statistical treatment of agents’ declarations of compliance with social values collected by value surveys reveal whether a society is well- or poorly-behaved. As for the second, in experiments conducted on the Trust Game the behaviour of players often deviates from the Nash solution of the first mover sending nothing (the sender neglects the sub-game perfect strategy profile and sends a positive amount, and the respondent renounces his dominant strategy and sends back a positive amount).

The main difference between experimental measures of trust or trustworthiness and survey based information arises from the fact that the latter consist of each agent’s self-evaluation of his trusting attitude as a person and of being trustworthy as a participant in his social environment, while the former directly identify the two (or more) players’ behaviour through their social interaction. Hence, the reason why attitudinal survey questions as reported in the World Values Survey (WVS) or European Values Survey (EVS) are often regarded as inefficient indicators of trust is that they lack the behavioural underpinnings that one might desire when measuring trust (Putnam, 1995). The concrete expression of the relational feature is peculiar to the behaviour of subjects playing the Trust Game in the laboratory. When comparing results stemming from these two empirical research methods, the asymmetry between the attitudinal and the behavioural measures, that is the lack of a strategic setting in the former and its presence in the latter, has to be carefully tackled.

In their seminal paper, Glaeser et al. (2000) analysed measures of self-reported trust and trustworthiness, comparing the attitudinal measure with the behavioural evidence stemming from experiments conducted using a version of the Trust Game (called the Investment Game, Berg et al., 1995). Subsequent research has provided further evidence on the extent to which other-regarding behaviour observed in laboratory experiments can be traced back to trust and trustworthiness as declared in answers to questionnaires such as the WVS or ESV.²

² This is not to say that answers to questionnaire convey a “pure” disposition towards risk-taking. Attention has to be paid to possible biases embedded in Value Surveys. The most important ones are: (i) the tendency to set up an hypothetical situation in responding to a questionnaire could lead the subject to overlook possible threats just because he does not find himself in a real setting; (ii) the tendency to self-idealisation, so that the subject may overestimate his

To summarize, Glaeser et al. (2000) reported that attitudinal survey questions do not predict trusting behaviour by senders in experiments; on the contrary, in their study answers to the WVS questionnaire appear to be correlated to respondents' behaviour, thus suggesting that the attitudinal measure is related not to trust but to trustworthiness. Lazzarini et al. (2005) presents similar experimental evidence. Sapienza et al. (2007) find a correlation between each sender's actual behaviour in the experiment and each sender's declared beliefs about the amount the respondent is willing to return, which can be labelled "expected trustworthiness". On the other hand, no correlation between senders' actual behaviour and attitudinal trust or expected trustworthiness was found by Fehr et al. (2003), who suggest that to some extent attitudinal trust predicts behavioural trust. A natural candidate for the explanation of diverging results is the variety of the experimental settings. For instance, Sapienza et al. (2007) notice the peculiarity of the Fehr et al. (2003) experimental evidence, where heterogeneity across German households as players in the TG impedes the trustor from identifying himself with the trustee, thus causing a deviation of the experimental evidence from the WVS's attitudinal evidence.

As regards the violation of orthodox rational choice in Trust Game experiments, these have largely been explained through evidence of the presence of other-regarding preferences combined with the maximization of material pay-offs. When each player's behaviour conforms to fairness, the maximization of the utility of the two players depends on the sum of their respective payoffs (Rabin, 1993); similarly, when behaviour reflects inequality aversion it entails the minimization of the distance between their respective payoffs (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000). The idea is that the social relations in which the two players are involved in the laboratory embed a disposition to trust and reciprocate.

In the first part of the paper, the correlation between attitudinal and behavioural measures of trust and trustworthiness is investigated, in order to evaluate whether each subject's self-reported degree of trust and trustworthiness is reflected by his actual behaviour. We estimate models similar to those employed by Glaeser to look at the relation between attitudinal and behavioural measures of trust and trustworthiness (see Section 2). Overall, our results are close to those of Fehr et al. (2003) in which attitudinal trust predicts behavioural trust to some extent.

Many papers (most notably Charness and Rabin, 2005 and Cox, 2004), however, have suggested that results from the aforementioned Trust Game experimental studies are problematic because they make no attempt to disentangle "strategic" from "other-regarding" motives³.

standing in terms of moral values; (iii) the lack of a gain may induce the subject to give loose answers. See, for example, Ciriolo (2007).

³ An attempt to elicit which one out of two motives for trusting and reciprocating behaviour has been put forward by using two different appraisals of the Trust Game in extensive form by McCabe et al. (2003). When an outside option is inserted in the extensive form, a first mover who discards the Nash play and sends a certain amount to the second player

In the second part of the paper, we draw on the methodology suggested by Cox (2004) to compare the strategic environment of the Trust Game with the non-strategic environment of the Dictator Game (see section 3). The “other-regarding” motive (the trustor’s and the trustee’s intention to express fairness in the social relation) is disentangled from the “strategic” motive (the intention of the trustor to “invest” in the relation with the trustee and the trustee’s strategic reaction). Note that, strictly speaking, in a one-shot game the term "strategic" is not usually employed to indicate the respondent's motive. Yet, for the sake of simplifying definitions and avoiding two different adjectives for the senders and the respondents, we have chosen to define as "strategic" also the behaviour of a respondent who reacts by returning a low amount because he is disappointed by the amount sent by the sender⁴. In the literature, this type of reactive behaviour is often referred to as "negative reciprocity", as opposed to the "positive reciprocity" exhibited by the respondent returning a large amount since he is satisfied by the amount received by the sender.

The statistical evaluation of senders’ and respondents’ behaviour in Trust and Dictator Games suggests that heterogeneity is playing an important role. We decided that the information contained in the attitudinal data could help in making sense of variability in behaviour across the experimental subjects. Thus, in the third part of the paper, we employ the “words” of subjects in order to evaluate their “actions”; we investigate in what way the “type” of experimental subject, elicited by the statistical treatment of answers given in filling the questionnaire, help in interpreting the subsequent behaviour in experimental sessions⁵. Answers to a questionnaire are given in the absence of a relational setting, whilst the experimental Trust Game may reflect both risk-taking and other-regarding behavioural motivations. On the basis of their questionnaire responses, we identify individuals as trusting or prudent and trustworthy or untrustworthy. We then analyse the behaviour of the different ‘types’ of individual separately. The results provide insights about the distance of the “relation-loaded” actual experimental behaviour from the behaviour expected on the basis of the information conveyed by the “aseptic” filling of the sheets of the questionnaire. In section 4, our question is as follows: as each subject’s self-reported degree of trust and trustworthiness should be reflected by his actual behaviour once controlling for his “type”, is his declared disposition to trust and reciprocate a proxy of his degree of trust and trustworthiness as expressed in playing the Trust Game? We will see that to answer this question requires digging deeper into the extent to which

makes a “voluntary” choice of “investing” in the relationship, while the first player’s choice in the traditional design can be labelled “involuntary”. Similarly to the first mover of the Centipede, the trustor reveals the intention to bear a risk (of getting a payoff which is lower than the outside option) and the trustee may then be moved by a sentiment of reciprocation (and also of gratefulness, as his self-esteem is strengthened by the other player’s recognition of his trustworthiness). Therefore, the “outside option” example shows that the intention to “invest” in the Trust Game in extensive form revealed by a move could conceal different motivations.

⁴ This is in line with the results found by Farina & Sbriglia (2008) using the Centipede game.

⁵ We decided that the noise involved in answering to questions would have been lower before than after having the subjects playing the Trust Game.

different attitudinal ‘types’ manifest or do not manifest trust, and comply or do not comply with civic virtues in playing as trustor or as trustee respectively. Section 5 concludes.

2. Model 1: A comparison between attitudinal and behavioural measures

2.1 The standard Trust Game experimental design

The first question we address here is the replication, in an Italian environment, of a similar experimental design to that implemented by Glaeser et al. (2000) for the United States and Lazzarini et al. (2005) for Brazil, in order to test the relationship between two players' behaviour and their questionnaire answers. These sessions were conducted in Siena and Salerno, in May and July 2007. Overall, 168 students participated in the sessions of this first part of the experiment.

All sessions were divided into two different stages. In the first stage, the subjects were asked to fill in a questionnaire in which some of the WVS questions were reproduced. The rationale of our selection of WVS questions is to make the questionnaire gather information on what may be called the subject's degree of trust (the disposition to be trusting) and trustworthiness (the disposition to be trustworthy and then inclined to reciprocate). Therefore, in addition to basic information on the characteristics of subjects, we asked all subjects - those who played as senders and those who played as respondents - to answer both the standard questions from the World Values Survey eliciting the general level of trust of the subject ("Generally speaking, would you say that most people can be trusted, or that you can never be too careful when dealing with others?" (v47), and "Do you think that most people would try to take advantage of you..." (v23)), as well as some more specific questions ("is it ever justified, to not pay taxes, to tell lies, to not pay for your ticket on the bus" and so on), eliciting the opinion of the subject about compliance with civic values. The complete set of trust/trustworthiness questions that appeared on the students' computer screens are given in an appendix.

As for the second stage, as in previous analyses of behavioural trust, we adopted the experimental setting of the Trust (Investment) Game (Berg *et al.* 1995). This game involves a bargaining context in which two players (Senders and Respondents) decide how to share a well defined amount of money. At the first step, Senders make an investment decision transferring a certain number of experimental tokens to Respondents. The number of tokens is then tripled by the experimenter, so that Respondents receive three times the amount of tokens initially sent. At the second step, Respondents decide how many tokens to return to Senders. The standard design was adopted, in as much as subjects were randomly divided into two groups (Respondents and Senders) once they had completed the questionnaire, and then the game was played according to the rules described above.

There are three main methodological differences between our work and those of Glaeser *et al.*, 2000 and Lazzarini *et al.*, 2005. First, we set the multiplying factor – α – equal to 3, as in the original design by Berg *et al.* (1995), rather than 2, as in the two above mentioned papers. The reason is that the higher value of α coefficient places a high weight on trustworthiness, which can then be better monitored. Second, in contrast to Lazzarini *et al.* (2005), where subjects were playing in face-to-face interactions, we adopted a double-blind anonymous partnership protocol: Senders and Respondents were selected randomly and anonymously by the computer and no personal communication was allowed during the sessions.⁶ The purpose here was to prevent any existing social ties or prior information sharing by subjects from affecting the results. We thus attempted to minimise disturbances due to the interplay between attitudes resulting from particular cultural values and behaviour induced by the specific experimental setting in order to preserve comparison with Trust Game experiments conducted in very different cultural and social environments such as the United States and Brazil. Third, throughout the paper we employ Poisson models to estimate the relationships with tests and, where necessary, corrections for over-dispersion and truncation at zero. We feel this is strictly speaking a more appropriate approach than either OLS - used by Glaeser *et al.* (2000) - or the Tobit model - used by Cox (2004) - given that, implicitly or explicitly, the amounts sent and returned take integer values. The use of OLS changes the results hardly at all. As regards the Tobit, the situation is a little more complicated and is returned to below.

2.2 Empirical results

Table 1 presents the results of estimating Model 1: estimation of Poisson models of behaviour in the Trust Game including as explanatory variables attitudinal measures of trust and trustworthiness based on answers to questions concerning each agent's self-evaluation of his trusting attitude as a person and of being trustworthy as a participant in his social environment. We are particularly concerned here with the relation between: (i) attitudinal trust – as reflected in answers to questions drawn from the EVS - and senders behavioural trust (the amount sent); and, (ii) attitudinal trustworthiness – again judged using EVS questions – and respondents' behavioural trustworthiness (the amount sent back).

Table 1 about here

⁶ In Glaeser *et al.* (2000), friends were allowed to participate in the same trust game. The effect of friendship or, more generally, of a previous social relationship on trusting behaviour was however unclear.

For both senders and recipients, two models were estimated. The first included a range of indices capturing different aspects of trust and trustworthiness; the second used summary indices of trust and trustworthiness⁷. As regards senders, we find that attitudinal trust is a moderately good predictor of a disposition to trust in behaviour. When included as a single index its effect is positive and statistically significant. When the range of the attitudinal trust indicators are included, trust in family and trust in political parties – somewhat rare in Italy – appear to be significant predictors of trusting behaviour. The effects of attitudinal trustworthiness are more mixed. The overall index suggests no effect, however, some indicators, and in particular, the unacceptability of tax avoidance – are positively correlated with the amount sent⁸. Often however, untrustworthiness in attitudes tends to increase the amount sent. The higher the score on questions such as it being justified to lie in one's own interests or to accept illegal payments - which suggest a moral acceptance of cheating - the more they send. One possible explanation for this points to the relation between these indicators of (un)trustworthiness and opportunistic and/or risk-loving behaviour amongst senders.

As regards respondents, they exhibit a disposition to reward fair senders, as well as to punish free-riders but at a personal benefit (“the less you send me, the less you deserve to receive back from me”). However, attitudinal trust is not related to trustworthy behaviour in terms of the amounts sent back. Indeed, the coefficient is negative, albeit not statistically significant. The summary index of trustworthiness has the ‘right’ sign: the more respondents declare a moral acceptance of lack of civic values and, in particular, literal free-riding behaviour (i.e. to travel on the bus without ticket), the less money they send back. Also this index is not statistically significant, but some single indicators of trustworthiness do predict trustworthy behaviour.

As regards the other variables included reflecting individual characteristics, one may observe that, in line with the findings in the literature⁹ women are less disposed to send (or invest) but more inclined to send back (or reciprocate), although the latter effect is not statistically significant. Age seems to operate in the opposite direction with amounts sent increasing and amounts sent back falling with age, although again the effect is only statistically significant for senders.

Thus the results presented here contrast to those of Glaeser et al. (2000) in that we find no correlation between attitudinal trust and behavioural trustworthiness and to those of Sapienza et al.

⁷ In line with Glaeser et al. (2000), the index of trust is based on one question: “Most people a) try to take advantage of you every time they can; or, b) try to behave correctly towards you” with a possible response from 1 (they always try to take advantage) to 10 (they always try to behave correctly), the index of trustworthiness is the sum of responses to the eight ‘trustworthiness’ or civic values questions.

⁸ Note that the index of trustworthiness is actually an inverse index – an index of ‘untrustworthiness’ if one prefers. The higher the value of the index, the more acceptable to the person is the ‘untrustworthy’ behaviour to which the question refers. Thus, a positive coefficient reflects a negative correlation between trustworthiness and the amount sent (or sent back).

⁹ See, for example, Innocenti & Paziienza (2006) for a review.

(2007), as we find no correlation between behavioural trust and the attitudinal “expected trustworthiness”. Rather, in line with Fehr et al.(2003), attitudinal trust appears to be moderately correlated with behavioural trust. Thus, our initial results from the first model, suggest a relation between attitudinal and behavioural trust but no clear relation between attitudinal and behavioural trustworthiness, nor indeed between attitudinal trust and behavioural trustworthiness. Indeed, the a qualitative difference between attitudinal and behavioural measures has to be underlined. In the act of filling a questionnaire, subjects lack any psychological involvement, which is instead undeniably at work in interacting with their opponents.

3. Model 2: Searching for the real motive underlying behavioural trust and reciprocity

3.1 The triadic experimental design

One possible reason for the estimated lack of relation between attitudinal and behavioural measures of trust and trustworthiness lies in the ambiguity embedded in the experimental setting. In replicating for the Italian environment a similar experimental design to that implemented by Glaeser et al. (2000) for the United States and Lazzarini et al. (2005) for Brazil we have not yet addressed the issue we presented in the introduction: the need to disentangle the real motivations from the two possible ones – the “risk-taking” or the “other-regarding” motives - of players’ behaviour in Trust Game experiments.

An experimental design in which positive reciprocal behaviour responding to a generous action is neatly separated from other-regarding (social) preferences has been constructed by Cox (2004). Cox modified the well-known investment game by Berg, Dickhaut and McCabe (1995) in order to obtain information on whether it is the “trust/reciprocity” motive or the “social preferences” motive which underlies players’ behaviour. We drew on the ‘Cox’ experimental design to conduct a second set of experimental sessions in December 2007, the subjects being undergraduate students at the University of Siena. The students were randomly divided in two groups (Senders and Respondents, respectively), and each of them was denoted by the number of the computer and the number of the session in which he seated. As before, and in contrast to Glaeser et al. (2000) and Lazzarini et al. (2005), the double-blind procedure, that is anonymity with respect to both the other player and the experimenter, was insured.

The so-called “triadic” design by Cox comprises three treatments: 1) a Trust (Investment) Game (TG), in which both the senders and the Respondents were endowed with ten tokens (the rate of change was 1 token = €1); the trustees had to decide whether to send back some, all, or part of his endowment; 2) a Dictator Game (DG1), in which the trustor has to decide whether to send or not to send (all, or part of) his endowment to the other player - in the Instructions, both players were informed that the sender would by no means have had the opportunity to interact with the other player, as this latter player had to remain passive; and, 3) a modified Dictator Game (DG2), in which a second mover acting as Respondent had to send back or not to send back (all, or part of) the amount that he has received by a first-mover acting as sender (which could of course also be zero), which the experimenter had multiplied by three. In the Instructions for DG2, the Respondent is made aware that the amount received was sent not by his opponent in the game he was playing, but

by another unknown player whom he would not have had the opportunity to interact with.¹⁰ The 194 students involved in our experiment, slightly more than those involved in the original Cox experiment, formed 33 pairs in the first two treatments and 31 pairs in the last one. In order to preserve independence in behaviour, each subject participated in only one session.

The subjects were also asked to fill out the same questionnaire used in Model 1. Coherently with the arguments presented in section 2, we do not follow Cox (2004) in differentiating questions between the two groups of players. In fact, we do not think it appropriate to distinguish between the opinion of the subject when he is playing as a Sender and when he is playing as a Respondent. The elicitation of trustors' opinions about the others' degree of trustworthiness (in addition to information on their degree of trust) allows us to deepen our understanding about the motives underlying the "high" or "low" amount the trustors sent. Similarly, to elicit trustees' attitudes to trust (in addition to information on their degree of trustworthiness) allows us to deepen our understanding about the motives underlying the "high" or "low" amount the trustees returned. As will be understood from the following, the attitudinal evidence about both trust and trustworthiness can be instrumental in separating out different motivations stemming from the behavioural evidence.

3.2 Empirical results

When individuals are ranked according to the amounts sent and received back in each treatment, we are in the position to disentangle the individuals' disposition towards trust and reciprocity by comparing the behaviour determined by social preferences in the non-strategic interaction of treatments 2 and 3 with the strategic setting in which the two players are posited in the TG. The sender's strategic behaviour in the TG results from the comparison of the amount sent by the trustor in the TG with the other-regarding preferences exhibited by the analogous player in the DG1 which is free from strategic considerations (figures 1 & 2). Similarly, a measure of the respondent's reciprocating behaviour results from the comparison between the respondent's strategic behaviour in the TG and the other-regarding preferences exhibited by the analogous player in the DG2 setting free from strategic considerations (figure 2).

Figures 1, 2 & 3 about here

¹⁰ All Instructions sheets are available at request from the corresponding author.

The comparison of the results of the TG with the DG1 allows us to infer a measure of the sender's possible trusting behaviour (figure 1). On average, the amount sent in the TG is greater than the amount sent in the DG1 (figure 2), and the amount sent back in the TG is lower than the amount returned in the DG2 (figure 3). In the latter figure, the blue bars show the amount sent back in the TG and the red bars show the amount sent back in the DG2. In general, the subjects playing as first movers send amounts lower than in the experimental sessions performed by Cox (see Table 4). On the one hand, in contrast to Cox's results the amount sent by the trustor is positive in almost all cases (a positive amount was sent in 31 out of 33 cases in our experiments *vis-à-vis* 26 out of 32 in those of Cox), and a zero amount sent is much less frequent than in the Cox experiment. On the other hand, compared to the Cox sessions the frequencies of players in the TG are much higher at small as opposed to large amounts sent (the number of first movers who send less than 5 tokens is 23 *vis-à-vis* 4; the number of first movers who send all the 10 tokens is only 2 *vis-à-vis* 13). As for the second movers, while a zero return occurs only 4 times *vis-à-vis* 9 times in Cox's experiment. While in the DG2 the trustee lacks any emotional response to his opponent, in the TG he reacts to the trustor's miserliness.

A graphical comparison of TG and DG1 for senders and TG and DG2 for respondents, tends to suggest a greater inclination towards strategic *vis-à-vis* other-regarding behaviour in our experiment than in Cox's. Yet, looking at differences in means, the "investing (risk-taking)" motive appears actually weaker in our case. In common with Cox, we find that the amount sent in TG is in excess of that sent in DG1, but on average the values were lower and the difference smaller than in the Cox's sample (the mean amount sent in our experiment was \$3.58 in the TG and \$3.24 in the DG1, whereas it was \$5.97 in TG and \$3.63 in the Cox's experiment). As for the amounts returned, the average was higher in our experiment (\$5.18 and \$5.72 compared to \$4.94 and \$2.06 in Cox's experiment), but again the difference between Trust and Dictator games was smaller¹¹.

In order to deepen our understanding, we first performed a similar exercise to that undertaken in Table 1, adding a 'Dictator Game' dummy variable to Model 1 to cope with the triadic experimental design¹². The results – reported in the appendix, table A2 - are qualitatively similar to before, however, there are some significant differences of detail¹³.

The most striking result concerns the coefficient on the dictator game dummy. For the most part, although not statistically significant, this coefficient is, as one might expect, negative.

¹¹ Indeed, in neither case did a simple t-test reveal a statistically significant difference in means.

¹² Note that the experimental design was slightly different in this case. In line with the Cox design - not only the first but also the second mover is endowed with 10 tokens.

¹³ The coefficient on the general trust index and the amounts both sent and sent back are both positive but not statistically significant. The effect of personal characteristics are somewhat better identified but other than that, for the most part similar to the first model. The negative coefficient for economics students is statistically significant here.

Looking at respondents, however, one can observe that, according to the richness of the variables included to capture attitudinal trust and trustworthiness, the coefficient changes from negative (in the full model) to positive (in the model with just summary trust and trustworthiness indices). This would suggest that there is an interaction between the game design (dictator vs. trust) and the respondents' trust and/or trustworthiness. Indeed we will return to this point below.

In order to disentangle the strategic from the other-regarding motives for respondents, we applied a model similar to that reported in Cox (2004). As before, given that the dependent variable only takes integer values, we apply a Poisson model (rather than the Tobit model used by Cox, 2004) testing for over-dispersion and a statistically significant hurdle (Poisson-logit mixture model) for truncation at zero in the data¹⁴. Formally, the general structure of the model estimated is:

$$R_i = \alpha + \beta D_i S_i + \gamma S_i + X_i' \delta + \varepsilon_i \quad (1)$$

Where R_i is the amount sent back, S_i the amount received by the recipient, D_i is a dummy taking the value of 1 for trust game participants and X_i is a vector of individual characteristics, which aids identification of the specific effects. The coefficients β and γ provide the means to distinguish between reciprocation and 'other-regarding' preferences. Since, as noted above, in the (modified) dictator game (DG2) there can be no reciprocating motive, the difference between the reaction of respondents to the amount sent in the two settings ($D=0$ and $D=1$) is a measure of reciprocity. Specifically, the β coefficient shows the purely strategic motivation, that is the trustee's reaction to the trustor's behaviour.

Table 2 about here

Our results, reported in Table 2, show a positive estimate of β , which is not, however, statistically significant. Also in contrast to Cox, the estimate of γ – the estimated 'other-regarding' preferences effect - is both positive and statistically significant. The result that there is no statistical distinction to be made between trust and dictator games in terms of the amounts sent back confirms

¹⁴ Since the test did not reject the null hypothesis of no truncation/hurdle at $p < .20$ (or even at $p < .30$) in any of the models estimated in this paper we limit ourselves to stating this fact and do not report detailed test results in the paper. As before, estimation of the model by two-limit tobit model produces qualitatively similar results. However, the null hypothesis of homoskedasticity is rejected by statistical tests. In the Tobit model (as with the Probit and Logit) the consequence of heteroskedasticity is inconsistent parameter estimates – not just inconsistent standard errors as with OLS or Poisson. The problem arises as to what reaction to the problem to adopt. Cox (2004) estimates a model with a parametric correction for it. In practice, this means dividing the likelihood function by $\exp(\theta S_i)$, where θ is an additional parameter to be estimated. The introduction of such a parametric heteroskedasticity correction term may actually be picking up a substantive effect (see, for example, Davidson & MacKinnon, 1986). This might explain why Cox obtains a negative coefficient estimate for γ implying that the more respondents receive from senders the less they send back.

our previous finding. However, recall the instability of the estimated coefficient on the dictator game dummy reported in table A2 according to whether a full set of trust and trustworthiness indicators was included or not. This provides a clue that the two motives, which appear to be mutually exclusive for senders, tend to overlap for respondents. In other words, the suggestion is that respondents' behaviour is determined more by their underlying motivation than by the strategic setting. The following section considers this issue in more detail, with the aim of identifying subjects' underlying motives by matching their self-declared attitudes with their behaviour.

4. The correspondence of the “types” drawn out from the attitudinal measures with the trusting and reciprocating behaviours

In this section we put together behavioural and attitudinal measures to analyse further the degree of trusting and reciprocating behaviour manifested by players in the TG and the two DGs. By using the answers to the questionnaire, participants were identified as trusting or prudent on the one hand and trustworthy or untrustworthy on the other, and assembled in four categories. Players with a value of the trust index (V47) above the median (=5 as it happens) were defined as trusting and others prudent; similarly, the composite index of trustworthiness constructed from the answers to the relevant questions and used above in models 1 and 2 was used to define individuals as either trustworthy or untrustworthy. Those with values above the median (=22) were defined as untrustworthy, others (≤ 22) were defined as trustworthy. It is worth observing that there was no correlation in our sample (both overall and for each experiment separately) between trusting and trustworthy individuals as defined here¹⁵. Table 3 reports the mean amounts sent and the mean return ratio overall, and separately for the two sample divisions - trusting/prudent and trustworthy/untrustworthy. Although, as noted above, overall we found little support for Cox's hypothesis of positive reciprocity, when we look at the behaviour of different individuals, identified as trusting or not and trustworthy or not on the basis of their responses to attitudinal surveys, we do indeed find evidence of positive reciprocity for some types of individual – specifically, those whose attitudes suggest trustworthiness.

Comparing trusting and prudent individuals, one may observe that in the trust (investment) game trusting individuals in the role of first movers, send much more (mean = 4.4) than prudent individuals (mean = 2.9) as one might expect, and this difference is statistically significant¹⁶. When playing the dictator game, however, trusting and prudent first movers send approximately the same

¹⁵ The simple correlation coefficient for the entire sample used in model 1 actually slightly negative at -.09.

¹⁶ With a p-value of .04 on a one-tailed test.

amounts on average. Thus, players identified as trusting by their questionnaire responses are prepared to invest in the risky prospect, whereas similarly identified prudent players' behaviour depends only on their social preferences. Looking at the trustworthy/untrustworthy divide, amounts sent in the trust game are virtually the same for the two groups of individual (3.50 for the trustworthy group and 3.63, actually a little more, for the untrustworthy group). In the dictator game there is a modest difference between the trustworthy (mean tokens sent = 3.44) and the untrustworthy (mean = 3.00). This result seems to confirm that differences in the propensity to send depend more on differences in the expectation of reciprocal behaviour by others, which in turn is influenced by participants' attitudes to risk, rather than on differences in other-regarding preferences embedded in the civic nature of players. Indeed, even trustworthy individuals "invest" in the interaction of the TG more than in the DG1, where no strategic reasoning applies albeit to a reduced degree. Overall, considering the two groupings together, we may conclude that in the interactive setting of the TG the strategic disposition to send money to the other player matters more than other-regarding motive and/or the declared attitude towards civic values.

As for respondents, the general presumption is confirmed that both the self-evaluation of one's own disposition to trust and the evaluation about the appropriateness of compliance with civic values influence reciprocating behaviour. Yet, more profound insights emerge, as strategic interaction appears to draw out conditional cooperation. As reported above, in our replication of the Cox experiment, the amount on average sent by all participants in the TG is greater than amounts sent by DG1 participants. However, comparing the amount returned in the TG and in the modified dictator game (DG2), the first distinction (trusting/prudent) presents little difference between the return ratio of the two groups, but trusting individuals return a smaller proportion of the amounts received in the TG than in the DG2 design. A plausible reason for this is the fact that the amount sent in the TG is on average much smaller with respect to the Cox experiment. Thus, we suggest that there is evidence of negative reciprocity, in the sense that the "trusting" feel betrayed by the first mover and react by returning a small amount. Data become even more telling by taking into account also the second divide (trustworthy/untrustworthy). The mean return ratio, which for trusting and prudent were 1.61 and 1.45 (TG) and 1.76 and 1.55 (DG2) respectively, are nearly 70% higher for trustworthy (1.84) than for untrustworthy individuals (1.10)). Similarly to the above reported analysis with the two divisions (trusting/prudent and trustworthy/untrustworthy) across Senders, the trusting and – to a much larger extent - the trustworthy send back in the trust game a larger amount than the prudent and the untrustworthy, respectively.

Thus, the statistical evidence in Table 3 indicates that in moulding behaviour the attitudinal "type" of each subject is more important than the context – the strategic TG setting, or the non-

strategic DG setting - in which he happens to play. Indeed, Table 3 shows that the larger deviations from the mean values (line “All” in the table) concern the Trusting and the Prudent as for the amounts sent (in the TG and the DG1), and the Trustworthy and the Untrustworthy as for the amounts returned (in the TG and the DG2).

Table 3 about here

Figures 4 and 5 reinforce the evidence based on means. Figure 4 reports the relative frequency of the amounts sent by trusting and prudent individuals in TG and DG1 respectively; figure 5 the distribution of the return ratio for trustworthy and untrustworthy individuals in the TG and DG2 designs. The evidence for trusting and prudent individuals in the TG/DG1 comparison is very different from the evidence for trustworthy and untrustworthy individuals in the TG/DG2 comparison. In figure 4, there is no obvious pattern of difference in the tokens sent between the trusting in the TG and the DG1. However, from figure 5 one can see that the relative weight of TG trustworthy individuals increases as the return ratio becomes larger. Indeed, at return ratios higher than 1.0 – 1.9, the relative frequency of the trustworthy in the TG is larger than the corresponding frequency of the trustworthy in the DG2.

Figures 4 and 5 about here

These issues can be analysed in the more formal framework used above. Specifically, table 4 reports the results of respondents’ behaviour in the framework given by equation (1) distinguishing between trustworthy and untrustworthy individuals.

Table 4 about here

The results confirm that the trustworthy are inclined towards strategic behaviour - both in the positive sense of rewarding the sender, and the negative one of punishing – more than “being nice to others”, as could have been manifested by a significant correlation between the amount returned in the DG2 and the amount returned in the TG. Moreover, the negative estimate of β for the untrustworthy, as well as being responsible for the overall lack of statistical significance of β reported in table 2, indicates that the untrustworthy respondent is motivated by the goal to exploit a

generous sender. In the experimental sessions conducted for the TG and the DGs, both the trusting and the reciprocating perform less generously than subjects in the Cox experimental sessions.

Thus, by taking together tables 3 and 4 we are able to assess the motivations underlying the behaviour of attitudinal types in their roles as Senders and Respondents. As for the “trusting”, they appear to trust less than average in playing as senders in the TG, probably because they not only fear the material loss of the “invested” amount but also fear the psychological loss of having been “betrayed”. Similarly, given that in the DG2 the amounts received by second movers were not decided by the potential beneficiaries of the dictators magnanimity, “trustworthy” individuals are rewarding the flesh and blood Sender more generously than they reward an unrelated Sender not involved in the interaction. Indeed, in sending back, Respondents seem to be motivated by their civicness, to the extent that the amount received is taken like manna from heaven. By the same token, by sending back a smaller amount than the “trustworthy” in the TG and a larger in the DG2, the “untrustworthy” seem to be motivated by “negative reciprocity”, as they are inclined to punish a selfish sender. Overall, the behaviour of the trustworthy highlights reward, the positive side of reciprocity, while the behaviour of the trusting who feels betrayed and of the untrustworthy who finds a confirmation of their sceptical view about the social environment both point to punishment, the dark side of reciprocity¹⁷.

5. Concluding remarks

Our experimental design had three aims. First, to find out whether, and possibly to what extent, answers to a questionnaire about attitudes towards trust and civicness predict subjects’ behaviour. Second, to disentangle the strategic motivation from the altruistic motivation by comparing behaviour in Trust and Dictator Games. Third, to investigate to what extent a correspondence could be found between subjects’ attitudinal ‘type’ and their behaviour in the two interactive settings of experimental TG and DGs.

The first finding of our investigation stems from the regressions in section 2, where a certain degree of correlation – albeit weak - is obtained between attitudinal trust and behavioural trust. This is similar to the Fehr et al. (2003) result but contrasts with the correlation between attitudinal trust and behavioural trustworthiness found by Glaeser et al. (2000). Our second finding stems from the methodological exercise of section 3, aimed at disentangling “other regarding” from strategic motivations. In shaping subjects’ behaviour the disposition to “invest” in the interaction of the TG turns out to be a powerful motivator. While in our experimental sessions the answers to a

¹⁷ Measures of betrayal aversion have been developed in Naef et al. (2008). The presence of this psychological bias to rational behaviour suggests that a trustor’s weak propensity to “invest” in the TG should not only be traced back to his personal risk aversion, but also to an additional effect due to betrayal aversion.

questionnaire predicted behaviour only to a limited extent, after the two motivational components have been separated out by means of the comparison between the results of the Trust Game and each of the two Dictator Games of section 3, the information conveyed by the questionnaire cast light on the motivating forces at work in the TG in the Model of section 4. By sorting out amounts sent and returned across the four “types”, we were able to attach a deeper interpretation to this dominance of the strategic motivation.

Our third finding is that the context, conditional on the “type” of the experimental subjects as declared in the questionnaire, determine subjects’ behaviour. The disposition to trust on the one side, and the degree of compliance with civic values on the other side, appear to independently motivate people. When playing as trustor, the self-reported Trusting subjects indeed tend to manifest trust by investing more in the risky interaction than the Prudent; when playing as trustee, the self-reported Trustworthy and Untrustworthy tend to manifest positive or negative reciprocity, that is an intention to reward or punish, respectively.

Therefore, the link between the questionnaire and experiments is stronger albeit more subtle than the weak correlation between average attitudes and average behaviours reported in the first part of the paper seems to suggest. According to our results, the trusting and the trustworthy both send on average more in the TG than in the DG1, but the trustworthy return less than the trusting send. This suggests that in the TG the “trusting type”’s disposition to invest in the social relation is more effective in motivating individuals than the “trustworthy type”’s disposition to comply with civic values. Moreover, within the same individual the disposition “to be good to others” when playing in the role of sender does not automatically transfer to a similar disposition “to be good to others” when playing in the role of respondent. Our results also indicate that the more trusting are the subjects according to their answers to the questionnaire, the more they send as trustors, and the less they send back as trustee in case they are moved by the desire to punish the senders for having sent a small amount.

This finding does not match with experimental research indicating that “(o)nce it can be shown that it is reasonable to expect trustworthiness there is no longer any mystery about trust, since trust is typically a best reply to this expectation” (Bacharach, Guerra, and Zizzo, 2001, pp.1-2). While it is obviously true that the level of trust manifested by each agent is influenced by life experience in his social environment, individuals who self-report as “trustworthy” should not be taken as necessarily endowed with a high disposition to trust, thus sending a large amount in the TG. This seems to confirm the “multiple self” view (Elster, 1986), whereby in the personality of each individual many components – possibly distant in terms of the motivating sentiments - are gathered together. The disposition to trust on the one hand, and the degree of compliance with civic

values on the other hand, separately motivate a subject, as both depend on the different roles played in their social interactions.

How then do these two findings impinge on our main question regarding the Shakespeare verse: “*Suit the action to the word, the word to the action*”: does an attitudinal declaration in the questionnaire find confirmation in the same individual’s behaviour? Our answer is a qualified “yes”, as it depends on the degree to which the “strategic” motive is manifested, that is on the individual’s greater or lesser disposition to trust when playing as a sender, and on the individual’s greater or lesser disposition to be trustworthy when playing as a respondent. By dividing subjects according to their disposition to trust and to be trustworthy manifested in their questionnaire responses, the self-declared trusting tend to send more than the prudent, and the self-declared trustworthy are inclined to return more than the untrustworthy.

References

- Bacharach M., G. Guerra, and D.J. Zizzo (2001), Is Trust Self-Fulfilling? An Experimental Study, mimeo.
- Berg J., J. Dickhaut, K. McCabe (1995), “Trust, reciprocity, and social history”, *Games and Economic Behavior*, 10:122-142.
- Bolton, G. and A. Ockenfels (2000), “ERC: A theory of equity, reciprocity, and competition”, *American Economic Review*, 90: 166-193.
- Bohnet I. and R. Zeckhauser (2004), “Trust, risk, and betrayal”, *Journal of Economic Behavior and Organisation*, 55. 467-484.
- Charness G. and M. Rabin (2005), “Expressed preferences and behavior in experimental games”, *Games and Economic Behavior*, 53: 151-169.
- Ciriolo E. (2007), “Inequity aversion and trustees’ reciprocity in the trust game”, *European Journal of Political Economy*, 23: 1007-1024.
- Coleman J.C. (1990), *Foundations of Social Theory*, The Belknap Press of Harvard University Press, Cambridge (Mass.).
- Cox J.C. (2004), “How to identify trust and reciprocity”, *Games and Economic Behavior*, 46: 260-281.
- Davidson, R. and J.G. McKinnon (1986), *Estimation and Inference in Econometrics*, Oxford University Press.
- Elster J. (1986), “Introduction”, in Elster J. (ed), *The Multiple Self*, Cambridge University Press, Cambridge.
- Farina, F. and P. Sbriglia (2008) „Conditional Co-operation in a Sequential Move Game,“ *International Review of Economics*, 55: 149-165.
- Fehr E., U. Fischbacher, B. Von Schupp, G. G. Wagner (2003), ”A Nation-Wide Laboratory. Examining Trust and Trustworthiness by Integrating Behavioral Experiments into Representative Surveys”, Cesifo Working Paper n. 866.
- Fehr E. and K.M. Schmidt (1999), “A Theory of Fairness, Competition, and Cooperation”, *Quarterly Journal of Economics*, 114: 816-818.

- Glaeser E.L., D. Laibson, J.A. Scheinkman, C.L. Soutter (2000), "Measuring Trust", *Quarterly Journal of Economics*, 65: 811-846.
- Lazzarini S.G., R. Madalozzo, R. Artes, J. De Oliveira Sequeira (2005), "Measuring Trust: An Experiment in Brazil", *Brazilian Journal of Applied Economics*, 9: 153-169.
- McCabe K., M.L. Rigdon, Vernon L. Smith (2003), "Positive reciprocity and intentions in trust games", *Journal of Economic Behavior and Organization*, 52: 267-275.
- Naef, M., E. Fehr, U. Fischbacher, J. Schupp, and G. Wagner (2008). "Decomposing Trust: Explaining National and Ethnical Trust Differences," *Working Paper, Institute for Empirical Research in Economics, University of Zurich*.
- von Neumann J. and O. Morgenstern (1944), *Theory of Games and Economic Behavior*, Princeton University Press, Princeton.
- Rabin M. (1993), "Incorporating fairness in game theory and economics", *American Economic Review*, 83: 1281-1302.
- Sapienza P., A. Toldra, L. Zingales (2007), *Understanding Trust*, NBER W.P. n. 13387.

Text tables

Table 1: Model 1 - Poisson estimates of amounts sent and sent back

	Senders: Tokens sent				Respondents: Tokens sentback			
	full model		summary indices		full model		summary indices	
	Coef.	. z	Coef.	. z	Coef.	. z	Coef.	. z
Tokens sent	-	-	-	-	0.234	10.96	0.241	12.07
Salerno	0.235	1.47	0.170	1.13	0.118	0.62	0.149	1.01
Female	-0.104	-0.57	-0.414	-2.70	0.019	0.11	0.036	0.27
Age	0.091	2.75	0.073	2.27	-0.030	-0.73	-0.019	-0.59
Mid to high income family	-0.180	-0.93	-0.032	-0.18	0.006	0.03	0.003	0.02
Economics student	-0.026	-0.18	-0.095	-0.64	-0.160	-1.10	-0.223	-1.83
Mother has secondary or tertiary education	0.121	0.81	0.072	0.53	0.084	0.59	0.114	0.94
Index of trust (from 1=no trust to 10=complete trust)	-	-	0.064	2.06	-	-	-0.033	-1.11
<i>Indices from 1(= no trust) to 4 (= complete trust):</i>								
Trust in the family	0.324	2.12	-	-	0.189	0.84	-	-
Trust in people you know	0.112	0.68	-	-	-0.126	-0.90	-	-
Trust in new acquaintances	0.067	0.48	-	-	-0.022	-0.22	-	-
Trust in immigrants	0.137	1.47	-	-	0.107	1.44	-	-
Trust in the government	-0.113	-0.81	-	-	-0.113	-0.78	-	-
Trust in Parliament	-0.044	-0.36	-	-	0.009	0.08	-	-
Trust in Political Parties	<i>0.212</i>	<i>1.78</i>	-	-	0.040	0.39	-	-
Trust in Public Officials	0.020	0.16	-	-	-0.045	-0.54	-	-
Index of trustworthiness	-	-	0.003	0.50			-0.002	-0.37
<i>It is Justified to: (1=never; 10 = always)</i>								
Try to obtain State benefits illicitly	-0.026	-0.55	-	-	-0.021	-0.62	-	-
Evade taxes	0.024	0.57	-	-	0.037	1.21	-	-
Drive someone else's car without their permission	0.063	1.44	-	-	0.024	0.71	-	-
Tell lies in one's own interests	0.092	3.23	-	-	<i>0.061</i>	<i>1.86</i>	-	-
for someone to have an extra marital affair	-0.011	-0.43	-	-	-0.008	-0.28	-	-
Accept illegal payments (bribes)	<i>0.080</i>	<i>1.68</i>	-	-	-0.004	-0.11	-	-
Use moonlighters - to avoid taxes	-0.107	-2.12	-	-	-0.002	-0.05	-	-
Ride on the buses without paying	-0.028	-0.92	-	-	-0.066	-2.13	-	-
Intercept	-2.973	-2.98	-0.500	-0.74	0.662	0.42	0.894	1.15
n	91		91		80		80	
Pseudo R-Squared	0.13		0.08		0.40		0.21	
p-value of χ^2 test - H_0 : mean = variance	0.050		0.001		0.500		0.500	

notes: coefficients which are significant at $.05 < p < .10$ are indicated in *italics*, coefficients which are significant at $p < .05$ are indicated in **bold**. Where a chi-squared test rejected mean-variance equality at $p < .20$, robust standard errors are reported. In all cases, chi-squared tests of the hurdle model do not reject the null (of no hurdle) at $p < .20$.

Table 2: Poisson model to test the difference in amounts sentback in trust and dictator games.

	Respondents: amount returned			
	full model		Just β and γ	
	Coef.	. z	Coef.	. z
Beta	0.037	0.89	-0.007	-0.20
Gamma	0.184	4.64	0.177	4.65
Female	0.024	0.12	-	-
Age	-0.269	-3.33	-	-
Mid to high income family	0.149	0.67	-	-
Economics student	-1.019	-2.46	-	-
Mother has secondary or tertiary education	0.157	0.72	-	-
Intercept	6.984	3.80	0.971	5.13
N	62		62	
Pseudo R-Squared	0.22		0.15	
p-value of χ^2 test - H_0 : mean = variance	0.000		0.000	

notes: coefficients which are significant at $.05 < p < .10$ are indicated in *italics*, coefficients which are significant at $p < .05$ are indicated in **bold**. Where a chi-squared test rejected mean-variance equality at $p < .20$, robust standard errors are used. In all cases, chi-squared tests of the hurdle model do not reject the null (of no hurdle) at $p < .20$.

Table 3: Model 2 experiments, mean amounts sent and mean return ratio by attitudinal trust and trustworthiness

		Mean Tokens Sent		Mean return Ratio	
			N		N
All	TG	3.58	33	1.50	31
	DG1	3.24	33	-	-
	DG2	-	-	1.64	31
Trusting	TG	4.40	15	1.61	11
	DG1	3.08	12	-	-
	DG2	-	-	1.76	14
Prudent	TG	2.89	18	1.45	20
	DG1	3.33	21	-	-
	DG2	-	-	1.55	17
Trustworthy	TG	3.50	14	1.84	17
	DG1	3.44	18	-	-
	DG2	-	-	1.55	18
Untrustworthy	TG	3.63	19	1.10	14
	DG1	3.00	15	-	-
	DG2	-	-	1.78	13

Note: The return ratio is defined as the amount returned divided by the amount sent by the first mover. This is very slightly different from Glaeser et al. (2000) where the denominator is the amount **received** from the first mover. The only difference is the multiple of 3.

Table 4: Poisson model to test of difference in amounts sent back in trust and dictator games, distinguishing between the attitudinal trustworthiness of recipients.

	Trustworthy Respondents				Untrustworthy Respondents			
	full model		Just β and γ		full model		Just β and γ	
	Coef.	z	Coef.	z	Coef.	z	Coef.	z
Beta	0.169	3.94	0.066	1.30	-0.094	-3.01	-0.068	-1.48
Gamma	0.124	3.63	0.092	2.13	0.254	5.31	0.250	6.32
Female	-0.083	-0.31	-	-	0.079	0.25	-	-
Age	-0.387	-4.41	-	-	-0.174	-2.26	-	-
Mid to high income family	-0.025	-0.11	-	-	0.312	0.88	-	-
Economics student	-0.857	-2.39	-	-	-1.187	-2.46	-	-
Mother has secondary or tertiary education	-0.341	-1.40	-	-	0.896	2.94	-	-
Intercept	9.462	5.69	1.172	6.29	4.576	2.36	0.753	2.03
n	35		35		27		27	
Pseudo R-Squared	0.25		0.11		0.44		0.25	
p-value of χ^2 test - H_0 : mean = variance	0.004		0.000		0.002		0.000	

notes: coefficients which are significant at $.05 < p < .10$ are indicated in *italics*, coefficients which are significant at $p < .05$ are indicated in **bold**. Where a chi-squared test rejected mean-variance equality at $p < .20$, robust standard errors are used. In all cases, chi-squared tests of the hurdle model do not reject the null (of no hurdle) at $p < .20$.

Figure 1: Amounts sent, 'Cox' type TG design, paired players

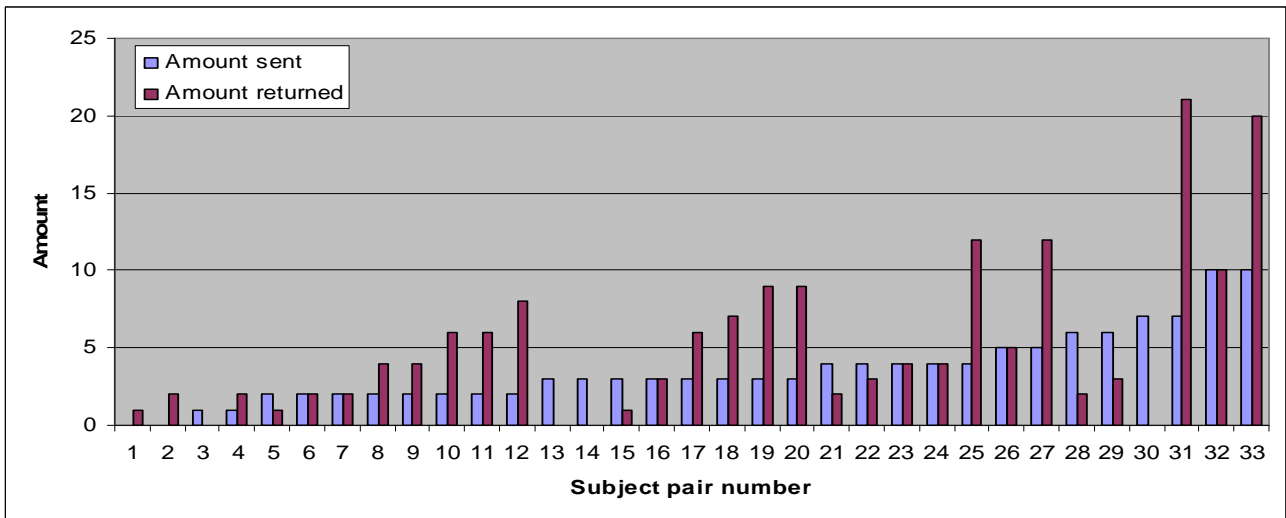


Figure 2: Amounts sent, 'Cox' type TG and DG1 designs, frequencies

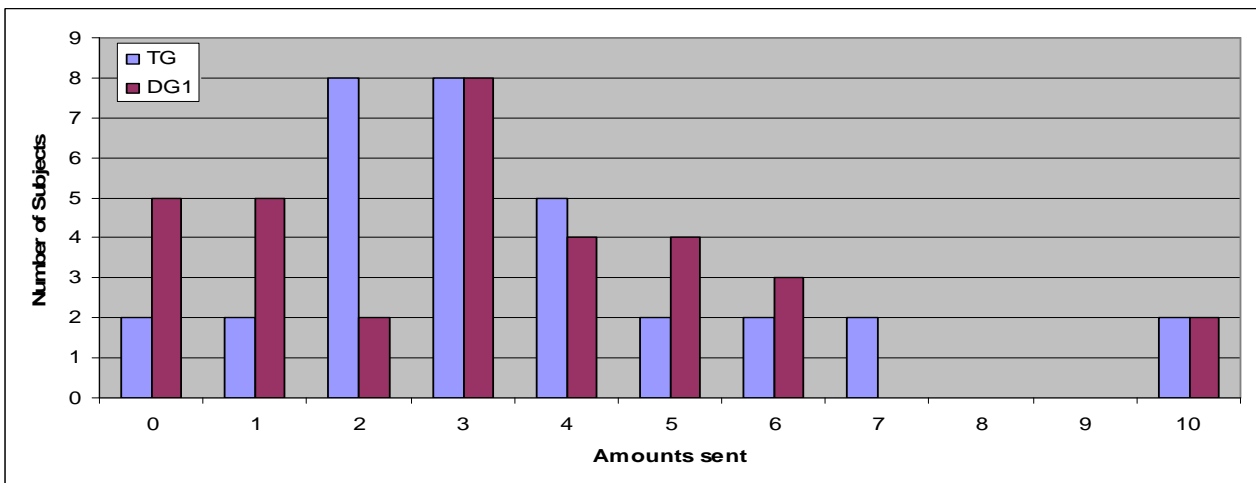


Figure 3: Amounts returned ‘Cox’ type TG and DG2 designs, by paired players

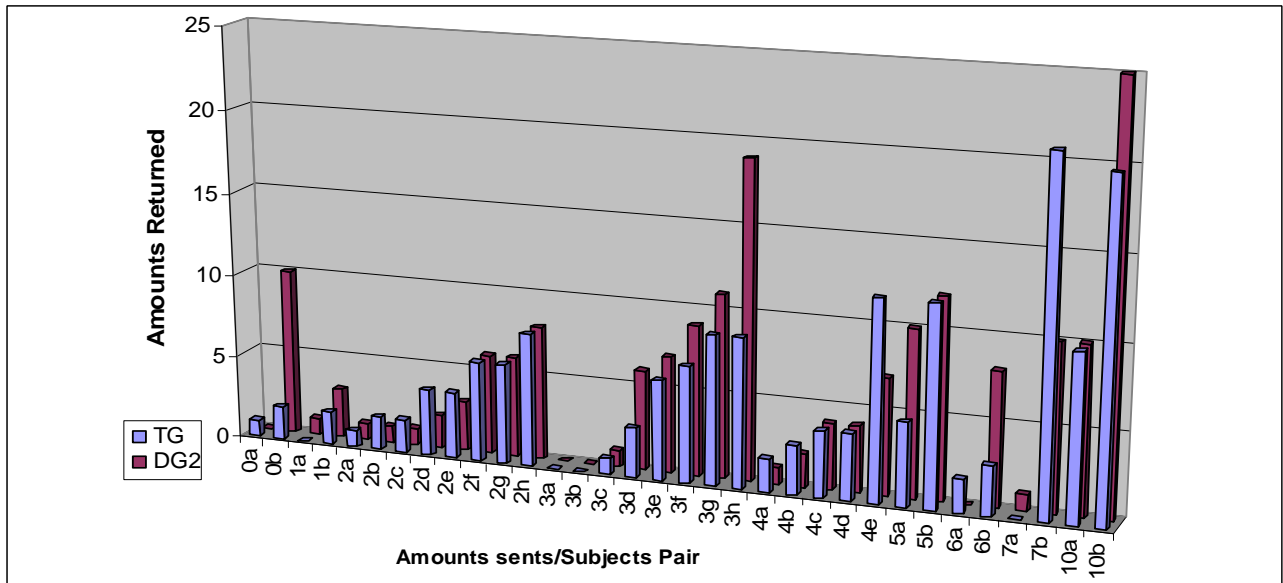


Figure 4: Amounts sent by Senders, TG and DG1, separately for “trusting” and “prudent” individuals

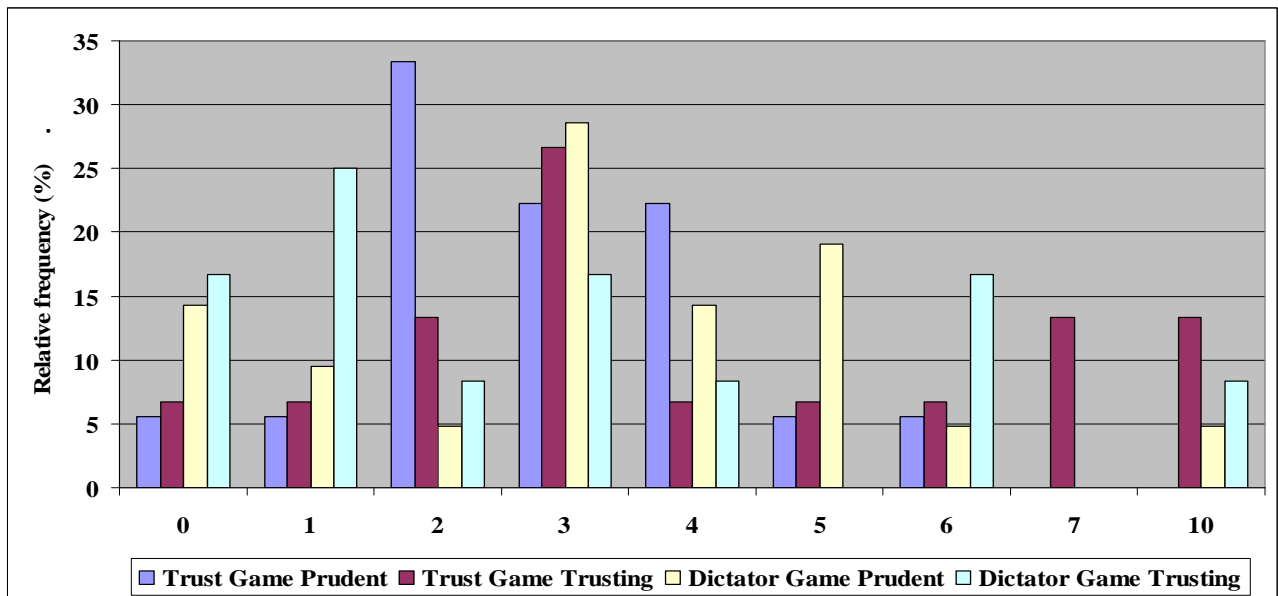
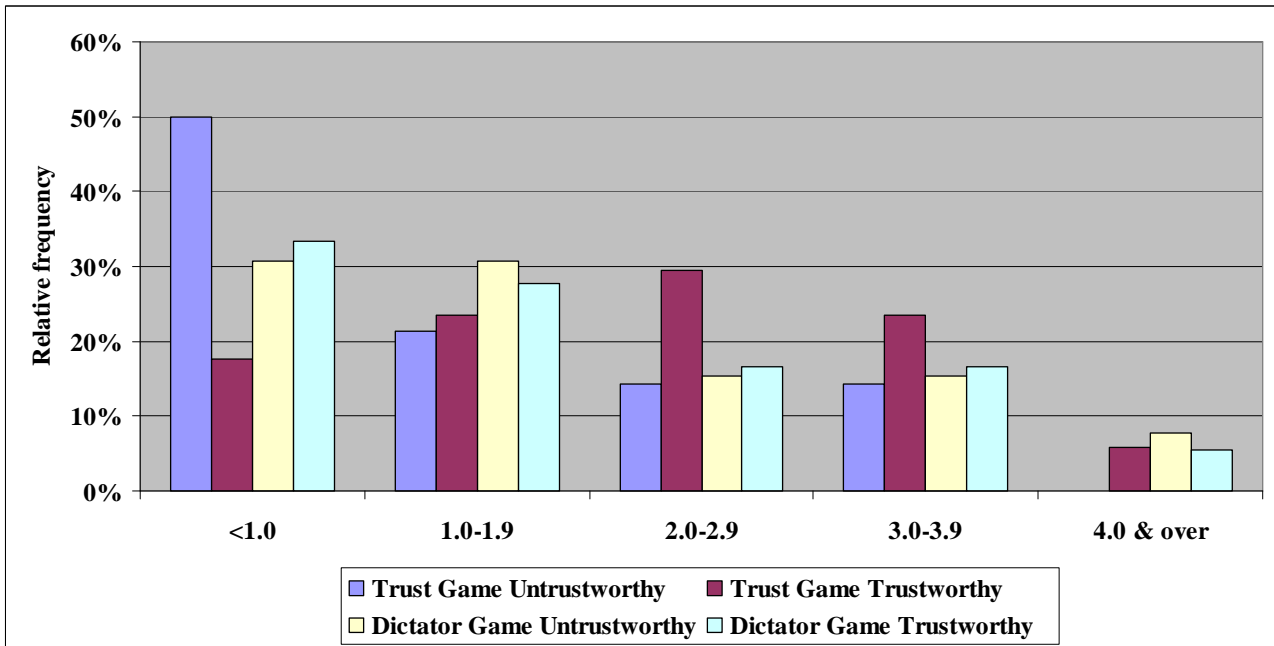


Figure 5: Distribution of the return ratio, TG and DG2, for “trustworthy” and “untrustworthy” individuals



Appendix:

Table A1: Trust & Trustworthiness questions

	Range/values
Individual Characteristics	
Age	
Sex	
Degree course	Economics (1 st -3 rd year); Communication sciences (1 st -3 rd year); Political Science (1 st -3 rd year); Post-graduate
Mother & Father's education	1 = none 2 = primary 3 = lower secondary 4 = upper secondary 5 = tertiary
Family economic situation	1 = well-off 2 = above average 3 = below average 4 = low
Trust/Trustworthiness Questions:	
<i>In general, would you say that you can trust most people or that one can never be too careful?</i>	1 = trust 2 = prudent (0 = don't know)
<i>How much trust do you have in the following groups:</i>	
- Your Family	1 = no trust
- People you know	2 = trust a little
- New acquaintances	3 = trust quite a lot
- Immigrants	4 = trust completely (0 = don't know)
<i>Ethnic Diversity?</i>	From 1 = lowers social harmony To 10 = is valuable
<i>Which of the following behaviours may be justified:</i>	
- To try to obtain benefits form the State to which you are not entitled	From 1 = never justified To 10 = always justified (0 = don't know)
- To not pay your taxes	
- To take and drive someone else's car without their permission	
- To make false statements to further ones own interests	
- To have an extra-marital affair	
- To accept a bribe	
- To pay for services 'under the counter' to avoid paying taxes	
- To not pay for your bus ticket	
<i>How much trust do you have in the following Institutions:</i>	
- Government	1 = no trust
- Parliament	2 = trust a little

- Political Parties	3 = trust quite a lot
- Civil Service/Servants	4 = trust completely (0 = don't know)
Most people a) try to take advantage of you every time they can; or, b) try to behave correctly towards you	From 1 = always try to take advantage To 10 = always try to behave correctly (0 = don't know)

Table A2: Model 2 Poisson estimates of amounts sent and sent back

	Senders: Tokens sent				Respondents: Tokens sentback			
	full model		summary indices		full model		summary indices	
	Coef.	z	Coef.	z	Coef.	z	Coef.	z
Tokens sent	-	-	-	-	0.176	7.35	0.153	2.31
Dictator game	-0.103	-0.62	-0.103	-0.64	-0.309	-1.54	0.502	1.64
Female	-0.410	-2.01	<i>-0.343</i>	<i>-1.67</i>	-0.286	-1.15	-0.212	-0.86
Age	-0.204	-3.42	-0.164	-2.22	-0.301	-3.76	-0.002	-0.02
Mid to high income family	-0.074	-0.42	0.013	0.08	-0.026	-0.10	0.071	0.27
Economics student	-0.765	-2.24	-0.607	-1.61	-1.407	-4.01	0.082	0.21
Mother has secondary or tertiary education	<i>-0.334</i>	<i>-1.84</i>	-0.333	-2.16	0.077	0.37	0.351	1.41
Index of trust (from 1=no trust to 10=complete trust)	-	-	0.015	0.33	-	-	0.076	1.31
<i>Indices from 1 (= no trust) to 4 (= complete trust):</i>								
Trust in the family	0.287	0.94	-	-	0.387	1.04	-	-
Trust in people you know	0.209	1.45	-	-	-0.111	-0.62	-	-
Trust in new acquaintances	-0.027	-0.22	-	-	0.234	1.22	-	-
Trust in immigrants	-0.034	-0.44	-	-	-0.016	-0.10	-	-
Trust in the government	0.064	0.39	-	-	-0.289	-0.92	-	-
Trust in Parliament	0.150	1.01	-	-	0.527	2.55	-	-
Trust in Political Parties	-0.333	-2.53	-	-	-0.005	-0.02	-	-
Trust in Public Officials	0.061	0.49	-	-	-0.296	-1.50	-	-
Index of trustworthiness	-	-	0.004	0.31	-	-	0.003	0.24
<i>It is Justified to: (1=never; 10 = always)</i>								
Try to obtain State benefits illicitly	-0.014	-0.25	-	-	-0.023	-0.33	-	-
Evade taxes	-0.025	-0.37	-	-	0.030	0.92	-	-
Drive someone else's car without their permission	0.139	2.80	-	-	0.041	0.67	-	-
Tell lies in one's own interests	0.008	0.17	-	-	0.121	2.34	-	-
for someone to have an extra marital affair	0.031	0.99	-	-	0.059	1.00	-	-
Accept illegal payments (bribes)	-0.019	-0.32	-	-	<i>-0.083</i>	<i>-1.68</i>	-	-
Use moonlighters - to avoid taxes	0.014	0.26	-	-	-0.041	-0.48	-	-
Ride on the buses without paying	0.002	0.04	-	-	-0.085	-1.55	-	-
Intercept	4.314	2.65	5.185	2.94	6.763	3.56	0.329	0.17
n	66		66		62		62	
Pseudo R-Squared	0.15		0.07		0.33		0.10	
p-value of χ^2 test - H_0 : mean = variance	0.446		0.018		0.000		0.000	

notes: coefficients which are significant at $.05 < p < .10$ are indicated in *italics*, coefficients which are significant at $p < .05$ are indicated in **bold**. Where a chi-squared test rejected mean-variance equality at $p < .20$, robust standard errors are reported. In all cases, chi-squared tests of the hurdle model do not reject the null (of no hurdle) at $p < .20$.