Economics Working Papers

2015-05

Corruption, Norm Violation and Decay in Social Capital

Ritwik Banerjee

AARHUS BSS

DEPARTMENT OF ECONOMICS
AND BUSINESS ECONOMICS
AARHUS UNIVERSITY

Corruption, Norm Violation and Decay in Social Capital

Ritwik Banerjee*
Aarhus University, Denmark

Abstract

The paper studies the interplay between corruption and social capital (measured as trust), using data from a lab experiment. Subjects play either a harassment bribery game or a strategically identical but differently framed ultimatum game, followed by a trust game. In a second experiment, the trust game is followed by the bribery game. Our experimental design allows us to examine whether subjects, who have been asked to pay a bribe, are less likely to trust and subjects, who have been trusted less in the first place, are more likely to demand bribe. Results suggest that a) there is a negative spillover effect of corruption on trust, but not vice-versa, and the effect increases with decrease in social appropriateness norm of the bribe demand; b) lower trust in the bribery game treatment is explained by lower expected return on trust; c) surprisingly, for both the bribery and the ultimatum game treatments, social appropriateness norm violation engenders the decay in trust through its adverse effect on belief about trustworthiness; d) belief about whether a bribe demand will be accepted or not predicts actual amount of bribe demanded.

Keywords: Corruption, Social Capital, Social Norm, Trust Games

JEL Classification: C91 C92 D03

*Email:ritwikbanerjee@outlook.com. Address: Department of Economics and Business, Fuglesangs Allé 4 8210 Århus V, Denmark.

1 Introduction

Social capital, which comprises of commonly held values such as trust, trustworthiness and cooperative norms, is increasingly seen today as an important component of a successful economic environment. Given that social capital helps circumvent the necessity for expensive complete contracts and thereby decreases the costs of enforcing contracts (North, 1990; Williamson, 1985; Sobel, 2002), it is not surprising that it has been found to have a positive instrumental role in a wide range of economic activities: from economic growth (Knack and Keefer, 1997) to financial development (Guiso et al., 2004, 2008) and trade and investment (Guiso et al., 2009).

Studies show that this vital ingredient of economic activity is negatively associated with corruption in a cross country panel framework. Figure 1 documents this association in a dynamic panel of countries with trust data from World Value Survey (WVS) and corruption (perception) data from International Country Risk Guide (ICRG), aggregated over four WVS waves. It illustrates the stylized fact that not only is corruption and trust negatively related cross-sectionally, but the movement of most countries have followed a trajectory from high trust - low corruption to low trust - high corruption during the period, as is indicated by the arrows which point towards the South East for most countries.

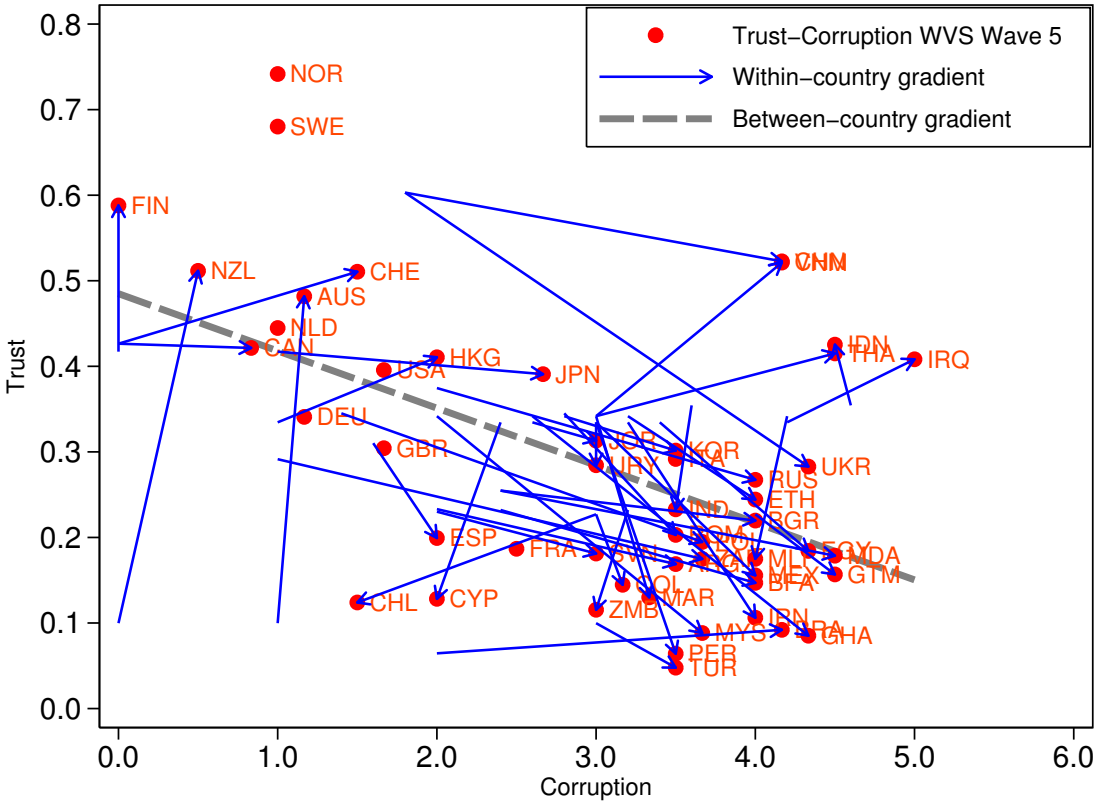
This association has been studied primarily by political scientists and to a lesser extent by economists, however, the precise causal link and the mechanisms driving the association remain less known. Some have taken the view that low levels of trust in a society may engender and nurture corruption since people fail to develop cooperative ethos (La Porta et al., 1997; Bjornskov, 2011; Seligson, 2002; Moreno, 2002). Others have argued that a lack of trust may diminish the sense of doing something wrong or "immoral", leading to a perception of high corruption in the society (Xin and Ruden, 2004), which in turn may lead to greater prevalence of corruption (Bardhan, 1997; Innes and Mitra, 2013). Corruption has also been viewed as a cause for the erosion of social capital (Anderson and Tverdova, 2003; Chang and Chu, 2006; Della Porta, 2000). This view draws support from the impact of political scandals on trust (Bowler and Karp, 2004), and by relating confidence in institutions entrusted to control corruption to interpersonal trust (Rothstein and Stolle, 2002)[1]. Others still, have interpreted the relation as one of mutually reinforcing causality (see for instance Uslaner, 2002, Morris and Klesner, 2010).

Despite the fact that the negative association between trust and corruption has been widely documented in a number of settings, the causal interpretation between the two is at best weak[2].

[1]The literature exploring the relation between trust and corruption often focuses on either political/institutional trust or interpersonal trust. While conceptually different in terms of the objects of trust, both originate from the same behavioral primitive.

[2]Potential simultaneity in the association between corruption and trust leads to endogeneity bias, which is difficult to overcome due to lack of suitable instruments and limited time varying and comparable cross-country data.

Figure 1: Within and between country gradient between trust and corruption



Note: Arrows indicate the movement of countries in the Trust-Corruption space from Wave 2 to Wave 5 in the World Value Survey. The arrows point to the South East for more countries suggesting that over the period, most countries have moved towards higher corruption and that this movement has also been associated with lower trust. The dotted line shows the cross sectional gradient. Data source: Corruption - International Country Risk Guide (ICRG); Trust - World Value Survey. Arrows in some data points are missing as these countries have only one data point each since WVS has brought more and more countries within its fold over time.

In this paper, we causally relate corruption and trust using experimental data. Both corruption (or more generally unethical behavior) and trust originate from behavioral primitives and both have been extensively studied through lab based experimental methods in the past (for a review of experimental corruption games see Abbink and Serra (2012) and Serra and Wantchekon (2012)). First, we analyze if people exhibit less trust in a standard trust game after having played a bribery game than after having played a strategically identical but differently framed ultimatum game (for an analysis of the two frames see Banerjee, 2015). Second, we examine the other side of the causality by letting subjects play the trust game followed by the bribery game - this helps us identify if corrupt behavior arises from low trust. Thus, our experimental design allows us to identify and estimate the causal link between corruption and trust, as measured through behavioral spillovers.

Behavioral spillover effect is defined as an effect which is observed only when an experimental game is played together with other games but not when the game is played in isolation. Such

effects, which are common in the experimental literature, have been found to enhance cooperation (Cason et al., 2012; Brandts and Cooper, 2006; Albert et al., 2007; Cason and Gangadharan, 2013), help attain a Pareto improving coordination equilibrium (Weber, 2006), induce rationality (Cherry et al., 2003; Cherry and Shogren, 2007) and even change actions when subjects hear about the actions of others in their group (Huck et al., 2011). Though some studies have inferred that higher cognitive load induced by greater outcome entropy, uncertainty and lesser path dependence induce positive behavior spillovers[3] (Bednar et al., 2012; Cason et al., 2012), we know surprisingly little about the mechanisms behind negative behavioral spillovers. While studying the interplay between corruption and trust, our study also aims to fill this gap.

In the first experiment, we randomly assign people to either a real effort harassment bribery game[4] or a strategically identical but differently framed ultimatum game. After subjects have been through the experience of being in one of the frames and have known the outcomes, we measure their trust behavior in a standard trust game. In the bribery game, a "Citizen" performs a task and earns a prize if successful. However, a "Public Official" may demand a bribe in order to let the Citizen have her prize - the Citizen may subsequently accept or reject this bribe demand. In the strategically identical but differently framed ultimatum game treatment, "Participant A" (analogous to the Citizen) upon successfully completing the task - earns the right to go to the second stage of the game. At the second stage, "Participant B" (analogous to the Public Official) plays an ultimatum game, with the same stake size as the prize in the bribery game, and decides how much to share with Participant A, which the latter can accept or reject. In this way, not only do we cleanly identify the causal impact of corruption on trust but also answer whether lower trust in people is associated with greater unethical behavior. In the second experiment, the trust game precedes the bribery game and the receiver in the trust game plays the role of Public Official in the bribery game. Thus, we can examine if low level of trust in the first stage has a spillover effect on bribe demand in the second.

Why do negative spillover effects originate in the first place? We hypothesize that in our setting negative spillover effects originate from violation of a certain commonly held moral code. In order to unravel this mechanism, in the third and final experiment, we elicit social appropriateness norm governing the bribery game, the ultimatum game and the trust game using a coordination tool developed by Krupka and Weber (2012).

First, our results from the first experiment confirm that the two frames trigger different behavioral responses - in particular, the bribery frame successfully imposes the intended frame of immorality. It is indeed the case that the two frames are governed by different social norms and

[3]Though different names, the explanations offered in these studies are essentially similar. Greater variability in outcome or "outcome entropy" leads to lesser path dependence and thus higher uncertainty.

[4]Harassment bribery is a form of bribery where a Public Official asks for a bribe from a Citizen who is entitled to a service that the official is obligated to provide. Petty bribery of this nature is very common in developing countries where Citizens, despite being entitled to government services (e.g. passport, driver's license), have to pay a bribe in order to obtain them or avoid inordinate procedural delays. Harassment bribery has been studied through experimental games in the past by Banerjee (2015) and Abbink et al. (2014).

this partly explains the difference in actual behavior. Second, Citizens trust less than Participant As and the baseline subjects[5] in the trust game but we find no difference in trustworthiness among them. Third, the expectations of the Citizens about the trustworthiness of the matched partner, is lower when compared to that of the Participant As and baseline subjects. The negative shock to expectation is driven by the violation of social appropriateness norm governing bribery and explains part of the difference in trust behavior. Interestingly, there is no independent effect of the corruption frame on trust (i.e. there is no mindset effect) but there is a mindset effect of corruption on expectations about trustworthiness. Hence, our findings suggest that norm violation and corruption mindset affect expectations about trustworthiness, which in turn leads to lower trust. Fourth, we find a weak negative association between corruption and trust behavior among Public Officials. Finally, our results from the second experiment show that there is no spillover effect from trust to bribe demand. We do however find that belief about whether a bribe demand will be accepted by the Citizen is a significant predictor of the actual bribe demand.

Our contributions to the literature are the following. We provide a clean identification of the causal link that corruption leads to lower trust using an experimental approach and thereby address a longstanding debate. In doing so, we pin down the precise behavioral mechanism through which corruption affects trust and show that the decline in the social capital in a corrupt environment has much to do with the violation of social appropriateness norms. The explanations offered in past studies shed little light in terms of how and why behavioral spillovers play out in real life. To the best of our knowledge, ours is the first study to show that social appropriateness norm violation, through its effect on beliefs about others' behavior, plays an important role in generating negative spillovers. With this, we also identify one potential channel through which behavioral spillovers work in wider social contexts and particularly in experimental games - namely that of social norm violation. Furthermore, our study takes the novel route of measuring incentive compatible belief about acceptability of bribe demand and relating it to actual bribe demand. It suggests that an effective instrument to fight corruption will be one which can suitably alter expectations about acceptability of bribe demand. Besides, we also contribute to the framing literature and show that the framing effect may partly be explained by the social appropriateness norms governing the frames.

The rest of the paper is organized as follows: Section 2 lays out the experimental design and briefly sketches the important survey questions. Section 3 presents the broad results and the mechanisms behind the results and Section 4 discusses the results and offers the concluding remarks.

[5]For completeness we conducted a standalone baseline trust game - it was not preceded by either the bribery or the ultimatum game.

2 Experimental Design

A simple way to examine the effect of corrupt transaction on trust is to compare the trust behavior of victims in a corruption game with that of subjects who do not participate in the corruption game (i.e. baseline treatment). However, such an exercise may bias the true effects of corruption on trust because of income effects arising from potential earnings. So we design a Bribery Game (BG) and develop a strategically identical but differently framed counterfactual of the bribery game, namely, the Ultimatum Game (UG). The two frames differ in terms of the language used - loaded (e.g. Citizen, Public Official, bribe etc.) vs. neutral (e.g. Participant A, Participant B, transfer etc.), and also in terms of the sense of expectation among the subjects (for a detailed analysis of the two frames, see Banerjee (2015)[6]). After having randomly treated subjects either through BG or UG in the first part, we let them play a modified version of the trust game (Berg et al., 1995) in the second and then observe the trust behavior. Any treatment effect in the trust behavior between BG and UG may be attributed to corruption. For completeness we also run a baseline trust game and compare it with the trust behavior in BG and UG.

The design of the BG and UG treatment relies on the prior that any amount demanded of subjects in a bribery game is considered unfair in the bribery game, but the same amount when retained in an ultimatum game is considered fair. Since demanding bribe is considered immoral while retaining the same amount in an ultimatum game is not, the two frames are expected to trigger different emotional responses despite being strategically identical. We exploit this and analyze the impact of the treatments on trust behavior. In addition, we also compare the impact of trust in BG and UG with that of baseline level of trust. This constitutes the first experiment of our study - it is designed to capture whether demanding bribe has a negative behavioral spillover on trust.

In the second experiment we examine whether lack of trust has a spillover effect on corruption. Though we do not have a clean counterfactual of the trust game, as we do for the bribery game, we aim to answer this question by letting subjects play the two games in reverse order. Thus, subjects play a trust game first and then, having known the amount they have been entrusted with, they proceed to play the corruption game. A correlation between the amount entrusted and the bribe demanded may give us some insights into whether there exists a spillover from trust to corruption. The third and the final experiment aims to measure the fairness or social appropriateness norms governing the two frames and examine if the assumptions about the treatment differences discussed above are correct.

The strategy of studying dynamic behavior after triggering a certain emotional response has been adopted by several studies in the past: for instance, Burnham et al. (2000) study the effect of framing the matched partner as a friend or foe, Drouvelis et al. (2010) prime cooperation in social

[6] Banerjee (2015) shows that the difference in the behavior between the two frames comes from a change in the sense of entitlement and not change in the language. The result, obtained in India - a country with high corruption norm, may be culturally driven.

dilemma games, Ariely et al. (2003) prime individuals to "arbitrary anchors" e.g. social security number and finds a difference in the willingness to pay behavior and more recently, Buser and Dreber (2013) examine the effect of competition on cooperation. Our experimental design follows a similar approach but with important differences as will be clear in the following sections.

2.1 Bribery Game and Ultimatum Game

Figure 2(a) describes the bribery game. A Citizen (C) has to complete a real effort task[7] in ten minutes, following which she gets a prize winning code. If she successfully completes the task and gets the prize winning code then she is entitled to a prize of 400 *Mohars*[8] (**M**400). Otherwise she earns only the participation fee of **M**200. However, even if the Citizen does get the prize winning code, a Public Official (PO) may demand a bribe of amount b in order to let the Citizen have her entitled prize. Notice that the bribe of amount b is an extract from the value of the Citizen's entitlement, which in this case is **M**400. So we assume that any bribe in excess of **M**400 will be rejected by a reasonable Citizen and let bribe demand take one of the following values - 0, 100, 200, 300, 400. When Citizen receives a bribe demand she has an opportunity to either accept it, thereby earning $\mathbf{M}(200+400-b)$, or reject it and earning only the participation fee of **M**200. On the other hand, the Public Official gets a participation fee of **M**200 and a salary of **M**400 for the task of approving the Citizens. If his bribe demand is accepted by the Citizen, he earns $\mathbf{M}(200+400+b)$, else **M**600 only.

Note the following features about this bribery game. One, the minimum earning of the Public Official always exceeds that of the Citizen and hence bribery decisions cannot be interpreted by alternative explanations such as inequity aversion. Two, this one shot bribery game mimics the natural situation where a briber and a bribee meet only once. Three, the real effort task for the Citizen is calibrated in a way such that she is more likely to successfully complete the task and get the prize winning code[9]. At the same time it is crucial for her to perform the task in order to induce in her a sense of entitlement and hence a sense of harassment if a bribe is demanded. Finally, the bribery game discussed here abstracts away from many of the standard features of past corruption games in the literature, e.g. punishment and monitoring, social inefficiencies, third party externalities etc. Thus, the only cost of engaging in corruption here is a moral one. Introduction of any of these features in our set up makes no difference to the underlying strategic or psychological

[7] We introduce a computer based task where Citizens have to count the number of occurrences of the letter "A" in five different panels, each with a random sequence of letters A, B, C, D, E. The panels are so designed that they appear one after the other and a subject is not able to proceed to the next one unless she correctly counts the number of As in the current one. They have ten minutes within which they are required to find the prize winning code, which is mentioned at the end of the fifth panel. The task is designed in such a way that a Public Official does not need to grade the answers of the Citizen but is still able to figure out whether she has been able to complete the task or not by looking at the prize winning code in her response sheet.

[8] *Mohar* (or gold coin) - the experimental currency unit in our set-up, were used as currency in medieval India.

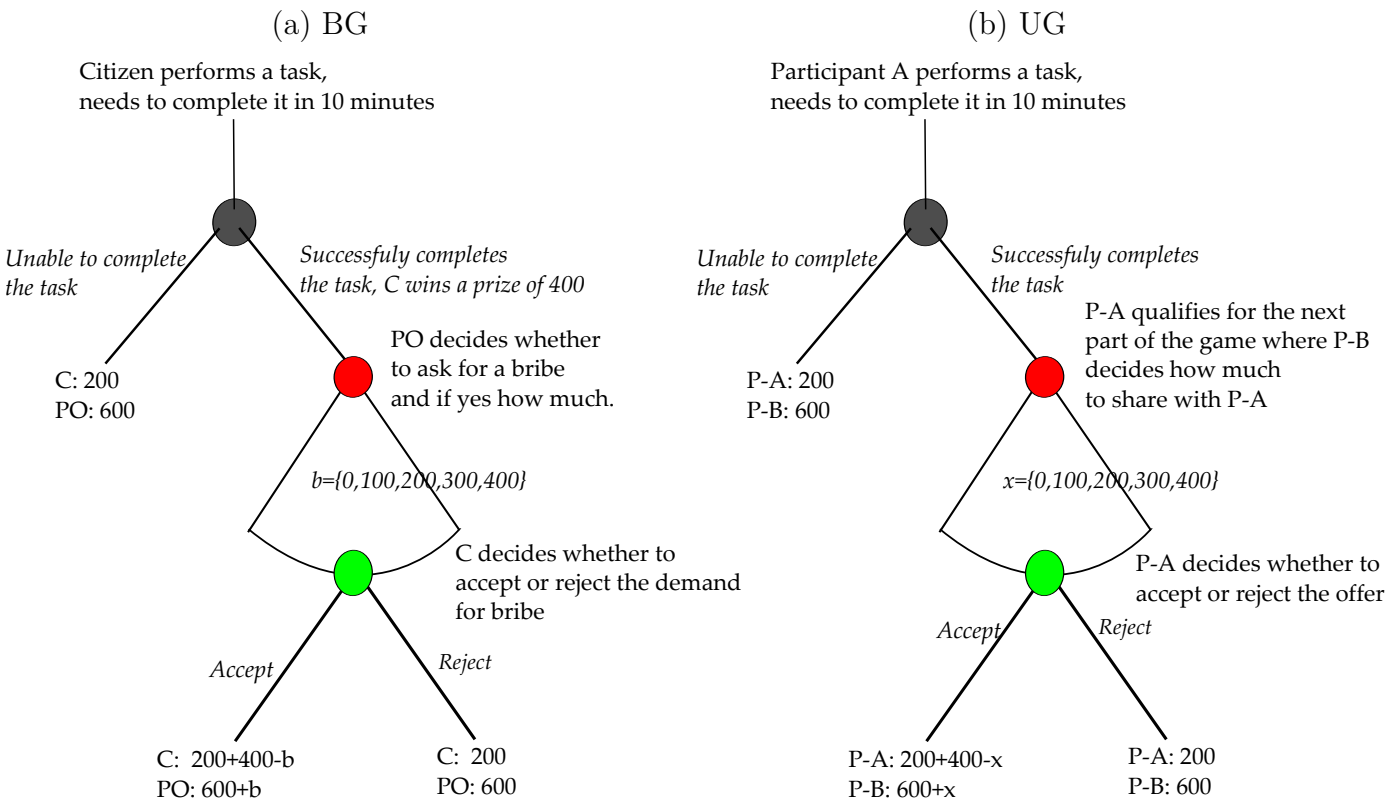
[9] In both treatments of our experiment all the subjects were able to complete the task within the stipulated time and get the prize winning code.

elements in the game. Banerjee (2015) discusses the interpretation of bribery in this simple set-up and gives evidence that subjects do make immoral decisions when they demand a bribe.

The ultimatum game treatment, described in 2(b), is isomorphic to the bribery game treatment described above, but with two main differences. One, it uses a neutral language frame by assigning roles as "Participant A" and "Participant B" instead of "Public Official" and "Citizen" and by using words such as "transfer" instead of "bribe". Two, while Citizens in the bribery game, upon successfully completing the task, were entitled to a prize, the Participant A (P-A henceforth) in this frame only *qualifies* to the second stage of the game where Participant B (P-B henceforth) plays an ultimatum game with her. Unlike in the bribery game, here the **M**400 endowment is with P-B and this feature induces a change in the sense of entitlement between the two treatments. Thus, in the second stage P-B decides to keep **M**x with himself and offers **M**$400-x$ to P-A, which P-A can either accept or reject[10]. If P-A accepts (rejects) the offer then she earns **M**$200+400-x$ (**M**200) while P-B earns **M**$200+400+x$ **(M**600**).** The sub-game perfect equilibrium in UG (BG) is Participant A (Public Official) retains (demands) **M**400 and Participant B (Citizen) accepts it. Thus, the ultimatum game is designed to provide a strategically equivalent counterfactual to the bribery game described above but evokes different psychological response due to the difference in the sense of entitlement. Our experimental design therefore adds to the literature where the location of the endowment, which engenders a sense of entitlement, has been found to play an important role in explaining observed behavior (List, 2007; Bardsley, 2008).

[10]We implement a strategy method to elicit C/P-A's accept/reject decision.

Figure 2: Bribery Game (BG) and Ultimatum Game (UG)



2.2 Trust Game

The baseline trust game we implemented is a variant of the standard trust game where a sender is matched to a receiver. The sender is endowed with **M**400. He can then decide how much to send, $t \in \{0, 50, 100, ...400\}$, to a receiver. Any amount sent is then multiplied by 3. The receiver then decides how much to return, $w \in \{0, 50, 100, ...3t\}$, to the sender. As a result, the payoff of a sender equals $\mathbf{M}(400 - t + w)$ whereas that of the receiver equals $\mathbf{M}(3t - w)$. The predominant interpretation in the literature is that t is a measure of trust, while w is a measure of trustworthiness. While in the BG/UG treatment, the trust game is preceded by either the BG or the UG treatment, respectively, in the baseline treatment it is preceded by neither. We followed a stranger matching protocol such that partners in the trust game are different from those in BG/UG[11].

In Experiment 1, subjects make their decisions both as a sender and a receiver in a strategy elicitation method[12] and role uncertainty is enforced. In the first decision, subjects play as a sender

[11] Behavioral spillovers have been found to be stronger when games are played with the same subjects than when they are played with different subjects (Cason et al., 2012). Our stranger matching protocol ensures that we do not pick up a trivial effect where a sender, after being a victim of a bribe demand, sends a lower amount (i.e. shows less trust) to the corrupt person she is matched with.

[12] In an exhaustive metastudy comparing strategy elicitation method versus direct method, Brandts and Charness (2011) finds that there was not even one case where treatment effect was found in strategy elicitation method but was not found in direct method. Given this finding and the fact that strategy elicitation method helps obtain an

and they decide how much of their initial endowment they are willing to send to the receiver. They choose any amount between **M**0 and **M**400 in multiples of fifty. In the second decision, they indicate how much they expect to be returned by their matched receiver for each possible amount sent. To motivate the subjects to report their beliefs accurately, we incentivize this question by paying an additional **M**100 if the response matches the actual return of the receiver for a randomly chosen amount sent. The subjects then take a third decision, where they play the role of a receiver. In this decision they indicate the amount they are willing to return to the sender for each possible amount which they may have received. Thus, we obtain their response both on and off the equilibrium path, enabling us to perform a richer sensitivity analysis. The earnings from this part are determined by randomly picking either the role of a sender or that of a receiver.

In Experiment 2, subjects play the trust game first and then they play the bribery game. While playing the trust game, they make decisions only in one of the roles i.e. either as a sender or as a receiver. At the end of the trust game, subjects are informed about the responses of their matched partners and their final earnings, following which they play the bribery game. In the bribery game senders play the role of Citizens while receivers play the role of Public Officials. This allows us to analyze whether amount entrusted to the receiver is negatively correlated with amount of bribe demanded by the receiver (assuming the role of the Public Official) in the bribery game. Note that Experiment 1 and Experiment 2 are implemented with a mutually exclusive set of subjects.

2.3 Social Norm

A third experiment is conducted to gather data on the social norm governing BG, UG and the trust game, using a tool developed by Krupka and Weber (2012). A separate group of subjects report their subjective assessment of how morally appropriate or inappropriate most people find the actions in a particular situation to be. They are rewarded if their appropriateness ratings match those of most other people (mode) in the session. Since the reward is given if a rating matches the mode of the distribution of ratings, it helps elicit a second order belief about the shared societal (other subjects in the session) perceptions about what is morally the right thing to do. Following Krupka and Weber (2012), we interpret the average rating as the social norm governing the situation.

Subjects are shown either the BG, the UG or the trust game treatment. Having seen the situation, they rate each action for each role as one of the following - "very socially inappropriate", "socially inappropriate", "somewhat socially inappropriate", "value neutral", "somewhat socially appropriate", "socially appropriate" and "very socially appropriate". The responses were later converted into numerical scores of -3, -2, -1, 0, +1, +2 and +3 respectively. We defined social norm governing a particular action in a given situation as the average social appropriateness rating for

otherwise unobservable rich data and perform a robust sensitivity analysis, we decided to employ this method. We believe that the treatment effect we find will have been accentuated had we used a direct method.

that action.

Each subject is paid a participation fee of Rs. 110. In the BG situation subjects report their social appropriateness rating for the actions of the Public Official and that of the Citizen. A bribe amount is randomly chosen. The modal response of the appropriateness rating for the randomly selected amount is noted. If a subject's rating for the randomly selected category for either the Public Official or the Citizen is the same as the modal response, then she is paid double the participation fee, i.e. Rs. 220. The norm elicitation of UG and the trust game treatments follow an identical protocol. 40 subjects rated the BG situation, 40 rated UG and 33 rated the trust game. It is important to note that any sensible measure of social norm should be uncontaminated by a subject's actual behaviors in that situation, else the elicited second order belief will be biased. Hence, the design we implemented was an entirely between subject one - it also helped avoid experimenter demand effect. Thus, none of the subjects who participated in the UG and BG treatments, took part in the social norm treatment.

2.4 Experiment Procedure

Experiment 1 of the experiment was conducted with student subjects at a management institute in Delhi. A total of 298 students were recruited and each subject participated in only one role of one treatment, out of which 182 participated in the BG and UG treatment, 36 participated in the baseline trust game and 80 in the social norm elicitation of BG and UG. For Experiment 2, a total of 93 students were recruited, out of which 60 played the trust game followed by the corruption game and 33 participated in the norm elicitation of the trust game. Sessions were randomly assigned UG and BG treatments and subjects were randomly assigned roles. The subjects were divided into two equal groups - each group was allocated a different room. The instructions for the respective roles were read out in English. Several examples were worked out and the earnings of both roles were calculated. The Citizens/Participant As completed the computer based task which then led them to the prize winning code. They mentioned the code in the response sheet which was then handed out to the matched Public Officials/Participant B. The Public Official/Participant Bs then made their bribe demand decision which was subsequently returned to C/P-A for their acceptance or rejection. The earning from this part was computed and mentioned on the response sheets, which was returned to the C/P-A subsequently.

Following the BG/UG treatment, the subjects played the trust game. They made their decisions both as sender and receiver but their earnings from this part were determined by randomly picking one of the roles. The final earnings of the subjects were determined by randomly picking one of the two parts. If the first part was chosen, then the subjects were paid according to the roles they played. If the second part was chosen then one group was randomly given the senders' earnings and the other group the receivers' earnings.

The sessions lasted for one and a half hours. All payoffs for this experiment were stated in terms

of the experimental currency called *Mohar*. At the end of the experiment participants exchanged their earnings for Rupees at the rate of 100*Mohars*=Rs.50. The earnings ranged from Rs. 100 to Rs. 700 with an average of Rs. 252 (~ 10 USD in PPP terms).

3 Results

3.1 Spillovers from Corruption to Trust and Trustworthiness

3.1.1 Trust

Since we were interested in the phenomenon of harassment bribery, we calibrated the task in a manner such that the majority of the subjects crossed the threshold, and as it turned out all the subjects completed the task within the stipulated time. In all, we had 45 and 46 pairs of subjects in UG and BG, respectively. In the following discussion (but not in the actual experiment) we use the word *ultim* to denote the UG treatment equivalent of the bribe i.e. the amount that P-B proposes to keep for himself. Also, since our focus in this paper is on the behavioral impact of being at the receiving end of corruption on trust, we will restrict our attention to the trust behavior of Citizens in BG, Participant As in UG and the subjects of the baseline trust game, unless otherwise stated.

We find significant differences in the way people perceive the BG and UG frames. It is reflected in the distributions of bribe/*ultim* amount in Figure 3a and also in the mean difference tests in Table 1. A Kolmogorov-Smirnov test rejects the null hypothesis that the distributions of bribe and *ultim* are equal (p-value = 0.03). Not only do we find that 19% of the subjects do not demand a bribe in the BG treatment as opposed to none in UG (χ^2 test, p-value=0.00), the mean bribe demanded is **M**182.6 in BG, but the mean *ultim* retained is **M**268.9 in UG (t-test, p-value<0.001). For the restricted sample, i.e. given that a bribe/*ultim* was demanded, we reject the hypothesis that bribe and *ultim* amount are equal (t-test, p-value=0.02). The difference in behavior of the PO in BG and that of the P-B in UG clearly indicates that the BG frame successfully induces an immoral environment. This is further reflected from the acceptance/rejection decision of the C/P-A which we see in Figure 3a. The percentage of Citizens who reject a bribe is always greater than that of Participant As for all possible bribe amount indicating that a bribe demand is considered more unfair than a demand for an equivalent amount of *ultim*. Table 1 shows that the difference is statistically significant for the amounts 200 and 300 (χ^2 test, p-value<0.001 for both the amounts). The results clearly show that the two frames, though strategically identical, have triggered different behavioral responses not only among PO/P-B but also among C/P-A.

That the subjects perceive the two frames differently is also indicated by the left panel of Figure 3b which plots the difference in social norm governing the two frames. A zero bribe demand is considered very socially appropriate but a zero *ultim* is considered socially inappropriate. Furthermore, the social appropriateness of bribe demand decreases with an increase in the bribe

amount, but that of *ultim* is maximum at equal split. The full distribution of the ratings, including the mean and mode, for each bribe/*ultim* category, is reported in Table 8 in Appendix 2. We shall later examine if this data can be used to predict trust behavior in the trust game.

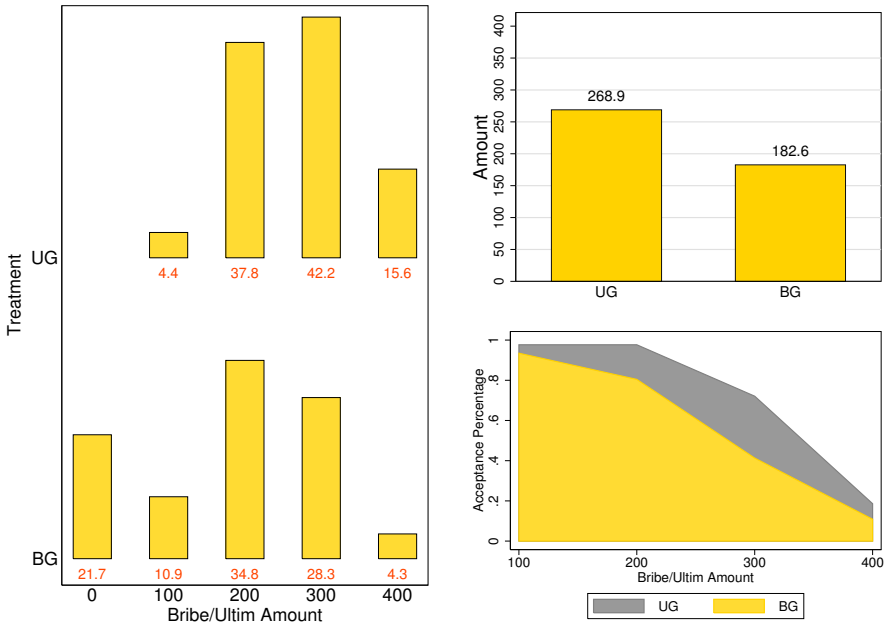
Figure 4 lays out the distribution of the levels of trust between BG and UG and compares the mean trust levels (amount shared as a sender in the trust game) of the Citizens with that of the Participant As. A chi-square test rejects the null hypothesis that both distributions are equal (p-value = 0.04)[13]. The full sample mean amount sent by the Citizens in the role of sender is **M**205.4 while that of the Participant As is **M**261.1. Table 1 shows that the difference is statistically significant (t-test, p-value=0.04). The difference between the amount sent remains statistically significant even when conditioned on those who decide to send a positive amount (t-test, p-value=0.08). These results indicate that Citizens, who are at the receiving end of bribery, tend to trust less than Participant As, who play a strategically identical but differently framed role in the ultimatum game.

Interestingly, it is the trust behavior in the BG, and not in the UG, which differs from the native distribution of trust as measured by the baseline trust treatment. This is indicated by the fact that both distribution and mean trust differs between BG and baseline (KS, p- value=0.10 and t-test, p -value=0.06). However, neither the distribution nor the means are different across the UG and baseline trust behavior (KS, p - value=0.80 and t-test, p - value=0.88). Our apprehension in Section 2 that the baseline trust may not be an appropriate counterfactual with which one can compare the effect of corruption on trust turned out to be misplaced. However, the subsequent discussion mainly focuses on the comparison between the trust behavior of P-A in UG and that of C in BG.

[13] A Kolmogorov-Smirnov test however fails to reject the null of equality of distributions in this case.

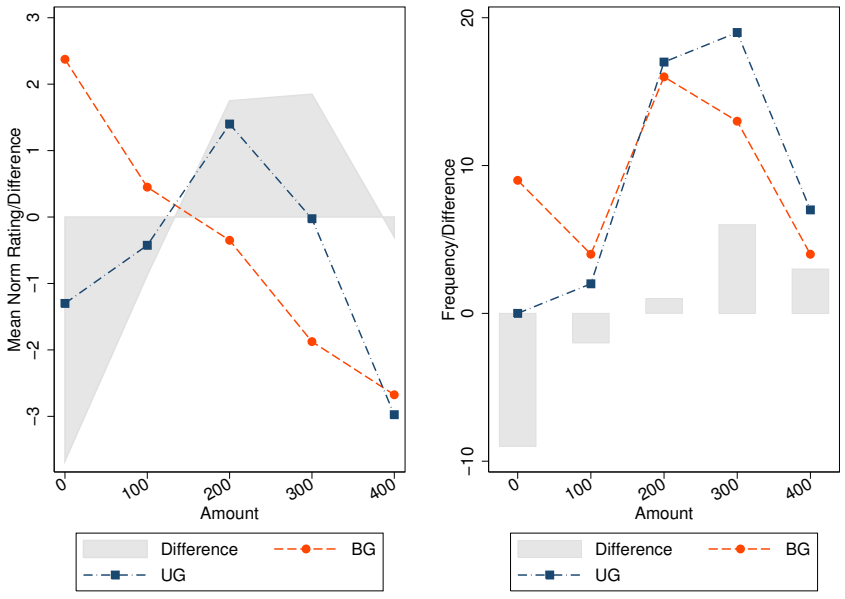
Figure 3: Bribery and Ultimatum Game

(a) Bribe/*ultim* demand and accept/reject



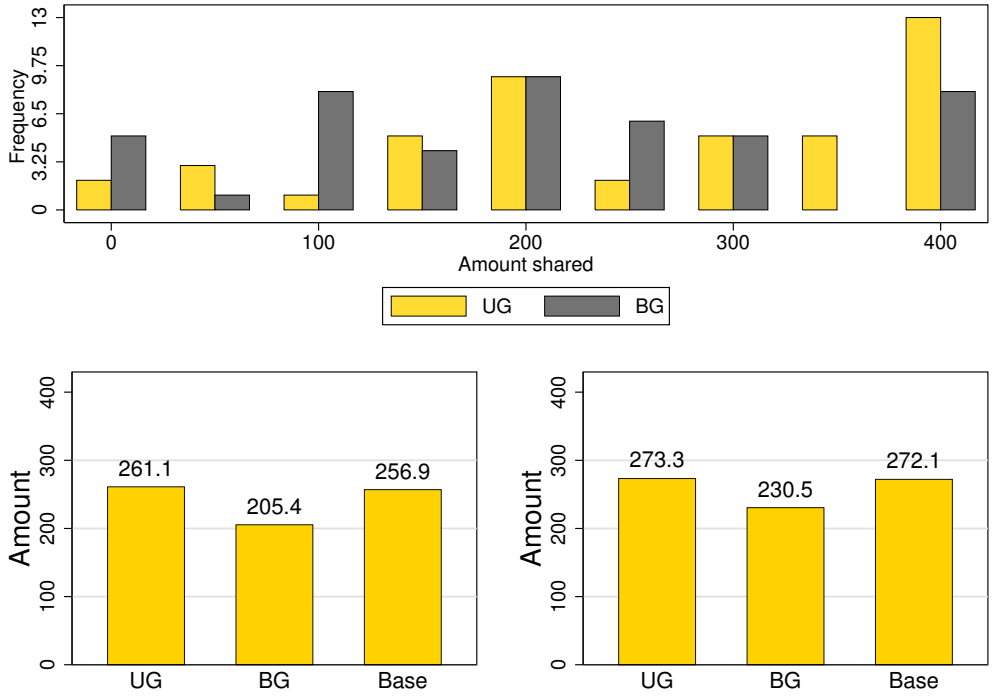
The figure on the left compares the bribe/*ultim* distribution in BG and UG. The one on the top right compares the mean bribe demanded with the mean *ultim* for the full sample while that on the bottom right compares the acceptance rates of the Citizens/Participant As for the bribe/*ultim* demand.

(b) Social Norm and Actual Behavior



The figure on the left compares the social norm of the bribe and *ultim* demand for each amount and the shaded region marks the difference. The figure on the right plots the number of subjects who demanded a particular amount of bribe/*ultim* in the BG/UG treatment. Clearly, the pattern of difference in social norm closely follows the difference in actual behavior.

Figure 4: Mean Trust in the two treatments.



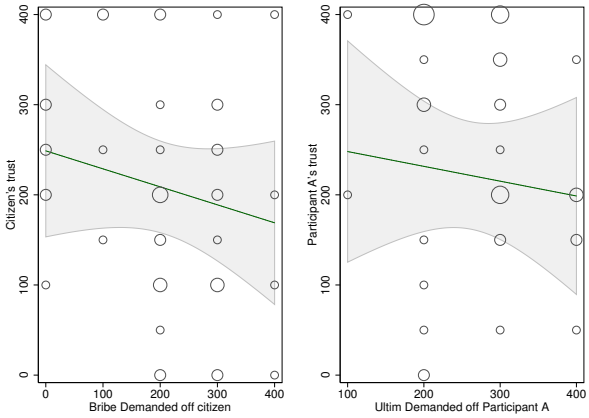
The figure on the top lays out the distributions of the amount shared by a Citizen and Participant A in the trust game. The bottom left and bottom right figures compare the mean amount shared by C in BG, P-A in UG and baseline subjects for full sample (including those who did not share anything) and restricted sample (excluding those who did not share anything) respectively.

The difference in the trusting behavior between the BG and the UG treatment persists after controlling for the bribe/*ultim* amount demanded of a Citizen and beliefs about others' trustworthiness, measured as expected return on trust ($ERoT = (Expected\,Return\,for\,a\,trust\,level - Trust\,level)/Trust\,level$), as shown in col (1) in Table 3. The negative association between bribe amount and trust is also illustrated in Figure 5, though *ultim* and trust are statistically uncorrelated (despite a negative correlation coefficient). This pattern is broadly consistent with the stylized fact we observe in Figure 1. Instead of bribe/*ultim* demanded of a Citizen, Col (2) - (5) control for the social norm ratings of the bribe/*ultim* demand, besides other variables such as ERoT, demographics and preferences. Interestingly, the treatment effect disappears in these specifications with social norm as a covariate, but the social norm coefficient remains positive and statistically significant. The coefficients suggest that for each unit increase in mean social appropriateness rating of bribe/*ultim* demanded, the average trust level increases by **M**18 to **M**19.5, depending on the specification. ERoT has a positive statistically and economically significant coefficient, meaning that an increase in expected return increases trust levels. Except the negative coefficient for female none of the demographic variables explain the trust levels. The fact that females trust less in our

sample than males is consistent with evidence from past studies (Buchan et al., 2008). Col (5) of Table 3 reports the ordered probit[14] estimates of the amount shared - the direction of the results are consistent with the ordinary least square estimates.

In Table 5 we briefly look at trust behavior of Public Officials. We find that trust is negatively associated with a demand for a bribe as indicated by col (1) and (2), though the strength of the association is weak. In col (3) - (4), we replace bribe demand with the social appropriateness rating corresponding to the bribe amount and find that the coefficient of social appropriateness measure is economically and statistically significant, implying that POs who took a more socially appropriate action in the bribery game also trusted more in the trust game.

Figure 5: Amount demanded as bribe or *ultim* and trust levels



The panel on the right plots Citizen's trust with the bribe demanded off her while that on the left plots the relationship between Participant A's trust and the *ultim* demanded of her. While the correlation in the left panel is -0.29 (p-value=0.05) that on the right is -0.12 (p-value=0.20). However, the difference in slope between in the two treatments are not statistically different.

[14]Since trust or the amount sent by the sender in our case - I, is an ordinal and discrete variable, one may argue that the actual propensity to trust I^* is latent and thus unobservable. The mapping between I and I^* is given by $I_i^* = \boldsymbol{x}_i'\beta + \varepsilon_i$ and $I_i = t$ if $s_{t-1} < I^* \leq s_t$, $t = 0, ..., T$. β - the parameter of interest can then be obtained by an ordered probit estimate.

Table 1: Mean Differences in BG/UG and Trust Game

Variables[a]	BG	UG	Difference	p-value[b]
% who asked for bribe/*ultim*	81	100	19	<0.01
Bribe/*ultim* amount (Full Sample)	182.6	268.8	71.1	<0.01
Bribe/*ultim* amount (Restricted Sample)	245.9	268.8	22.9	0.02
% who accepted when amount=100	93.5	97.8	4.3	0.31
% who accepted when amount=200	80.4	97.8	17.4	<0.01
% who accepted when amount=300	41.3	73.3	32.0	<0.01
% who accepted when amount=400	10.8	17.8	7	0.34
% who decided to trust	89.1	95.6	6.5	0.25
Trust Amount (Full Sample)	205.4	261.1	55.7	0.04
Trust Amount (Restricted Sample)	230.5	273.3	42.8	0.08

[a]The restricted sample consists of only those who demanded a bribe/*ultim* or those who chose to trust.

[b]For comparing proportions in the table, p-values from χ^2 test of equality of proportions are reported. For comparison of sample mean, p-values from t-test are reported.

3.1.2 Trustworthiness behavior

To analyze the trustworthiness behavior, we convert the amount returned as a receiver to a Return Ratio (RR) where $RR = Amount\,Returned/Amount\,Received$. Col (4) - (6) in Table 4 report the ordinary least square regression results of trustworthiness of the C/P-A - measured in terms of average Return Ratio. We find no evidence that there is a difference in the trustworthiness of Citizens and Participant As. Also, neither the bribe/*ultim* amount or the social appropriateness measure predict trustworthiness. This is evident from the proximity of the BG and UG Return Ratio curves which are plotted in 6(b) and is also bourne out of the fact that for none of the trust categories, the difference in return ratio is statistically significant. The only variable which seems to capture trustworthiness is mean ERoT, indicating that a subject's expectation about her matched partner's trustworthiness seems to predict her own trustworthiness behavior. It is difficult to say whether subjects form their expectations about others' trustworthiness from their own trustworthiness behavior or the other way round, but in a homogenous subject pool like ours, both mechanisms can potentially be at work. We also do observe the monotone concave shape of the Return Ratio curve observed in past studies (Bellemare and Kroger, 2007). Finally, the trustworthiness of PO, measured by mean Return Ratio of all trust categories, does not have any association with the bribe amount demanded, as indicated by results given in col (5) - (7) in Table 5.

3.2 Spillovers from Trust to Corruption

Table 6 lays out the results from Experiment 2, where a trust game is followed by the corruption game. The experiment was set up in a way such that the receiver in the first stage trust game played the role of a Public Official in the second stage bribery game. Col (1) and (2) reveal that the amount entrusted has had little bearing on the demand for bribe when receivers assume the role of Public Officials. In col (3) and (4) we estimate a two stage specification which is analogous to the col (1) - (3) in Table 4 i.e. we assume norm violation in the trust game affects bribe demand decision through beliefs about whether the bribe will be accepted or not. Statistical insignificance indicates that this channel is not at work.

The only variable which successfully predicts bribe demanded is expectations of whether or not the demanded bribe will be accepted. Col (5) and (6) in Table 6 show that bribe demand increases with expectations about whether the bribe demand will be accepted. To our knowledge this is the first study which elicit beliefs about whether or not the demanded bribe will be accepted in an incentive compatible manner and show that it predicts actual bribe demand. Policies aimed at reducing corruption levels should focus on how expectations about acceptability of bribe demand can be changed.

3.3 Mechanism

What is the precise nature in which norm violation, beliefs and trust affect each other? To answer this question we need to understand whether norm violation is more pronounced in one treatment than another and whether norm violation has a differential effect on trust across treatments. Besides, how the treatment affects beliefs about trustworthiness is crucial. First, note that the average social norm rating of *ultim* demanded is 0.04 while that of bribe demanded is -0.38 (MW test, p-value=0.04). Figure 7 further illustrates that there is relatively more mass on the left for BG than UG. Thus, not only is the average demand more socially inappropriate in BG than in UG, more socially inappropriate demand has been made in the former than in the latter. Second, an increase in norm violation has a greater consequence on trust in BG than in UG as is indicated by col (6) in Table 3. While col (7) suggests that the treatments affect beliefs in different ways, the differential effect vanishes once social norm is introduced as a regressor (col (8) - (9), Table 3). The pattern in the data indicates that norm violation may affect trust through its effect on beliefs about trustworthiness - a channel which merits further investigation.

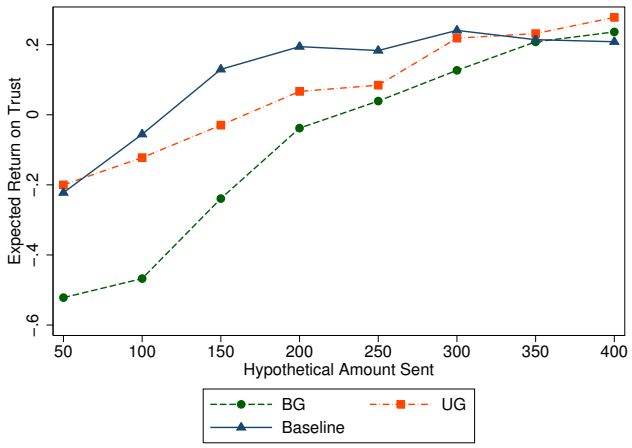
To do so, we present a formal set up in Appendix 1 through which we unpack the mechanism driving the spillover from corruption to trust. "Citizens" interact with "Public Officials" in order to obtain a certain public service. Public Officials may be "honest" and "good" or "corrupt" and "bad". Whether a Citizen meets an honest Public Official or a corrupt one is entirely fortuitous. Following their interactions with the Public Officials, Citizens form beliefs about how likely Public Officials are to be trustworthy and then make a decision whether or not to trust a Public Official.

The framework predicts that if a Citizen meets a corrupt (honest) Public Official in the first stage, then her belief about a matched person's trustworthiness decreases (increases) and consequently the trust shown by the Citizen decreases (increases).

Our data allow us to examine if this channel is indeed at work. First, we analyze the data on expectations or beliefs (measured by Expected Return on Trust) and preferences. Figure 6(a) plots the average expected return on trust for each possible trust levels using the full strategy vector data. Two observations stand out - first, the expected return is significantly less for the Cs in BG than the P-As in UG, especially for lower levels of trust; second, ERoT is largely negative, specially for lower levels of trust. The first observation tells us that Citizens have suffered a negative shock in their expectations about trustworthiness of their matched partners, when compared to Participant A or baseline subjects. The second suggests that subjects by and large display low expectations (largely negative) about the trustworthiness when the full strategy vector is considered, though their expectations corresponding to their actual response is greater than zero and thus consistent (not reported).

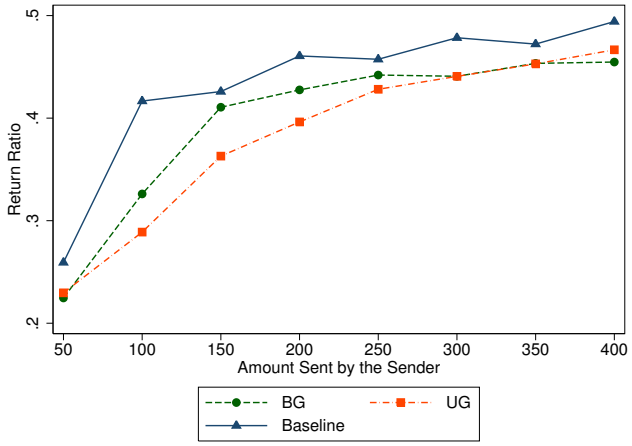
Figure 6: Expected Return on Trust

6(a)



The panel plots the average Expected Return on Trust for full strategy vector data of subjects in baseline and those playing Citizen and Participant A in BG and UG, respectively.

6(b)



The above figure plots the average return ratio (i.e. trustworthiness), for all possible bribe amounts, of subjects in baseline and those playing Citizen and Participant A in BG and UG, respectively.

The OLS estimates of col (2) - (4) and the ordered probit estimates of col (5) in Table 3 show that the bribery frame by itself does not lead to the treatment effect, and thus the treatment effect is most likely not generated through priming or mindset effects. However, the positive, statistically and economically significant coefficients corresponding to the average social norm show that if a Citizen/Participant A faces a socially inappropriate bribe/*ultim* demand then she trusts less. Now, consider this with the finding that average social appropriateness measure of bribe demand in the BG, -0.38, is significantly lower than that of the *ultim* demand in UG, 0.04 (MW test, p-value=0.04). Together they imply that Citizens have faced more socially inappropriate demands on average than Participant As and this in turn has generated lower trust.

Besides social norm, ERoT, averaged over all trust categories, turns out to be positive and

statistically significant when it is used as a covariate in the regression of trust (col (2) - (5) in Table 3) meaning that the expectation of trustworthiness of the matched partner predicts trust. However, it is important to note that these specifications yield biased estimates since the ERoT is endogenously determined. Not only is this apparent conceptually from equation (7) and (8) in Appendix 1, but also empirically from Figure 6 where ERoT is seen to systematically vary with treatment[15]. Thus, treatment dummy, and also possibly social appropriateness measure, affect beliefs about trustworthiness in the first stage while in the second stage trust decisions are influenced by demographic characteristics, beliefs and preferences. Hence, the structural equations in terms of the experimental data are given by

$$TRUST = \beta_0 + \beta_1 E(ERoT|BG, NORM) + \beta_{\mathbf{2}}\mathbf{X} + \beta_\lambda \lambda + \beta_\theta \theta + \epsilon \quad (1)$$

$$ERoT = \gamma_0 + \gamma_1 BG + \gamma_2 NORM + \nu \quad (2)$$

where $TRUST$ is the trust decision of the sender, $\mathbf{X}$ is the set of exogenous characteristics of the subject, BG is the treatment dummy and $NORM$ is the exogenously elicited appropriateness measure of the bribe/*ultim* demand faced by the subject. The joint estimation of equations (1) and (2) assumes that the appropriateness of the bribe/*ultim* demand and the treatment dummy affects trust through the expected return on trust but not independently i.e. the exclusion restriction holds. Our parameters of interest are β which is consistently and unbiasedly estimated using a 3SLS procedure.

Col (1) - (3) in Table 4 reports the second stage results. Col (1) and (2) show that the coefficient of ERoT is positive and significant at 10% level and that in col (8) it is marginally insignificant with a p-value=0.10. Interestingly, the first stage results show that the treatment dummy has a negative and significant effect and social appropriateness measure a positive and significant effect on ERoT. The significant negative effect of the treatment dummy suggests that there is a negative mindset effect of treatment on beliefs about trustworthiness but there is no independent effect of the treatment on trust (not reported) i.e. the very mindset of being in a potentially corrupt environment reduces expectations about a prosocial and fair behavior. The positive significant effect of social norm on expectations about trustworthiness, on the other hand, indicates that beliefs respond positively to a fair outcome, not necessarily to a materially beneficial outcome. Note from Figure 3b that while a bribe amount and its fairness has a negative and monotonic relation, less *ultim* is not always considered fair - the peak of social appropriateness in UG is in fact at equal split. Table 2 compares the difference in trust and ERoT for greatest social appropriateness and lowest social

[15]Formally we test for endogeniety using a Durbin-Wu-Hausman test and this leads to a rejection of the null hypothesis that the mean ERoT is exogenous (p-value=0.07).

Table 2: Trust, Mean ERoT and high and low social appropriateness

UG, BG Amount	Trust Difference	p-value	Difference in Mean ERoT	p-value
200,0[a]	4	0.94	0.07	0.60
400,400[b]	10	0.90	-0.38	0.13

[a]Most socially appropriate choice
[b]Most socially inappropriate choice

appropriateness in UG and BG. The greatest social appropriateness in UG and BG correspond to an *ultim* of 200 in UG and a bribe demand of 0 in BG. The least social appropriateness correspond to *ultim* and bribe demand of 400 each. It turns out that there is no statistical difference in ERoT between the most and the least fair (p-value=0.60). Furthermore, there is no statistical difference in trust between subjects who received the most and the least fair bribe/*ultim* demand. Thus it is the social appropriateness norm corresponding to the bribe/*ultim,* and not the amount per se, which affects the beliefs and the subsequent trust decisions. Hence, whether or not social norm has been violated is an important factor in the underlying model which predicts trust decisions. So why did the trust decisions differ in the two frames? The reason is that the socially inappropriate demand was exercised more frequently in BG than in UG.

Therefore, results from the joint estimation of ERoT and trust confirm the following mechanism at work: the corruption frame decreases expectations of trustworthiness and the social appropriateness of bribe/*ultim* demand increases the same. The expectations of trustworthiness in turn determine the actual trust decisions. The first stage results affirm Prediction 1 while the second stage results confirm Prediction 2 as obtained from the theoretical framework presented in Appendix 1.

We also collect data on altruistic and risk preferences, which we use to analyze if preferences can help explain the observed trust pattern. We follow Dohmen et al. (2011), who find that the approach of asking people a survey question about their "willingness to take risks in general ... generates a useful all-round measure", to obtain the risk profile (proxy for γ in (1)) of the subjects. For altruistic preference, we ask the subjects how much they will be willing to share with a charity if they win a lottery of Rs. 1000 (proxy for θ in (2)). The general risk measure turns out to be a significant predictor of trust as is clear from Col (4), (5) and (9) (and elsewhere in the analysis) in Table 3 but altruism does not. Neither risk nor altruism is significant when interacted through the treatment variable (not reported).

Does the social norm based mechanism described above also explain why we do not find a spillover from trust to corruption? Interestingly, as Fig 8a in Appendix 2 shows, conditioned on a positive amount of trust, there is not much variation in the social appropriateness norm of the amount entrusted. Not surprising then that social norm does not explain bribe demand either in col (2) in Table 6 indicates or in col (3) and (4) which report the two stage estimates of an

empirical model, analogous to equation1 and 2. The latter assumes that social norm corresponding to amount entrusted affect expectations or beliefs about bribe acceptance, which in turn affect the bribe demands. Clearly this model does not explain the data.

4 Discussion and Conclusion

In real life people interact with each other strategically in many different settings. These interactions affect our priors which in turn influence our subsequent decisions. However, the majority of experimental research focuses on behavior in experimental games in isolation. To mimic some of the real life situations of interrelated behavioral effects, past studies have designed experiments that generate "behavioral spillover effects" (Knez and Camerer, 2000; Ahn et al., 2001; Cason et al., 2012). Such spillovers can help improve coordination or cooperation (Cason et al., 2012) or worsen them (Buser and Dreber, 2013). These effects are different from other related psychological concepts such as priming and pure mindset effects. While priming arises from very subtle interventions, which work even by simply reminding people of some priming elements, behavioral spillovers arise when there are real consequences in terms of monetary payoffs.

In this paper we provide evidence of negative spillover i.e. the effect of bribe extraction on trust. Subjects are randomized into either a harassment bribery game or a strategically identical but differently framed ultimatum game. Both treatments are followed by a trust game. Despite being identical in strategic terms, the two games differ in terms of the language in which they are described and entitlements of the players (driven by different endowments). Both these differences induce different moral centers in the frames and consequently triggers different psychological responses. We show that people in the bribery game treatment trust less than those in the ultimatum game treatment - this provides a causal link that corruption leads to lower trust. Furthermore, we provide an insight into the mechanism behind the negative spillover effect. Our evidence suggests that a demand for bribe violates social appropriateness norm and norm violation in turn negatively affects belief about the matched partner's trustworthiness. Since actual trust behavior is partly shaped by the belief about how trustworthy a matched partner is, the negative belief shock triggers a decrease in the level of trust through a rightward shift in the prior about the prevalence of norm violators in the trust game. This mechanism indicates that subjects exhibit some kind of a generalized indirect negative reciprocity, when faced with norm violations. Interestingly this operates through a change in beliefs rather than preferences - a finding which is consistent with evidence on social framing effects from past studies (Ellingsen et al., 2012). However, this is a subject which needs further investigation - Gächter et al. (2013), for instance, finds that observed peer effect in their gift exchange game is explained by social preferences rather than norm induced beliefs.

In a second experiment, we let subjects play a trust game and corruption game in that sequence with an aim to examine if lack of trust triggers corrupt behavior. We find no evidence that lack of trust causes higher bribe demand. Furthermore, norm violation as a possible mechanism does not

explain the data. Interestingly, we find that beliefs about whether a bribe demand will be accepted or not, measured through an incentive compatible way, is an important predictor of actual bribe demand. This points to the fact that a long term sustained reduction in corruption will require finding ways by which these beliefs can be altered.

A few important caveats must be placed at this point. First, behavioral spillovers, of the kind we study in this paper, are short lived in nature. The priors are more likely to go back to the steady state levels with time. However, we conjecture that repeated interactions in a corrupt environment may lead to a behavioral stationary state of low trust (see for instance Sah (2007)). Of course our experiment, being a one shot game, has no way of verifying this conjecture. Second, the fact that we did not find a causal relation from trust to corruption suggests that low trust do not trigger unethical behavior in the short run. It may very well be true that persistent low trust in a society leads to an increase in unethical behavior in the longer horizon. Given our experimental design, we are unable to identify longer run effects such as this. Third, unlike most other corruption experiments which are run in countries with low corruption norm, our experiments are conducted in a country where corruption is very high - India. Some of the results in this study, interpretation and response in the loaded frame, may depend on cultural traits of subjects.

The consequences of corruption on economic activity has primarily been addressed in the literature through three channels: public and private investments and expenditure, human capital and governance. Our paper suggests that adverse effect on social capital is yet another way in which corruption can affect growth and other economic activity. This channel has received little attention in the literature and our paper makes a contribution by showing that there is an unambiguous causal link from corruption to social capital and thereby placing the issue on the discussion table.

Acknowledgement

I thank Alexander Koch, Nabanita Datta Gupta, Marco Piovesan, Luigi Zingales, Bertil Tingodden, Lata Gangadharan, Johannes Abeler, Nabanita Datta Gupta and Klaush Abbink seminar/conference participants at Aarhus University, IIM Calcutta, IIT Gandhinagar, IIM Ahmedabad, Winter School at DSE 2014, Morality Conference at University of California, San Diego, Washington and Lee University for their comments and suggestions. I also thank Sujoy Chakrabarty and Bibek Banerjee for making it possible for me to run the experiment and Manas Pathak for his research assistance. The experiment was funded with grants from Department of Economics and Business, Aarhus University.

References

Abbink, Klaus and Danila Serra, "Anticorruption Policies: Lessons from the Lab," in Leonard Wantchekon Danila Serra, ed., *New Advances in Experimental Research on Corruption*,

Emerald Group Publishing Limited, 2012, chapter 8, pp. 77–115.

_ , **Utteeyo Dasgupta, Lata Gangadharan, and Tarun Jain**, "Letting the briber go free: An experiment on mitigating harassment bribes," *Journal of Public Economics*, 2014, *111* (C), 17–28.

Acemoglu, Daron and Alexander Wolitzky, "Cycles of Conflict: An Economic Model," *American Economic Review*, 2014, *104* (4), 1350–67.

Ahn, T.K., Elinor Ostrom, David Schmidt, Robert Shupp, and James Walker, "Cooperation in PD Games: Fear, Greed, and History of Play," *Public Choice*, 2001, *106* (1-2), 137–155.

Albert, Max, Werner Guth, Erich Kirchler, and Boris Maciejovsky, "Are we nice(r) to nice(r) people?An experimental analysis," *Experimental Economics*, March 2007, *10* (1), 53–69.

Anderson, Christopher J. and Yuliya V. Tverdova, "Corruption, Political Allegiances, and Attitudes toward Government in Contemporary Democracies," *American Journal of Political Science*, 2003, *47* (1), pp. 91–109.

Ariely, Dan, George Loewenstein, and Drazen Prelec, ""Coherent Arbitrariness": Stable Demand Curves Without Stable Preferences," *The Quarterly Journal of Economics*, February 2003, *118* (1), 73–105.

Banerjee, Ritwik, "On the interpretation of bribery in a laboratory corruption game: moral frames and social norms," *Experimental Economics*, 2015, pp. 1–28.

Bardhan, Pranab, "Corruption and Development: A Review of Issues," *Journal of Economic Literature*, September 1997, *35* (3), 1320–1346.

Bardsley, Nicholas, "Dictator game giving: altruism or artefact?," *Experimental Economics*, June 2008, *11* (2), 122–133.

Bednar, Jenna, Yan Chen, Tracy Xiao Liu, and Scott Page, "Behavioral spillovers and cognitive load in multiple games: An experimental study," *Games and Economic Behavior*, 2012, *74* (1), 12–31.

Bellemare, Charles and Sabine Kroger, "On representative social capital," *European Economic Review*, January 2007, *51* (1), 183–202.

Berg, Joyce, John Dickhaut, and Kevin McCabe, "Trust, Reciprocity, and Social History," *Games and Economic Behavior*, July 1995, *10* (1), 122–142.

Bjornskov, Christian, "Combating Corruption: On the Interplay between Institutional Quality and Social Trust," *Journal of Law and Economics*, 2011, *54* (1), 135 – 159.

Bowler, S. and J. A. Karp, "Politicians, scandals, and trust in government," *Political Behavior*, 2004, *26* (3), 271–287.

Brandts, Jordi and David J. Cooper, "A Change Would Do You Good .... An Experimental Study on How to Overcome Coordination Failure in Organizations," *American Economic Review*, 2006, *96* (3), 669–693.

_ **and Gary Charness**, "The strategy versus the direct-response method: a first survey of experimental comparisons," *Experimental Economics*, 2011, *14* (3), 375–398.

Buchan, Nancy R., Rachel T.A. Croson, and Sara Solnick, "Trust and gender: An examination of behavior and beliefs in the Investment Game," *Journal of Economic Behavior & Organization*, December 2008, *68* (3-4), 466–476.

Burnham, Terence, Kevin McCabe, and Vernon L. Smith, "Friend-or-foe intentionality priming in an extensive form trust game," *Journal of Economic Behavior & Organization*, September 2000, *43* (1), 57–73.

Buser, Thomas and Anna Dreber, "The Flipside of Comparative Payment Schemes," Tinburgen Institute Discussion Paper TI 2013-190/1, Tinburgen Institute 2013.

Cason, Timothy N. and Lata Gangadharan, "Cooperation Spillovers And Price Competition In Experimental Markets," *Economic Inquiry*, 07 2013, *51* (3), 1715–1730.

_ **, Anya C. Savikhin, and Roman M. Sheremeta**, "Behavioral spillovers in coordination games," *European Economic Review*, 2012, *56* (2), 233 – 245.

Chang, Eric C. C. and Yun han Chu, "Corruption and Trust: Exceptionalism in Asian Democracies?," *Journal of Politics*, 2006, *68* (2), 259–271.

Cherry, Todd L. and Jason F. Shogren, "Rationality crossovers," *Journal of Economic Psychology*, April 2007, *28* (2), 261–277.

_ **, Thomas D. Crocker, and Jason F. Shogren**, "Rationality spillovers," *Journal of Environmental Economics and Management*, January 2003, *45* (1), 63–84.

Dohmen, Thomas, Armin Falk, David Huffman, Uwe Sunde, Jurgen Schupp, and Gert G. Wagner, "Individual Risk Attitudes: Measurement, Determinants, And Behavioral Consequences," *Journal of the European Economic Association*, 06 2011, *9* (3), 522–550.

Drouvelis, Michalis, Robert Metcalfe, and Nattavudh Powdthavee, "Priming Cooperation in Social Dilemma Games," IZA Discussion Papers 4963, Institute for the Study of Labor (IZA) May 2010.

Ellingsen, Tore, Magnus Johannesson, Johanna Mollerstrom, and Sara Munkhammar, "Social framing effects: Preferences or beliefs?," *Games and Economic Behavior*, 2012, *76* (1), 117–130.

Gächter, Simon, Daniele Nosenzo, and Martin Sefton, "Peer Effects In Pro-Social Behavior: Social Norms Or Social Preferences?," *Journal of the European Economic Association*, 06 2013, *11* (3), 548–573.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, "The Role of Social Capital in Financial Development," *American Economic Review*, June 2004, *94* (3), 526–556.

_ , _ , and _ , "Trusting the Stock Market," *Journal of Finance*, December 2008, *63* (6), 2557–2600.

_ , _ , and _ , "Cultural Biases in Economic Exchange?," *The Quarterly Journal of Economics*, August 2009, *124* (3), 1095–1131.

Huck, Steffen, Philippe Jehiel, and Tom Rutter, "Feedback spillover and analogy-based expectations: A multi-game experiment," *Games and Economic Behavior*, March 2011, *71* (2), 351–365.

Innes, Robert and Arnab Mitra, "Is Dishonesty Contagious?," *Economic Inquiry*, 01 2013, *51* (1), 722–734.

Knack, Stephen and Philip Keefer, "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation," *The Quarterly Journal of Economics*, 1997, *112* (4), 1251–1288.

Knez, M. and C. Camerer, "Increasing Cooperation in Prisoner's Dilemmas by Establishing a Precedent of Efficiency in Coordination Games," *Organizational Behavior and Human Decision Processes*, 2000, *82* (2), 194–216. cited By (since 1996)38.

Krupka, Erin L. and Roberto A. Weber, "Identifying Social Norms Using Coordination Games: Why Does Dictator Game Sharing Vary?," *Journal of European Economic Association*, 2012.

List, John A., "On the Interpretation of Giving in Dictator Games," *Journal of Political Economy*, 2007, *115*, 482–493.

Moreno, A, "Corruption and democracy: A cultural assessment," *Comparative Sociology*, 2002, *1* (3-4), 495–507.

Morris, Stephen D. and Joseph L. Klesner, "Corruption and Trust: Theoretical Considerations and Evidence From Mexico," *Comparative Political Studies*, 2010, *43* (10), 1258–1285.

North, Douglas C., *Institutions Institutional Change and Economic Performance*, Cambridge University Press, 1990.

Porta, D. Della, "Social capital, beliefs in government and political corruption," in S. J. Pharr and R. D. Putnam, eds., *Disaffected democracies: What's troubling the trilateral countries?*, Princeton, NJ: Princeton University Press, 2000.

Porta, Rafael La, Florencio Lopez de Silanes, Andrei Shleifer, and Robert W. Vishny, "Trust in Large Organizations," *American Economic Review*, May 1997, *87* (2), 333–38.

Rothstein, B. and D. Stolle, "How Political Institutions Create and Destroy Social Capital: An Institutional Theory of Generalized Trust," *Paper presented at the annual meeting of the American Political Science Association, Boston Marriott Copley Place, Sheraton Boston & Hynes Convention Center, Boston, Massachusetts*, 2002.

Sah, Raaj, "Corruption across countries and regions: Some consequences of local osmosis," *Journal of Economic Dynamics and Control*, August 2007, *31* (8), 2573–2598.

Seligson, Mitchell A., "The Impact of Corruption on Regime Legitimacy: A Comparative Study of Four Latin American Countries," *Journal of Politics*, 2002, *64* (2), 408–433.

Serra, Danila and Leonard Wantchekon, "Experimental Research on Corruption: Introduction and Overview," in Leonard Wantchekon Danila Serra, ed., *New Advances in Experimental Research on Corruption*, Research in Experimental Economics, Emerald Group Publishing Limited, 2012, chapter 1, pp. 51–76.

Sobel, Joel, "Can We Trust Social Capital?," *Journal of Economic Literature*, 2002, *40* (1), 139–154.

Uslaner, E.M., *The Moral Foundations of Trust*, Cambridge University Press, 2002.

Weber, Roberto A., "Managing Growth to Achieve Efficient Coordination in Large Groups," *American Economic Review*, 2006, *96* (1), 114–126.

Williamson, Oliver E., *The Economic Institutions of Capitalism*, The Free Press: New York, 1985.

Xin, X. and T. K. Ruden, "The context for political corruption: A cross-national analysis.," *Social Science Quarterly*, 2004, *85* (2), 294–309.

Table 3: Citizen's Trust

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES					trust				
bg	-61.65**	-32.79	-28.35	-32.31	-0.30	-47.59*	-45.17*	-40.95	-39.36
	(26.56)	(25.33)	(25.76)	(25.19)	(0.24)	(26.13)	(26.47)	(26.44)	(25.98)
amount	-0.29**								
	(0.12)								
norm		19.49**	19.24**	18.12**	0.18**				
		(7.96)	(7.88)	(7.81)	(0.07)				
norm*bg						21.26*		17.16*	19.25*
						(11.17)		(9.51)	(10.97)
erot	99.38***	99.33***	100.34***	89.68**	0.90***				
	(35.84)	(35.84)	(35.58)	(35.44)	(0.34)				
erot*bg							107.82*	84.21	75.18
							(59.49)	(61.16)	(59.40)
age			-2.99	-4.42	-0.04				-4.82
			(7.02)	(6.90)	(0.06)				(7.14)
female			-59.08**	-52.34*	-0.51*				-57.80*
			(29.35)	(28.61)	(0.27)				(29.72)
catscore			-4.47	-4.07	-0.05				-4.37
			(3.54)	(3.44)	(0.04)				(3.57)
fam_income			-4.44	-1.40	0.01				1.56
			(16.21)	(15.78)	(0.15)				(16.45)
altruism				0.03	0.00				0.04
				(0.09)	(0.00)				(0.09)
risk				16.62**	0.17***				18.42***
				(6.72)	(0.06)				(6.92)
Constant	334.51***	255.32***	782.06**	659.82*	(3.61)	261.11***	261.11***	261.11***	682.72*
	(36.58)	(17.56)	(357.15)	(352.43)	-6.51*	(18.33)	(18.37)	(18.24)	(365.21)
Observations	91	91	91	91	91	91	91	91	91
R-squared	0.180	0.180	0.236	0.297		0.086	0.083	0.106	0.247
Pseudo R-squared					0.0846				
Log Likelihood					-172.2				

†† Note: Numbers in the parentheses are Standard errors. *** denotes significance at the 1% level, ** at the 5% level and * at the 10% level. The dependent variable is trust for all the columns.

Table 4: Mechanism driving Citizen's Trust and her Trustworthiness

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES		trust			trustworthiness	
bg				0.02	0.03	0.03
				(0.03)	(0.03)	(0.03)
amount				0.00		
				(0.00)		
norm					-0.01	-0.01
					(0.01)	(0.01)
erot	412.99*	395.08*	465.44 †		0.21***	0.22***
	(223.93)	(238.93)	(286.23)		(0.04)	(0.04)
age		-3.02	-4.49		-0.00	-0.00
		(6.99)	(7.00)		(0.01)	(0.01)
female		-59.31**	-51.55*		-0.01	-0.02
		(29.82)	(31.30)		(0.03)	(0.03)
score		-4.46	-4.10		-0.01	-0.01
		(3.51)	(3.50)		(0.00)	(0.00)
fam_income		-3.93	-0.58		0.03*	0.03*
		(19.29)	(19.41)		(0.02)	(0.02)
altruism			0.03			-0.00
			(0.18)			(0.00)
risk			17.64**			-0.00
			(7.03)			(0.01)
Constant	242.86***	768.83**	646.45*	0.38***	0.84**	0.92**
	(17.56)	(363.05)	(358.56)	(0.04)	(0.38)	(0.38)
First Stage						
bg	-0.13*	-0.12*	-0.11*			
	(0.07)	(0.07)	(0.07)			
norm	0.03*	0.03*	0.03*			
	(0.02)	(0.02)	(0.02)			
Constant	Yes	Yes	Yes			
Observations	91	91	91	91	91	91
R-squared				0.003	0.311	0.322
Pseudo R-squared						
Log Likelihood						

† The coefficient is marginally insignificant with p-value=0.10

†† Numbers in the parentheses are Standard errors. *** denotes significance at the 1% level, ** at the 5% level and * at the 10% level. The dependent variable in col (1) - (7) is trust, that in col (9) - (11) is trustworthiness measured as mean Return Ratio. Col (5) reports the ordered probit estimation. Col (6) - (8) jointly estimate mean ERoT and trust.

Table 5: Public Official's Trust and Trustworthiness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES		trust				trustworthiness	
bribe	-0.28*	-0.30*			-0.00		
	(0.15)	(0.15)			(0.00)		
norm			21.04*	23.30**		-0.00	-0.00
			(11.53)	(10.94)		(0.01)	(0.01)
age		0.04	-0.46	-0.62		0.02**	0.02**
		(11.19)	(11.81)	(11.17)		(0.01)	(0.01)
female		-21.01	-19.44	-22.30		-0.03	-0.03
		(41.48)	(43.56)	(41.27)		(0.04)	(0.04)
catscore		-0.36*	-0.39*	-0.35*		-0.00***	-0.00***
		(0.20)	(0.21)	(0.20)		(0.00)	(0.00)
fam_income		10.29	18.32	10.55		-0.01	-0.02
		(27.28)	(28.48)	(27.11)		(0.03)	(0.03)
altruism		-0.12		-0.12			-0.00
		(0.13)		(0.12)			(0.00)
risk		22.98**		22.77**			0.02**
		(9.44)		(9.37)			(0.01)
Constant	305.65***	232.78	249.98	199.15	0.43***	-0.02	-0.11
	(32.10)	(310.25)	(312.12)	(305.51)	(0.04)	(0.30)	(0.30)
Observations	46	46	46	46	46	46	46
R-squared	0.076	0.287	0.169	0.295	0.010	0.345	0.422

† Note: Numbers in the parentheses are Standard errors. *** denotes significance at the 1% level, ** at the 5% level and * at the 10% level. The dependent variable in col (1) - (4) is trust, that in col (5) - (7) is trustworthiness measured in terms of Return Ratio.

Table 6: Effect of trust on Receiver's demand for bribe

		(1)	(2)	(3)	(4)	(5)	(6)
EQUATION	VARIABLES	bribe					
	trust	-0.20					
		(0.18)					
	norm		12.93				
			(44.51)				
	female		-43.97		-46.87		-46.41
			(39.52)		(33.18)		(36.99)
	age		5.47		0.60		0.56
			(17.25)		(18.86)		(15.67)
	income		-23.22		-22.74		-22.61
			(20.48)		(19.26)		(19.03)
	score		-4.74		-4.77*		-4.74
			(3.44)		(2.88)		(3.22)
	expect_bribe_accept			131.00	47.18	58.33**	55.59**
				(149.54)	(132.28)	(26.40)	(26.14)
	Constant	185.72***	374.27	-112.00	479.99	33.33	461.49
		(37.11)	(484.48)	(299.63)	(399.09)	(55.38)	(446.19)
First stage	norm			0.29	0.29		
				(0.27)	(0.27)		
	Constant			1.63***	1.63***		
				(0.36)	(0.36)		
	Observations	30	30	30	30	30	30
	R-squared	0.041	0.209			0.148	0.306

† Numbers in the parentheses are Standard errors. *** denotes significance at the 1% level, ** at the 5% level and * at the 10% level. The dependent variable is the amount of bribe demanded. Trust level exhibited in the first stage does not predict bribe demanded in the second stage. Col (3) and (4) estimates the two stage regression analogous to col (1) - (3) in Table 4. Col (5) and (6) demonstrates that expectations about acceptance of bribe demand significantly predicts the amount demanded.

Appendix 1: Theoretical Framework

Assume that a person, who is honest, is more likely to be trustworthy, say with probability h than a person who is corrupt, say l , such that $0 \leq l < h \leq 1$. Also assume that a Bayesian Citizen gets an imperfect signal about trustworthiness of the set of matched partners by observing whether she meets an honest official or a corrupt one in the first stage. Then she uses this signal to update his posterior belief that a matched person in the second stage is trustworthy. Note that unlike in typical applications where a Bayesian agent updates her belief about exactly the same individual she meets, we follow Acemoglu and Wolitzky (2014) and assume that a Citizen learns something about how subjects, in the pool of matched Public Officials she is dealing with, are by observing examples of their behavior. Bayesian updating then tends to make Citizens put more weight on the behavior they immediately observe.

Let μ_0 be the prior belief that a matched partner is trustworthy. Suppose that a Citizen meets an honest official in the first stage. His updated posterior about a matched partner's trustworthiness in the second stage, μ is given by

$$\mu(H) = \frac{\mu_0 h}{\mu_0 h + (1-\mu_0) l} \tag{3}$$

This follows in view of the fact that the official is either honest and trustworthy (probability $\mu_0 h$) or an honest official coming from that subset of officials who are not trustworthy (probability $(1-\mu_0)l$). Similarly, given that a Citizen meets a corrupt person in the first stage, his updated posterior is given by

$$\mu(L) = \frac{\mu_0 (1-h)}{\mu_0 (1-h) + (1-\mu_0)(1-l)} \tag{4}$$

It is easy to see that the $\mu(H) > \mu_0$ and $\mu(L) < \mu_0$ i.e. the posterior belief of a Citizen about meeting a trustworthy person in the future is higher if she meets an honest Public Official while it is lower if she meets a corrupt Public Official. This leads to our first prediction.

Prediction 1. *If a Citizen meets a corrupt (honest) Public Official, then her belief about the trustworthiness of the person she will meet in the second stage decreases (increases).*

The updated beliefs play an important role in the subsequent trust decision, which we model as that in a simple trust game. Assume that the initial endowment in the trust game is given by $\bar{x}$, sharing decision by t and there are only two types of receivers with whom the sharing decisions are made - one, less trustworthy i.e. those who keep a high amount with themselves (say $\bar{w}$) and two, more trustworthy i.e. those who keep a small amount with themselves (say $\underline{w}$). Preferences of

those making the trust decisions are given by $U(.,\lambda,\theta)$ where λ and θ are the risk (implicit in the curvature of the utility function) and pro-sociality parameter.

Expected Utility of an individual who shares s as a sender in the trust game is given by -

$$EU = \mu U(\bar{x}-t+(3t-\underline{w}),\lambda,\theta)+(1-\mu)U(\bar{x}-t+(3t-\bar{w}),\lambda,\theta) \tag{5}$$

Assuming an interior solution[16], the first order condition with respect to t is given by

$$\begin{aligned} 2\mu U_1(\bar{x}+2t^*-\underline{w},\lambda,\theta)+2(1-\mu)U_1(\bar{x}+2t^*-\bar{w},\lambda,\theta) &= 0 \\ t^* &= t^*(\mu,\lambda,\theta) \end{aligned} \tag{6}$$

Plugging equation (3) in (6) gives the optimal trust decision if one meets an honest person before, $t^*(H)=t^*(\mu(H),\lambda,\theta)$, while plugging equation (4) in (6) gives the optimal trust decision if one meets a dishonest person before, $t^*(L)=t^*(\mu(L),\lambda,\theta)$.

Prediction 2. *If a Citizen meets a corrupt (honest) Public Official, then the trust shown by the Citizen decreases (increases).*

Totally differentiating the first order condition with respect to t and μ, we can show that $\frac{dt^*}{d\mu}>0$. Since $\mu(H)>\mu_0$ and $\mu(L)<\mu_0$ implies $\mu(H)>\mu(L)$, it follows that $t^*(\mu(H),\lambda,\theta)>t^*(\mu(L),\lambda,\theta)$.

Our interest lies in estimating how trust responds to whether a Citizen meets an honest official or a corrupt one. We therefore estimate equation (6) from the framework described above. The linear approximation to the functional form in equation (6) is

$$t = \beta_\mu\mu+\beta_\lambda\lambda+\beta_\theta\theta+\varepsilon \tag{7}$$

The specification in (7) shows that trust decision is predicted by the belief of the Citizen about how trustworthy the trustee is, the risk preference and pro-sociality parameters and a disturbance term. However, notice that μ is determined at the previous stage and thus equation (7) is jointly estimated with equation (8)

$$\mu = \gamma\mathbf{1}(H)+\nu \tag{8}$$

where $\mathbf{1}(H)$ is a dummy variable indicating whether the Citizen meets an honest official or not and ν is the disturbance term.

[16]In this framework $t^*>0$ iff $EU(t^*)\geq U(\bar{x})$ i.e. an individual decides to share iff his expected return from sharing is higher than that from retaining the entire amount with himself.

The data from the experiment allow us to jointly estimate (7) and (8), as is described in Subsection 3.3.

Appendix 2

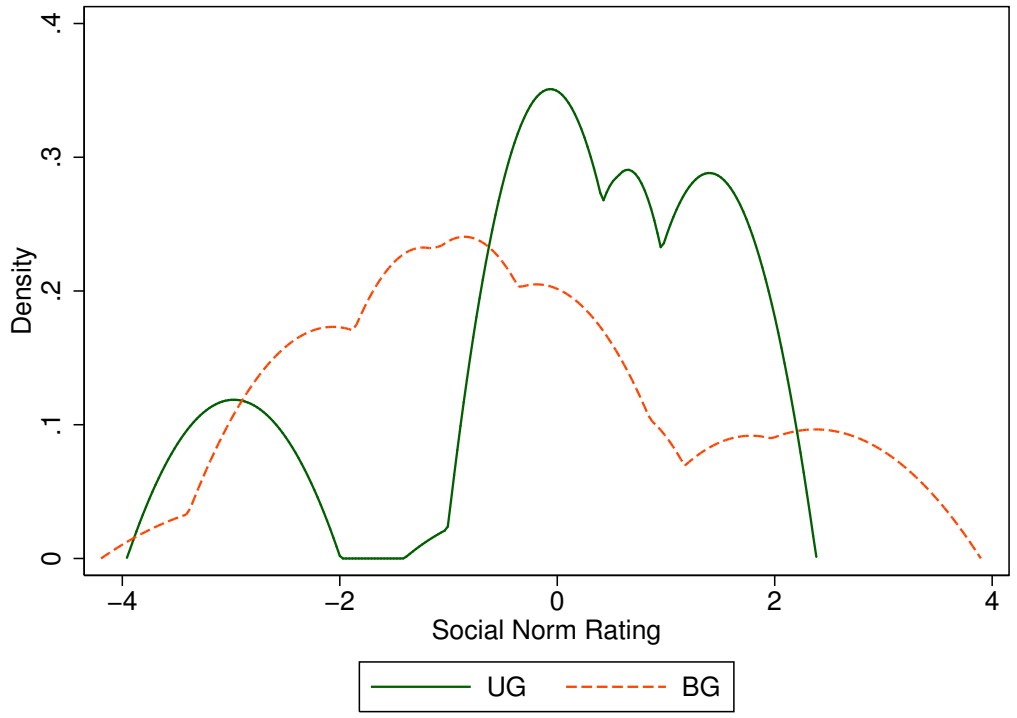
Table 7: Summary Statistics

BG/UG Variables	Description	Mean	Std. Dev
bg	=1 if Treatment is BG	0.51	0.50
amount	bribe/*ultim* demanded from C/P-A	232.97	109.60
bribe	bribe demanded by PO in BG	225.27	110.14
norm	Mean Social appropriateness measure for a bribe/*ultim* amount	-0.17	1.57
Observations		91	

Trust Game & Demographic Variables		Full Sample		C+P-A+Baseline	
		Mean	Std. Dev.	Mean	Std. Dev.
trust	Amount sent as a sender in Trust Game	245.41	122.29	232.97	127.20
trustworthiness	Return Ratio, averaged over all trust categories.	0.39	0.14	0.39	0.14
erot	ERoT, averaged over all trust categories.	-0.02	0.41	-0.02	0.35
female	=1 if subject is Female	0.26	0.44	0.25	0.44
age	Age	24.37	1.81	24.35	1.86
score	CAT/GMAT score in percentile	100.32	55.98	95.06	3.51
fam_income	Family Income[a]	3.56	0.78	3.57	0.79
altruism	Suppose you win a lottery of Rs.1000. How much of it will you be willing to share with a charity of your choice?	294.27	142.32	283.52	141.43
risk	How do you see yourself: are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?	5.76	2.00	5.90	1.86
Cronbach's alpha for Return Ratio[b]		0.86		0.86	
Cronbach's alpha for ERoT[b]		0.92		0.90	
Observations		218		91	

[a] Categorical variable where category 1: <Rs. 20,000, 2: between Rs. 20,001 and Rs. 50,000, 3: between Rs. 50,001 and Rs. 1,00,000 and 4: >Rs. 1,00,001.
[b] A measure of internal consistency, i.e. how closely related the set of items are as a group.

Figure 7: Distribution of social norm corresponding to the actual amount demanded in UG and BG



The figure plots the epanechnikov kernel density estimate of the social norm corresponding to the amount demanded in UG and BG. There is relatively more mass on the left for BG than UG indicating that more socially inappropriate demand has been made in the former than the latter.

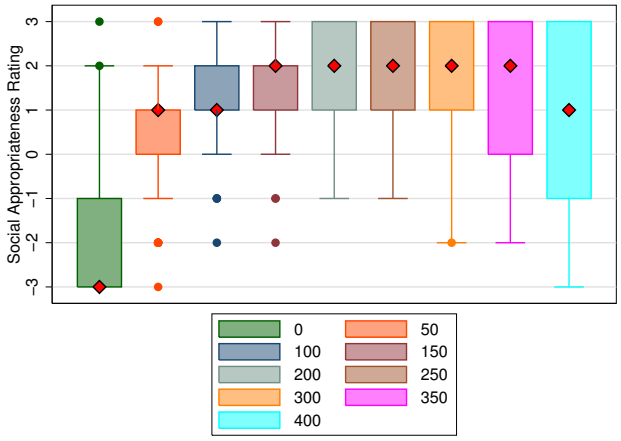
Table 8: Frequency distribution of norm ratings for each bribe/*ultim*

Bribe/*Ultim*		-3	-2	-1	0	1	2	3	Mean UG		-3	-2	-1	0	1	2	3	Mean BG	p-value[a]
0		55	10	10	0	2.5	5	17.5	-1.3		7.5	0	0	5	0	2.5	85	2.38	0.00
100		12.5	32.5	10	5	10	30	0	-0.43		0	10	25	10	20	35	0	0.45	0.03
200	**UG**	0	5	2.5	25	10	30	27.5	1.4	**BG**	0	30	17.5	27.5	12.5	7.5	5	-0.35	0.00
300		5	25	17	0	30	17.5	5	-0.03		27.5	32.5	40	0	0	0	0	-1.88	0.00
400		97.5	2.5	0	0	0	0	0	-2.98		92.5	2.5	5	0	0	0	0	-2.68	0.29

[a]Mann Whitney Rank Sum test reported p-value of the mean difference. Shaded cells for each category in each treatment denote the modal ratings.

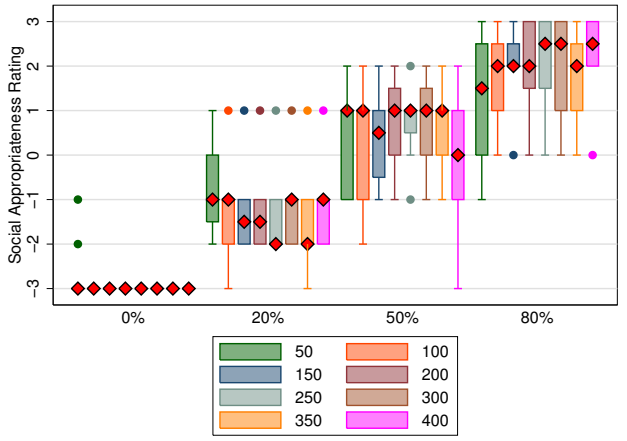
Figure 8: Distribution of Social Appropriateness Norm ratings for Trust and Trustworthiness decisions

(a) Social Norm governing Trust



The figure plots the distribution of social appropriateness norm ratings for all possible levels of trust. The red diamond indicates the mode of the distribution. Clearly, once conditioned on a positive amount of trust, there is very little variation in the distribution of social norm ratings.

(b) Social Norm governing Trustworthiness



The figure plots the distribution of social appropriateness of trustworthiness. To make things simpler, we have elicited social norm ratings for 0% (i.e. zero trustworthiness), 20%, 50% and 80% return. Clearly, complete lack of trustworthiness is considered very socially inappropriate. Social appropriateness increases with trustworthiness.

Appendix 3: Instructions

1 Instructions for First Experiment (Bribery and Ultimatum Game followed by Trust Games)

Welcome.

You are now taking part in an economic experiment. If you read the following instructions carefully, you can, depending on your decisions and the decisions of other participants, earn a considerable amount of money. It is prohibited to communicate with the other participants during the experiment. Should you have any questions please raise your hand and we will come to you. This is an anonymous experiment and you will not know either the identity or the choices that others know. We will give each one of you an identity number which will facilitate your payments.

Overview

The experiment consists of 2 parts and a survey. Please start by reading the instructions for the first part carefully. You will receive the instructions for the second part after the first part is finished. And so on.

Earnings

During the experiment you can earn money by receiving a fictitious currency called "mohar". All mohars that you earn in the experiment will be exchanged into Rupees at the end of the experiment, The exchange rate is: 1 mohar = Rs 0.50 (M denotes mohar henceforth). We will pay you 200 mohars for participating but you can earn additional money depending on the decisions you and the others make. The experiment consists of two parts but remember you will be randomly paid for only one of the two parts which will be determined by a toss. Since you donot know which one you will be paid for, make your decisions for both the parts carefully.

1.1 Part 1 : Subject given either 5.1.1 or 5.1.2

1.1.1 Bribery Game

You may be paired with another participant in this experiment. The matching of two participants will be randomly done. You will not be informed of the identity of the participant with whom you have been matched.

Each participant today will receive a base participation fee of 200 M. We have divided the total number of participants in this experiment session randomly into two equal groups: Citizens (C) and Public Officials (PO).

A Citizen performs a task in ten minutes. Her task is to count the number of occurrences of the letter "A" from a random sequence of letters. She has to perform this task for five different sequences of letters. If she is unable to complete the task in ten minutes then she leaves the game with her participation fee of 200 M and the Public Official gets 600 M. If she successfully does complete the task she is entitled to a payment of 400 M (in addition to participation fee of 200 M). However before the experimenter hands over the entitlement to the Citizen, she needs the approval of the Public Official who receives a salary of 400 M for his job of approval (in addition to participation fee of 200 M). A Public Official, however, can ask for a bribe before approving the entitlement for the corresponding Citizen. He may ask for a bribe of 100, 200, 300, 400 M. He may choose not to ask for a bribe as well i.e. ask for 0 bribe. The information for demand for bribe then is forwarded to the Citizen who can then decide whether to Accept or Reject the demand for

bribe. The final earnings will depend on the final choices each one makes i.e. PO's choices about demand for bribe, C's choices about Acceptance or Rejection. Suppose PO demands a bribe b. If C accepts the demand then PO gets $(600+b)$M and C gets $(200+b)$M. If she rejects the earnings then C and PO get only 600M and 200M, respectively.

Take a look at the figure below to further clarify the rules of the game and the earnings.

Please go through the two examples given below.

Example. Citizen completes the task. She is entitled to a payment of 600 M . Public Official demands a bribe of 100 M for himself. Citizen accepts it. Public Official's earning is 200+400+100=700 M. Citizen's earning is 200+400-100=500 M.

Example. Citizen completes the task. She is entitled to a payment of 600 M . Public Official demands for a bribe of 400 M for himself. Citizen rejects it. Public Official's earning is 600+0=600 M. Citizen's earning is 200+0=200 M.

Instruction for Citizens

In this room all of you are Citizens. Note that you are matched anonymously with a participant sitting in the other room. He is your corresponding Public Official who is in charge of approving your entitlement if you do earn it.

In order to earn the entitlement of 400 M, you have to perform a simple task in 10 minutes following which you will earn the key to your entitlement. What you will see is five sequences of some random letters. Your task is to count the exact number of 'A's for each of the sequences. Only when you have correctly counted the number of As for a sequence will you be able to go to the next sequence. When you count successfully for all the sequence you will receive the key for your entitlement and you can use the key to make your choices subsequently.

In order to complete the task, click here to count the number of As for the five sequences of random letters.

1. Input your Identity number. Enter the correct the number of 'A's for each of the five sequences.

2. If you have completed counting the number of As, please write down the Key to your entitlement on a piece of paper and proceed. If you have not been able to complete the task in ten minutes then you can collect your participation fee and leave.

Right click here and open the link in a new tab to input your choices

3. Please indicate on the response sheet and on the website whether you accept or reject the demand for bribe for all possible bribe amount. We will match your response with the actual bribe amount demanded and determine your earnings.

4. We will now collect your responses and match them with the response of your corresponding Public Official.

5. You will now receive the response sheet, which mentions the bribe demanded, your acceptance/rejection decision and the final earning from this part.

Instruction for Public Officials

In this room all of you are Public Officials. You are responsible for the approving the entitlement for the Citizens. Before approving you can ask for a bribe from the Citizen. You may also choose not to ask for a bribe.

1. Now make your decision whether to ask for a bribe before you approve the entitlement for the Citizen and if yes how much to ask for. Click here to input your choice.

2. We now collect your decision and match them with Citizen's acceptance/rejection decision.

1.1.2 Ultimatum Game

Common for Participant A and Participant B

You may be paired with another participant in this experiment. The matching of two participants will be randomly done. You will not be informed of the identity of the participant with whom you have been matched.

Each participant today will receive a base participation fee of 200 M. We have divided the total number of participants in this experiment session randomly into two equal groups: Participant A (P-A) and Participant B (P-B).

Participant A performs a task in ten minutes. Her task is to count the number of occurrences of the letter "A" from a random sequence of letters. She has to perform this task for five different sequences of letters. If she cannot perform the task in ten minutes then she leaves the game with her participation fee 200 M and P-B gets 600 M. If she successfully completes the task, then she is entitled to playing the next stage of the game i.e. she earns the right to play the second stage game. P-B's earning is 400M in addition to the participation fee of 200 M (i.e. 600 M) for her role, which is the following. In the second stage P-B decides to divide 400 M between himself and P-A. For example if P-B keeps x with himself then P-A gets 400 – x M. The amount which P-B transfers can only be in multiple of 100s i.e. either 0, 100, 200, 300, 400 in which cases he gets 400, 300, 200, 100, 0, respectively, for himself. P-A can then decide whether or not to Accept or Reject the amount which is offered. If P-A accepts the offer then P-B gets (600 + x) M and P-A gets (200 +x) M. If she rejects the earnings then P-A and P-B get only 600 M and 200 M respectively.

Take a look at the figure below to further clarify the rules of the game and the earnings.

Please go through the two examples given below.

Example. P-A completes the task and proceeds to the next round. P-B divides 400 M into 100 M for himself and 300 M for himself. P-A accepts it. P-B's earning is 200+400+100=700 M. P-A's earning is 200+400-100=500 M.

Example. P-A completes the task and proceeds to the next round. P-B divides 400 M into 400 M for himself and 0 for P-A. P-A rejects it. P-B's earning is 600+0=600 M. P-A's earning is 200+0=200 M.

Instruction for Participant A

In this room all of you are Participant As. Note that you are matched anonymously with a participant sitting in the other room, he is your corresponding Participant B whom you will play in second round.

In order to proceed to second round, you will have to perform a simple task in 10 minutes following which you will earn the key to the second round. What you will see is five sequences of some random letters. Your task is to count the exact number of 'A's for each of the sequences. Only when you have correctly counted the number of As for a sequence will you be able to go to the next sequence. When you count successfully for all the sequence you will receive the key and you can use the key to proceed.

1. Right click here and open the link in a new tab. Enter the correct the number of 'A's for each of the five sequences.

2. If you have completed counting the number of As, please write down the Key to your entitlement on a piece of paper and proceed. If you have not been able to complete the task in ten minutes then you can collect your participation fee and leave.

3. Please right click here and open a new tab and indicate on the response sheet whether you accept or reject the amount demanded for all possible transfer amount. We will match your response with the actual transfer amount and determine your earnings.

4. We will now collect your responses and match them with the response of your corresponding P-B.

5. You will now receive the response sheet, which mentions the division proposed by P-B, your acceptance/rejection decision and the final earnings from this part.

Instruction for Participant B

In this room all of you are Participant B.

1. Now make your decision about how to divide 400 M between yourself and Participant A i.e. whether to share anything with him, if yes how much. Please right click here to open a new link and input your decision. Your sharing amount should be in multiples of 100.

2. We now collect your decision.

3. You are now being informed about whether your decision has been accepted and your and the P-A's earnings.

1.2 Part 2: Trust Game: Common for Citizen and Public Official in BG and Participant A and Participant B in UG

In this part a participation fee of 200 M will be given to all participants.

You will now play the sending task. In this task, participants are divided into two groups: Senders and Receivers. Both the Senders and the Receivers are given 400 M. First Sender makes a decision. The Sender can choose to send 0, 100, 200, 300 or 400 M to the Receiver. Any amount sent will be tripled. The Sender keeps any amount of money not send to the Receiver.

The Receiver can send back any amount up to the total amount received (that is, the amount the Sender sent multiplied by 3).

Earnings The Sender's earnings in part 2 are := 400 M - any amount sent to the Receiver + any amount sent back to the Sender

The Receiver's earnings in part 2 are: = any amount received from the Sender multiplied by three − any amount sent back to the Sender.

You will be asked to make a decision both as a Sender and as a Receiver. One of your roles will be randomly picked. You will be matched with another randomly matched participant in the other role (note that your matched partner here will be different from the matched partner in Part 1). Your decision and the decision of the other player determine your earnings.

Example

You are in the role of a Sender. You have chosen to send 200 M to the Receiver. Hence, the Receiver could send back between 0 and 600 M (= 3 × 200 M). to you. The Receiver has chosen to send back 300 M to you.

• Your earnings in Part 2 are therefore: 400 M - 200 M (the amount you sent) + 300 M (the amount received back) = 500 M.

• The earnings of the Receiver in Part 2 are therefore: 600 M (amount sent to the Receiver) - 300 M (amount sent back by the Receiver) = 300 M

You are in the role of a Receiver. The Sender has chosen to send 400 M to you. Hence, you could send back between 0 and 1200 M (= 3 × 400 M) to the Sender. You have chosen to send back 100 M to the Sender.

· Your earnings in part 2 are therefore: 1100 M= 1200 M (the amount you received) - 100 M (the amount you sent back).

· The earnings of the Sender in part 2 are therefore : 100 M = 400 - 400 + 100= 100M

Practice exercise.

· You are in the role of a Sender. You have chosen to send 100 M to the Receiver. The Receiver has chosen to send back 0 M to you.

Your earnings in part 4 are: The earnings of the Receiver in part 4 are:

· You are in the role of a Receiver. The Sender has chosen to send 300 M to you. You have chosen to send back 100 M to the Sender.

Your earnings in part 2 are:

The earnings of the Sender in part 2 are:

To make your decisions, right click here and open a new tab.

Decision as Sender

1. Mark how much you will like to send the receiver. (in multiples of 50 M)

2. How much you expect the receiver to return you back if you send him 100 M (i.e. Receiver receives 300 M). If your prediction matches the actual decision of the matched receiver then you will win a bonus of 100 M. While making your decision choose between 0,100, 200 or 300 only. (Please mention in multiples of 50 M)

3. How much you expect the receiver to return you back if you send him 200 M (i.e. Receiver receives 600 M). If your prediction matches the actual decision of the matched receiver then you will win a bonus of 100 M. While making your decision choose between 0,100, 200, 300, 400, 500 or 600 only. (Please mention in multiples of 50 M)

4. How much you expect the receiver to return you back if you send him 300 M (i.e. Receiver receives 900 M). If your prediction matches the actual decision of the matched receiver then you will win a bonus of 100 M. While making your decision choose between 0,100, 200, 300, 400, 500, 600, 700, 800 and 900 only. (Please mention in multiples of 50 M)

5. How much you expect the receiver to return you back if you send him 400 M (i.e. Receiver receives 1200 M). If your prediction matches the actual decision of the matched receiver then you will win a bonus of 100 M. While making your decision choose between 0,100, 200, 300, 400, 500, 600, 700, 800, 900 1000, 1100 or 1200 only. (Please mention in multiples of 50 M)

Decision as Receiver

1. Mark how much you will like to send back to the sender if you received 150 M (i.e. the sender sent you 50 M). Choose between 0 and 150 but in multiples of 50 only

2. Mark how much you will like to send back to the sender if you received 300 M (i.e. the sender sent you 100 M). Choose between 0 and 300 but in multiples of 50 only

3. Mark how much you will like to send back to the sender if you received 450 M (i.e. the sender sent you 100 M). Choose between 0 and 450 but in multiples of 50 only

4. Mark how much you will like to send back to the sender if you received 600 M (i.e. the sender sent you 200 M). Choose between 0 and 600 but in multiples of 50 only

5. Mark how much you will like to send back to the sender if you received 750 M (i.e. the sender sent you 100 M). Choose between 0 and 300 but in multiples of 50 only

6. Mark how much you will like to send back to the sender if you received 900 M (i.e. the sender sent you 300 M). Choose between 0 and 900 but in multiples of 50 only.

7. Mark how much you will like to send back to the sender if you received 1150 M (i.e. the sender sent you 100 M). Choose between 0 and 300 but in multiples of 50 only

8. Mark how much you will like to send back to the sender if you received 1200 M (i.e. the sender sent you 400 M). Choose between 0 and 1200 but in multiples of 50 only.

Now we will randomly determining your role and determine your earnings. Coin toss for Role determination. Heads := you will be paid for Part 1 and Tails:= you will be paid for Part 2. We will toss once more if you get Part 2 in the first toss in order to determine the roles.

We have come to the end of the experiment. Please fill out the exit survey.

1.3 Exit Survey

1. Identity Number
2. Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? (Code one answer):
   (a) Most people can be trusted
   (b) Need to be very careful
3. Do you think most people would try to take advantage of you if they got the chance, or would they try to be fair?
   (a) Most of the time they would try to be fair
   (b) Most of the time they would try to take advantage
4. Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?
   (a) Most of the time people are helpful
   (b) Most of the time they are just looking out for themselves
5. Suppose you left your wallet with Rs. 500 in the Metro. On a scale of 1 to 10, how much do you think are the chances that you will get it back?
6. How much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all?
   (a) Your family
   (b) Your neighborhood
   (c) People you know personally
   (d) People you meet for the first time
   (e) People of another religion
   (f) People of another caste
   (g) People of another nationality
7. How widespread do you think bribe taking and corruption is in this country?
   (a) Almost no Public Officials are engaged in it
   (b) A few Public Officials are engaged in it
   (c) Most Public Officials are engaged in it
   (d) Almost all Public Officials are engaged in it
8. Please mention for each of the following actions whether you think it can always be justified, never be justified, or something in between. 1 : Never justified 10: Justifiable

(a) Claiming government benefits to which you are not entitled

(b) Avoiding a fare on public transport

(c) Cheating on taxes if you have a chance

(d) Someone accepting a bribe in the course of their duties

9. How do you see yourself: are you generally a person who is fully prepared to take risks or do you try to avoid taking risks? Please tick a box on the scale, where the value 0 means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks'.

10. How do you see yourself: are you a person who is fully prepared to take risks when it comes to car driving/motorcycle riding etc. or do you try to avoid taking risks? Please tick a box on the scale, where the value 0means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks'.

11. How do you see yourself: are you a person who is fully prepared to take risks when it comes to financial matters or do you try to avoid taking risks? Please tick a box on the scale, where the value 0means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks'.

12. How do you see yourself: are you a person who is fully prepared to take risks when it comes to sports or leisure activities or do you try to avoid taking risks? Please tick a box on the scale, where the value 0 means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks'.

13. How do you see yourself: are you a person who is fully prepared to take risks when it comes to career or do you try to avoid taking risks? Please tick a box on the scale, where the value 0 means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks'.

14. How do you see yourself: are you a person who is fully prepared to take risks when it comes to health matters or do you try to avoid taking risks?Please tick a box on the scale, where the value 0 means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks'.

15. A short survey about yourself

    (a) Sex

        i. Male

        ii. Female

    (b) Age

    (c) Are you the only child of your parents?

        i. Yes

        ii. No

    (d) Ancestral State

    (e) Mother Tongue

    (f) Political Identity

(g) Total Gross Family Income

(h) Caste Affiliation

(i) Religous Affiliation

(j) Religiosity - Not Religious (1) ... Strongly Religious (4)

(k) Your secondary level exam score was (in %)

(l) Your higher secondary level exam score was (in %)

(m) Your CAT/GMAT score (in percentile)

(n) Were the instructions clear? Please write a line or two.

(o) What strategies did you use?Please write a line or two.

(p) How did you decide on the strategies that you chose? Please write a line or two.

(q) What do you think this experiment was about? Please write a line or two.

2 Instruction for Second Experiment (Trust Game followed by Bribery Game)

Welcome.

You are now taking part in an economic experiment. If you read the following instructions carefully, you can, depending on your decisions and the decisions of other participants, earn a considerable amount of money. It is prohibited to communicate with the other participants during the experiment. Should you have any questions please raise your hand and we will come to you. This is an anonymous experiment and you will not know either the identity or the choices that others know. We will give each one of you an identity number which will facilitate your payments.

Overview

The experiment consists of 2 parts and a survey. Please start by reading the instructions for the first part carefully. You will receive the instructions for the second part after the first part is finished. And so on.

Earnings

During the experiment you can earn money by receiving a fictitious currency called "mohar". All mohars that you earn in the experiment will be exchanged into Rupees at the end of the experiment, The exchange rate is: 1 mohar = Rs 0.50 (M denotes mohar henceforth). We will pay you 200 mohars for participating but you can earn additional money depending on the decisions you and the others make. The experiment consists of two parts but remember you will be randomly paid for only one of the two parts which will be determined by a toss. Since you donot know which one you will be paid for, make your decisions for both the parts carefully.

2.1 Part 1: Trust Game

[We gave them the same instruction as in Section 5.2]

2.2 Part 2: Bribery Game

[We gave them the same instruction as in Section 5.1.1]

2.3 Exit Survey

[We gave them the survey as in Section 5.3]

3 Instructions for Third Experiment (Social Norm Elicitation)

3.1 Bribery Game

3.1.1 Introduction

You are now taking part in an economic decision making study.

We will give each one of you an identity number. Please do not lose your identity number. This entire study is anonymous. Please donot discuss with your neighbors your neighbors at any point during the study.

We will use identity number for payment. Please raise your hands once you have read the questions.

Please write your participant ID in the space provided above.

On the following pages, you will read descriptions of a series of situations. These descriptions correspond to situations in which a person must make a decision. This description will include several possible choices available to, lets say, Individual A.

After you read the description of the decision, you will be asked to evaluate the different possible choices available to Individual A and to decide, for each of the possible actions, whether taking that action would be "socially appropriate" and "consistent with moral or proper social behavior" or "socially inappropriate" and "inconsistent with moral or proper social behavior." By socially appropriate, we mean behavior that most people agree is the "correct" or "ethical" thing to do. Another way to think about what we mean is that if Individual A were to select a socially inappropriate choice, then someone else might be angry at Individual A for doing so.Social appropriateness rating is on a scale of -3 to +3 where -3 is "very socially inappropriate" and +3 is very socially appropriate.

In each of your responses, we would like you to answer as truthfully as possible, based on your opinions of what constitutes socially appropriate or socially inappropriate behavior.

To give you an idea of how the experiment will proceed, we will go through an example and show you how you will indicate your responses. On the next page you will see an example of a situation.

Example: Situation

Individual A is at a local coffee shop near campus. While there, Individual A notices that someone has left a wallet at one of the tables. Individual A must decide what to do.Individual A has four possible choices: take the wallet, ask others nearby if the wallet belongs to them, leave the wallet where it is, or give the wallet to the shop manager. Individual A can choose only one of these four options.

The table below presents a list of the possible choices available to Individual A. For each of the choices, please indicate your rating for the social appropriateness of the action on a scale of -3 to +3. Indicate your response, in the table below.

Individual A's choice	Your rating
Take the wallet	
Ask others nearby if the wallet belongs to them	
Leave the wallet where it is	
Give the wallet to the shop manager	

If this were one of the situations for this study, you would consider each of the possible choices above and, for that choice, indicate the extent to which you believe taking that action would be "*socially appropriate*" and "*consistent with moral or proper social behavior*" or "*socially inappropriate*" and "*inconsistent with moral or proper social behavior*". Recall that by socially appropriate we mean behavior that most people agree is the "*correct*" or "*ethical*" thing to do.

For example, suppose you thought that taking the wallet was *very socially inappropriate*, asking others nearby if the wallet belongs to them was somewhat *socially appropriate*, leaving the wallet where it is *was somewhat socially inappropriate*, and giving the wallet to the shop manager *was very socially appropriate*. Then you would indicate your responses as follows:

Individual A's choice	Your Rating
Take the wallet	-3
Ask others nearby if the wallet belongs to them	+1
Leave the wallet where it is	-1
Give the wallet to the shop manager	+3

Are there any questions about this example situation or about how to indicate your responses?

On the following pages, the situations deal with decisions that "Individual A" might have to make. For each situation, you will receive a sheet, with a table on which to indicate your responses.

For each situation, the experimenter will read a description of the situation. You will then indicate whether each possible choice available to Individual A is socially appropriate or socially inappropriate.

At the end of the session today, we will select one of the two situations by a coin toss (Head - Situation I and Tail - Situation II). We will then ask you to randomly choose one category from an envelope containing all the categories. Thus, we will select both a situation and category at random. For each situation and category, we will compute the most frequently occurring response from all the responses in the room today. We will pay you Rs. 110 for your participation today. However if you give the same response as that most frequently given by other people in the room, then you will receive an additional R.s 110. This amount will be paid to you, in cash, at the conclusion of the experiment.

For instance, if we were to select the example situation above and the possible choice "Leave the wallet where it is," and if your response had been "somewhat socially inappropriate," i.e rating -1, then you would receive Rs. 110, in addition to the Rs. 110 participation fee, if this was the response selected by most other people in today's session. Otherwise you would receive only participation fee which is Rs. 110.

If you have any questions from this point on, please raise your hand and wait for the experimenter to come to you.

Please wait to turn the page until the experimenter asks you to do so. If you have any questions, please raise your hand and wait for the experimenter.

3.1.2 The Situation

Take a look at Figure 1. Citizens and Public Officials play a game where they are seated in two separate rooms but each Citizen is randomly matched to exactly one Public Official. A Citizen is given 20 problems to solve in 15 minutes. The corresponding matched supervisor grades the answer sheet of the Citizen he is matched with and gets a salary of 600. If the Citizen solves at least 10 problems correctly he "passes" the test but if she scores less than 10 she "fails" the test. The Citizen is entitled to a payment of 400 in addition to a base amount of 200 if she solves at least 10 problems and "passes" but she earns only 200 if she fails. However even if the Citizen solves 10 problems or more correctly the supervisor demands a bribe in order to let the Citizen pass and earn more. In other words whether to let the Citizen pass is entirely his discretion. He may demand a bribe amount of {10,20,30...400}. He can also choose not to take a bribe. Rate the action of the official and Citizen on a scale of -3 to +3 as stated above.

However the Citizen may accept to pay a bribe or she may reject it.

Remember you are not being asked report your personal appropriateness rating but social appropriateness rating and you will be paid if your rating matches with the rating of most other people.

Rate the action of Public Official on a scale of -3 and +3 in the response sheet given to you.

Rate the action of Public Citizen on a scale of -3 to +3 as stated above.

Remember you will be rewarded if your rating matches with the rating of most other people in the room today.

Figure 1 below gives a visual description of the payoffs.

Figure 1 referred to Figure 2(a) in the paper.

3.1.3 Response Sheet

Identity Number. _____

Situation

Rate Public Official's decision.

Total amount that can be extracted as bribe is 400.		Rating
Amount Sought by the Public Official as bribe	Amount of the entitlement left with the Citizen	
0 i.e. Public Official does not ask for a bribe	400	
10-50	390-350	
60-100	340-300	
110-150	290-250	
160-200	240-200	
210-250	190-150	
260-300	140-100	
310-350	90-50	
360-390	40-10	
400 i.e. Public Official demands the entire amount as bribe	0	

Rate the decision of the Citizen

Total surplus that can be extracted as bribe is 400 Amount Sought by the Public Official as bribe	Citizen's response	Rating
0 i.e. Participant B does not keep anything with himself	-	
10-50	Accept	
	Reject	
60-100	Accept	
	Reject	
110-150	Accept	
	Reject	
160-200	Accept	
	Reject	
210-250	Accept	
	Reject	
260-300	Accept	
	Reject	
310-350	Accept	
	Reject	
360-390	Accept	
	Reject	
400 i.e. Participant B keeps everything for himself	Accept	
	Reject	

3.2 Ultimatum Game

3.2.1 Introduction

You are now taking part in an economic decision making study.

We will give each one of you an identity number. Please do not lose your identity number. This entire study is anonymous. Please donot discuss with your neighbors your neighbors at any point during the study.

We will use identity number for payment. Please raise your hands once you have read the questions.

Please write your participant ID in the space provided above.

On the following pages, you will read descriptions of a series of situations. These descriptions correspond to situations in which a person must make a decision. This description will include several possible choices available to, lets say, Individual A.

After you read the description of the decision, you will be asked to evaluate the different possible choices available to Individual A and to decide, for each of the possible actions, whether taking that action would be "socially appropriate" and "consistent with moral or proper social behavior" or "socially inappropriate" and "inconsistent with moral or proper social behavior." By socially appropriate, we mean behavior that most people agree is the "correct" or "ethical" thing to do. Another way to think about what we mean is that if Individual A were to select a socially inappropriate choice, then someone else might be angry at Individual A for doing so.Social appropriateness rating is on a scale of -3 to +3 where -3 is "very socially inappropriate" and +3 is very socially appropriate.

In each of your responses, we would like you to answer as truthfully as possible, based on your opinions of what constitutes socially appropriate or socially inappropriate behavior.

To give you an idea of how the experiment will proceed, we will go through an example and show you how you will indicate your responses. On the next page you will see an example of a situation.

Example: Situation

Individual A is at a local coffee shop near campus. While there, Individual A notices that someone has left a wallet at one of the tables. Individual A must decide what to do.Individual A has four possible choices: take the wallet, ask others nearby if the wallet belongs to them, leave the wallet where it is, or give the wallet to the shop manager. Individual A can choose only one of these four options.

The table below presents a list of the possible choices available to Individual A. For each of the choices, please indicate your rating for the social appropriateness of the action on a scale of -3 to +3. Indicate your response, in the table below.

Individual A's choice	Your rating
Take the wallet	
Ask others nearby if the wallet belongs to them	
Leave the wallet where it is	
Give the wallet to the shop manager	

If this were one of the situations for this study, you would consider each of the possible choices above and, for that choice, indicate the extent to which you believe taking that action would be "*socially appropriate*" and "*consistent with moral or proper social behavior*" or "*socially inappropriate*" and "*inconsistent with moral or proper social behavior*". Recall that by socially appropriate we mean behavior that most people agree is the "*correct*" or "*ethical*" thing to do.

For example, suppose you thought that taking the wallet was *very socially inappropriate*, asking others nearby if the wallet belongs to them was somewhat *socially appropriate*, leaving the wallet where it is *was somewhat socially inappropriate*, and giving the wallet to the shop manager *was very socially appropriate*. Then you would indicate your responses as follows:

Individual A's choice	Your Rating
Take the wallet	-3
Ask others nearby if the wallet belongs to them	+1
Leave the wallet where it is	-1
Give the wallet to the shop manager	+3

Are there any questions about this example situation or about how to indicate your responses?

On the following pages, the situations deal with decisions that "Individual A" might have to make. For each situation, you will receive a sheet, with a table on which to indicate your responses.

For each situation, the experimenter will read a description of the situation. You will then indicate whether each possible choice available to Individual A is socially appropriate or socially inappropriate.

At the end of the session today, we will select one situation and one category randomly. Thus, we will select both a situation and category at random. For each situation and category, we will have recorded the most frequently occurring response of most people in the room today. If you give the same response as that most frequently given by other people then you will receive a reward of Rs. 110 in addition to the participation fee of Rs. 110. This amount will be paid to you, in cash, at the end of the experiment.

For instance, if we were to select the example situation above and the possible choice "Leave the wallet where it is," and if your response had been "somewhat socially inappropriate," i.e rating -1, then you would receive Rs. 110, in addition to the Rs. 110 participation fee, if this was the response

selected by most other people in today's session. Otherwise you would receive only participation fee which is Rs. 110.

If you have any questions from this point on, please raise your hand and wait for the experimenter to come to you. Please wait to turn the page until the experimenter asks you to do so. If you have any questions, please raise your hand and wait for the experimenter.

3.2.2 The Situation

Take a look at Figure 2. Participants A and Participants B play a game where they are seated in two separate rooms but each Participant A is randomly matched to exactly one Participant B. Participant A was given 20 problems to solve in 10 minutes. Participant B was supposed to grade the answer sheet of the worker he was matched with. If Participant A solves at least 10 problems correctly then she takes part in a the next part of the game. Otherwise she earns only 200 and leaves. If she proceeds to the next part of the game then she is eligible for a transfer from Participant B i.e. each participant B has 400 between himself and Participant A. Participant B splits 400 between himself and Participant A. He could share any amount {10,20,30...400}, including 0 and 400 i.e. he could share nothing with P-A or he could give away the entire amount to her. P-A in turn could accept or reject the proposed division by P-B. If he rejects the offer then he gets only 200 and P-B gets 600. If he accepts the offer then P-A gets 200+amount P-B shares with him and P-B gets 600+share he keeps with himself. Let us go through the figure to further clarify.

Rate the action of Participant B on a scale of -3 and +3 in the response sheet given to you.

Rate the action of Participant A on a scale of -3 to +3 as stated above.

Remember you will be rewarded if your rating matches with the rating of most other people.

Figure 2 below gives a visual description of the payoffs.

Figure 2 referred to Figure 2(b) in the paper.

3.2.3 Response Sheet

Identity Number. _____

Rate Participant B's Decision.

Total amount to be divided is 400		Rating
The part he proposes to keep with himself.	Amount of the share left with Participant A	
0 i.e. Participant B does not keep anything with himself	400	
10-50	390-350	
60-100	340-300	
110-150	290-250	
160-110	240-110	
210-250	190-150	
260-300	140-100	
310-350	90-50	
360-390	40-10	
400 i.e. Participant B keeps everything for himself	0	

Rate the action of Participant A

Total amount to be divided is 400	Participant A's response	Rating
The part participant B proposes to keep with himself.		
0 i.e. Participant B does not keep anything with himself	-	
10-50	Accept	
	Reject	
60-100	Accept	
	Reject	
110-150	Accept	
	Reject	
160-110	Accept	
	Reject	
210-250	Accept	
	Reject	
260-300	Accept	
	Reject	
310-350	Accept	
	Reject	
360-390	Accept	
	Reject	
400 i.e. Participant B keeps everything for himself	Accept	
	Reject	

Economics Working Papers

2014-16: A. R. Lamorgese, A. Linarello and Frederic Warzynski: Free Trade Agreements and Firm-Product Markups in Chilean Manufacturing

2014-17: Kristine Vasiljeva: On the importance of macroeconomic factors for the foreign student's decision to stay in the host country

2014-18: Ritwik Banerjee: On the Interpretation of Bribery in a Laboratory Corruption Game: Moral Frames and Social Norms

2014-19: Ritwik Banerjee and Nabanita Datta Gupta: Awareness programs and change in taste-based caste prejudice

2014-20: Jos Jansen and Andreas Pollak: Strategic Disclosure of Demand Information by Duopolists: Theory and Experiment

2014-21: Wenjing Wang: Do specialists exit the firm outsourcing its R&D?

2014-22: Jannie H. G. Kristoffersen, Morten Visby Krægpøth, Helena Skyt Nielsen and Marianne Simonsen: Disruptive School Peers and Student Outcomes

2014-23: Erik Strøjer Madsen and Yanqing Wu: Globalization of Brewing and Economies of Scale

2014-24: Niels-Hugo Blunch and Nabanita Datta Gupta: Social Networks and Health Knowledge in India: Who You Know or Who You Are?

2014-25: Louise Voldby Beuchert and Anne Brink Nandrup: The Danish National Tests – A Practical Guide

2015-01: Ritwik Banerjee, Tushi Baul, and Tanya Rosenblat: On Self Selection of the Corrupt into the Public Sector

2015-02: Torben M. Andersen: The Nordic welfare model and welfare services - Can we maintain acceptable standards?

2015-03: Nina Neubecker, Marcel Smolka and Anne Steinbacher: Networks and Selection in International Migration to Spain

2015-04: Sylvanus Kwaku Afesorgbor and Kaleb Girma Abreha: Preferential Market Access, Foreign Aid and Economic Development

2015-05: Ritwik Banerjee: Corruption, Norm Violation and Decay in Social Capital