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Attribution of responsibility for corrupt decisions*

Maria Montero† Alex Possajennikov‡ Yuliet Verbel§

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Abstract

This paper studies responsibility attribution for outcomes of collusive bribery. In an experiment, participants labeled as either citizens or public officials can propose a bribery transaction to another participant (labeled as either public official or citizen, respectively), who decides whether to accept the proposal. We then let either the victims of the corrupt transaction or the bystanders of it judge the individual decisions of proposing and accepting. We interpret these judgments as a measure of responsibility attribution. We find that labels (citizen or public official) have a stronger effect than roles (proposer or responder): public officials are consistently regarded as more responsible for corruption than citizens, while those accepting a bribe are regarded as only somewhat more responsible than those proposing it. Further, we find that victims judge corruption decisions more severely than bystanders, although bystanders' judgments are also consistently negative. In treatments with a neutral context, we find that judgments are less harsh than in the corruption context, bystanders' judgments are much less harsh than those of victims, and responders are judged more severely than proposers. Our results suggest that people judge corrupt actors in context, more harshly when they are labeled as law enforcers (i.e., public officials), and that unaffected parties (i.e., bystanders) react nearly as negatively to corruption as those directly affected by it (i.e., victims).

Keywords: Responsibility attribution, Bribery, Experiment.

JEL Codes: C90, D73, K42

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1 Introduction

In the fight against corruption, governments focus on implementing strategies promoting transparency and accountability. Enforcement mechanisms like severe monetary and legal sanctions on corrupt actors are the most common examples of top-down interventions. These interventions have been followed by bottom-up approaches that involve, instead of the legal system, citizens' participation in the form of community monitoring, free speech, and expressions of disapproval about acts of corruption. The empirical evidence suggests that practices like citizens monitoring how local authorities handle public funds (Reinikka & Svensson, 2005; Olken, 2007) and reporting bribe demands (Ryvkin et al., 2017) work, to some extent, in reducing corruption in developing countries where legal and judicial institutions are weak. Another practice that, according to experimental evidence, also has an impact on reducing intentions of corruption (i.e., willingness to offer/accept a bribe) is the victims' expression of disapproval toward corrupt actors (Salmon & Serra, 2017; Levati & Nardi, 2023).

Although several advances have been made in the study of the effectiveness of bottom-up anti-corruption practices, little attention has been paid to the distribution of disapproval toward the participants of corruption. We interpret expressions of disapproval as a measure of responsibility attribution and study them systematically. Some of the questions we are able to answer are the following. Who do people think is more responsible for a simple act of corruption like bribery? Is it the citizen paying the bribe, or the official accepting it? Does it depend on who initiates the transaction? Does it depend on who is judging these corrupt actors? Would a victim of corruption judge them differently than a witness would?

In this paper, we answer these questions by implementing an experiment eliciting people's judgments (degree of approval or disapproval) over the decisions of whether to propose or whether to accept a corrupt transaction that imposes a cost on a third party. In the experiment, there are groups of four people: a citizen, an official, a victim (referred to as "other member of society"), and a bystander (referred to as "observer"). Either the citizen or the official can propose a corrupt transaction to the other. The transaction benefits them both at the victim's expense, while the bystander observes whether the transaction takes place but is not affected by it (in monetary terms). We vary the roles of proposer/responder and the

labels of citizen/official to disentangle the effect of moving first or second from the effect of being labeled as citizen or public official on responsibility attribution.[1] After the citizen and the public official make their decisions, we introduce the possibility of expressing judgments in the form of non-monetary points (positive or negative) that are assigned separately to the citizen and the official. These judgments are then revealed to everyone in the group. We let either victims or bystanders express judgments toward the two corrupt actors, as we are also interested in how affected versus unaffected parties react to corruption.

We find that judgments are affected by both roles (proposer/responder) and labels (citizen/official), but labels are more important than roles. Officials receive significantly more severe judgments than citizens, whereas responders receive only marginally more severe judgments than proposers. Furthermore, we find that victim judgments are somewhat harsher than those of bystanders, although both victims and bystanders express strong negative judgments of corruption.

Following these findings, we implement additional outcome-equivalent treatments introducing a neutral frame to further disentangle the effect of roles from the effect of labels in guiding judgment decisions. In these treatments, we abstain from referring to the transaction as a corrupt transaction, and we use neutral labels ("Participant A" and "Participant B") to refer to the actors who benefit from the transaction. As in the corruption treatments, we let both victims (referred to as "Participant C") and bystanders (referred to as "Participant D") express their judgments. We find that judgments are more severe in the corruption frame than in the neutral frame, showing that people understand the severity of acts of corruption and judge them accordingly. Concerning the attribution of responsibility in the neutral frame, we find that victims judge considerably more severely than bystanders. More responsibility is attributed to responders than to proposers, and victims' judgments drive this result.

Our paper contributes to the literature on attribution of responsibility in collective decision-making, both under a neutral and under a corruption framing. We discuss how our paper

[1] The literature distinguishes between coercive bribes (also called extortionary bribes or harassment bribes) and collusive bribes (Abbink et al., 2014; Banerjee, 2016a,b; Ryvkin et al., 2017; Ryvkin & Serra, 2019). In the first case, the bribe is for the provision of services that citizens are entitled to receive (e.g., admission to a public hospital or approval of a passport), while in the second case they are for illegal services that citizens are not entitled to. Our focus is on collusive bribery; hence the transaction is voluntary irrespective of whether it is proposed by the citizen or the public official (for example, a motorist is caught speeding and either the citizen or the public official proposes that the fine be canceled in exchange for a bribe).

relates to the literature below.

Our first contribution is to the literature on corruption that studies instances of monetary punishment or (non-monetary) expressions of judgment toward the corrupt actors.

Monetary punishment is considered by Cameron et al. (2009) and D'Adda et al. (2016). In Cameron et al. (2009) the victim must punish both parties equally, hence the punishment decision cannot be used as a measure of responsibility attribution. D'Adda et al. (2016) allow for differential punishment in a bribery game but do not discuss whether one party is punished significantly more than the other. Their focus is on order effects between the norm elicitation about the social appropriateness of corruption (following Krupka & Weber, 2013) and actual punishment behavior.

Non-monetary expressions of judgment have been considered in Salmon & Serra (2017) and Levati & Nardi (2023). In Salmon & Serra (2017), individuals acting in the role of victims are allowed to send an approval or disapproval message in the form of an emoticon to each of the citizens and officials in the session, including those of their own group. The authors find that citizens (proposers) are more likely to receive a disapproving message than officials (responders), but the difference is only marginally significant once controls are added to the regression. In Levati & Nardi (2023), the victim is able to send a free text message together with an emoticon; this message is visible to all participants and is not separate for citizens and public officials. Our paper is similar in that we study non-monetary judgment, but our design allows for separate judgments of citizen and public official, allows for a finer expression of judgment than just approval/disapproval, and allows to disentangle the labels of citizen/public official from the roles of proposer/responder. We also clearly separate judgments by victims and bystanders, while in Salmon & Serra (2017) the same subject is the victim in one transaction and a bystander in others.

Bystanders' monetary (and thus costly) punishment decisions in the context of bribery have been studied by Guerra & Zhuravleva (2021). The authors focus on how punishment is affected by the sizes of the benefits obtained by the corrupt actors and of the externality imposed on the victim. They find that citizens (proposers) and public officials (responders) are equally likely to be punished. The average size of punishment is larger for officials in all treatments, but the difference is not statistically significant. Our design is different since punishment is non-monetary and therefore does not affect total earnings in the game, and

neither does the corrupt transaction. We also compare bystanders' judgments to those of victims in the same situation.

Our second contribution is to the literature on responsibility attribution in general. Duch et al. (2015) and Bartling et al. (2015) use a neutral framing and measure responsibility as monetary punishment. Duch et al. (2015) study a game in which a group of decision-makers decide how to distribute a resource between them and a group of recipients, and the recipients can punish individual decision-makers. One of the decision-makers is given the role of proposer, and all decision-makers vote simultaneously on the proposal. They find that recipients target mainly the proposer for punishment if an unequal allocation is chosen. Bartling et al. (2015) study a situation in which three voters decide over an allocation of money between themselves and the recipients. There are two options to vote for, and voters cast their votes sequentially. They find that, on average, the pivotal voter (in the sense of Shapley & Shubik, 1954) is punished the most. Compared to our design, Bartling et al. (2015) do not have a proposer, while Duch et al. (2015) do not have a pivotal player that "tips the balance" (all decision-makers vote simultaneously on the proposal), so their papers do not offer a guide on responsibility attribution in a situation like ours with a proposer and, if a transaction is proposed and accepted, a pivotal player.

Our third contribution is to the literature on experimental methods focusing on the relevance of contextual instructions. Contextual instructions are often used in order to increase external validity in settings such as bribery (Alekseev et al., 2017). Several experiments compare a corruption frame with a neutral frame. Abbink & Hennig-Schmidt (2006) find no effect of framing the experiment as a firm bribing an official to get a license, while Banerjee (2016b) finds no effect of framing in a harassment bribe situation. Barr & Serra (2009) find that the corruption frame reduces the frequency and size of bribes compared to a neutral frame in a setting of petty corruption involving a citizen and a public official, which may be more familiar to student subjects. We find that framing the transaction as corruption leads to more severe judgments compared with a purely redistributive frame, especially by those not directly affected by the transaction (bystanders).

Compared with the literature, our design systematically varies several relevant dimensions of a corrupt transaction (who initiates the transaction, whether the decision-maker is labeled as citizen or public official, and whether the judgment is made by someone who is directly

affected), and allows for individual judgments of the corrupt actors. Understanding responsibility attribution in these situations informs us of how acceptable corrupt behavior is and therefore how easy its proliferation may be, which can provide an indication of how to target measures to combat corruption better.

The rest of the paper is structured as follows: in Section 2, we explain the experiment and its implementation. Section 3 reports the results, and Section 4 discusses the findings and concludes the paper.

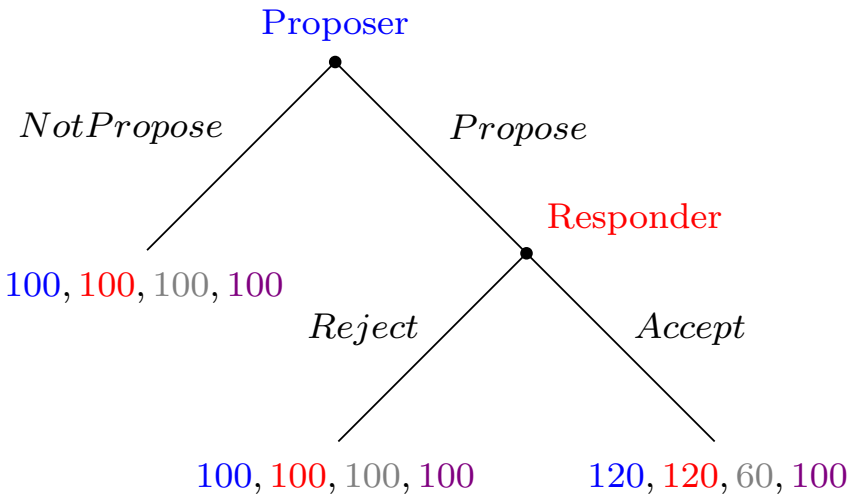
2 Experimental Design and Hypotheses

2.1 Experimental Design

We implement a modification of Salmon & Serra (2017)'s bribery game. In our game, one proposer, one responder, one victim, and one bystander form a group after each of them has earned an initial endowment of 100 Experimental Currency Units (ECUs).

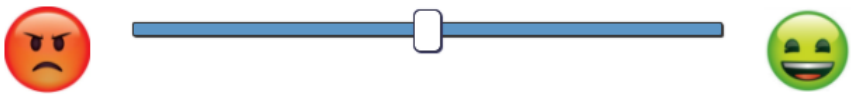
In this bribery game, a proposer decides whether to propose a corrupt transaction and a responder decides whether to accept the proposal. Depending on treatment, the proposer may be assigned the label of citizen (in which case the responder is assigned the label of public official) or public official (in which case the responder is assigned the label of citizen). The corrupt transaction comprises a bribe transfer: the citizen sends 20 ECUs to the official in exchange for a service that the official provides, and the service has a value of 40 ECUs to the citizen. The provision of the service comes at the expense of the victim, who is deducted the net gain of the transaction, 40 ECUs. The bystander is only a witness of the interaction and is unaffected by the transaction. Figure 1 illustrates the sequential representation of the game. The first payoff refers to proposer, the second to the responder, the third one to the victim, and the fourth one to the bystander.

Figure 1: The sequential game



We introduce the possibility of expressing judgments in this game. The judgments take the form of non-monetary points that are assigned to the proposer and the responder. These judgments are implemented using a slider that goes from -9, corresponding to a red angry facial expression on their screen, to 9, corresponding to a green happy facial expression on their screen. Figure 2 shows the slider. Depending on the treatment, we let either victims or bystanders express judgments toward the citizen and the public official. At the end of the experiment these judgments are shown to all members of the group.

Figure 2: Slider



The treatment variations in the experiment come from two dimensions. The first dimension is who makes the judgment: the victim who suffers a monetary loss if the transaction takes place or the bystander who only witnesses the transaction. The second dimension is who takes the role of the proposer of the corrupt transaction: the official or the citizen. This leads to a 2×2 between-subjects design illustrated in Table 1 (treatment names refer to who proposes and who judges: for example, "CP_VJ" means "Citizen Proposes, Victim Judges").

Table 1: Corruption Treatments Design

		Judgment	
		Victim	**Bystander**
Proposer	**Citizen**	CP_VJ	CP_BJ
	Official	OP_VJ	OP_BJ

Each treatment comprises three stages: an endowment-earning stage, a decision-making stage, and a belief-elicitation stage. In the first stage, all subjects go through a real effort task to earn an initial endowment of 100 ECUs. The task is based on the randomized version of the encryption task (Benndorf et al., 2019) and consists of correctly decoding two text sequences into numbers within two minutes. In the second stage, subjects learn about the decision-making situation they face, and after answering control questions that check for their understanding of the situation, they are assigned one of the four roles of the game and they make decisions in their role only. The subject in the role of proposer decides whether to propose the transaction, and the one in the role of responder decides whether to accept the transaction if proposed. In the treatments where the victims express judgments, the victim judges the proposer and the responder, using the slider, on every possible decision combination (i.e. Propose/Accept, Propose/Reject, Not Propose/Accept, Not Propose/Reject), and the bystander does not make any judgment decision. Conversely, in the treatments where the bystander expresses judgments, the bystanders judge the proposer and the responder, using the slider, on every possible decision combination while the victim does not make any judgment decision.

In the third stage, we elicit subjects' beliefs about the decisions of the other group members in the game in an incentivized manner. Proposers state their beliefs about the decision of the responder and about the judgments expressed by either the victim or the bystander. Responders state their beliefs about the decision of the proposer and about the judgments expressed by either the victim or the bystander. Victims and bystanders express their beliefs about the decisions of both the proposer and the responder, and, if they are not expressing their judgments, they also state their beliefs about the judgments of the other player.

At the end of the experiment, we conduct a post-experimental questionnaire that comprises the Aron et al. (1992)'s Inclusion of the Other in the Self (IOS) scale to gather information

about how close subjects perceive themselves to the other subjects in different roles in the game, two questions about how responsible they think the citizen and the public official are if the transaction takes place, and one question about how difficult they find the experiment. We also ask standard demographic questions. Then we provide feedback to each group about their decisions and judgments.

We use contextual labels in the experiment as we want subjects to perceive the context as a clear corruption situation. Therefore, we refer to the transaction as a corrupt transaction in which a bribe is transferred and we use the labels of citizen and official to refer to the proposer and responder (depending on the treatments), the label of other member of society to refer to the victim, and the label of observer to refer to the bystander.

After the treatments described above, we conduct the same experiment but with a neutral frame. It consists of two treatments in which we implement the same situation as in the corruption treatments, involving the same transaction and leading to the same material outcomes as the bribery game, only using completely neutral labels instead of contextual labels. We assign the label of participant A to the proposer, participant B to the responder, participant C to the victim, and participant D to the bystander. Table 2 illustrates the design of these extra treatments.

Table 2: Neutral Treatments Design

		Judgment	
		Victim	**Bystander**
Proposer	**Neutral**	NP_VJ	NP_BJ

Table 3 summarizes the labels used in the corruption and in the neutral frames. Subjects in our experiment take one of four roles: proposer, responder, victim or bystander. The labels used in the instructions differ depending on the frame. In our corruption treatments, the subjects are labeled citizen/official (depending on who proposes in that treatment), official/citizen, other member of society and observer. In our neutral-frame treatments, they are labeled Participant A, B, C and D.

Table 3: Framing used in the corruption and neutral treatments

Role	Labels in corruption frame	Labels in neutral frame
Proposer	Citizen/Official	Participant A
Responder	Official/Citizen	Participant B
Victim	Other member of society	Participant C
Bystander	Observer	Participant D

2.2 Procedures

Our sample consists of students registered with the CeDEx Laboratory at the University of Nottingham, UK. In total, 1167 students participated in the experiment, with 188-200 participants per treatment as shown in Table 4. We conducted the experiment online using software programmed in Lioness (Giamattei et al., 2020), with subjects recruited using ORSEE (Greiner, 2015). We first conducted a pilot session of the treatment CP_VJ in December 2021 in which we collected 95 observations (half of the total observations in that treatment). Then, throughout 2022, we conducted the sessions for the remaining treatments. The pilot differs from the other sessions only in the questionnaire. In the pilot, only citizens and public officials are asked how responsible they think they are if the corrupt transaction takes place, and this question was non-mandatory. In the remaining sessions, we asked all participants (citizens, public officials, victims, and bystanders) the question about how responsible they think the citizen and the public official are if the transaction takes place, and the question was mandatory.[2]

The experiment was conducted asynchronously: all subjects invited to a session made decisions individually and they were matched afterward to determine their payoffs and received feedback about the decisions and judgments from the game. This implies that subjects in the role of responders make the decision of whether to accept a transaction *if* proposed by the proposer in their group. Subjects were randomly assigned to treatment and roles. There

[2]Full experimental instructions are available as Experiment Instructions at the end of this file. As the decision-making part of the experiment did not change from the pilot to the subsequent sessions, we also use the pilot data for our analysis. The pilot data is only different in that we have missing data for the responsibility question in the questionnaire, as some participants (victims and bystanders) were not asked this question in the pilot. Moreover, subjects were only asked about their own responsibility in the pilot, so we have missing data for the responsibility of the other actor involved in the corrupt transaction. Finally, as the responsibility question was not mandatory in the pilot, not all citizens or public officials provided an answer. Out of 47 subjects with these labels, we collected 32 answers.

were some cases of attrition due to subjects timing out/not answering the control questions correctly, resulting in some groups being incomplete. For payment purposes, we matched the incomplete groups with a sample subject under the individual role that the group was missing.[3] The exchange rate used in the experiment was 100 ECU = £1.50. In addition, one of the belief questions was selected at random for payment, and the subject received an extra £0.25 if the actual decision matched the stated belief. Subjects took approximately 15 minutes to complete the experiment, and the average payment was £11 per hour. Subjects were paid via PayPal.

Table 4: Subjects per treatment

	Proposer	**Responder**	**Victim**	**Bystander**	**Total**
CP_VJ	51	49	50	50	200
CP_BJ	49	49	48	48	194
OP_VJ	46	50	48	47	191
OP_BJ	43	49	45	51	188
NP_VJ	50	50	49	46	195
NP_BJ	48	49	51	51	199

2.3 Hypotheses

Our predictions are informed by the literature on responsibility attribution and corruption. We are interested in how responsibility is attributed to the subject proposing a corrupt transaction and to the responder accepting the proposal, and how it depends on the labels (citizen or public official) of the decision-makers. We are also interested in knowing how people who experience corruption differently (i.e., victims vs. bystanders) attribute responsibility to the corrupt actors.[4]

As shown in Duch et al. (2015) in a neutral context, subjects attribute significantly more responsibility to the proposer of an unfair allocation. Guided by this finding, we can expect the proposers of the corrupt transaction in our game to receive more severe judgments than the responders. Alternatively, given the findings from Bartling et al. (2015) where more responsibility is attributed to pivotal players (players with decisive power), we can also

[3] A sample subject is a subject who completed the experiment in the same treatment and belonged to a complete group. The decisions of that subject are used in any incomplete group and only for payment purposes. The sample subject is paid only once according to the decisions made in his/her own group.

[4] Although we elicit judgments for all scenarios, we are primarily interested in the scenario where the bribe is proposed and accepted, and our hypotheses refer to judgments made in this scenario.

expect the responders in our games to receive more severe judgments than the proposers. In our game, both proposer and responder are crucial because for the transaction to take place, the transaction must be proposed by the proposer and accepted by the responder. However, given the sequentiality of the game, the responder has the *final* decisive power, and his decision to accept the transaction after it has been proposed can be regarded as more pivotal than the decision of the proposer to initiate the transaction.

The evidence in the context of corruption is also inconclusive. Salmon & Serra (2017) find that proposers (citizens) are marginally more likely to receive a disapproving message than responders (officials). Guerra & Zhuravleva (2021) find no statistically significant difference in either the frequency or the size of punishment, although the average size of punishment for responders (officials) is higher in all their treatments. D'Adda et al. (2016) find that proposers (labeled as firms in their experiment) receive somewhat harsher punishment than responders (officials) in their NormFirst treatment, while responders (officials) receive somewhat harsher punishment than proposers (firms) in their BehaviorFirst treatment, which is the closest to ours.[5] Therefore, we do not have a strong indication of which player in our game will be judged more severely than the other, and it might even be the case that their role (i.e., proposer and responder) interacts with their label (i.e., citizen and official). For these reasons, a cautious anticipation would be that responders are judged as severely as proposers.

Hypothesis 1. *Responders are judged as severely as proposers.*

Concerning the allocation of responsibility between citizens and officials, Salmon & Serra (2017) find that individuals are marginally more likely to send disapproving messages to citizens, as discussed above. This result is attributed by Levati & Nardi (2023) to the fact that citizens initiate the transaction (i.e., are always in the role of proposers). In Guerra & Zhuravleva (2021) public officials are punished more on average but the difference is not significant. Our design enables us to separate the roles of proposer/responder from the labels of citizen/official, and our judgments are continuous variables as in Guerra & Zhuravleva (2021) rather than categorical (happy/indifferent/frowny) as in Salmon & Serra (2017). The

[5]Since their focus is on order effects between norm elicitation and actual punishment behavior rather than on the distribution of punishment between the participants of corruption, they do not report statistical tests on the latter.

label of citizen can be easier to relate to than the label of official, as our participants are citizens and only a few people in society work as public officials. Additionally, being a public official is usually associated with the duty of law enforcement and since being corrupt is a law-breaking behavior, corrupt actions by officials could be regarded as more reprehensible than corrupt actions by citizens.[6] We anticipate that, once roles are controlled for, public officials will be judged more severely than citizens.

Hypothesis 2. *Officials get more severe judgments than citizens.*

There is empirical evidence suggesting that victims of harm inflicted by others tend to have a stronger emotional reaction toward the perpetrator of the harm than observers do, given that victims suffer directly the harm in contrast to observers who only witness it. For instance, Lind et al. (1998) show that people rate a mild personal injustice as more unfair than a severe injustice inflicted on someone else. In our experiment, victims are monetarily affected by the transaction between the proposer and the responder while bystanders are not affected by it, therefore we expect victims to express more severe judgments in comparison to bystanders.

Hypothesis 3. *Victims judge more severely than bystanders do.*

Judgments may be related to beliefs about corrupt behavior. The frustration-aggression hypothesis (Dollard et al., 1939; Berkowitz, 1989), and the psychological game theory perspective derived from it (Battigalli et al., 2019), suggest that people feel frustrated if their initial expectations are not met, and the tendency to hurt others is proportional to their level of frustration. Based on this, we anticipate that subjects' judgments can be affected by feelings of anger or frustration. If a victim (or a bystander) expects the decision-maker not to be corrupt, they may express a more severe judgment than if corruption is anticipated.

Hypothesis 4. *Lower expectations of corruption on the part of victims/bystanders are associated with more severe judgments in the event that corruption takes place.*

Although the material outcomes are identical in both corruption-label and neutral-label treatments, we expect the artifact of corruption labels to produce a stronger emotional reaction than an outcome-equivalent neutrally-framed situation. That is, we expect people

[6]Indeed, some legal systems punish both parties equally, while in others receiving a bribe is punished more severely than paying a bribe (Engel et al., 2016), suggesting that public officials are held more responsible if anything.

to judge more severely the decisions to propose and accept a transaction in the corruption-label treatments than in the neutral-label treatments.

Hypothesis 5. *Judgments in the corruption-label treatments are more severe than judgments in the neutral-label treatments.*

Considering the bribery game that we implement, in addition to judgments, we can also explore the decisions to propose and accept the corrupt transaction and form expectations around them. However, since our main interest in this paper is to evaluate the judgments surrounding decisions of corruption, we do not state formal hypotheses about these decisions.

3 Results

In this section, we first analyze the judgment decisions (Subsection 3.1), which are the main focus of the paper. In Subsection 3.2, we discuss the decisions to propose and accept a corrupt transaction.

3.1 Judgment Decisions

3.1.1 Corruption-frame treatments

We start with the analysis of treatments framed as a possible corrupt bribe exchange. Victims or bystanders expressed judgments about the decisions of public official or citizen whether to propose a bribe and whether to accept it, in all four possible scenarios: Propose/Accept (P/A), Propose/Reject (P/R), Not Propose/Accept (NP/A), Not Propose/Reject (NP/R). Judgments take integer values from -9, corresponding to a red angry facial expression in the slider, to 9, corresponding to a green happy facial expression in the slider.

We focus our analysis in this section on the scenario where the bribe exchange occurs, that is, when the proposer proposes the corrupt transaction and the responder accepts (P/A).[7] Table 5 shows the average judgments toward proposer (which is labeled Citizen or Public

[7]Subsection S1.1 in Supplementary Materials contains an overview of the other three scenarios. Generally, the decisions to propose or to accept a bribe are judged negatively, and the decisions not to propose or to reject a bribe are judged positively.

Official, depending on the treatment) and responder (correspondingly labeled Public Official or Citizen) in each treatment in the Propose/Accept (P/A) scenario.[8]

Table 5: Means of judgment decisions in corruption-frame treatments for (P/A) scenario

Treatment		VJ			BJ		
		Mean	Std. Dev.	N	Mean	Std. Dev.	N
CP	Proposer (Citizen)	−5.70	4.36	50	−4.95	3.96	48
	Responder (Official)	−7.22	3.35	50	−6.27	3.44	48
OP	Proposer (Official)	−5.45	5.18	48	−5.70	4.30	51
	Responder (Citizen)	−5.85	4.12	48	−4.62	4.13	51

Our main question is whether there is a difference in judgments toward the two agents involved in the corrupt transaction (proposer proposing it and responder accepting it). In our corruption-frame treatments, roles (Proposer or Responder) are also associated with labels (Citizen or Official); in particular, when, for example, the proposer is a citizen, then necessarily the responder is a public official. Table 6 shows the results of tests comparing judgments to proposers and responders (or to citizens and officials) in each treatment, and also aggregated across treatments.[9]

Table 6: Tests of judgments across roles and labels

Hypothesis H_0	Treatment	Proposer		Responder	p-value
Proposer (Citizen) =	CP_VJ	−5.70	$>^{***}$	−7.22	[0.000]
Responder (Official)	CP_BJ	−4.95	$>^{***}$	−6.27	[0.006]
Proposer (Official) =	OP_VJ	−5.45	$\approx$	−5.85	[0.809]
Responder (Citizen)	OP_BJ	−5.70	$<^{**}$	−4.62	[0.010]
Proposer = Responder	All corruption	−5.46	$\approx$	−5.98	[0.103]
		Citizen		Official	
Citizen = Official	All corruption	−5.28	$>^{***}$	−6.17	[0.000]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Signed-rank tests on paired observations.

[8]During the experiment, in each treatment, half of the subjects expressing judgments made a decision judging first the proposer's decision and then the responder's decision, while the other half made decisions in the opposite order. We test for order effects and do not find significant differences in judgment levels when comparing the two orders (see Subsection S1.2 in Supplementary Materials). Therefore, for our analysis, we pool these judgment decisions.

[9]The tests are signed-rank tests on paired observations. All tests reported in this paper are two-sided.

We find that judgments are significantly more negative toward responders than toward proposers when officials are responders (treatments CP_VJ and CP_BJ). When officials are proposers, the difference in judgments is either not significant (treatment OP_VJ), or proposers (officials) are judged significantly more harshly than responders (citizens) (treatment OP_BJ). These observations indicate that the label (Citizen or Official) may be more important than the role (Proposer or Responder). Indeed, when comparing judgments by role irrespective of labels, we find that while responders are judged more harshly than proposers, the difference is not statistically significant, as shown in row 5 of Table 6. In contrast, when comparing judgments by label irrespective of roles, officials are judged significantly more harshly than citizens (last row of Table 6).

We compare bystanders' judgments with those of victims in Table 7.[10] We find that judgments by victims are more severe than those by bystanders for responders (significant at 5% level for citizens and at 10% level for officials), but not significantly different for proposers with either label. If we pool all judgments (averaging the two judgments each subject makes to avoid multiple observations per subject), we find that overall judgments by victims are significantly harsher than judgments by bystanders.

Table 7: Tests of judgments in corruption-frame treatments by who is judging

Hypothesis H_0	Treatment_Role	Victim		Bystander	p-value
Victims' Judgments = Bystanders' Judgments	CP_Proposer	-5.70	$\approx$	-4.95	[0.186]
	CP_Responder	-7.22	$\leq^{*}$	-6.27	[0.052]
	OP_Proposer	-5.45	$\approx$	-5.70	[0.753]
	OP_Responder	-5.85	$<^{**}$	-4.62	[0.044]
	Average judgments	-6.07	$<^{**}$	-5.38	[0.022]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Rank-sum tests on unpaired observations.

In order to be able to control for subject characteristics, we also conduct regression analysis. Subjects in our experiment express approval or disapproval using a slider that takes integer values between -9 and 9. A judgment is worse the closer it is to the value of -9. A large proportion of judgments (42% of all judgments in the corruption-frame treatments) takes the value of -9, suggesting that a censored regression model may be appropriate. Table 8 reports

[10] Here the tests are rank-sum tests on unpaired observations, since victims and bystanders express judgments in different treatments.

Table 8: Tobit regression for judgment decisions in P/A for corruption-frame treatments

Variables	Judgment Decision (−9 to 9)	
	I	II
Proposer (β_P)	0.767*	0.807*
	(0.414)	(0.416)
Citizen (β_C)	1.955***	1.993***
	(0.417)	(0.421)
Bystander (β_B)	1.548*	1.565*
	(0.888)	(0.883)
Constant	−9.857***	−9.132**
	(0.758)	(4.581)
Controls	No	Yes
Observations	394	392
Clusters (subjects)	197	196
Pseudo R-squared	0.008	0.010

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the individual level. Note: The dependent variable takes values from −9 to 9. Controls are the order in which judgment decisions were made, gender, age, degree in economics, and UK nationality.

estimates from Tobit regressions where the dependent variable is the judgment decision in the P/A scenario. Since each subject (victim or bystander) expresses two judgments (toward proposer and toward responder), we cluster standard errors by subject. The regressions allow us to compare average judgments toward Proposers when the base is judgments toward Responders, judgments toward Citizens when the base is judgments toward Officals, and judgments expressed by Bystanders when the base is judgments by Victims (column I). In column II, we control for the order in which judgment decisions are presented to the subjects, and for demographic characteristics (gender, age, degree in economics or business, and UK nationality). The values and significance of the coefficients are very similar in both specifications, and none of the control variables is significant.[11]

The main findings from the regressions support the findings from the non-parametric tests. We confirm that labels are more important than roles, since officials are judged significantly more harshly than citizens, while the difference between proposers and responders is only marginally significant. Victim judgments are more severe than bystander judgments, but this difference is only marginally significant while it was significant at the 5% level in the

[11]The full regression results for control variables are reported in Subsection S1.3 in Supplementary Materials. An additional specification in that section also includes interaction terms for Proposer, Citizen and Bystander variables.

non-parametric test.[12]

We summarize the findings as follows:

Result 1. *In the corruption-frame treatments, responders receive somewhat more severe judgments than proposers, but the difference is at best marginally significant.*

Result 2. *In the corruption-frame treatments, judgments toward officials are more severe than judgments toward citizens, especially in the role of responders.*

Result 3. *In the corruption-frame treatments, bystanders' judgments are somewhat less severe than those of victims.*

We therefore find some support for Hypothesis 1 (similar judgments for responders and proposers) and strong support for Hypothesis 2 (harsher judgments for officials than for citizens). We also find some support for Hypothesis 3 (more severe judgments by victims compared to bystanders), though bystanders' judgments are almost as harsh as those of victims.

Recall that we also elicited beliefs (from victim, bystander and the other decision-maker) about whether the decision-makers (citizen and official) will propose or accept a bribe.[13] Decision-makers expected not to make a corrupt decision receive generally harsher judgments by victims/bystanders than those expected to make a corrupt decision. These judgments are only marginally significantly harsher (rank-sum test p-value 0.085) for proposers expected to Not Propose than for those expected to Propose, and not significantly harsher for responders expected to Reject than for those expected to Accept ($p = 0.128$). A regression of judgment on beliefs combining all judgments (directed to proposers and to responders) finds that judgment of a decision-maker significantly depends on beliefs about that decision-maker, but this effect is driven by the difference in judgments when the other decision-maker is

[12]Recall that in the post-experimental questionnaire we also asked (in a non-incentivized manner) for a measure of the responsibility of each decision-maker for the corrupt outcome. This ranges from "not at all responsible" (1) to "fully responsible" (10). If we look, instead of judgments, at this variable, then only the label matters (officials are held more responsible for the corrupt outcome than citizens), but the role (proposer or responder) or who judges (victim or bystander) does not matter. This is shown in Column V of Table S9 in Subsection S1.5 of Supplementary Materials.

[13]These statements were binary. Averages of these statemens by treatment and role are presented in Subsection S1.4 of Supplementary Materials. There are no systematic differences in beliefs by treatment, role, or label, as shown in that section.

expected not to be corrupt.[14]

Result 4. *In the corruption-frame treatments, lower expectations of corruption on the part of victims/bystanders are associated with somewhat more severe judgments in the event that corruption takes place.*

Hypothesis 4 is thus partially confirmed. This is consistent with the frustration-aggression hypothesis: if corruption was not expected (particularly if it was not expected from any of the two agents), victims and bystanders may feel let down and make more severe judgments compared to those expecting corruption to occur.[15]

In the post-experimental questionnaire, we asked subjects expressing judgments about a measure of their closeness to participants in other roles (IOS), a measure of difficulty in understanding the experiment, and a measure of altruism (in addition to the measure of responsibility discussed in footnote 12). Like beliefs, all these variables are not exogenously determined but are subjects' choices. Thus, they are not (necessarily) causally related to judgments, but we can look at correlations of these variables with judgment decisions to identify possible mechanisms why officials (and responders to some extent) receive harsher judgments.

The self-reported measure of how difficult the experiment was for the participants is significantly associated with less severe judgments. For the IOS measure towards proposers and responders and the responsibility measure, there is some correlation with judgment decisions: the closer a victim or a bystander feels to the decision-maker, the less severe judgment he or she gives, and more severe judgments are associated with more responsibility. These latter correlations can, however, be explained by the effect of labels (Citizen/Official): victims and bystanders generally feel closer to citizens than to officials and assign more responsibility to officials than to citizens.[16]

[14] The non-parametric tests and the regression results are reported in Subsection A.1 of Appendix A. Since both judgments and beliefs are subjects' choices in the experiment, association between them should be seen as correlation, but not necessarily as a causal relationship.

[15] Alternative explanations are also possible. For example, those who believe decision-makers not to be corrupt may be expressing severe judgments for the P/A scenario more freely, not expecting these judgments to be actually activated since decision-makers are not expected to be corrupt. It may also be the case that those who strongly disapprove of corruption think that others share this view, leading to a belief that corruption is unlikely to occur.

[16] As reported in Subsection S1.5 of Supplementary Materials. On the other hand, victims and bystanders feel closer to responders than to proposers, but do not assign significantly more responsibility to proposers. Thus the correlation of the IOS measure and the responsibility measure with judgments is only weak.

3.1.2 Adding neutral-frame treatments

In the neutral-frame treatments there are no "Citizen" and "Public Official" labels. All references to "corruption" or "bribe" are dropped, and the decisions are framed as proposing or accepting a transaction that increases the payoffs of proposer (Participant A) and responder (Participant B) at the expense of victim (Participant C). In the absence of contextual labels (Citizen/Official), differences in judgments can be attributed to the role (Proposer/Responder). We can also compare judgments in these treatments with those in the corruption frame to see how framing influences judgments.

Table 9 reports the means of judgments in the neutral-frame treatments, separately by who is receiving the judgment (row: proposer or responder) and who is expressing it (column: victim or bystander).

Table 9: Means of judgment decisions in neutral-frame treatments for P/A scenario

Treatment		VJ			BJ		
		Mean	Std. Dev.	N	Mean	Std. Dev.	N
NP	Proposer	−3.44	5.25	49	0.58	6.07	51
	Responder	−4.46	4.89	49	−0.25	5.40	51

Table 10 shows the results of (signed-rank) tests comparing judgments to proposers and responders in the neutral-frame treatments. We find that the tendency to judge responders more severely than proposers is significant in the neutral-frame treatments when victims judge but not when bystanders judge. Pooling judgments by victims and bystanders, responders are judged significantly more harshly than proposers (last row of the table). These results provide evidence that, in the absence of contextual labels, responders are judged more severely than proposers.

Table 10: Tests of judgments across roles in neutral-frame treatments

Hypothesis H_0	Treatment	Proposer		Responder	p-value
Proposer = Responder	NP_VJ	−3.44	$>^{**}$	−4.46	[0.012]
	NP_BJ	0.58	$\approx$	−0.25	[0.193]
Proposer = Responder	All neutral	−1.39	$>^{***}$	−2.32	[0.008]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Signed-rank tests on paired observations.

Comparing within rows of Table 9, it is evident that victims judge the decision-makers in the neutral-frame treatments more severely than bystanders do. This difference is statistically significant as shown in Table 11 that reports rank-sum tests for proposers and responders separately, and for pooled judgments averaging the two judgments each subject makes to avoid multiple observations per subject.

Table 11: Tests of judgments in neutral-frame treatments by who is judging

Hypothesis H_0	Treatment_Role	Victim		Bystander	p-value
Victims' Judgments = Bystanders' Judgments	NP_Responder	−3.44	$<^{***}$	0.58	[0.001]
	NP_Proposer	−4.46	$<^{***}$	−0.25	[0.000]
	Average judgments	−3.96	$<^{***}$	0.17	[0.000]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Rank-sum tests on unpaired observations.

Comparing with the average values of judgments in Table 5, we also see that the judgments are less severe in the neutral-frame treatments compared with the corruption-frame ones. From non-parametric tests in Table 12 comparing judgments for citizens and officials in the corruption-frame treatments with judgments in the neutral-frame treatments (while keeping who gives the judgment (victims/bystanders) and the role (proposer/responder) fixed), we find that almost all such tests show significantly harsher judgments in the corruption-frame treatments. Tests from pooled data confirm that average judgments in the corruption-frame treatments are significantly harsher than average judgments in the neutral-frame treatments.

Table 12: Comparison tests of judgments by frame

Hypothesis H_0	Treatment_Role	Citizen,Official		Neutral	p-values
Corruption = Neutral	VJ_Proposer	$-5.70, -5.45$	$<^{**}, <^{**}$	-3.44	[0.012], [0.012]
	VJ_Responder	$-5.85, -7.22$	$\approx, <^{***}$	-4.46	[0.137], [0.000]
	BJ_Proposer	$-4.95, -6.27$	$<^{***}, <^{***}$	0.58	[0.000], [0.000]
	BJ_Responder	$-4.62, -5.70$	$<^{***}, <^{***}$	-0.25	[0.000], [0.000]
	Average judgments	-5.72	$<^{***}$	-1.86	[0.000]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Rank-sum tests on unpaired observations.

In the corruption-frame treatments, we find that bystanders react to a corrupt transaction almost as strongly as victims do, while victims' judgments are substantially harsher in the neutral-frame treatments. The frame of corruption makes both victims and bystanders react more severely, but it has a larger effect on bystanders' judgments. As a result, the difference between the judgments of victims and bystanders is largely washed away by the corruption context.

We further conduct regression analysis, controlling for subject characteristics as shown in Table 13.[17] We confirm that in the neutral-frame treatments, average judgments toward responders are harsher than those toward proposers and that victims, on average, express more severe judgments than bystanders do (column I). The specification in column II uses all data from both corruption-frame and neutral-frame treatments. The neutral-frame treatments serve as the base, while in the corruption-frame treatments we differentiate between judgments given to citizens and to officials. Column II shows that, also across all treatments, responders are judged more harshly than proposers, and victims judge more harshly than bystanders, but the magnitude of the effects is smaller, as expected, since these effects were weaker in the corruption treatments. Judgments in the neutral-frame treatments are milder than in the corruption-frame treatments (where it is confirmed that officials are judged more harshly than citizens: $\beta_C - \beta_O = 2.077$, significantly higher than 0, $p < 0.001$).

The results for the neutral-frame treatments are summarized as

Result 1'. *In the neutral-frame treatments, responders receive more severe judgments than proposers, particularly from victims.*

[17] As with Table 8, the full regression results including coefficients for control variables are reported in Subsection S1.3 in Supplementary Materials. None of the controls are significant. Further specifications in that section also include interaction terms for Proposer, Bystander and Citizen/Official variables.

Table 13: Tobit regression for judgments in P/A for neutral frame and all treatments

Variables	Judgment Decision (−9 to 9)	
	Neutral frame	All treatments
	I	II
Proposer (β_P)	1.306**	0.991***
	(0.515)	(0.329)
Bystander (β_B)	4.885***	2.843***
	(1.420)	(0.762)
Citizen (β_C)		−4.341***
		(0.840)
Official (β_O)		−6.418***
		(0.902)
Constant	−4.594	−3.120
	(5.866)	(3.842)
Controls	Yes	Yes
Observations	200	592
Clusters (subjects)	100	296
Pseudo R-squared	0.029	0.038

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the individual level. Note: The dependent variable takes values from −9 to 9. Controls are the order in which judgment decisions were made, gender, age, degree in economics, and UK nationality.

Result 3'. *In the neutral-frame treatments, bystanders judge decision-makers significantly less harshly than victims do.*

Compared with the results from the corruption-frame treatments, we find less support for Hypothesis 1 (which is that judgments for responders are not different from those for proposers), but more support for Hypothesis 3 (victims judge more harshly than bystanders do).

From all the comparisons in the previous paragraphs (using non-parametric tests and regression analysis), the corruption frame has a significant effect on the severity of judgments. Thus, we find strong support for Hypothesis 5:

Result 5. *Judgments in the neutral-frame treatments are significantly less harsh than judgments in the corruption-frame treatments.*

We also look at the association of judgments by victims/bystanders with their beliefs about what proposers or responders are going to do in the neutral-frame treatments. We again find evidence that lower beliefs that the decision-maker is going to take the "corrupt" decision are

associated with harsher judgments, but this association is present only if the other decision-maker is believed not to take the "corrupt" decision.[18]

Result 4'. *In the neutral-frame treatments, lower expectations by victims/bystanders that proposers and responders would take decisions leading to lower payoff for victims are associated with more severe judgments of such decisions.*

This result is consistent with Hypothesis 4. It is only a partial confirmation of it, since the result is contingent on the beliefs about the other decision-maker.

For the choices of subjects in the post-experimental questionnaire, some of the observations gleaned from corruption-frame treatments data are confirmed in the neutral-frame treatments but others are not.[19] A higher self-reported difficulty in understanding the experiment is associated with less harsh judgments also in the neutral-frame treatments. The IOS measure of distance to proposer/responder and the responsibility measure are now not very correlated with judgments, possibly because their effect in the corruption-frame treatments was mostly through labels (Citizen/Official), which are absent from the neutral frame. The IOS distance to victims now correlates with judgments: bystanders who feel closer to victims express harsher judgments with a neutral frame, while in the corruption situation this distance did not matter much.

Overall, combining the corruption-frame and the neutral-frame treatments, we find mixed evidence for Hypothesis 1: sometimes there is no difference in judgments of responders and proposers, but sometimes responders are judged more harshly, depending on the frame, labels, and who is judging. In the corruption-frame treatments, labels (Citizen/Official) appear to matter more than roles (Responder/Proposer), lending support for Hypothesis 2. We also find support for Hypothesis 3: the difference in judgments of victims and bystanders is large in the neutral-frame treatment, and it is also present in the corruption-frame treatments although the magnitude of the effect is smaller. Less harsh judgments are associated with beliefs that the decision-makers are going to take a "corrupt" decision to some extent in both sets of treatments, providing support for Hypothesis 4. Finally, Hypothesis 5 receives

[18] Tests and regressions showing this are presented in Subsection A.1 of Appendix A. Also, as shown in Subsection S1.4 of Supplementary Materials, bystanders expect "corrupt" decisions more than victims do, which partially explains why bystanders' judgments are less harsh than those of victims in the neutral-frame treatments.

[19] The discussion is based on the regressions reported in Subsection S1.5 of Supplementary Materials.

Table 14: Propose and Accept Decisions

Treatment		VJ			BJ		
		Freq.	Pct.	N	Freq.	Pct.	N
CP	Propose (Citizen)	40	78.43%	51	30	61.22%	49
	Accept (Official)	30	61.22%	49	26	53.06%	49
OP	Propose (Official)	38	76.00%	50	31	63.27%	49
	Accept (Citizen)	28	60.87%	46	16	37.21%	43
NP	Propose	39	78.00%	50	44	91.67%	48
	Accept	30	60.00%	50	30	61.22%	49

strong support as judgments are clearly harsher in the corruption frame than in the neutral frame.

3.2 Propose and Accept Decisions

The decisions to propose or accept a transaction with negative externalities are not the main focus of this paper. Nevertheless, in this subsection, we report the results and patterns found in the analysis of these decisions.

Table 14 shows the frequencies of the decisions to propose the transaction with negative externalities (meaning a bribe in the corruption-frame treatments) and to accept it in each treatment. One of the observations from the table is that the proportion of Propose decisions is higher than the proportion of Accept decision in each treatment: proposers are more likely to propose the transaction than responders to accept it in all treatments. Pooling across all treatments, the frequency of proposals is 74.75%, while the frequency of acceptances is 55.94%, which is significantly lower ($p < 0.001$ from a proportion test).[20] On the other hand, there is no significant difference in corrupt behavior by label (Citizen or Public Official) in the corruption-frame treatments: the frequency of corrupt decisions by citizens is 60.32% and by officials is 63.45%.

[20]Proportion tests that are discussed in this and the next paragraph are presented in Subsection A.2 in the Appendix, also for subsamples of observations from particular treatments.

Table 15: OLS regression for Propose and Accept decisions

Variables	Decision to Propose and Accept (0/1)		
	Corruption frame I	Neutral frame II	All treatments III
Proposer (β_P)	0.152***	0.235***	0.178***
	(0.048)	(0.062)	(0.038)
Citizen (β_C)	−0.044		
	(0.048)		
Bystander (β_B)	−0.131***	0.073	−0.060
	(0.048)	(0.060)	(0.038)
Neutral (β_N)			0.130***
			(0.039)
Constant	1.122***	1.012***	1.043***
	(0.172)	(0.232)	(0.138)
Controls	Yes	Yes	Yes
Observations	384	196	580
R-squared	0.097	0.131	0.102

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses. Note: The dependent variable is a dummy and takes the value of 1 if the subject proposes or accepts the transaction, 0 otherwise. Exogenous controls are gender, age, degree in economics, and UK nationality.

Surprisingly, in the corruption-frame treatments, there is more corrupt behavior when victims judge (69.39%) than when bystanders judge (54.21%), a significant difference ($p = 0.002$). But in the neutral-frame treatments, the decision-makers propose/accept the transaction more often when bystanders judge (76.29%) than when victims judge (69.00%), although this difference is not significant. The decisions to propose or accept the transaction are also more frequent in the neutral-frame treatments (72.59%) than in the corruption-frame treatments (61.92%), as one would expect ($p = 0.010$).

With regression estimates reported in Table 15, we confirm the differences observed between the frequencies of the decisions to propose and to accept the negative externality transaction (while also controlling for exogenous characteristics such as gender, age etc.).[21] Proposers propose the transaction significantly more often than responders accept it both in the corruption-frame treatments and in the neutral-frame treatments. In the neutral frame there are more proposals and acceptances than in the corruption frame.

[21] Since we are interested in the effects of the variables, not in probability prediction, we use ordinary least square (OLS) regressions, even though the dependent variable is binary. Full regression results, including for the control variables, are reported in Subsection S2.1 of Supplementary Materials. For the control variables, Propose/Accept decisions are less likely for older participants, more likely for those studying economics or business, and somewhat less likely for UK nationals.

From belief statements about the decision of the other decision-maker, average beliefs are higher than actual proportions of corrupt decisions, especially for beliefs about the decision of responders (indeed, beliefs about proposers and responders are very similar, whereas actual behavior is different as discussed above).[22] Beliefs about judgments, on the other hand, are surprisingly accurate on average, correctly reflecting our findings from the previous subsection, such as the harsher judgment of officials than of citizens (and of responders than of proposers to some extent), and the less harsh judgments in the neutral-frame treatments, especially by bystanders.[23] The decisions to Propose/Accept are positively correlated with the beliefs of proposers/responders about the behavior of the other decision-maker (so that those who believe that the other decision-maker is going to take a corrupt action are more likely to Propose/Accept), and about judgment (so that those who believe that they will receive harsher judgment are less likely to Propose/Accept).

Among the choices in the post-experimental questionnaire, the Propose/Accept decisions are positively correlated with "closeness" (as measured by the IOS measure) to the other decision-maker, and are negatively correlated with closeness to the victim and to the perception of the decision-maker's own responsibility.[24] Proposers feel further away from the victim than responders do, and decision-makers in the corruption-frame treatments feel further away from each other than in the neutral-frame treatments, indicating possible reasons for the decisions.

Overall, our main result for Propose/Accept decisions is that proposers propose more often than responders accept. This is consistent with the (correct) expectation of somewhat less harsh judgment of proposers than of responders that we observe in our experiment. On the other hand, public officials are not less likely to be corrupt than citizens even though public officials receive harsher judgments and subjects correctly anticipate this.

[22] The observations in this paragraph follow from Subsection S2.2 of Supplementary Materials.

[23] The decision-makers in the neutral frame believe that judgments are going to be harsher than they actually are.

[24] These correlations are shown in Subsection S2.3 of Supplemtary Materials. The observations below in this paragraph also follow from the analysis in that section.

4 Conclusion

This paper studies responsibility attribution in the context of corruption. We provide evidence on how different corrupt actors are regarded in society and whether the way they are regarded depends on who is expressing judgments toward them. We conduct an experiment where we elicit people's judgments over the decisions to propose or accept a bribe transaction, and we interpret the judgments as a measure of responsibility attribution. In the experiment, either a citizen or a public official could propose a corrupt transaction to the other, and the other decides whether to accept the proposal. We then ask either the victims of the corrupt transaction or the bystanders of it to judge the individual decisions of proposing and accepting the bribery transaction.

We find that public officials are held more responsible than citizens and, to a lesser extent, the agent who accepts a proposal is held more responsible than the agent that initiates the transaction. Victims' judgments are more severe than those of bystanders, although bystanders' judgments are also consistently negative. These results show that the most important factor that determines who people find more responsible for corruption is whether the decision-maker is labeled as public official rather than whether they are the ones proposing the corrupt transaction or the ones sealing the deal (i.e., accepting the corrupt transaction). Our findings add to the evidence on how people assign responsibility to corrupt actors. Previous literature on how (monetary) punishment or (non-monetary) disapproval is distributed between the participants of corruption is mixed. Salmon & Serra (2017) find a marginally higher frequency of disapproval messages towards proposers (citizens) while Guerra & Zhuravleva (2021) find equal frequencies with responders (officials) punished more harshly, albeit not significantly so. Our design allows us to disentangle the roles of proposer and responder from the labels of citizen and public official. Similarly to the literature, we do not find a strong effect of being proposer or responder (once the citizen/public official labels are controlled for, responders are judged more harshly, but the difference is only marginally significant). On the other hand, we find a strong effect of labels, with public officials receiving harsher judgments than citizens, and this difference is particularly large when public officials are responders. Our results are thus qualitatively closer to those of Guerra & Zhuravleva

(2021), possibly due to the granularity of our judgment variable, compared to the categorical judgment variable of Salmon & Serra (2017).

We also conduct two extra treatments with a neutral frame to study the attribution of responsibility for decisions with negative externalities in the absence of contextual labels. We observe that more responsibility is attributed to the agent who accepts a proposal than to the agent who initiates the transaction. We also find that judgments are less harsh than in the corruption-frame treatments, and victims' judgments are harsher than those of bystanders. These results highlight the importance of contextual instructions in experiments. People react more severely to a transaction when it happens in the context of bribery than in a neutral context. They also judge the same decisions as more reprehensible if the decision-maker is under a label of law enforcer.

With our findings, we not only provide evidence on how people assign responsibility to corrupt actors, but also shed light on the relevance of bottom-up approaches as interventions against corruption (Reinikka & Svensson, 2005; Olken, 2007; Ryvkin et al., 2017; Levati & Nardi, 2023). We show that people understand the severity of acts of corruption and judge them accordingly. However, people find these acts less reprehensible if they expect others to act corruptly in the first place. Therefore, special attention and urgency should be given to anti-corruption practices in places where people are growing accustomed to corruption. Some evidence already suggests that the normalization of corruption can threaten the effectiveness of social enforcement mechanisms that rely on the judgments from civil society (Salmon & Serra, 2017). Further, since bystanders react almost as strongly to corruption as victims, our results suggest that transparency and the ability of individuals to articulate their views through free speech are more important than the direct involvement of victims for the fight against corruption.

A Appendix

A.1 Judgment Decisions and Beliefs

In Table 16, we report the average judgments to proposers (first number in a cell) and to responders (second number in a cell) separated by what action victims/bystanders believe that proposer is going to take (Propose or Not Propose) and responder is going to take (Accept or Reject), along with the number of observations for each belief combination in each set of treatments.

Table 16: Means of judgments in corruption treatments for (P/A) scenario by beliefs

Corruption-frame treatments				
	Accept	N	Reject	N
Propose	$-5.05, -5.72$	114	$-5.48, -5.84$	31
Not Propose	$-6.65, -5.05$	20	$-6.16, -7.66$	32
Neutral-frame treatments				
	Accept	N	Reject	N
Propose	$-1.01, -1.98$	58	$0.94, -0.59$	17
Not Propose	$-1.00, -1.86$	14	$-7.45, -7.36$	11

Note: first number in the cell is judgment to proposers, second number is judgment to responders.

Table 17 reports rank-sum tests of judgment differences depending on whether the decision-maker is believed to choose Propose or Not Propose (for proposers) and Accept or Reject (for responders). The table reports tests on data disaggregated by belief about the other decision-maker and also on the data aggregated over belief about the other decision-maker.

Table 17: Tests of associations between judgments and beliefs

Corruption-frame treatments					
Hypothesis H_0	Belief_Responder	Propose		Not Propose	p-value
Judgment to Proposer	Accept	-5.05	$\approx$	-6.65	[0.152]
Propose = Not Propose	Reject	-5.48	$\approx$	-6.16	[0.711]
	Any	-5.14	$\geq^{*}$	-6.37	[0.085]
Hypothesis H_0	Belief_Proposer	Accept		Reject	p-value
Judgment to Responder	Propose	-5.72	$\approx$	-5.84	[0.768]
Accept = Reject	Not Propose	-5.05	$>^{***}$	-7.66	[0.010]
	Any	-5.62	$\approx$	-6.76	[0.128]
Neutral-frame treatments					
Hypothesis H_0	Belief_Responder	Propose		Not Propose	p-value
Judgment to Proposer	Accept	-1.02	$\approx$	-1.00	[0.902]
Propose = Not Propose	Reject	0.94	$>^{***}$	-7.45	[< 0.001]
	Any	-0.57	$>^{***}$	-3.84	[0.007]
Hypothesis H_0	Belief_Proposer	Accept		Reject	p-value
Judgment to Responder	Propose	-1.98	$\approx$	-0.59	[0.330]
Accept = Reject	Not Propose	-1.86	$>^{**}$	-7.36	[0.024]
	Any	-1.96	$\approx$	-3.25	[0.274]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Rank-sum tests on unpaired observations.

Table 18 shows the results of the Tobit regressions of judgment decisions on beliefs (since both beliefs and judgments are subjects' choices, the regressions indicate correlation, not causality). Belief is the belief about the decision-maker being judged; Belief Other is the beliefs about the other decision-maker.

Table 18: Tobit regressions for judgment decisions in P/A on subjects' beliefs

Variables	Judgment Decision (−9 to 9)			
	Corruption frame		Neutral frame	
	I	II	III	IV
Belief (β_1)	1.844**	2.709*	3.134**	10.09***
	(0.811)	(1.399)	(1.367)	(2.266)
Belief Other (β_2)		1.537		9.967***
		(1.341)		(2.183)
Belief × Belief Other (β_{12})		−1.736		−10.96***
		(1.183)		(3.088)
Constant	−8.985***	−9.684***	−4.729***	−10.87***
	(0.715)	(1.045)	(1.251)	(1.843)
Observations	394	394	200	200
Clusters (subjects)	197	197	100	100
Pseudo R-squared	0.003	0.004	0.006	0.025
$\beta_1 + \beta_{12}$		0.973		−0.871
		[0.360]		[0.566]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the individual level. Note: The dependent variable takes values from −9 to 9. Wald tests for linear combinations of coefficients in the last row; p-values in brackets.

A.2 Proportion tests for Propose and Accept decisions

Table 19 reports the p-values of tests of equality of proportions of decisions to propose or to accept a transaction with negative externalities, by role (Proposer/Responder), for each treatment and also aggregated across treatments. For the comparison by label (Citizen/Official) the decisions in different roles are pooled.

Table 19: Tests of Propose and Accept decisions across roles and labels

Hypothesis H_0	Treatment	Propose		Accept	p-value
Propose (Citizen) = Accept (Official)	CP_VJ	78.43%	$\geq^{*}$	61.22%	[0.061]
	CP_BJ	61.22%	$\approx$	53.06%	[0.414]
Propose (Official) = Accept (Citizen)	OP_VJ	76.00%	$\approx$	60.87%	[0.110]
	OP_BJ	63.27%	$>^{**}$	37.21%	[0.013]
Propose = Accept	All corruption	69.85%	$>^{***}$	53.48%	[0.001]
		Citizen		Official	
Citizen = Official	All corruption	60.32%	$\approx$	63.45%	[0.526]
		Propose		Accept	
Propose = Accept	NP_VJ	78.00%	$\geq^{*}$	60.00%	[0.052]
	NP_BJ	91.67%	$>^{***}$	61.22%	[0.000]
Propose = Accept	All neutral	84.69%	$>^{***}$	60.61%	[0.000]
Propose = Accept	All treatments	74.75%	$>^{***}$	55.94%	[0.000]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Two-sample proportion tests.

In Table 20 we report the p-values of tests of equality of proportions of Propose/Accept decisions comparing these proportions by who is giving the judgment, Victim (VJ) or Bystander (BJ). Again, tests are reported for each treatment and also aggregated across treatments.

Table 20: Tests of Propose and Accept decisions by who is judging

Hypothesis H_0	Treatment	VJ		BJ	p-value
VJ = BJ	CP_Proposer	78.43%	$\geq^{*}$	61.22%	[0.061]
	CP_Responder	61.22%	$\approx$	53.06%	[0.414]
	OP_Proposer	76.00%	$\approx$	63.27%	[0.168]
	OP_Responder	60.87%	$>^{**}$	37.21%	[0.026]
VJ = BJ	All corruption	69.39%	$>^{***}$	54.21%	[0.002]
VJ = BJ	NP_Proposer	78.00%	$\leq^{*}$	91.67%	[0.060]
	NP_Responder	60.00%	$\approx$	61.22%	[0.901]
VJ = BJ	All neutral	69.00%	$\approx$	76.29%	[0.252]
VJ = BJ	All treatments	69.26%	$\geq^{*}$	61.67%	[0.054]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Two-sample proportion tests.

Table 21 reports the p-values of tests of equality of proportions of Propose/Accept decisions comparing these proportions by frame, corruption or neutral. Tests are reported separately

for who is judging and for fixed roles (but aggregated across labels, since there is no difference between citizens' and officials' behavior), and also aggregated across treatments and roles.

Table 21: Comparison tests of Propose/Accept decisions by frame

Hypothesis H_0	Treatment_Role	Corruption		Neutral	p-value
Corruption = Neutral	VJ_Propose	77.23%	$\approx$	78.00%	[0.915]
	VJ_Accept	61.05%	$\approx$	60.00%	[0.902]
	BJ_Propose	62.24%	$<^{***}$	91.67%	[0.000]
	BJ_Accept	45.65%	$\leq^{*}$	61.22%	[0.078]
	All treatments	61.92%	$<^{**}$	72.59%	[0.010]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Two-sample proportion tests.

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Supplementary materials to "Attribution of responsibility for corrupt decisions"

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S1 Additional Results for Judgment Decisions

S1.1 Analysis of the other scenarios

Figure S1 shows the mean of judgments in each treatment for all possible scenarios, from left to right, Propose/Accept (P/A), Propose/Reject (P/R), Not Propose/Accept (NP/A), Not Propose/Reject (NP/R). Recall that judgments can take integer values from -9, corresponding to a red angry facial expression in the slider, to 9, corresponding to a green happy facial expression in the slider. We find evidence of intuitive patterns, that is, decisions to propose or to accept the transaction receive on average negative judgments; while decisions of not to propose or to reject receive positive judgments. We also find evidence suggesting that neutral-label treatments produce milder judgments.

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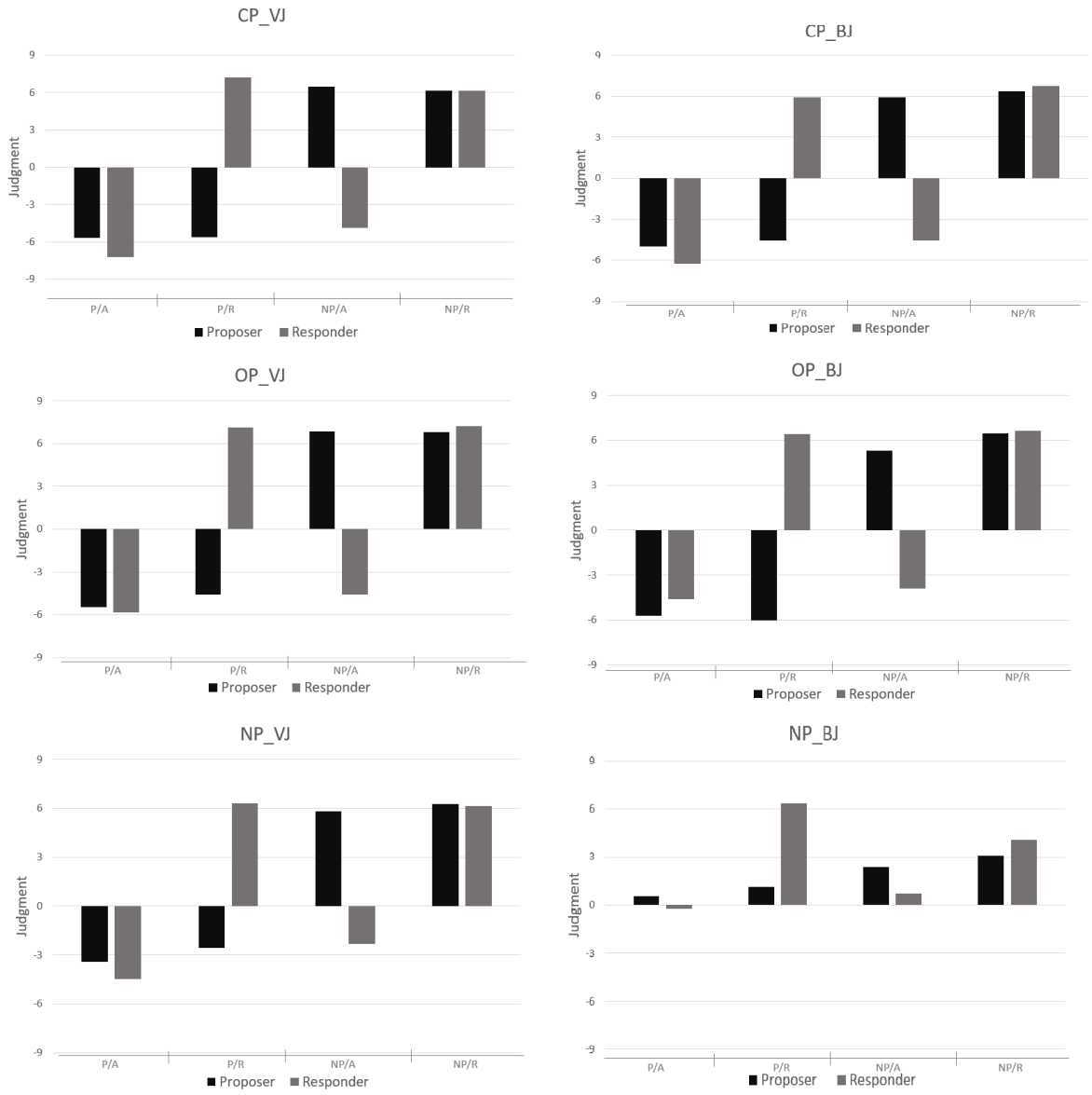


Figure S1: Mean of judgments per treatment for all scenarios

S1.2 Order analysis

The average judgments in the Propose/Accept (P/A) scenario, separated by order (left: first in order; right: second) and comparisons of them (rank-sum tests) for proposers and responders, are contained in Table S1. Comparisons are done for proposers and responders, disaggregated by treatments and also aggregated for the corruption-frame treatments. We find no significant order effects.

Table S1: Tests of judgment order

Judgments to Proposers					
Hypothesis H_0	Treatment(s)	Order1		Order2	p-value
Order1 = Order2	CP_VJ	−6.16	≈	−5.24	[0.304]
	CP_BJ	−4.08	≈	−5.83	[0.128]
	OP_VJ	−5.20	≈	−5.74	[0.493]
	OP_BJ	−5.67	≈	−5.74	[0.656]
Order1 = Order2	All Corruption	−5.29	≈	−5.64	[0.377]
Order1 = Order2	NP_VJ	−3.80	≈	−3.08	[0.845]
	NP_BJ	−0.04	≈	1.11	[0.537]
Judgments to Responders					
Hypothesis H_0	Treatment(s)	Order1		Order2	p-value
Order1 = Order2	CP_VJ	−7.60	≈	−6.84	[0.124]
	CP_BJ	−5.50	≈	−7.04	[0.133]
	OP_VJ	−6.08	≈	−5.61	[0.391]
	OP_BJ	−5.13	≈	−4.19	[0.974]
Order1 = Order2	All Corruption	−6.09	≈	−5.88	[0.477]
Order1 = Order2	NP_VJ	−5.04	≈	−3.88	[0.381]
	NP_BJ	−1.26	≈	0.57	[0.252]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Rank-sum tests on unpaired observations.

S1.3 Full regression tables for judgment decisions

Table S2 reports full results for the corruption-frame treatments of the Tobit regressions of judgment decisions on variables describing role (Proposer/Responder), label (Citizen/Official), who is judging (Bystander/Victim) and control variables. For the control variables: Order is a dummy variable, equals 1 if responder was judged first and proposer second, 0 otherwise (see also Subsection S1.2). The remaining variables are from the demographic information in the post-experimental questionnaire: Age is the age of the participant giving judgment (in years); Male is 1 if the participant is male, 0 if female; Economics is 1 if the participant studies an economics or business degree, 0 otherwise; UK is 1 if the participant indicates UK nationality, 0 otherwise.

Table S2: Tobit regressions for judgments in P/A for corruption-frame treatments

Variables	Judgment Decision (−9 to 9)		
	I	II	III
Proposer (β_P)	0.767*	0.807*	3.274*
	(0.414)	(0.416)	(1.721)
Citizen (β_C)	1.955***	1.993***	3.267**
	(0.417)	(0.421)	(1.580)
Proposer×Citizen (β_{PO})			−3.048
			(3.007)
Bystander (β_B)	1.548*	1.565*	2.642*
	(0.888)	(0.883)	(1.493)
Proposer×Bystander (β_{PB})			−2.660
			(2.251)
Citizen×Bystander (β_{CB})			−0.479
			(2.057)
Proposer×Citizen			1.903
×Bystander (β_{PCB})			(3.899)
Order		−0.250	−0.217
		(0.916)	(0.919)
Age		−0.039	−0.036
		(0.199)	(0.200)
Male		−0.857	−0.850
		(0.942)	(0.938)
Economics		−0.420	−0.244
		(1.045)	(1.049)
UK		0.826	0.812
		(1.134)	(1.115)
Constant	−9.857***	−9.132**	−10.34**
	(0.758)	(4.581)	(4.601)
Observations	394	392	392
Clusters (subjects)	197	196	196
Pseudo R-squared	0.008	0.010	0.012

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the individual level. Note: The dependent variable takes values from −9 to 9.

For specification III of Table S2, Table S3 reports results of Wald tests whether linear combinations of coefficients on treatment variables are zero, comparing treatment differences in subsamples of observations as indicated.

Table S3: Wald tests of coefficients for specification III of Table S2

Comparison	Subsample	Coefficient	Value	p-value
Proposer v Responder	VJ_Official	β_P	3.274*	[0.058]
	VJ_Citizen	$\beta_P + \beta_{PC}$	0.226	[0.879]
	BJ_Official	$\beta_P + \beta_{PB}$	0.614	[0.665]
	BJ_Citizen	$\beta_P + \beta_{PC} + \beta_{PB} + \beta_{PCB}$	−0.530	[0.660]
Citizen v Official	VJ_Responder	β_C	3.267**	[0.039]
	VJ_Proposer	$\beta_C + \beta_{PC}$	0.219	[0.894]
	BJ_Responder	$\beta_C + \beta_{CB}$	2.788**	[0.026]
	BJ_Proposer	$\beta_C + \beta_{PC} + \beta_{CB} + \beta_{PCB}$	1.643	[0.234]
Bystander v Victim	CP_Responder	β_B	2.642*	[0.077]
	OP_Proposer	$\beta_B + \beta_{PB}$	−0.018	[0.991]
	CP_Responder	$\beta_B + \beta_{CB}$	2.162*	[0.091]
	OP_Proposer	$\beta_B + \beta_{PB} + \beta_{CB} + \beta_{PCB}$	1.406	[0.312]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Wald tests whether the value of the coefficient combination is zero.

In Table S4 we reports full results for the neutral-frame treatments of the regressions of judgment decisions on variables describing role (Proposer/Responder), who is judging (Victim/Bystander) and control variables (columns I and II). Columns III and IV are based on data from all treatments and report the full results of the regressions of judgment decisions on the same variables plus the labels variable (Citizen/Official/Neutral). The base category for this variable is Neutral, i.e. the neutral-frame treatments.

Table S4: Tobit regression for judgments in P/A for neutral frame and all treatments

Variables	Judgment Decision (−9 to 9)			
	Neutral treatments		All treatments	
	I	II	III	IV
Proposer (β_P)	1.306**	1.487**	0.991***	1.444*
	(0.515)	(0.752)	(0.329)	(0.740)
Bystander (β_B)	4.885***	5.059***	2.843***	5.235***
	(1.420)	(1.441)	(0.762)	(1.384)
Proposer×Bystander (β_{PB})		−0.347		−0.325
		(1.024)		(1.007)
Citizen (β_C)			−4.341***	−2.058
			(0.840)	(1.444)
Official (β_O)			−6.418***	−5.402***
			(0.902)	(1.588)
Proposer×Citizen (β_{PC})				−1.191
				(1.672)
Proposer×Official (β_{PO})				1.877
				(1.884)
Bystander×Citizen (β_{BC})				−3.008**
				(1.915)
Bystander×Official (β_{BO})				−2.586**
				(2.076)
Proposer×Bystander				−0.557
×Citizen (β_{PBC})				(2.200)
Proposer×Bystander				−2.303
×Official (β_{PBO})				(2.477)
Order	1.502	1.502	0.394	0.388
	(1.387)	(1.387)	(0.784)	(0.778)
Age	−0.027	−0.027	−0.043	−0.037
	(0.238)	(0.238)	(0.157)	(0.152)
Male	−1.089	−1.089	−1.271	−1.115
	(1.678)	(1.678)	(0.830)	(0.821)
Economics	−0.741	−0.742	−0.415	−0.327
	(2.100)	(2.101)	(0.955)	(0.949)
UK	−1.261	−1.260	−0.034	0.052
	(1.587)	(1.588)	(0.922)	(0.912)
Constant	−4.594	−4.691	−3.120	−4.736
	(5.866)	(5.882)	(3.842)	(3.823)
Observations	200	200	592	592
Clusters (subjects)	100	100	296	296
Pseudo R-squared	0.029	0.029	0.038	0.042

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the individual level. Note: The dependent variable takes values from −9 to 9.

Table S5 reports results of Wald tests whether linear combinations of coefficients on treatment variables for specifications II and IV of Table S4 are zero, comparing treatment differences in subsamples of observations as indicated. For specification IV, only tests involving labels variable (Citizen/Official) are reported.

Table S5: Wald tests of coefficients for specifications II and IV of Table S4

Comparison	Subsample	Coefficient	Value	p-value
Specification II: Neutral treatments				
Proposer v Responder	NP_VJ	β_P	1.487^{**}	[0.049]
	NP_BJ	$\beta_P + \beta_{PB}$	1.141	[0.105]
Bystander v Victim	NP_Responder	β_B	5.059^{***}	[0.001]
	NP_Proposer	$\beta_B + \beta_{PB}$	4.712^{***}	[0.003]
Specification IV: All treatments				
Citizen v Neutral	VJ_Responder	β_C	-2.058	[0.155]
	VJ_Proposer	$\beta_C + \beta_{PC}$	-3.250^{**}	[0.030]
	BJ_Responder	$\beta_C + \beta_{BC}$	-5.067^{***}	[0.000]
	BJ_Proposer	$\beta_C + \beta_{PC} + \beta_{BC} + \beta_{PBC}$	-6.815^{***}	[0.000]
Official v Neutral	VJ_Responder	β_O	-5.402^{***}	[0.001]
	VJ_Proposer	$\beta_O + \beta_{PO}$	-3.526^{**}	[0.030]
	BJ_Responder	$\beta_O + \beta_{BO}$	-7.988^{***}	[0.000]
	BJ_Proposer	$\beta_O + \beta_{PO} + \beta_{BO} + \beta_{PBO}$	-8.415^{***}	[0.000]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Wald tests whether the value of the coefficient combination is zero.

S1.4 Beliefs about Propose/Accept decisions

Table S6 shows the actual proportions of Propose/Accept decisions, and the beliefs of Victims and Bystanders (V,B) about those decisions, in each treatment and aggregated across treatments and roles.

Table S6: Beliefs about Propose and Accept Decisions

Treatment		VJ		BJ	
		Actual	Belief V,B	Actual	Belief V,B
CP	Propose	0.78	0.72, 0.82	0.61	0.77, 0.79
	Accept	0.61	0.66, 0.76	0.53	0.75, 0.67
OP	Propose	0.76	0.79, 0.79	0.63	0.82, 0.65
	Accept	0.61	0.73, 0.66	0.37	0.67, 0.67
NP	Propose	0.78	0.65, 0.89	0.92	0.86, 0.84
	Accept	0.60	0.67, 0.76	0.61	0.80, 0.76
			Actual	Belief	
Overall	Propose		0.75	0.78	
	Accept		0.56	0.71	

Table S7 presents the results of the regression of beliefs of victims/bystanders about Propose/Accept decisions on treatment and other exogenous variables. Even thought elicited beliefs are binary statements, we use simple OLS rather than binary outcome models (probit or logit), since we are interested in the effects of exogenous variables rather than in probability predictions.

Table S7: Victim/bystanders beliefs about P/A (OLS)

Variables	Belief about Propose/Accept (0/1)		
	Corruption frame	Neutral frame	All treatments
	I	II	III
Proposer (β_P)	0.056	0.030	0.048
	(0.037)	(0.057)	(0.031)
Citizen (β_C)	0.036		−0.025
	(0.037)		(0.047)
Official (β_O)			−0.061
			(0.048)
Bystander (β_B)	−0.036	0.154**	0.030
	(0.054)	(0.069)	(0.043)
Order	0.038	0.035	0.037
	(0.055)	(0.070)	(0.043)
Age	0.004	−0.003	0.002
	(0.009)	(0.011)	(0.007)
Male	0.065	0.057	0.057
	(0.055)	(0.092)	(0.046)
Economics	0.012	0.069	0.027
	(0.061)	(0.107)	(0.053)
UK	0.116*	0.065	0.092*
	(0.063)	(0.072)	(0.048)
Constant	0.435*	0.591*	0.533***
	(0.236)	(0.306)	(0.191)
Observations	392	200	592
Clusters (subjects)	196	100	296
R-squared	0.026	0.044	0.021

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the individual level.
Note: The dependent variable takes values 0/1.

S1.5 Judgments and choices in the questionnaire

Table S8 reports the results of the regressions of judgment decision by victims/bystanders on their choices in the post-experimental questionnaire. The results should be seen as indicating correlation, not causality since all these choices are endogenous. IOS Proposer/Responder is the choice measuring closeness to proposer/responder being judged (from 1 to 7); IOS Victim is the measure of closeness to victim (only used in specifications II, IV, VI, which are for bystanders only); Difficulty is the self-reported difficulty in understanding the experiment (from 1 to 10); Altruism is the response to a question of how much of a windfall £1000 the subject would give to a good cause (between 0 and 1000); Responsibility is a measure of how

much proposer or responder is deemed responsible for the outcome of corruption (from 1 to 10).

Table S8: Tobit regressions for judgment decisions in P/A on other subject choices

Variables	Judgment Decision (−9 to 9)					
	Corruption frame		Neutral frame		All treatments	
	I	II	III	IV	V	VI
IOS Proposer/	0.447*	0.286	−0.128	0.871*	0.310	0.675*
Responder	(0.243)	(0.298)	(0.395)	(0.509)	(0.247)	(0.373)
IOS Victim		0.030		−0.865***		−0.705***
		(0.246)		(0.307)		(0.252)
Difficulty	0.657***	0.472**	1.083***	0.698*	0.876***	0.686***
	(0.199)	(0.218)	(0.252)	(0.358)	(0.182)	(0.244)
Altruism	−0.001	−0.002	0.006**	0.004	0.003	0.0004
	(0.002)	(0.003)	(0.003)	(0.004)	(0.002)	(0.003)
Responsibility	−0.507**	−0.677**	0.105	0.476	−0.516**	−0.576*
	(0.225)	(0.299)	(0.373)	(0.493)	(0.208)	(0.305)
Constant	−6.315***	−3.286	−7.751**	−7.096*	−5.822***	−1.988
	(2.345)	(3.161)	(3.382)	(4.158)	(2.111)	(3.066)
Observations	348	198	200	102	548	300
Clusters (subjects)	174	99	100	51	274	150
Pseudo R-squared	0.023	0.026	0.032	0.033	0.024	0.027

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the individual level. Note: The dependent variable takes values from −9 to 9.

Table S9 reports the results of the regressions for these subject choices on exogenous treatment and demographic variables, for the corruption-frame treatments. For columns I and V, there are two observations per subject since a subject can have different IOS or responsibility measure for proposers and responders (recall that in one of the sessions of CP_VJ treatment we did not ask for responsibility measure, leading to fewer observations in column V than in column I). For columns III and IV, there is one observation per subject making the judgment (victim or bystander); column II is only for bystanders.

Table S9: Victim/bystander questionnaire choices in corruption-frame treatments (OLS)

	Dependent variables				
	IOS Proposer/ Responder	IOS Victim	Difficulty	Altruism	Responsibility
Variables	I	II	III	IV	V
Proposer (β_P)	−0.353***				0.084
	(0.102)				(0.157)
Citizen (β_C)	0.394***				−1.017***
	(0.102)				(0.157)
Bystander (β_B)	−0.065		0.032	6.564	−0.252
	(0.206)		(0.305)	(28.77)	(0.244)
Order	−0.123	−0.632	−0.122	5.953	0.237
	(0.217)	(0.446)	(0.311)	(28.69)	(0.246)
Age	0.010	0.026	0.019	−6.555	0.025
	(0.035)	(0.098)	(0.051)	(5.573)	(0.038)
Male	−0.181	−0.130	−0.596**	−81.04***	0.181
	(0.223)	(0.463)	(0.302)	(29.79)	(0.257)
Economics	−0.004	0.480	−0.259	−32.12	−0.708**
	(0.258)	(0.513)	(0.339)	(32.09)	(0.331)
UK	−0.487	−0.543	0.544	−25.64	0.349
	(0.250)	(0.552)	(0.357)	(38.13)	(0.273)
Constant	3.112***	4.402*	2.983**	359.0**	7.719***
	(0.923)	(2.428)	(1.444)	(145.0)	(1.077)
Observations	392	98	196	196	346
Clusters (subjects)	196				173
R-squared	0.053	0.043	0.036	0.052	0.110

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors (in parentheses) are clustered at the individual level, where appropriate (columns I and V). For the dependent variables: IOS measures (columns I and II) take values from 1 to 7; Difficulty (column III) takes values from 1 to 10; Altruism (column IV) takes values between 0 and 1000; Responsibility (column V) takes values from 1 to 10.

Table S10 reports the results of the regressions of victims/bystanders questionnaire choices for the neutral-frame treatments. As in Table S9, in columns I and V there are two observations per subject making the judgment (victim or bystander); in columns III and IV there is one observation per subject; column II is only for bystanders.

Table S10: Victim/bystander questionnaire choices in neutral-frame treatments (OLS)

	Dependent variables				
	IOS Proposer/ Responder	IOS Victim	Difficulty	Altruism	Responsibility
Variables	I	II	III	IV	V
Proposer (β_P)	−0.400***				−0.320*
	(0.125)				(0.189)
Bystander (β_B)	−0.890**		0.774*	−64.32	−0.555*
	(0.363)		(0.458)	(44.69)	(0.302)
Order	0.121	−0.284	−0.110	−101.9**	−0.093
	(0.349)	(0.571)	(0.468)	(45.34)	(0.267)
Age	−0.081*	−0.139**	0.109	−14.54***	−0.032
	(0.041)	(0.066)	(0.079)	(5.375)	(0.057)
Male	0.083	−0.907	0.285	−76.06	0.079
	(0.432)	(0.579)	(0.561)	(48.89)	(0.364)
Economics	0.022	0.653	−0.976	−4.044	0.377
	(0.645)	(1.106)	(0.622)	(68.07)	(0.416)
UK	−0.786*	−0.861	−0.786	−176.9***	−0.125
	(0.396)	(0.662)	(0.573)	(55.79)	(0.321)
Constant	5.825***	6.128***	1.061	752.4***	8.876***
	(1.128)	(1.848)	(2.017)	(165.5)	(1.409)
Observations	200	51	100	100	200
Clusters (subjects)	100				100
R-squared	0.093	0.099	0.104	0.192	0.047

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors (in parentheses) are clustered at the individual level, where appropriate (columns I and V). For the dependent variables: IOS measures (columns I and II) take values from 1 to 7; Difficulty (column III) takes values from 1 to 10; Altruism (column IV) takes values between 0 and 1000; Responsibility (column V) takes values from 1 to 10.

Finally, Table S11 reports the results of the regressions of victims/bystanders questionnaire choices for all treatments. In columns II, III and IV, variable Citizen is 1 when Citizen is Proposer and variable Official is 1 when Official is Proposer, in the corruption-frame treatments. The base for the categorical variable Citizen/Official/Neutral in all columns is Neutral, i.e., the neutral-frame treatments.

Table S11: Victim/bystander questionnaire choices in all treatments (OLS)

	Dependent variables				
	IOS Proposer/ Responder	IOS Victim	Difficulty	Altruism	Responsibility
Variables	I	II	III	IV	V
Proposer (β_P)	-0.369^{***}				-0.066
	(0.079)				(0.121)
Citizen (β_C)	-0.058	1.159^{***}	-0.013	-50.12^{*}	-0.032
	(0.218)	(0.440)	(0.331)	(30.10)	(0.211)
Official (β_O)	-0.452^{**}	1.663^{***}	0.174	-24.48	1.007^{***}
	(0.211)	(0.416)	(0.314)	(30.67)	(0.192)
Bystander (β_B)	-0.341^{*}		0.271	-14.84	-0.364^{*}
	(0.182)		(0.256)	(24.14)	(0.187)
Order	-0.058	-0.486	-0.119	-32.17	0.067
	(0.187)	(0.350)	(0.263)	(24.64)	(0.181)
Age	-0.018	-0.017	0.040	-8.756^{*}	0.010
	(0.030)	(0.075)	(0.044)	(4.471)	(0.033)
Male	-0.058	-0.264	-0.501^{*}	-76.11^{***}	0.214
	(0.195)	(0.381)	(0.269)	(25.30)	(0.207)
Economics	-0.037	0.406	-0.233	-17.09	-0.420
	(0.249)	(0.454)	(0.305)	(29.11)	(0.277)
UK	-0.554^{**}	-0.707^{*}	0.086	-79.05^{**}	0.152
	(0.216)	(0.423)	(0.310)	(32.30)	(0.210)
Constant	4.154^{***}	3.366^{*}	2.471^{**}	509.2^{***}	7.560^{***}
	(0.757)	(1.841)	(1.171)	(121.3)	(0.820)
Observations	592	149	296	296	546
Clusters (subjects)	296				273
R-squared	0.055	0.129	0.026	0.081	0.085

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors (in parentheses) are clustered at the individual level, where appropriate (columns I and V). For the dependent variables: IOS measures (columns I and II) take values from 1 to 7; Difficulty (column III) takes values from 1 to 10; Altruism (column IV) takes values between 0 and 1000; Responsibility (column V) takes values from 1 to 10.

S2 Additional Results for Propose/Accept Decisions

S2.1 Full regression tables for Propose/Accept decisions

Table S12 shows full results of the regressions of Propose and Accept decisions, for the corruption-frame treatments (columns I and II), for the neutral-frame treatments (columns III and IV), and for all treatments (columns V and VI). Columns II, IV and VI include interaction terms. Since we are interested in the effects of the variables, not in probability

predictions, we use OLS rather than probit or logit specifications.

Table S12: OLS regressions for Propose and Accept decisions

Variables	Decision to Propose and Accept (0/1)					
	Corruption frame		Neutral frame		All treatments	
	I	II	III	IV	V	VI
Proposer (β_P)	0.152***	0.131**	0.235***	0.194**	0.178***	0.130**
	(0.048)	(0.066)	(0.062)	(0.091)	(0.038)	(0.065)
Citizen (β_C)	−0.044	−0.044				
	(0.048)	(0.048)				
Bystander (β_B)	−0.131***	−0.153***	0.073	0.031	−0.060	−0.149**
	(0.048)	(0.071)	(0.060)	(0.097)	(0.038)	(0.071)
Proposer×		0.043		0.084		0.041
Bystander (β_{PB})		(0.096)		(0.121)		(0.096)
Neutral (β_N)					0.130***	−0.001
					(0.039)	(0.084)
Proposer×						0.061
Neutral (β_{PN})						(0.110)
Bystander×						0.179
Neutral (β_{BN})						(0.119)
Proposer×Bystander						0.040
×Neutral (β_{PBN})						(0.154)
Age	−0.024***	−0.024***	−0.019**	−0.018**	−0.022***	−0.021***
	(0.007)	(0.007)	(0.009)	(0.009)	(0.005)	(0.005)
Male	0.080	0.080	0.039	0.037	0.062	0.063
	(0.050)	(0.050)	(0.061)	(0.061)	(0.039)	(0.039)
Economics	0.101*	0.103*	0.197***	0.193***	0.134***	0.131***
	(0.057)	(0.057)	(0.069)	(0.070)	(0.045)	(0.046)
UK	−0.068	−0.068	−0.120*	−0.118*	−0.096**	−0.092**
	(0.054)	(0.054)	(0.069)	(0.070)	(0.043)	(0.043)
Constant	1.122***	1.134***	1.013***	1.013***	1.043***	1.076***
	(0.172)	(0.173)	(0.232)	(0.234)	(0.138)	(0.140)
Observations	384	384	196	196	580	580
R-squared	0.097	0.097	0.131	0.133	0.102	0.114

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses. Note: The dependent variable is a dummy and takes the value of 1 if the subject proposes or accepts the transaction, 0 otherwise.

Table S13 shows results of Wald tests whether linear combinations of coefficients on treatment variables in some specifications of Table S12 are zero, comparing treatment differences in subsamples of observations as indicated. For specification VI, only tests involving Neutral variable are reported.

Table S13: Wald tests of coefficients from Table S12

Comparison	Subsample	Coefficient	Value	p-value
Specification II: Corruption treatments				
Propose v Accept	VJ	β_P	0.131^{**}	[0.047]
	BJ	$\beta_P + \beta_{PB}$	0.174^{**}	[0.014]
Bystander v Victim	Responder	β_B	-0.153^{**}	[0.032]
	Proposer	$\beta_B + \beta_{PB}$	-0.110^{*}	[0.096]
Specification IV: Neutral treatments				
Propose v Accept	VJ	β_P	0.194^{**}	[0.033]
	BJ	$\beta_P + \beta_{PB}$	0.279^{***}	[0.001]
Bystander v Victim	Responder	β_B	0.031	[0.753]
	Proposer	$\beta_B + \beta_{PB}$	0.115	[0.114]
Specification VI: All treatments				
Neutral v Corruption	VJ_Accept	β_N	-0.001	[0.955]
	VJ_Propose	$\beta_N + \beta_{PN}$	0.061	[0.408]
	BJ_Accept	$\beta_B + \beta_{BN}$	0.178^{**}	[0.039]
	BJ_Propose	$\beta_N + \beta_{PN} + \beta_{BN} + \beta_{PBN}$	0.279^{***}	[0.000]

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Note: Wald tests whether the value of the coefficient combination is zero.

S2.2 Beliefs of proposers/responders and their decisions

Table S14 shows the average beliefs of proposers/responders about the decision of the other decision-maker (i.e. beliefs of proposers about the decision of responder and beliefs of responders about the decision of proposer), along with actual proportions of decisions (as in Table S6), disaggregated by treatment and combined across treatments.

Table S14: Beliefs of responders/proposers about Propose/Accept decisions

Treatment		VJ		BJ	
		Actual	Belief	Actual	Belief
CP	Propose	0.78	0.82	0.61	0.80
	Accept	0.61	0.90	0.53	0.65
OP	Propose	0.76	0.80	0.63	0.67
	Accept	0.61	0.78	0.37	0.86
NP	Propose	0.78	0.84	0.92	0.92
	Accept	0.60	0.88	0.61	0.88
			Actual	Belief	
Overall	Propose		0.75	0.81	
	Accept		0.56	0.82	

Beliefs of decision-makers about the other decision-maker's choice are higher than actual

proportions (especially for Accept decisions), but the differences in beliefs across treatments appear small.

In Table S15 we report the actual average judgments in the P/A scenario, and the average reported beliefs of proposers and responders (P,R) about the judgments.

Table S15: Beliefs of Proposers/Responders about judgment decisions

Treatment	Judgment to	VJ		BJ	
		Actual	Belief P,R	Actual	Belief P,R
CP	Proposer	−5.7	−6.3, −5.7	−5.0	−4.3, −4.6
	Responder	−7.2	−6.8, −6.1	−6.3	−5.4, −6.1
OP	Proposer	−5.5	−6.1, −7.1	−5.7	−5.2, −5.4
	Responder	−5.9	−5.3, −5.4	−4.6	−4.4, −4.4
NP	Proposer	−3.4	−4.6, −5.2	0.6	−0.2, −1.5
	Responder	−4.5	−5.8, −6.6	−0.3	−1.4, −2.2
			Actual	Belief	
Overall	Proposer		−4.1	−4.7	
	Responder		−4.8	−5.1	

Average beliefs about judgments are only slightly higher than actual judgments, mostly because judgments are believed to be harsher than they really are in the neutral frame.

Table S16 presents the results of the regression of beliefs of proposers/responders, both about Propose/Accept decisions (columns I-III) and about judgment decisions (columns IV-VI), on treatment and role variabels, and other exogenous variables.

Table S16: OLS regression for beliefs of Proposers/Responders

Variables	Belief Propose/Accept (0/1)			Belief judgment (−9 to 9)		
	Corruption	Neutral	All	Corruption	Neutral	All
	I	II	III	IV	V	VI
Proposer (β_P)	0.020	−0.021	0.007	0.381	1.815***	0.872**
	(0.042)	(0.048)	(0.032)	(0.441)	(0.669)	(0.372)
Citizen (β_C)	−0.060		−0.142***	0.996***		−1.787***
	(0.042)		(0.040)	(0.463)		(0.487)
Official (β_O)			−0.084**			−2.789***
			(0.037)			(0.453)
Bystander (β_B)	−0.065	0.046	−0.027	1.374***	4.466***	2.458***
	(0.043)	(0.046)	(0.032)	(0.449)	(0.665)	(0.375)
Age	−0.014*	−0.015*	−0.014**	−0.110	−0.226*	−0.158***
	(0.008)	(0.009)	(0.006)	(0.073)	(0.010)	(0.056)
Male	0.047	0.039	0.040	0.190	−0.031	0.048
	(0.042)	(0.051)	(0.032)	(0.055)	(0.707)	(0.407)
Economics	0.060	0.044	0.067*	−0.208	0.319	0.069
	(0.047)	(0.053)	(0.037)	(0.568)	(0.977)	(0.484)
UK	< 0.001	−0.096*	−0.033	−0.561	−2.285***	−1.207***
	(0.049)	(0.053)	(0.036)	(0.485)	(0.799)	(0.423)
Constant	1.105***	1.235***	1.204***	−4.355**	−0.249	−0.902
	(0.178)	(0.207)	(0.137)	(1.735)	(2.555)	(1.439)
Observations	384	196	580	384	196	580
R-squared	0.037	0.038	0.043	0.045	0.255	0.142

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses. In columns I-III, the dependent variable takes value 0 or 1. In columns IV-VI, the dependent variable takes values from −9 to 9. The base categories for Proposer variable is Responder; for Bystander variable is Victim. For Citizen variable, the base category is Official in columns I and IV; it is Neutral in columns III and VI.

Table S17 shows the results of the regressions of Propose/Accept decisions on beliefs. Belief Other is the belief about the other decision-maker; Belief Judgment is the beliefs about the judgment.

Table S17: OLS regression for Propose/Accept decisions on subjects' beliefs

Variables	Decision to Propose and Accept (0/1)		
	Corruption frame I	Neutral frame II	All treatments III
Belief Other	0.375***	0.223**	0.346**
	(0.056)	(0.104)	(0.050)
Belief Judgment	0.012**	0.016***	0.014***
	(0.005)	(0.005)	(0.004)
Constant	0.389***	0.583***	0.439***
	(0.060)	(0.100)	(0.050)
Observations	386	197	583
R-squared	0.107	0.068	0.101

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses. Note: The dependent variable takes values 0 or 1.

S2.3 Propose/Accept decisions and choices in the questionnaire

Table S18 reports the results of the regressions of Propose/Accept decisions on other subject choices in the post-experimental questionnaire. The results should be seen as indicating correlation, not causality since all these choices are endogenous.

Table S18: Regression for Propose/Accept decisions on subject questionnaire choices

Variables	Decision to Propose and Accept (0/1)		
	Corruption frame I	Neutral frame II	All treatments III
IOS Other	0.047***	0.068***	0.056***
	(0.013)	(0.017)	(0.010)
IOS Victim	−0.097***	−0.079***	−0.090***
	(0.013)	(0.018)	(0.011)
Difficulty	0.004	−0.012	−0.003
	(0.011)	(0.013)	(0.008)
Altruism	−0.0001	0.0003	0.00002
	(0.0001)	(0.0002)	(0.0001)
Responsibility	−0.021**	−0.056***	−0.033***
	(0.011)	(0.015)	(0.008)
Constant	0.906***	1.057***	0.958***
	(0.114)	(0.153)	(0.091)
Observations	371	197	568
R-squared	0.182	0.219	0.186

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses. Note: The dependent variable is a dummy and takes the value of 1 if the subject proposes or accepts the transaction, 0 otherwise.

For the corruption-frame treatments, Table S19 reports the results of the regressions of subject choices in the post-experimental questionnaire on exogenous treatment and demographic variables (since in one of the sessions we did not ask for measure of responsibility, there are fewer observations in column V).

Table S19: Regressions for decision-makers' questionnaire choices for corruption frame

	Dependent variables				
	IOS Other	IOS Victim	Difficulty	Altruism	Responsibility
Variables	I	II	III	IV	V
Proposer (β_P)	0.271	-0.654^{***}	0.140	24.96	0.173
	(0.181)	(0.178)	(0.222)	(20.44)	(0.207)
Citizen (β_C)	0.086	0.173	-0.127	-3.013	-0.151
	(0.182)	(0.177)	(0.226)	(21.31)	(0.209)
Bystander (β_B)	-0.170	0.105	0.219	31.22	-0.052
	(0.182)	(0.180)	(0.228)	(20.97)	(0.212)
Age	-0.043	0.089^{***}	-0.125^{***}	-7.373^{**}	0.037
	(0.029)	(0.028)	(0.041)	(3.639)	(0.039)
Male	0.153	-0.304	-0.317	-31.81	-0.309
	(0.191)	(0.184)	(0.232)	(23.38)	(0.227)
Economics	-0.446^{**}	-0.351^{*}	-0.139	-66.65^{***}	-0.284
	(0.220)	(0.202)	(0.304)	(22.39)	(0.272)
UK	0.299	-0.264	-0.286	-22.11	0.079
	(0.208)	(0.193)	(0.244)	(22.59)	(0.236)
Constant	5.105^{***}	1.895^{***}	6.237^{***}	347.1^{***}	7.302^{***}
	(0.697)	(0.668)	(0.937)	(83.28)	(0.895)
Observations	384	384	384	384	369
R-squared	0.032	0.097	0.039	0.047	0.020

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. For the dependent variables: IOS Other and IOS Victim (columns I and II) take values from 1 to 7; Difficulty (column III) takes values from 1 to 10; Altruism (column IV) takes values between 0 and 1000; Responsibility (column V) takes values from 0 to 10.

In Table S20 we report the results of similar regressions for the neutral treatments.

Table S20: Regressions for decision-makers' questionnaire choices for neutral frame

	Dependent variables				
Variables	IOS Other I	IOS Victim II	Difficulty III	Altruism IV	Respon-sibility V
Proposer (β_P)	0.064	-0.426^{*}	0.377	58.96^{**}	0.133
	(0.246)	(0.241)	(0.304)	(27.09)	(0.276)
Bystander (β_B)	0.181	-0.615^{**}	-0.001	0.944	-0.326
	(0.241)	(0.239)	(0.302)	(26.43)	(0.271)
Age	-0.070^{*}	-0.026	0.022	1.006	0.019
	(0.038)	(0.034)	(0.050)	(3.676)	(0.040)
Male	0.206	-0.012	-0.647^{**}	-49.72^{*}	0.337
	(0.251)	(0.252)	(0.309)	(26.83)	(0.281)
Economics	-0.511	-0.265	0.354	-50.10	0.249
	(0.358)	(0.325)	(0.428)	(36.69)	(0.369)
UK	-0.482	-0.487^{*}	0.369	-66.61^{**}	-0.231
	(0.272)	(0.278)	(0.365)	(30.45)	(0.316)
Constant	6.586^{***}	4.473^{***}	2.413^{**}	173.0^{*}	7.227^{***}
	(0.925)	(0.874)	(1.215)	(96.89)	(0.957)
Observations	196	196	196	196	196
R-squared	0.038	0.064	0.031	0.082	0.030

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. For the dependent variables: IOS Other and IOS Victim (columns I and II) take values from 1 to 7; Difficulty (column III) takes values from 1 to 10; Altruism (column IV) takes values between 0 and 1000; Responsibility (column V) takes values from 0 to 10.

Finally, Table S21 reports the results of regressions of decision-maker's questionnaire choices for all treatments. The base for the categorical variable Citizen/Official/Neutral in all columns is Neutral, i.e., the neutral-frame treatments.

Table S21: Regressions for decision-makers' questionnaire choices in all treatments

	Dependent variables				
	IOS Other	IOS Victim	Difficulty	Altruism	Respon-sibility
Variables	I	II	III	IV	V
Proposer (β_P)	0.210	-0.565^{***}	0.196	35.84^{**}	0.169
	(0.145)	(0.144)	(0.180)	(16.11)	(0.165)
Citizen (β_C)	-0.407^{**}	0.362^{**}	0.134	17.56	0.297
	(0.181)	(0.181)	(0.221)	(19.15)	(0.199)
Official (β_O)	-0.499^{***}	0.194	0.276	21.30	0.475^{**}
	(0.178)	(0.175)	(0.225)	(20.33)	(0.205)
Bystander (β_B)	-0.047	-0.124	0.130	19.89	-0.140
	(0.145)	(0.144)	(0.181)	(16.40)	(0.166)
Age	-0.049^{**}	0.050^{**}	-0.072^{**}	-3.786	0.039
	(0.023)	(0.022)	(0.031)	(2.510)	(0.028)
Male	0.143	-0.223	-0.380^{**}	-35.91^{**}	-0.091
	(0.150)	(0.149)	(0.181)	(17.56)	(0.174)
Economics	-0.404^{**}	-0.396^{**}	< 0.001	-57.35^{***}	-0.146
	(0.186)	(0.173)	(0.246)	(18.85)	(0.214)
UK	0.033	-0.310^{*}	-0.117	-41.11^{**}	-0.028
	(0.165)	(0.157)	(0.200)	(17.97)	(0.186)
Constant	5.888^{***}	2.607^{***}	4.731^{***}	263.0^{***}	6.786^{***}
	(0.561)	(0.556)	(0.751)	(63.40)	(0.676)
Observations	580	580	580	580	565
R-squared	0.036	0.066	0.027	0.045	0.018

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. For the dependent variables: IOS Other and IOS Victim (columns I and II) take values from 1 to 7; Difficulty (column III) takes values from 1 to 10; Altruism (column IV) takes values between 0 and 1000; Responsibility (column V) takes values from 0 to 10.

"Attribution of responsibility in corrupt decisions" paper - Experimental Instructions

Welcome Screens (All treatments)

Welcome - Part 1

Thank you for taking part in this study.

For attendance purposes, we need to ask for your Student ID. This will not be linked in any way to your decisions in this study.
We will provide you with a **Secret ID** that will be your ID throughout the whole study.

Please enter your Student ID.

Continue

Welcome - Part 2

Please read the following information carefully.

You will be paid a **£1.00** participation fee if you complete the study. Additionally, you can earn up to **£1.75** depending on yours and other participants' decisions.

The study consists of **three different parts and a questionnaire**.

Instructions will be provided as you go along.
Please read all instructions carefully, answer the comprehension questions, and complete the associated decision-making part.

It is important that you complete this study without any interruptions.
Please **do not close this window** or leave this webpage in any other way. If you close your browser, you will not be able to re-enter and we will not be able to pay you.

This is your **secret ID** in the experiment. Please make sure to write it down.

Please click continue to proceed.

Continue

Encryption Task Screens (All treatments)

Instructions - Part 1

The Encryption Task

You will be given sequences of **random** letters. An example of such a sequence can be seen below. These have to be decoded into numbers with the given decoding table. For each text sequence, the decoding table changes.

You will have 2 minutes to correctly decode 2 text sequences into numbers. Note that each letter must be decoded correctly. After entering the decoded text sequence, hit the submit button. Subsequently, irrespective of whether the text sequence was decoded correctly or not, a new text sequence and a new decoding table will appear.

If you decode 2 text sequences correctly you will earn 100 points to use in Part 2.
The conversion rate is 100 points = £1.50.

Encryption task

Decode as many text sequences into numbers as possible

Correctly decoded text sequences: 0

Decoding table

letter	e	v	b	n	k
corresponds to number	0	1	2	3	4

Text sequence: kenkbv

Your answer (enter only numbers):

Submit

Remaining time: 00:57

In the example, you can see the text sequence *kenkbv*. The decoding table tells you that e=0, v=1,... This means that you have to decode *kenkbv* into *403421* and enter this numeric value into the answer field.

Control questions

Please answer the following 2 questions. This is to check your understanding of the task. You only have 3 attempts to answer them all correctly. Otherwise, you are excluded from participating.

1. What is the aim of the encryption task?

- Write meaningful words from the given letters.
- Decode the letters into numbers.
- Reorder the letters according to the alphabet.
- Assign a value to each letter and calculate the total value.

2. Which of the following statements is false?

- If you decode 2 text sequences correctly you will earn 100 points.
- For each text sequence, the decoding table changes.
- You have as much time as you want to decode the text sequences.

Continue

Attempts left to answer the control questions: 3

Encryption Task

Decode text sequences into numbers

Correctly decoded text sequences: 0

Decoding table

letter	p	l	v	e	b
corresponds to number	0	1	2	3	4

Text sequence: bbepvb

Your answer (enter only numbers):

Submit

Remaining time: 01:47

Bribery Game – Corruption Treatments (pictures correspond to CP_VJ treatment)

Instructions - Part 2

You earned **100 points** by completing successfully the encryption task. This is your endowment for the decision-making task. Please read *carefully* the following instructions.

The decision-making Task

You are part of a group of four participants and will make decisions in the following situation.

This is a four-person situation where you can be assigned to the role of **Private Citizen**, the role of **Public Official**, the role of **Other Member of Society**, or the role of **Observer**. The **Private Citizen** will have the opportunity to **propose a corrupt transaction** to the **Public Official**. The corrupt transaction consists of the Private Citizen sending a bribe of 20 points to the Public Official in exchange for a corrupt service of 40 points. The **Public Official** can either **accept or reject the proposal**. The **Other Member of Society** will not make a decision but will suffer a **monetary loss of 40 points** if the corrupt transaction is proposed and accepted. The **Observer** will not make a decision nor will suffer a monetary loss, but **will observe whether a corrupt transaction is proposed and accepted**.

Each participant in your group will begin with an endowment of 100 points earned through having completed the encryption task. The earnings from this part may be altered based on the decisions of the Private Citizen and the Public Official.

If a corrupt transaction is proposed by the Private Citizen **and accepted** by the Public Official, the **Public Official receives 20 points**. The **Private Citizen pays the bribe of 20 points and receives a benefit of 40 points**. The **Other Member of Society suffers a cost of 40 points**. The **Observer does not benefit or suffer a cost** from the corrupt transaction. These amounts are added or subtracted from the initial 100 points of each participant.

If there is **no proposal or if the proposal is rejected** by the Public Official there are no costs and **earnings remain 100 points** for each participant.

Moreover, the **Other Member of the Society** will be allowed to **judge the decisions** of the **Private Citizen** and the **Public Official** in his/her group. The Other Member of Society can express judgments using a slider like the one below that goes from -9 to 9. The **Private Citizen**, the **Public Official**, and the **Observer will see the judgments expressed by the Other Member of Society** in their group.

You will be randomly assigned to one of the four roles, and you will make decisions under that role only. If you are the Private Citizen, you will decide whether to propose a corrupt transaction. If you are the Public Official, you will decide whether to accept the corrupt transaction if proposed. If you are the Other Member of Society, you will judge every possible decision of the Private Citizen and the Public Official. And if you are the Observer, you will observe the decisions and the judgments in your group.

Control questions

Please answer the following 2 questions. This is to check your understanding of the task. You only have 3 attempts to answer them all correctly. Otherwise, you are excluded from participating.

1. If the Private Citizen proposes the corrupt transaction and the Public Official accepts the proposal, what is the cost that the Other Member of the Society suffers?

- 100 points.
- 40 points.
- 20 points.

Which of the following statements is false?

- Everyone in your group owns 100 points for completing the encryption task.
- The Observer does not participate in the corrupt transaction nor suffers from it.
- The Other Member of Society will only judge the decisions of the Private Citizen.

Continue

For the OP_VJ and OP_BJ treatments the below sentences from the text

- The **Private Citizen** will have the opportunity to **propose a corrupt transaction** to the **Public Official**.
- The **Public Official** can either **accept or reject the proposal**.

Are switch to:

- The **Public Official** will have the opportunity **to propose a corrupt transaction** to the **Private Citizen**.
- The **Private Citizen** can either **accept or reject the proposal**.

For the CP_BJ and OP_BJ treatments the below paragraph from the text:

Moreover, the **Other Member of the Society** will be allowed to **judge the decisions** of the **Private Citizen** and the **Public Official** in his/her group. The Other Member of Society can express judgments using a slider like the one below that goes from -9 to 9. The **Private Citizen**, the **Public Official**, and the **Observer will see the judgments expressed by the Other Member of Society** in their group.

Is switch to:

Moreover, the **Observer** will be allowed to **judge the decisions** of the **Private Citizen** and the **Public Official** in his/her group. The Observer can express judgments using a slider like the one below that goes from -9 to 9. The **Private Citizen**, the **Public Official**, and the **Other Member of the Society will see the judgments expressed by the Observer** in their group.

Bribery Game – Neutral Treatments (pictures from NP_VJ treatment)

Instructions - Part 2

You earned **100 points** by completing successfully the encryption task. This is your endowment for the decision-making task. Please read *carefully* the following instructions.

The decision-making Task

You are part of a group of four participants and will make decisions in the following situation.

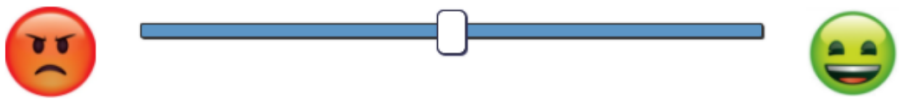
This is a four-person situation where you can be assigned to the role of **Participant A**, the role of **Participant B**, the role of **Participant C**, or the role of **Participant D**. **Participant A** will have the opportunity to **propose a transaction** to **Participant B**. The transaction consists of Participant A sending 20 points to Participant B in exchange for a service of 40 points. **Participant B** can either **accept or reject the proposal**. **Participant C** will not make a decision but will suffer a **monetary loss of 40 points** if the transaction is proposed and accepted. **Participant D** will not make a decision nor will suffer a monetary loss, but **will observe whether a transaction is proposed and accepted**.

Each participant in your group will begin with an endowment of 100 points earned through having completed the encryption task. The earnings from this part may be altered based on the decisions of Participant A and Participant B.

If a transaction is proposed by Participant A **and accepted** by Participant B, **Participant B receives 20 points**. **Participant A pays the 20 points and receives a benefit of 40 points**. **Participant C suffers a cost of 40 points**. **Participant D does not benefit or suffer a cost** from the transaction. These amounts are added or subtracted from the initial 100 points of each participant.

If there is **no proposal or if the proposal is rejected** by Participant B there are no costs and **earnings remain 100 points** for each participant.

Moreover, **Participant C** will be allowed to **judge the decisions** of **Participant A** and **Participant B** in his/her group. Participant C can express judgments using a slider like the one below that goes from -9 to 9. **Participant A**, **Participant B**, and **Participant D will see the judgments expressed by Participant C** in their group.



You will be randomly assigned to one of the four roles, and you will make decisions under that role only. If you are Participant A, you will decide whether to propose a transaction. If you are Participant B, you will decide whether to accept the transaction if proposed. If you are Participant C, you will judge every possible decision of Participant A and Participant B. And if you are Participant D, you will observe the decisions and the judgments in your group.

Control questions

Please answer the following 2 questions. This is to check your understanding of the task. You only have 3 attempts to answer them all correctly. Otherwise, you are excluded from participating.

1. If Participant A proposes the transaction and Participant B accepts the proposal, what is the cost that Participant C suffers?

- 100 points.
- 40 points.
- 20 points.

2. Which of the following statements is false?

- Everyone in your group owns 100 points for completing the encryption task.
- Participant D does not participate in the transaction nor suffers from it.
- Participant C will only judge the decisions of Participant A.

Continue

For the NP_BJ treatment the below paragraph from the text:

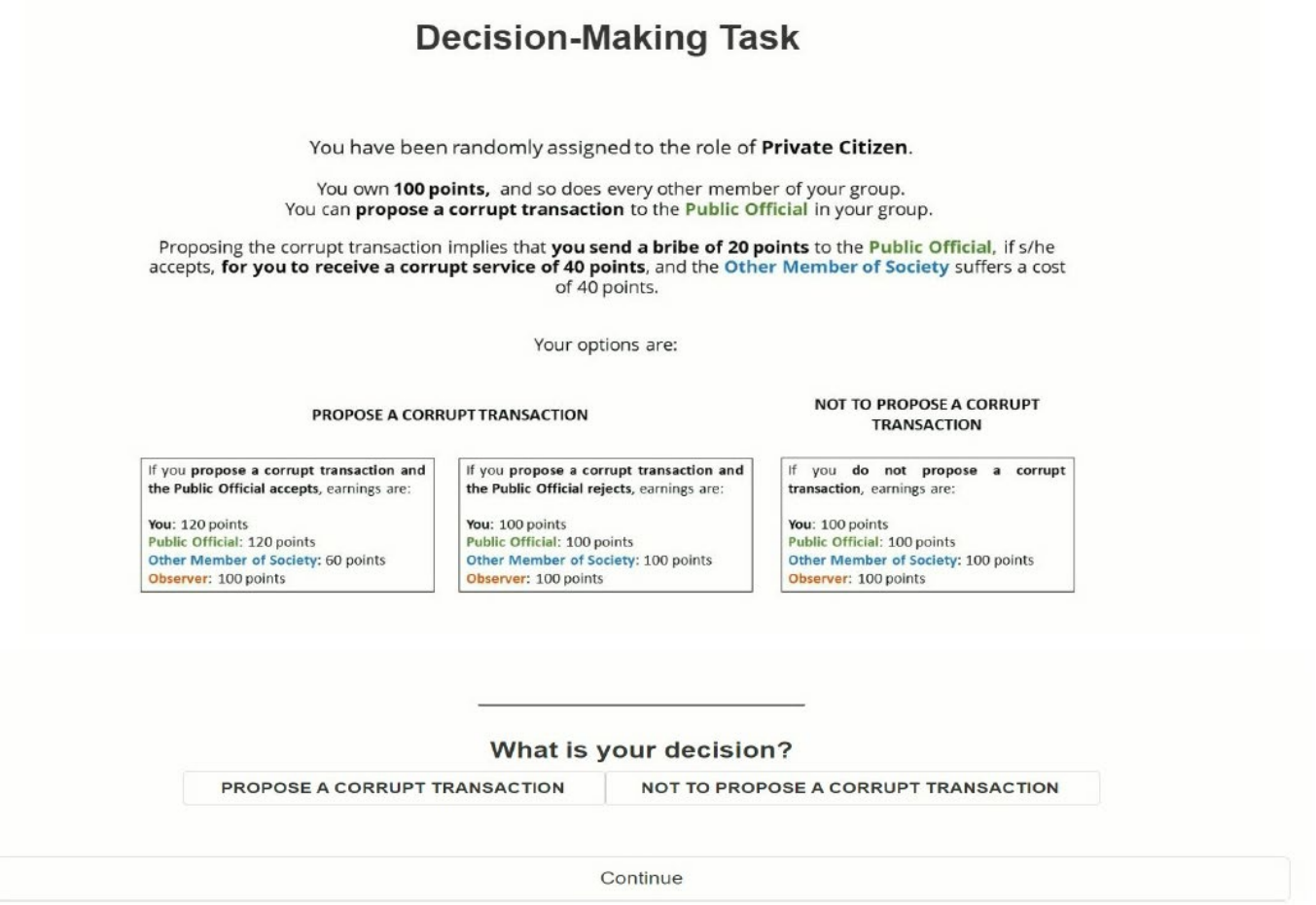
Moreover, **Participant C** will be allowed to **judge the decisions** of **Participant A** and **Participant B** in his/her group. Participant C can express judgments using a slider like the one below that goes from -9 to 9. **Participant A, Participant B**, and **Participant D will see the judgments expressed by Participant C** in their group.

Is switch to:

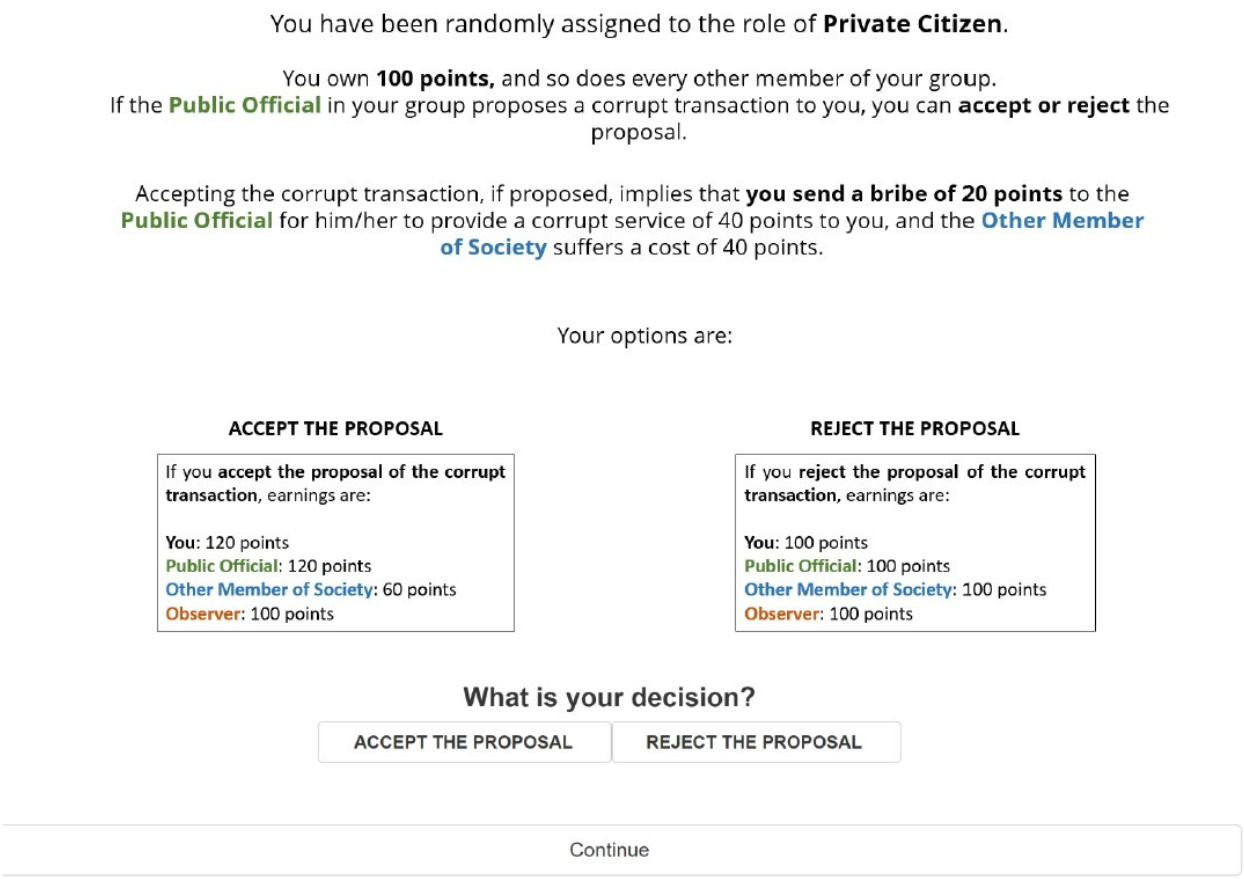
Moreover, **Participant D** will be allowed to **judge the decisions** of **Participant A** and **Participant B** in his/her group. Participant C can express judgments using a slider like the one below that goes from -9 to 9. **Participant A, Participant B**, and **Participant C will see the judgments expressed by Participant D** in their group.

The Decisions

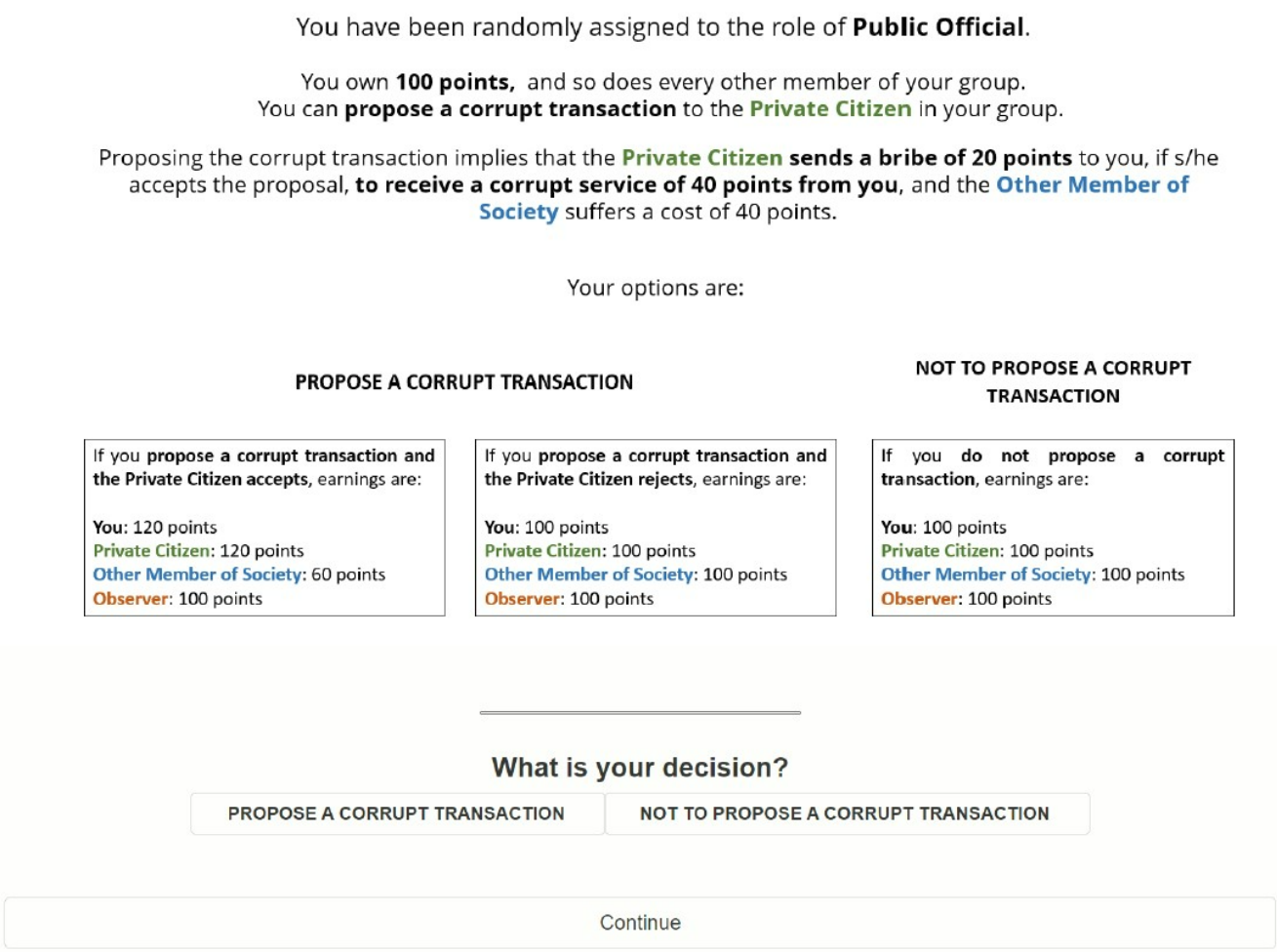
Private Citizen in CP_VJ and CP_BJ



Private Citizen in OP_VJ and OP_BJ



Public Official in OP_VJ and OP_BJ



Public Official in CP_VJ and CP_BJ

Other Member of Society in CP_VJ and OP_VJ (Pictures correspond to CP_VJ treatment)

Decision-Making Task

You have been randomly assigned to the role of **Other Member of Society**.

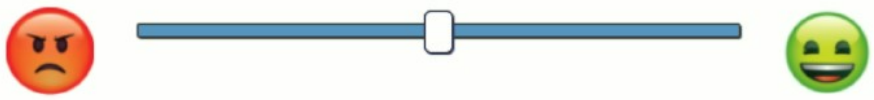
You own **100 points,** and so does every other member of your group.
The **Private Citizen** is deciding whether to propose a corrupt transaction. The **Public Official** is simultaneously deciding whether to accept the corrupt transaction if proposed.

The corrupt transaction, if proposed and accepted, implies that the **Private Citizen** sends a bribe of 20 points to the **Public Official** for him/her to receive a corrupt service of 40 points, and **you suffer a cost of 40 points.**

The earnings that would result from the possible outcomes are summarized below:

If the Private Citizen **proposes a corrupt transaction and the Public Official accepts,** earnings are:	If the Private Citizen **proposes a corrupt transaction and the Public Official rejects,** earnings are:	If the Private Citizen **does not propose a corrupt transaction,** earnings are:
You: 60 points **Private Citizen**: 120 points **Public Official**: 120 points **Observer**: 100 points	**You**: 100 points **Private Citizen**: 100 points **Public Official**: 100 points **Observer**: 100 points	**You**: 100 points **Private Citizen**: 100 points **Public Official**: 100 points **Observer**: 100 points

You have now the opportunity to judge separately the possible decisions of the Private Citizen and the Public Official in your group by using sliders like the one below. Each slider can go from -9 to 9. The initial position of a slider is at 0, and you can move it to the left, to the right, or you can move it back to the initial position depending on your judgments. Your judgments for the actual scenario will be observed by everyone in your group.



Please click on Continue to judge the decisions in the first possible scenario.

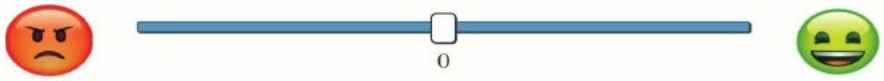
Possible Scenario 1

If the Private Citizen **does not propose a corrupt transaction and the Public Official accepts,** earnings are:

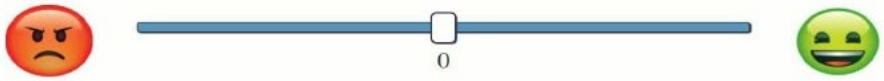
You: 100 points
Private Citizen: 100 points
Public Official: 100 points
Observer: 100 points

In this scenario, the corrupt transaction would not take place because the Private Citizen does not propose a corrupt transaction, even though the Public Official would accept the corrupt transaction if proposed. We ask you how would you judge these decisions.

Please select how would you judge the decision of the ***Private Citizen*** of **not proposing** a corrupt transaction.



Please select how would you judge the decision of the ***Public Official*** of **accepting** a corrupt transaction if proposed.



Continue

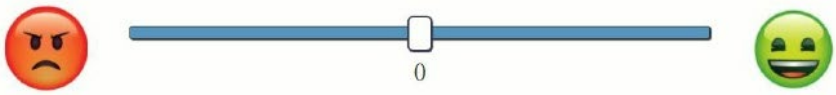
Possible Scenario 2

If the Private Citizen **proposes a corrupt transaction and the Public Official rejects**, earnings are:

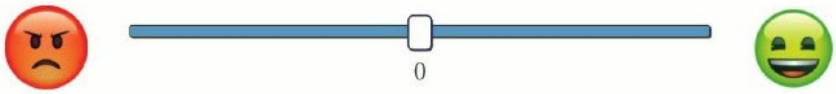
You: 100 points
Private Citizen: 100 points
Public Official: 100 points
Observer: 100 points

In this scenario, the corrupt transaction would not take place given that the Private Citizen proposes a corrupt transaction, but the Public Official rejects. We ask you how would you judge these decisions.

Please select how would you judge the decision of the ***Private Citizen*** of **proposing** a corrupt transaction.



Please select how would you judge the decision of the ***Public Official*** of **rejecting** the corrupt transaction.



Continue

Possible Scenario 3

If the Private Citizen **proposes a corrupt transaction and the Public Official accepts,** earnings are:

You: 60 points
Private Citizen: 120 points
Public Official: 120 points
Observer: 100 points

In this scenario, the corrupt transaction would take place given that the Private Citizen proposes a corrupt transaction, and the Public Official accepts. We ask you how would you judge these decisions.

Please select how would you judge the decision of the ***Private Citizen*** of **proposing** a corrupt transaction.

0

Please select how would you judge the decision of the ***Public Official*** of **accepting** the corrupt transaction.

0

Continue

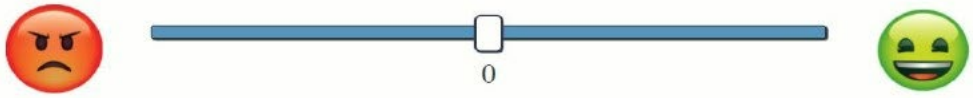
Possible Scenario 4

If the Private Citizen **does not propose a corrupt transaction and the Public Official rejects**, earnings are:

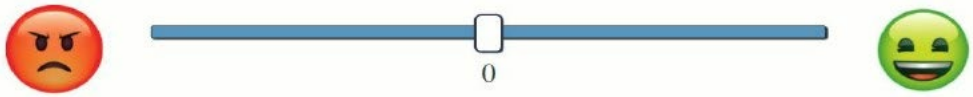
You: 100 points
Private Citizen: 100 points
Public Official: 100 points
Observer: 100 points

In this scenario, the corrupt transaction would not take place because the Private Citizen does not propose a corrupt transaction, and the Public Official would reject the corrupt transaction if proposed. We ask you how would you judge these decisions.

Please select how would you judge the decision of the ***Private Citizen*** of **not proposing** a corrupt transaction.



Please select how would you judge the decision of the ***Public Official*** of **rejecting** a corrupt transaction if proposed.



Continue

Other Member of Society in CP_BJ and OP_BJ

Decision-Making Task

You have been randomly assigned to the role of **Other Member of Society**.

You own **100 points,** and so does every other member of your group.
The **Private Citizen** is deciding whether to propose a corrupt transaction. The **Public Official** is simultaneously deciding whether to accept the corrupt transaction if proposed.

The corrupt transaction, if proposed and accepted, implies that the **Private Citizen** sends a bribe of 20 points to the **Public Official** for him/her to receive a corrupt service of 40 points, and **you suffer a cost of 40 points.**

The earnings that would result from the possible outcomes are summarized below:

If the Private Citizen **proposes a corrupt transaction and the Public Official accepts,** earnings are:	If the Private Citizen **proposes a corrupt transaction and the Public Official rejects,** earnings are:	If the Private Citizen **does not propose a corrupt transaction,** earnings are:
You: 60 points **Private Citizen**: 120 points **Public Official**: 120 points **Observer**: 100 points	**You**: 100 points **Private Citizen**: 100 points **Public Official**: 100 points **Observer**: 100 points	**You**: 100 points **Private Citizen**: 100 points **Public Official**: 100 points **Observer**: 100 points

You have no action to take. You will observe the decisions of the Private Citizen and the Public Official, and the judgments of the Observer.

Continue

Observer in CP_BP and OP_BP (pictures correspond to OP_BJ treatment)

You have been randomly assigned to the role of **Observer**.

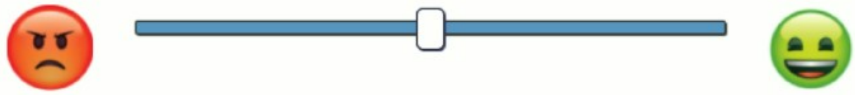
You own **100 points** as well as every other member of your group.
The **Public Official** is deciding whether to propose a corrupt transaction. The **Private Citizen** is simultaneously deciding whether to accept the corrupt transaction if proposed.

The corrupt transaction, if proposed and accepted, implies that the **Private Citizen** sends a bribe of 20 points to the **Public Official** for him/her to receive a corrupt service of 40 points, and the **Other Member of the Society** suffers a cost of 40 points.

The earnings that would result from the possible outcomes are summarized below:

If the Public Official **proposes a corrupt transaction and the Private Citizen accepts**, earnings are:	If the Public Official **proposes a corrupt transaction and the Private Citizen rejects**, earnings are:	If the Public Official **does not propose a corrupt transaction**, earnings are:
You: 100 points **Public Official**: 120 points **Private Citizen**: 120 points **Other Member of the Society**: 60 points	**You**: 100 points **Public Official**: 100 points **Private Citizen**: 100 points **Other Member of the Society**: 100 points	**You**: 100 points **Public Official**: 100 points **Private Citizen**: 100 points **Other Member of the Society**: 100 points

You have now the opportunity to judge separately the possible decisions of the Private Citizen and the Public Official in your group by using sliders like the one below. Each slider can go from -9 to 9. The initial position of a slider is at 0, and you can move it to the left, to the right, or you can move it back to the initial position depending on your judgments. Your judgments for the actual scenario will be observed by everyone in your group.



Please click on Continue to judge the decisions in the first possible scenario.

- The decision screens for all four possible scenarios are alike the decision screens of the Other Member of Society above.

Observer in CP_VP and OP_VP

You have been randomly assigned to the role of **Observer**.

You own **100 points** as well as every other member of your group.
The **Public Official** is deciding whether to propose a corrupt transaction. The **Private Citizen** is simultaneously deciding whether to accept the corrupt transaction if proposed.

The corrupt transaction, if proposed and accepted, implies that the **Private Citizen** sends a bribe of 20 points to the **Public Official** for him/her to receive a corrupt service of 40 points, and the **Other Member of the Society** suffers a cost of 40 points.

The earnings that would result from the possible outcomes are summarized below:

If the Public Official **proposes a corrupt transaction and the Private Citizen accepts**, earnings are:	If the Public Official **proposes a corrupt transaction and the Private Citizen rejects**, earnings are:	If the Public Official **does not propose a corrupt transaction**, earnings are:
You: 100 points **Public Official**: 120 points **Private Citizen**: 120 points **Other Member of the Society**: 60 points	**You**: 100 points **Public Official**: 100 points **Private Citizen**: 100 points **Other Member of the Society**: 100 points	**You**: 100 points **Public Official**: 100 points **Private Citizen**: 100 points **Other Member of the Society**: 100 points

You have no action to take. You will observe the decisions of the Private Citizen and the Public Official, and the judgment of the Other Member of the Society.

Continue

Participant A in NP_VJ and NP_BJ

Decision-Making Task

You have been randomly assigned to the role of **Participant A**.

You own **100 points,** and so does every other member of your group.
You can **propose a transaction** to the **Participant B** in your group.

Proposing the transaction implies that **you send 20 points** to the **Participant B,** if s/he accepts, **for you to receive a service of 40 points**, and the **Participant C** suffers a cost of 40 points.

Your options are:

PROPOSE A TRANSACTION		NOT TO PROPOSE A TRANSACTION
If you **propose a transaction and Participant B accepts**, earnings are: **You**: 120 points **Participant B**: 120 points **Participant C**: 60 points **Participant D**: 100 points	If you **propose a transaction and Participant B rejects**, earnings are: **You**: 100 points **Participant B**: 100 points **Participant C**: 100 points **Participant D**: 100 points	If you **do not propose a transaction**, earnings are: **You**: 100 points **Participant B**: 100 points **Participant C**: 100 points **Participant D**: 100 points

What is your decision?

NOT TO PROPOSE A TRANSACTION | PROPOSE A TRANSACTION

Continue

Participant B in NP_VJ and NP_BJ

Decision-Making Task

You have been randomly assigned to the role of **Participant B**.

You own **100 points,** and so does every other member of your group.
If the **Participant A** in your group proposes a transaction to you, you can **accept or reject** the proposal.

Accepting the transaction, if proposed, implies that **you receive 20 points** from **Participant A** for him/her to receive a service of 40 points, and **Participant C** suffers a cost of 40 points.

Your options are:

ACCEPT THE PROPOSAL

If you **accept the proposal of the transaction**, earnings are:

You: 120 points
Participant A: 120 points
Participant C: 60 points
Participant D: 100 points

REJECT THE PROPOSAL

If you **reject the proposal of the transaction**, earnings are:

You: 100 points
Participant A: 100 points
Participant C: 100 points
Participant D: 100 points

What is your decision?

ACCEPT THE PROPOSAL | REJECT THE PROPOSAL

Continue

Participant C in NP_VP

Decision-Making Task

You have been randomly assigned to the role of **Participant C**.

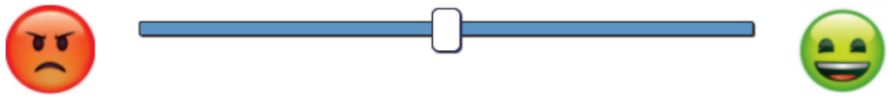
You own **100 points,** and so does every other member of your group.
Participant A is deciding whether to propose a transaction. **Participant B** is simultaneously deciding whether to accept the transaction if proposed.

The transaction, if proposed and accepted, implies that **Participant A** sends 20 points to **Participant B** for him/her to receive a service of 40 points, and **you suffer a cost of 40 points.**

The earnings that would result from the possible outcomes are summarized below:

If Participant A **proposes a transaction and Participant B accepts**, earnings are:	If Participant A **proposes a transaction and Participant B rejects**, earnings are:	If Participant A **does not propose a transaction**, earnings are:
You: 60 points **Participant A**: 120 points **Participant B**: 120 points **Participant D**: 100 points	**You**: 100 points **Participant A**: 100 points **Participant B**: 100 points **Participant D**: 100 points	**You**: 100 points **Participant A**: 100 points **Participant B**: 100 points **Participant D**: 100 points

You have now the opportunity to judge separately the possible decisions of Participant A and Participant B in your group by using sliders like the one below. Each slider can go from -9 to 9. The initial position of a slider is at 0, and you can move it to the left, to the right, or you can move it back to the initial position depending on your judgments. Your judgments for the actual scenario will be observed by everyone in your group.



Please click on Continue to judge the decisions in the first possible scenario.

Continue

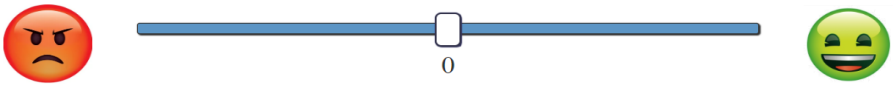
Possible Scenario 1

If Participant A **proposes a transaction and Participant B rejects**, earnings are:

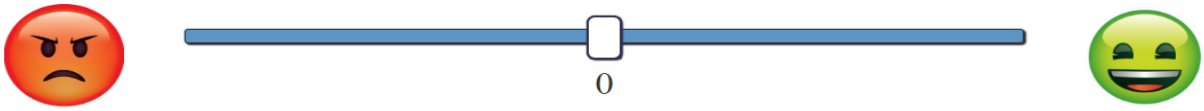
You: 100 points
Participant A: 100 points
Participant B: 100 points
Participant D: 100 points

In this scenario, the transaction would not take place given that Participant A proposes a transaction, but Participant B rejects. We ask you how would you judge these decisions.

Please select how would you judge the decision of ***Participant A*** of **proposing** a transaction.



Please select how would you judge the decision of ***Participant B*** of **rejecting** the transaction.



Continue

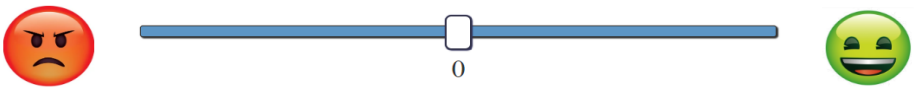
Possible Scenario 2

If Participant A **does not propose a transaction and Participant B rejects,** earnings are:

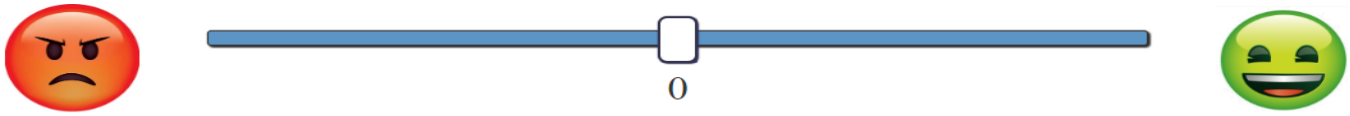
You: 100 points
Participant A: 100 points
Participant B: 100 points
Participant D: 100 points

In this scenario, the transaction would not take place because Participant A does not propose a transaction, and Participant B would reject the transaction if proposed. We ask you how would you judge these decisions.

Please select how would you judge the decision of ***Participant A*** of **not proposing** a transaction.



Please select how would you judge the decision of ***Participant B*** of **rejecting** a transaction if proposed.



Continue

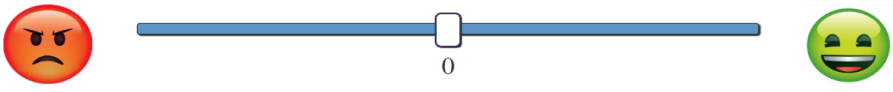
Possible Scenario 3

If Participant A **proposes a transaction and Participant B accepts,** earnings are:

You: 60 points
Participant A: 120 points
Participant B: 120 points
Participant D: 100 points

In this scenario, the transaction would take place given that Participant A proposes a transaction, and Participant B accepts. We ask you how would you judge these decisions.

Please select how would you judge the decision of ***Participant A*** of **proposing** a transaction.



Please select how would you judge the decision of ***Participant B*** of **accepting** the transaction.

0

Continue

Possible Scenario 4

If Participant A **does not propose a transaction and Participant B accepts,** earnings are:

You: 100 points
Participant A: 100 points
Participant B: 100 points
Participant D: 100 points

In this scenario, the transaction would not take place because Participant A does not propose a transaction, even though Participant B would accept the transaction if proposed. We ask you how would you judge these decisions.

Please select how would you judge the decision of ***Participant A*** of **not proposing** a transaction.

0

Please select how would you judge the decision of ***Participant B*** of **accepting** a transaction if proposed.

0

Continue

Participant D in NP_BJ

Decision-Making Task

You have been randomly assigned to the role of **Participant D**.

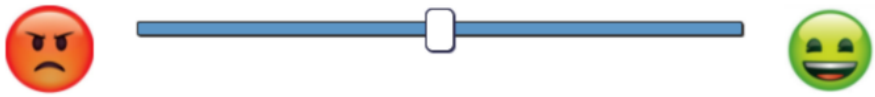
You own **100 points** as well as every other member of your group.
Participant A is deciding whether to propose a transaction. **Participant B** is simultaneously deciding whether to accept the transaction if proposed.

The transaction, if proposed and accepted, implies that **Participant A** sends 20 points to **Participant B** for him/her to receive a service of 40 points, and **Participant C** suffers a cost of 40 points.

The earnings that would result from the possible outcomes are summarized below:

If Participant A **proposes a transaction and Participant B accepts**, earnings are:	If Participant A **proposes a transaction and Participant B rejects**, earnings are:	If Participant A **does not propose a transaction**, earnings are:
You: 100 points **Participant A**: 120 points **Participant B**: 120 points **Participant C**: 60 points	**You**: 100 points **Participant A**: 100 points **Participant B**: 100 points **Participant C**: 100 points	**You**: 100 points **Participant A**: 100 points **Participant B**: 100 points **Participant C**: 100 points

You have now the opportunity to judge separately the possible decisions of Participant A and Participant B in your group by using sliders like the one below. Each slider can go from -9 to 9. The initial position of a slider is at 0, and you can move it to the left, to the right, or you can move it back to the initial position depending on your judgments. Your judgments for the actual scenario will be observed by everyone in your group.



Please click on Continue to judge the decisions in the first possible scenario.

Continue

- The decision screen of all possible four scenarios are alike the decisions screens of Participant C above.

Participant D in NP_VJ

Decision-Making Task

You have been randomly assigned to the role of **Participant D**.

You own **100 points** as well as every other member of your group.
Participant A is deciding whether to propose a transaction. **Participant B** is simultaneously deciding whether to accept the transaction if proposed.

The transaction, if proposed and accepted, implies that **Participant A** sends 20 points to **Participant B** for him/her to receive a service of 40 points, and **Participant C** suffers a cost of 40 points.

The earnings that would result from the possible outcomes are summarized below:

If Participant A **proposes a transaction and Participant B accepts**, earnings are:	If Participant A **proposes a transaction and Participant B rejects**, earnings are:	If Participant A **does not propose a transaction**, earnings are:
You: 100 points **Participant A**: 120 points **Participant B**: 120 points **Participant C**: 60 points	**You**: 100 points **Participant A**: 100 points **Participant B**: 100 points **Participant C**: 100 points	**You**: 100 points **Participant A**: 100 points **Participant B**: 100 points **Participant C**: 100 points

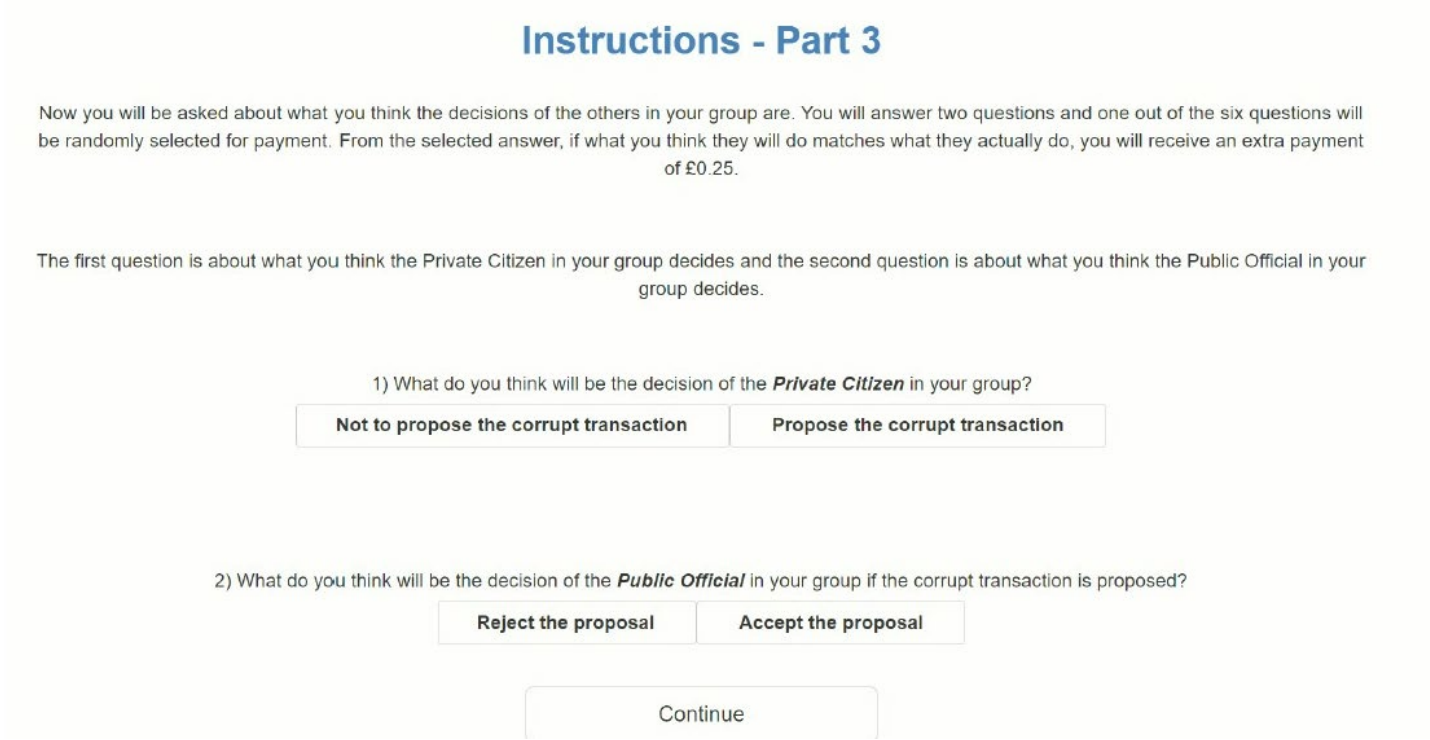
You have no action to take. You will observe the decisions of Participant A and Participant B, and the judgments of Participant C.

Continue

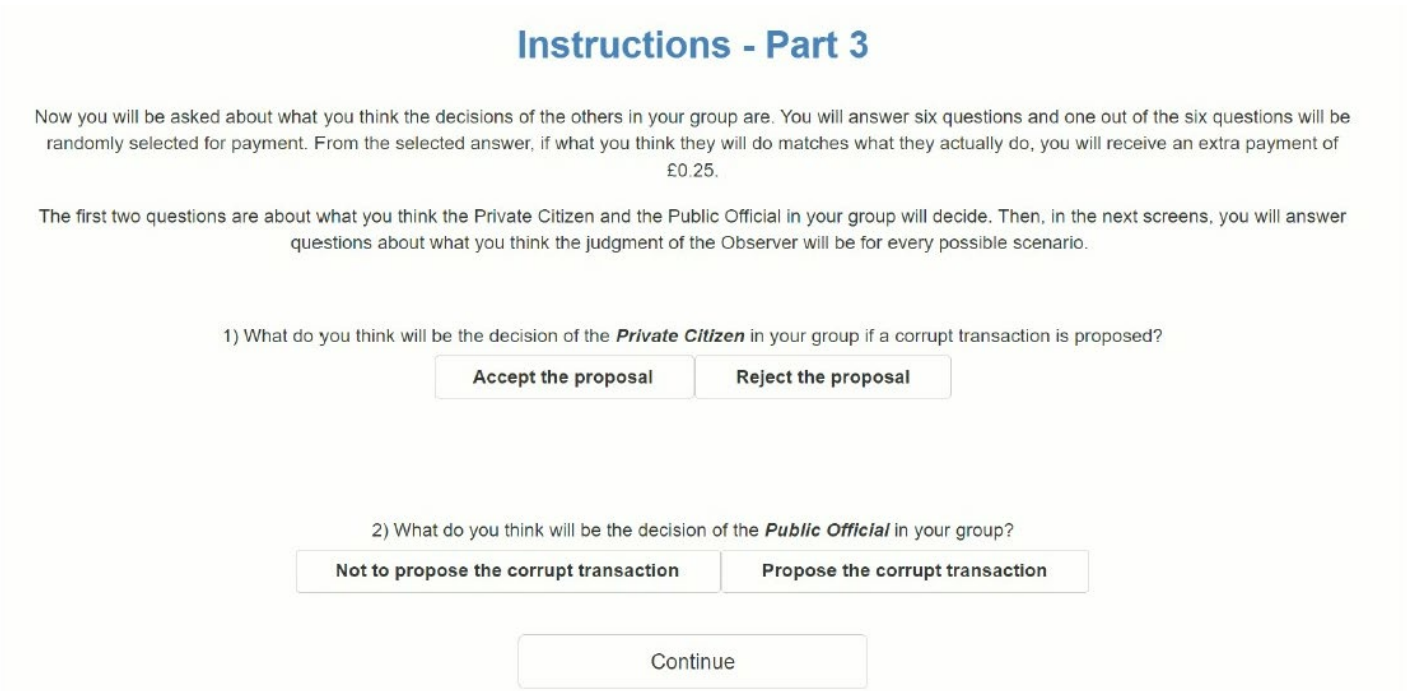
Elicitation of Beliefs -Corruption treatments

Beliefs from Other Member of Society and Observer about Private Citizen and Public Official actions

Screen from CP_VJ and CP_BJ



Screen from OP_VJ and OP_BJ



Beliefs from the Private Citizen about the Public Official's action

Instructions - Part 3

Now you will be asked about what you think the decisions of the others in your group are. You will answer five questions and one out of the five questions will be randomly selected for payment. From the selected answer, if what you think they will do matches what they actually do, you will receive an extra payment of £0.25.

The first question is about what you think the Public Official in your group will decide. Then, in the next screens, you will answer questions about what you think the judgments of the Other Member of Society will be for every possible scenario.

1) What do you think will be the decision of the ***Public Official*** in your group if the corrupt transaction is proposed?

Reject the proposal | **Accept the proposal**

Continue

Instructions - Part 3

Now you will be asked about what you think the decisions of the others in your group are. You will answer five questions and one out of the five questions will be randomly selected for payment. From the selected answer, if what you think they will do matches what they actually do, you will receive an extra payment of £0.25.

The first question is about what you think the Public Official in your group will decide. Then, in the next screens, you will answer questions about what you think the judgments of the Observer will be for every possible scenario.

1) What do you think will be the decision of the ***Public Official*** in your group?

Not to propose the corrupt transaction | **Propose the corrupt transaction**

Continue

Beliefs from the Private Citizen and Public Official about judgments from Other Member of Society or Observer (pictures correspond to CP_VJ)

Possible Scenario 1

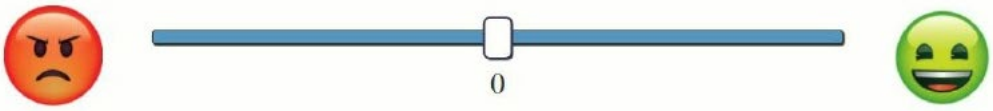
If the Private Citizen proposes a corrupt transaction and the Public Official rejects, earnings are:

Private Citizen: 100 points
Public Official: 100 points
Other Member of the Society: 100 points
Observer: 100 points

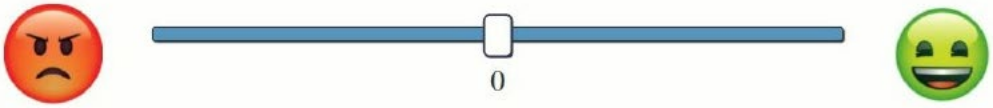
In this scenario, the corrupt transaction would not take place given that the Private Citizen proposes a corrupt transaction, but the Public Official rejects. We ask you how do you think the Other Member of the Society will judge these decisions.

Remember that each slider can go from -9 to 9, and the initial position of a slider is at 0. You can move a slider to the left, to the right, or you can move it back to the initial position.

Please select how do you think the Other Member of the Society will judge the decision of the ***Private Citizen*** of **proposing** a corrupt transaction.



Please select how do you think the Other Member of the Society will judge the decision of the ***Public Official*** of **rejecting** a corrupt transaction.



Continue

Possible Scenario 2

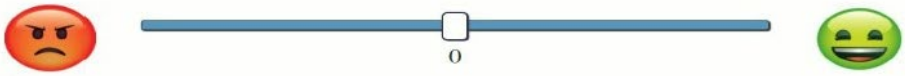
If the Private Citizen does not propose a corrupt transaction and the Public Official accepts, earnings are:

Private Citizen: 100 points
Public Official: 100 points
Other Member of the Society: 100 points
Observer: 100 points

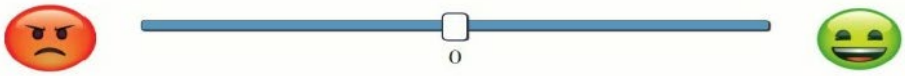
In this scenario, the corrupt transaction would not take place because the Private Citizen does not propose a corrupt transaction, even though the Public Official would accept the corrupt transaction if proposed. We ask you how do you think the Other Member of the Society will judge these decisions.

Remember that each slider can go from -9 to 9, and the initial position of a slider is at 0. You can move a slider to the left, to the right, or you can move it back to the initial position.

Please select how do you think the Other Member of the Society will judge the decision of the ***Private Citizen*** of **not proposing** a corrupt transaction.



Please select how do you think the Other Member of the Society will judge the decision of the ***Public Official*** of **accepting** a corrupt transaction if proposed.



Continue

Possible Scenario 3

If the Private Citizen does not propose a corrupt transaction and the Public Official rejects, earnings are:

Private Citizen: 100 points
Public Official: 100 points
Other Member of the Society: 100 points
Observer: 100 points

In this scenario, the corrupt transaction would not take place because the Private Citizen does not propose a corrupt transaction, and the Public Official would reject the corrupt transaction if proposed. We ask you how do you think the Other Member of the Society will judge these decisions.

Remember that each slider can go from -9 to 9, and the initial position of a slider is at 0. You can move a slider to the left, to the right, or you can move it back to the initial position.

Please select how do you think the Other Member of the Society will judge the decision of the ***Private Citizen*** of **not proposing** a corrupt transaction.

Please select how do you think the Other Member of the Society will judge the decision of the ***Private Citizen*** of **not proposing** a corrupt transaction.

0

Please select how do you think the Other Member of the Society will judge the decision of the ***Public Official*** of **rejecting** a corrupt transaction if proposed.

0

Continue

Possible Scenario 4

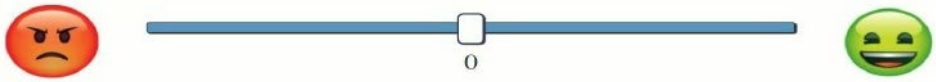
If the Private Citizen proposes a corrupt transaction and the Public Official accepts, earnings are:

Private Citizen: 120 points
Public Official: 120 points
Other Member of the Society: 60 points
Observer: 100 points

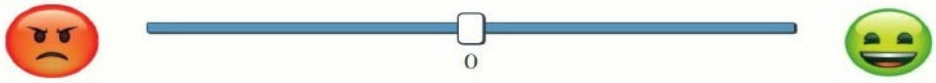
In this scenario, the corrupt transaction would take place given that the Private Citizen proposes a corrupt transaction, and the Public Official accepts. We ask you how do you think the Other Member of the Society will judge these decisions.

Remember that each slider can go from -9 to 9, and the initial position of a slider is at 0. You can move a slider to the left, to the right, or you can move it back to the initial position.

Please select how do you think the Other Member of the Society will judge the decision of the ***Private Citizen*** of **proposing** a corrupt transaction.



Please select how do you think the Other Member of the Society will judge the decision of the ***Public Official*** of **accepting** a corrupt transaction.



Continue

BELIEFS ELICITATION - NEUTRAL TREATMENTS

Participant A's beliefs about Participant's B action

Instructions - Part 3

Now you will be asked about what you think the decisions of the others in your group are. You will answer five questions and one out of the five questions will be randomly selected for payment. From the selected answer, if what you think they will do matches what they actually do, you will receive an extra payment of £0.25.

The first question is about what you think Participant B in your group will decide. Then, in the next screens, you will answer questions about what you think the judgments of Participant C will be for every possible scenario.

1) What do you think will be the decision of ***Participant B*** in your group if the transaction is proposed?

Reject the proposal | **Accept the proposal**

Continue

Participant B's beliefs about Participant's A action

Instructions - Part 3

Now you will be asked about what you think the decisions of the others in your group are. You will answer five questions and one out of the five questions will be randomly selected for payment. From the selected answer, if what you think they will do matches what they actually do, you will receive an extra payment of £0.25.

The first question is about what you think Participant A in your group will decide. Then, in the next screens, you will answer questions about what you think the judgments of Participant C will be for every possible scenario.

1) What do you think will be the decision of the ***Participant A*** in your group?

Propose the transaction | **Not to propose the transaction**

Continue

Participant C's beliefs about Participants A&B actions

Instructions - Part 3

Now you will be asked about what you think the decisions of the others in your group are. You will answer two questions and one out of the two questions will be randomly selected for payment. From the selected answer, if what you think they will do matches what they actually do, you will receive an extra payment of £0.25.

The first question is about what you think Participant A in your group decides and the second question is about what you think Participant B in your group decides.

1) What do you think will be the decision of ***Participant A*** in your group?

Not to propose the transaction	**Propose the transaction**

2) What do you think will be the decision of ***Participant B*** in your group if the transaction is proposed?

Reject the proposal	**Accept the proposal**

Continue

Participant D's beliefs about Participants A&B actions

Instructions - Part 3

Now you will be asked about what you think the decisions of the others in your group are. You will answer six questions and one out of the six questions will be randomly selected for payment. From the selected answer, if what you think they will do matches what they actually do, you will receive an extra payment of £0.25.

The first two questions are about what you think Participant A and Participant B in your group will decide. Then, in the next screens, you will answer questions about what you think the judgment of Participant C will be for every possible scenario.

1) What do you think will be the decision of ***Participant A*** in your group?

Not to propose the transaction	**Propose the transaction**

2) What do you think will be the decision of ***Participant B*** in your group if a transaction is proposed?

Reject the proposal	**Accept the proposal**

Continue

Beliefs about judgment decisions (pictures from NP_VJ treatment)

Possible Scenario 1

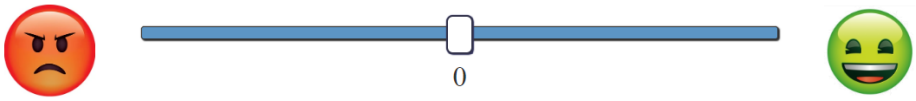
If Participant A **does not propose a transaction and Participant B rejects,** earnings are:

Participant A: 100 points
Participant B: 100 points
Participant C: 100 points
Participant D: 100 points

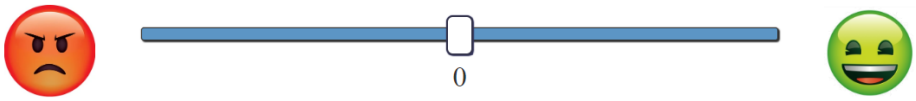
In this scenario, the transaction would not take place because Participant A does not propose a transaction, and Participant B would reject the transaction if proposed. We ask you how do you think Participant C will judge these decisions.

Remember that each slider can go from -9 to 9, and the initial position of a slider is at 0. You can move a slider to the left, to the right, or you can move it back to the initial position.

Please select how do you think Participant C will judge the decision of ***Participant A*** of **not proposing** a transaction.



Please select how do you think Participant C will judge the decision of ***Participant B*** of **rejecting** a transaction if proposed.



Continue

Possible Scenario 2

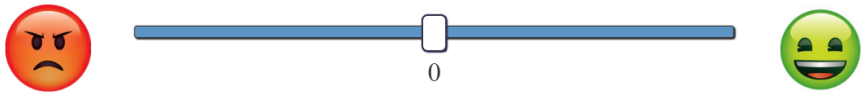
If Participant A **proposes a transaction and Participant B rejects**, earnings are:

Participant A: 100 points
Participant B: 100 points
Participant C: 100 points
Participant D: 100 points

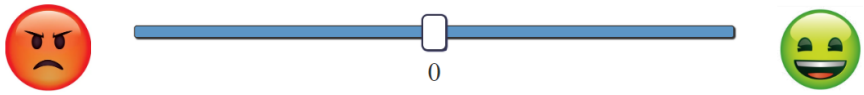
In this scenario, the transaction would not take place given that Participant A proposes a transaction, but Participant B rejects. We ask you how do you think Participant C will judge these decisions.

Remember that each slider can go from -9 to 9, and the initial position of a slider is at 0. You can move a slider to the left, to the right, or you can move it back to the initial position.

Please select how do you think Participant C will judge the decision of ***Participant A*** of **proposing** a transaction.



Please select how do you think Participant C will judge the decision of ***Participant B*** of **rejecting** a transaction.



Continue

Possible Scenario 3

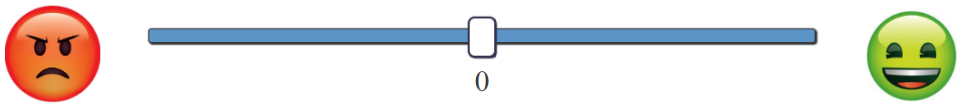
If Participant A **does not propose a transaction and Participant B accepts,** earnings are:

Participant A: 100 points
Participant B: 100 points
Participant C: 100 points
Participant D: 100 points

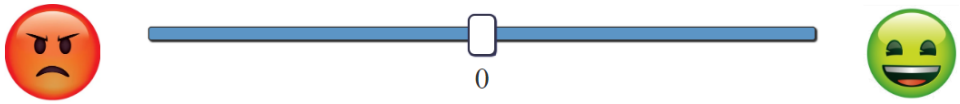
In this scenario, the transaction would not take place because Participant A does not propose a transaction, even though Participant B would accept the transaction if proposed. We ask you how do you think Participant C will judge these decisions.

Remember that each slider can go from -9 to 9, and the initial position of a slider is at 0. You can move a slider to the left, to the right, or you can move it back to the initial position.

Please select how do you think Participant C will judge the decision of ***Participant A*** of **not proposing** a transaction.



Please select how do you think Participant C will judge the decision of ***Participant B*** of **accepting** a transaction if proposed.



Continue

Possible Scenario 4

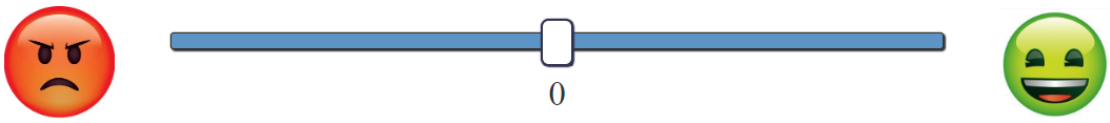
If Participant A **proposes a transaction and Participant B accepts**, earnings are:

Participant A: 120 points
Participant B: 120 points
Participant C: 60 points
Participant D: 100 points

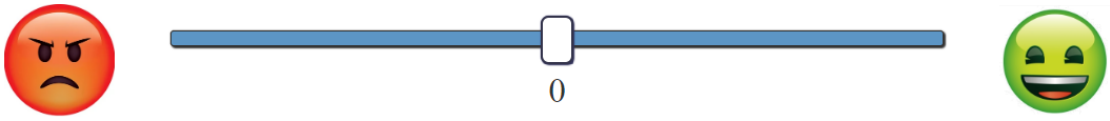
In this scenario, the transaction would take place given that Participant A proposes a transaction, and Participant B accepts. We ask you how do you think Participant C will judge these decisions.

Remember that each slider can go from -9 to 9, and the initial position of a slider is at 0. You can move a slider to the left, to the right, or you can move it back to the initial position.

Please select how do you think Participant C will judge the decision of ***Participant A*** of **proposing** a transaction.



Please select how do you think Participant C will judge the decision of ***Participant B*** of **accepting** a transaction.



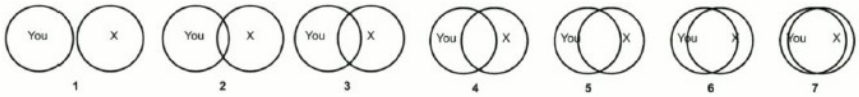
Continue

Questionnaire – Corruption treatments

Questionnaire

Describing your relationship with the others

The pictures below present seven options that could describe your relationship with someone else (X). We will ask you to describe your relationship with all the other members of your group by typing the number of the picture that best describes it.



1) Use the radioline to indicate the number of the picture which best describes your relationship with the ***Public Official*** in your group.

1 ○○○○○○○ 7

2) Use the radioline to indicate the number of the picture which best describes your relationship with the ***Other Member of Society*** in your group.

1 ○○○○○○○ 7

3) Use the radioline to indicate the number of the picture which best describes your relationship with the ***Observer*** in your group.

1 7

4) What is your age?

5) What is your gender?

Male

Female

6) Which country are you from?

7) What is your field of study?

8) How difficult did you find to understand this study?

Not at all difficult Very difficult

9) Imagine the following situation: Today you unexpectedly received £1000. How much of this amount would you donate to a good cause? Integer values between 0 and 1000 are allowed.

Hypothetical Scenario

Imagine that you propose the corrupt transaction and the Public Official accepts it.

10) How responsible do you think you are for the corrupt transaction taking place in your group?

Not at all responsible Fully responsible

11) How responsible do you think the Public Official is for the corrupt transaction taking place in your group?

Not at all responsible Fully responsible

Hypothetical Scenario

Imagine that the Public Official in your group proposes the corrupt transaction and the Private Citizen in your group accepts it.

10) How responsible do you think the Public Official is for the corrupt transaction taking place in your group?

Not at all responsible ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Fully responsible

11) How responsible do you think the Private Citizen is for the corrupt transaction taking place in your group?

Not at all responsible ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Fully responsible

You have completed this study and you will be paid the participation fee of **£1.00** plus your additional earnings. **You will receive an email with feedback about the decisions of the other members of your group.**

As we mentioned in the invitation email, **we are going to pay you via PayPal**. Please enter below your email address associated with PayPal and **make sure there are no typos**. We won't be able to pay you if you provide an incorrect email account.

We will pay you today.

Please enter your email address associated with PayPal:

This is your **secret ID** in the experiment. Please make sure to write it down.

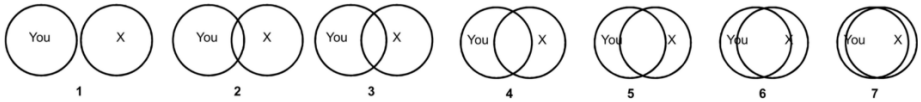
Thank you for participating.

Questionnaire – Neutral Treatments

Questionnaire

Describing your relationship with the others

The pictures below present seven options that could describe your relationship with someone else (X). We will ask you to describe your relationship with all the other members of your group by typing the number of the picture that best describes it.



1) Use the radioline to indicate the number of the picture which best describes your relationship with ***Participant B*** in your group.

1 ○ ○ ○ ○ ○ ○ ○ 7

2) Use the radioline to indicate the number of the picture which best describes your relationship with ***Participant C*** in your group.

1 ○ ○ ○ ○ ○ ○ ○ 7

3) Use the radioline to indicate the number of the picture which best describes your relationship with the ***Participant D*** in your group.

1 ○ ○ ○ ○ ○ ○ ○ 7

4) What is your age?

5) What is your gender?

Male

Female

6) Which country are you from?

7) What is your field of study?

8) How difficult did you find to understand this study?

Not at all difficult ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Very difficult

9) Imagine the following situation: Today you unexpectedly received £1000. How much of this amount would you donate to a good cause? Integer values between 0 and 1000 are allowed.

Hypothetical Scenario

Imagine that you propose the transaction and Participant B accepts it.

10) How responsible do you think you are for the transaction taking place in your group?

Not at all responsible ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Fully responsible

11) How responsible do you think Participant B is for the transaction taking place in your group?

Not at all responsible ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Fully responsible

You have completed this study and you will be paid the participation fee of **£1.00** plus your additional earnings. **You will receive an email with feedback about the decisions of the other members of your group.**

As we mentioned in the invitation email, **we are going to pay you via PayPal**. Please enter below your email address associated with PayPal and **make sure there are no typos**. We won't be able to pay you if you provide an incorrect email account.

We will pay you today.

Please enter your email address associated with PayPal:

This is your **secret ID** in the experiment. Please make sure to write it down.

1000202

Feedback – Corruption Treatments

(pictures of CP_VJ treatment)

Citizen

Your Feedback

Your role was: **Private Citizen**

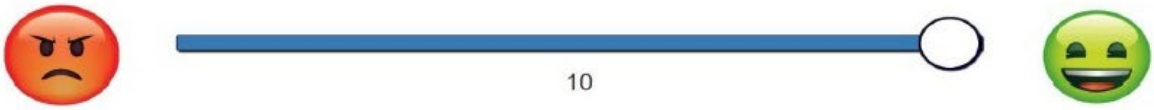
Your decision was: **Propose the corrupt transaction**

The decision of the Public Official in your group was: **Reject the proposal**

Therefore, you earned (in points): **100**

The Other Member of Society judged your decision in the following way:

The Other Member of Society judged the decision of the Public Official in the following way:



We also asked you five questions about predicting the decisions of the others in your group for an extra £0.25.

Out of the five questions, the question selected for payment was the following: What do you think will be the decision of the ***Public Official*** in your group if the corrupt transaction is proposed?

Your answer was: **Accept the proposal**

Your final payoff, including the participation fee, is (in £): **2.5**

Thank you for participating.

Now you can close this window.

Your Feedback

Your role was: **Public Official**

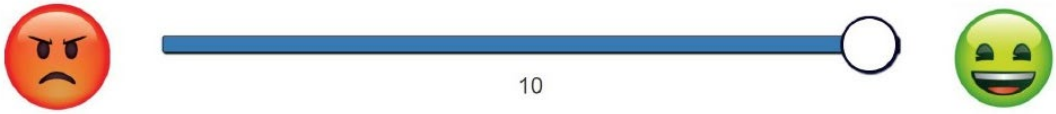
Your decision was: **Reject the proposal**

The decision of the Private Citizen in your group was: **Propose the corrupt transaction**

Therefore, you earned (in points): **100**

The Other Member of Society judged the decision of the Private Citizen in the following way:

The Other Member of Society judged your decision in the following way:



We also asked you five questions about predicting the decisions of the others in your group for an extra £0.25.

Out of the five questions, the question selected for payment was the following: What do you think will be the decision of the ***Private Citizen*** in your group?

Your answer was: **Propose the corrupt transaction**

Your final payoff, including the participation fee, is (in £): **2.75**

Thank you for participating.

Now you can close this window.

Other member of society

Your Feedback

Your role was: **Other Member of Society**

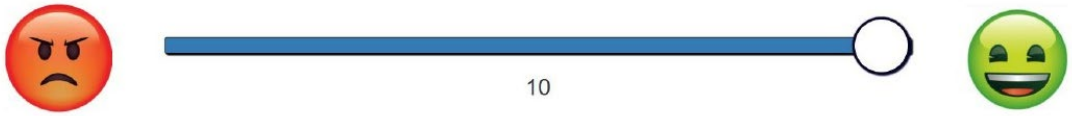
The decision of the Private Citizen in your group was: **Propose the corrupt transaction**

The decision of the Public Official in your group was: **Reject the proposal**

Therefore, you earned (in points): **100**

You judged the decision of the Private Citizen in the following way:

You judged the decision of the Public Official in the following way:



We also asked you two questions about predicting the decisions of the others in your group for an extra £0.25.

Out of the two questions, the question selected for payment was the following: What do you think will be the decision of the ***Public Official*** in your group if the corrupt transaction is proposed?

Your answer was: **Accept the proposal**

Your final payoff, including the participation fee, is (in £): **2.5**

Thank you for participating.

Now you can close this window.

Observer (with example of other scenario of beliefs paid)

Your Feedback

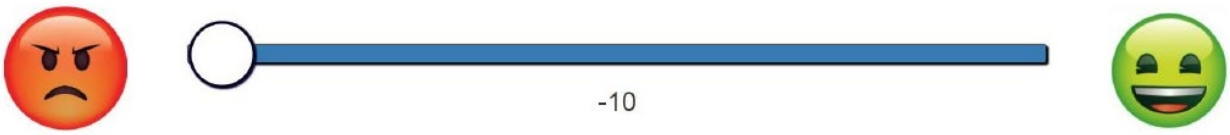
Your role was: **Observer**

The decision of the Private Citizen in your group was: **Propose the corrupt transaction**

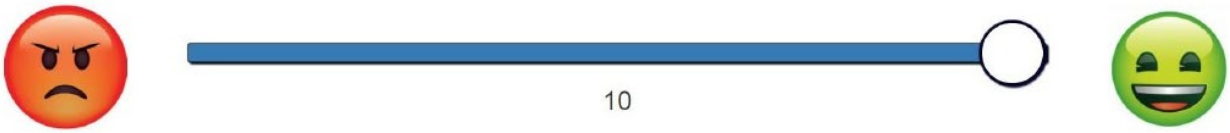
The decision of the Public Official in your group was: **Reject the proposal**

Therefore, you earned (in points): **100**

The Other Member of Society judged the decision of the Private Citizen in the following way:



The Other Member of Society judged the decision of the Public Official in the following way:



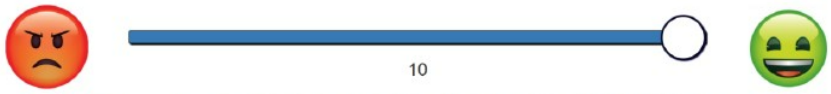
We also asked you six questions about predicting the decisions of the others in your group for an extra £0.25.

Out of the six questions, the question selected for payment was the one about predicting how the Other Member of Society in your group would judge the decisions of the Private Citizen and the Public Official in the following scenario:

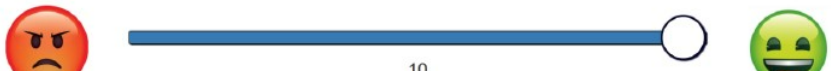
If the Private Citizen does not propose a corrupt transaction and the Public Official rejects, earnings are:

Private Citizen: 100 points
Public Official: 100 points
Other Member of the Society: 100 points
Observer: 100 points

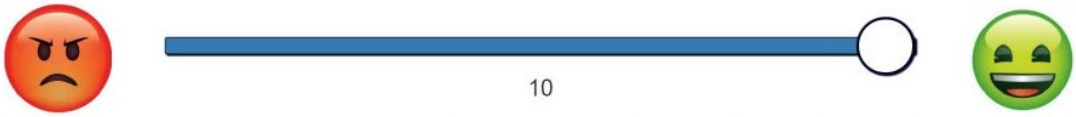
Your answer about the judgment of decision of the Private Citizen was:



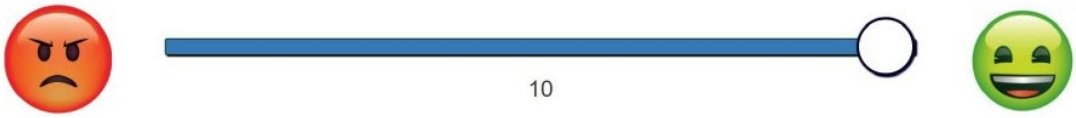
Your answer about the judgment of the decision of the Public Official was:



The Other Member of Society judged the decision of the Private Citizen in that scenario in the following way:



The Other Member of Society judged the decision of the Public Official in that scenario in the following way:



Your final payoff, including the participation fee, is (in £): **2.75**

Thank you for participating.

Now you can close this window.