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Easier Together: Shared Responsibility and Corruption

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Easier Together: Shared Responsibility and Corruption

Yuliet Verbel*

March, 2024

Abstract

When faced with the choice of behaving corruptly, are people more willing to accept a bribe or to embezzle money? Situations of bribery and embezzlement usually differ in their decision-making dynamics, with bribery requiring coordination between decision-makers (i.e., briber and bribee) while embezzlement does not require such coordination for a decision of corruption. This study makes use of outcome-equivalent games to examine participants' willingness to engage in these two types of corruption. The results show people are more likely to undertake bribery than embezzlement, and this is attributed to the joint decision-making dynamic of bribery, which shapes the responsibility for the outcome of corruption to be shared between the decision-makers instead of concentrated as it is in a situation of embezzlement. In an additional experiment eliciting social norms related to bribery and embezzlement, I find a clear norm of no-corruption, which highlights a discrepancy between the perceived appropriateness of these situations and the actual behavior exhibited in them. I further find that the social appropriateness ratings for each type of corruption are not significantly different. My findings suggest that anticorruption efforts should account for factors that facilitate rule-breaking behavior, such as coordinated decisions that lead to shared responsibility for the outcome.

Keywords: Bribery, Experiment, Embezzlement, Corruption

JEL Codes: C90, D73, K42

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1 Introduction

Corruption is considered one of the greatest obstacles to economic and social development, a view supported by empirical evidence. Indeed, corruption has been shown to have a damaging impact on various aspects of economic and social development, including a government's expenditures, the provision of public goods, social capital, and firm efficiency and competitiveness (Mauro, 1995, 1998; Ades & Di Tella, 1999; Reinikka & Svensson, 2004; Bhargava, 2005; Fisman & Svensson, 2007; Reinikka & Svensson, 2011; Banerjee, 2016). However, despite its damaging impacts, corruption is still very prevalent in our societies. There are many forms of corruption that differ in a variety of ways, including the number of participants and the degree of responsibility each participant bears. These differences can impact the likelihood of someone choosing to participate in a given corrupt situation. Therefore, a key question is whether there are types of corruption that people find it easier to be involved in than others. If yes, this information can have significant implications for how anti-corruption policies should be designed and targeted.

In this paper, I study people's willingness to engage in either bribery or embezzlement, the two most common types of corruption. More specifically, I implement a laboratory experiment to investigate the role of responsibility in these types of corrupt decisions, given that a key difference between them is the level of responsibility participants entail when involved in these situations. To illustrate, imagine a transit official whose job is to verify driver's licenses. In this case, corruption can occur if a driver without valid documentation bribes the transit official in an attempt to avoid a fine. In another scenario, an official's job is to transfer aid donations to recipients. Here, corruption occurs if the official embezzles part of the funds before transferring them to the recipients. In each case, the official's decision whether to take the bribe or embezzle the money depends on a number of factors, such as how big the associated gains are, how easy it is to participate without being caught, and how many people are involved. Of these factors, this paper focuses on the latter. Specifically, this paper posits that the greater the number of people involved in the decision of corruption, the less responsibility each participant bears for its outcome, including the negative externalities the decision imposes. In the case of bribery, the responsibility is shared between the citizen who proposes the bribe and the official who accepts it. In contrast, in the embezzlement situation, responsibility for the outcome rests solely with the public official.

In the experiment, participants are able to make a corrupt decision in three welfare-equivalent situations. In the first situation, a bribery game (BG), participants are assigned the role of citizen, public official, or third party. In this setting, they must choose whether to partake of a bribe. Here, the corruption outcome depends on the agreement between the citizen and the public official; they both benefit from the corruption while the third party suffers any negative externality that corruption generates. The second situation is a pure embezzlement game (PEG) in which the outcome depends only on the public official's decision. Here, the embezzlement decision benefits the public official while imposing a negative externality on the two other parties. Finally, this paper includes a novel third situation, a modified embezzlement game (MEG). Crucially, this novel embezzlement game is outcome-equivalent to the bribery game. In the modified embezzlement game, the outcome again depends on only the public official's decision. However, both the public official and the citizen benefit from the embezzlement decision while a third party suffers the negative externality. The benefits for the public official and the aggregated cost of corruption are constant across the three games, allowing for direct comparability of the public official's decisions.

While the bribery situation involves two individuals making a joint decision, the embezzlement situation involves only one. This variation in the level of decision-maker involvement reflects the level of responsibility each decision-maker entails. In the bribery situation, the responsibility is shared between the citizen and the public official, while in the embezzlement situations, it rests solely on the public official.

The results from this experiment show that individuals are significantly more likely to accept a bribe if offered than to embezzle in an outcome-equivalent situation. In particular, I find that a public official is 9 percentage points more likely to participate in corruption when the situation requires the coordination of two decision-makers opting to be corrupt (BG) instead of an individual decision(MEG). This result suggests that situations with a decision-making dynamic that leads to the responsibility for the outcome of a decision to be shared between decision-makers, such as the bribery situation, can facilitate corruption decisions.

To gain a better understanding of subjects' behavior in the corruption games, I conduct an additional experiment on social norms which helps to investigate whether the decisions in the corruption games align with perceptions of social appropriateness regarding situations of bribery and embezzlement. This additional experiment draws on Krupka & Weber (2013)'s procedure for eliciting social norms and adapts their procedure to the corruption games. The results show that, while a large majority of participants view engaging in corruption as very socially inappropriate, this view does not always align with behavior. Furthermore, I observe that the variation in the propensities to engage in corrupt decisions by game aligns with the variation in the ratings of social appropriateness, but the difference in ratings is not statistically significant. That is, in the corruption games, individuals are more likely to participate in corruption in either the BG or the PEG than in the MEG; and analogously, more participants judge the MEG as more inappropriate than the PEG or the BG. Interestingly, I find that accepting a bribe is considered significantly more inappropriate than offering one. This is in line with the experimental evidence from the bribery scenario, where I observe that a citizen's willingness to offer a bribe is larger than an official is to accept one, although this difference in behavior is not significant.

The main contribution of this paper is to provide a more detailed understanding of the willingness to participate in different types of corruption and the factors shaping that willingness. Previous literature on corruption has shown that both bribery and embezzlement decisions are influenced by a number of factors, including trust and reciprocity (Abbink et al., 2002), cultural background (Fisman & Miguel, 2007; Barr & Serra, 2010), the possibility of detection (Abbink et al., 2014; Christöfl et al., 2017), and the threat of punishment (Azfar & Nelson, 2007; Barr et al., 2009). However, the question of which type of corruption is more tempting for individuals and why remains unexplored. My study contributes to this literature by showing that individuals are more willing to engage in bribery than in embezzlement because the joint decision feature from the bribery situation facilitates decisions of corruption. I reach this finding by implementing games of bribery and embezzlement that are incentive and outcome equivalent.

Given that the nature of the decision-making process is a crucial factor determining the difference between engagement in bribery and embezzlement situations, this paper further connects to the literature on group decision-making and highlights the significance of group dynamics in the context of corruption. Previous research in this area has widely shown the tendency to exhibit more selfish behavior towards outsiders when decisions are made at the group versus individual level (for a review, see Charness & Sutter (2012) and Kugler et al. (2012)). Possible explanations for this finding include a diffusion of the pivotality associated with the outcome (Falk & Szech, 2013; Bartling et al., 2015), a decreased level of perceived individual responsibility and associated guilt for the outcome (Battigalli & Dufwenberg, 2007; Rothenhäusler et al., 2015), and a larger normative acceptance of the selfish actions (Behnk et al., 2022). In this paper, I also find larger evidence of selfish behavior (larger willingness to be corrupt) when the situation involves more than one decision-maker.

While the evidence for selfish behavior is robust for many types of group decisions, the evidence specifically in the domain of corruption is mixed. Within this area of research, Schikora (2011) finds that corrupt transactions increase when a group of two bribees decides whether to accept a bribe compared to a single bribee. In line with this finding, Frank et al. (2015) use groups of three for both the roles of briber and bribee and find that deciding in groups instead of individually increases the number of bribes offered as well as the likelihood of accepting them. By contrast, Bodenschatz & Irlenbusch (2019) conduct a set of experiments when two individuals must decide whether to offer a bribe and find no effect (a negative effect) of group decision-making on the likelihood of corruption in one-shot (repeated) interactions. While these studies focus on a group decision of multiple people deciding whether to offer or accept a bribe, here I focus on a joint decision, which is an agreement between two parties where each party exerts a different action (either offer or accept a bribe); and the agreement leads with certainty to corruption. Therefore, in the bribery situation, coordination between the parties is needed for a joint decision of corruption to take place, whereas in the embezzlement situation, such coordination is not required. I thus am able to identify differences in a participant's willingness to engage in two types of corruption that require a different decision-making dynamic and go beyond the analysis of group size.

The main finding of individuals being significantly more likely to accept a bribe if offered than to embezzle in an outcome-equivalent situation cannot be explained by a diffusion on the pivotality of the decision makers, as in Falk & Szech (2013) and Bartling et al. (2015). In my two decision-makers situation (the BG), if a bribe is offered, the official is the only pivotal player. Still, my finding can be explained by a decreased level of perceived individual responsibility, as it does in Battigalli & Dufwenberg (2007) and Rothenhäusler et al. (2015), when participants decide jointly instead of individually. The joint decision between the citizen and the official requires coordination, and coordination can be perceived as teamwork, ultimately affecting their perceived level of responsibility for the outcome of their decisions. Moreover, a larger normative acceptance can be linked to this finding as it does for Behnk et al. (2022). The results from the experiment on social norms show that people consider it more socially inappropriate to embezzle than to accept a bribe in an outcome-equivalent situation, suggesting that there is a larger normative acceptance of the bribery situation.

The rest of the paper is structured in the following way: Section 2 outlines the experiment and its implementation, followed by the results reported in Section 3. Section 4 covers the implementation and results of the norm-elicitation experiment. Finally, Section 5 discusses the findings and concludes the paper.

2 Experimental Design

I implement a within-subjects design with three framed, one-shot corruption games that simulate the scenarios of bribery, embezzlement, and modified embezzlement, respectively.

To focus on the distributive effects of corruption and allow for direct comparability, the games do not incorporate efficiency concerns or costs associated with corruption decisions. I also keep both the total welfare and the benefit of behaving corruptly constant across the games. Each game consists of three subjects. In the bribery game, there is a citizen, a public official, and another member of society. In both the embezzlement and modified embezzlement games, there is a public official and two other members of society. The other members of society are always passive players.

Each corruption game consists of an endowment-earning stage and a decision-making stage. In the endowment-earning stage, all subjects perform a real-effort task to earn an initial individual endowment that is equal among the players and fixed to a value of 100 Experimental Currency Units (ECUs). The three tasks (one per corruption game) are based on Niederle et al. (2013), Benndorf et al. (2014), and Abeler et al. (2011)'s real effort tasks.[1] In the decision-making stage, all subjects decide whether to engage in decisions of corruption, where they can benefit themselves at a cost to someone else. In the bribery game, they decide whether to offer a bribe under the role of a citizen and whether to accept a bribe, if offered, under the role of an official. The order in which they make these two decisions is randomized. In the embezzlement games, they make a single decision of whether to embezzle. Subjects are informed that later on, they will randomly form groups of three, and roles will be randomly assigned. Hence, subjects face role uncertainty.[2]

Following Salmon & Serra (2013)'s strategy of introducing distractor tasks between rule-breaking games, I use two filler games between the corruption games. The filler games are a modification of the elicitation of risk preferences Multiple Price List(MPL) method developed by Holt & Laury (2002) and the "acquiring a company game" by Charness & Levin (2009). To prevent any influence of a previous game outcome on current game performance, participants do not receive any feedback between corruption games during the experiment. Moreover, I implement three different orders for presenting the corruption games. In each order, one of the three games is played first, while the order in which the filler games and the real-effort tasks are presented remains unchanged.

After the corruption games, I conduct the Social Value Orientation (SVO) test outlined by Murphy et al. (2011). This test consists of six allocation decisions between a

[1] A sense of entitlement for the endowment is crucial when implementing corruption games as it helps in building the perception that a decision of corruption implies taking away from what belongs to others and not just from what was given to others (as it would be in the case of windfall endowment). The tasks were: one sum of five numbers of two digits (Niederle et al., 2013), encrypt one combination of three letters (words) into three-digit numbers (Benndorf et al., 2014), and count the number of zeros in a grid full of numbers (Abeler et al., 2011).

[2] A valid concern is that role uncertainty could alter subjects' decisions. Although Engelmann & Strobel (2004) found non-significant differences between treatments with and without role uncertainty in their allocation games, Iriberri & Rey-Biel (2011) suggest that the use of this method could underestimate subjects' selfish preferences. Therefore, any corrupt/selfish behavior observed in the experiment should be considered a lower bound.

sender and receiver calibrated to classify subjects into altruistic, prosocial, individualistic, and competitive categories. I use the SVO test to asses how the subjects' scores on this measure correlate to their decision of whether to participate in corruption.

2.1 Corruption Games

Bribery Game (BG)

The bribery game is based on that of Salmon & Serra (2017), in which corruption is the result of a bribe being offered and then accepted. In this game, a citizen decides whether to offer a bribe of 20 ECUs and the public official decides whether to accept the bribe if offered. If a bribe is offered and accepted, the benefit for the citizen is 40 ECUs, minus the bribe, consisting of a net earning of 20 ECUs. The official receives the 20 ECUs bribe with no cost, but the other member of society suffers a loss of 40 ECUs, representing the negative externality generated by the corrupt agreement. The decision to participate in corruption is neither Pareto improving nor Pareto worsening. Figure 1 shows the sequential representation of the bribery game.

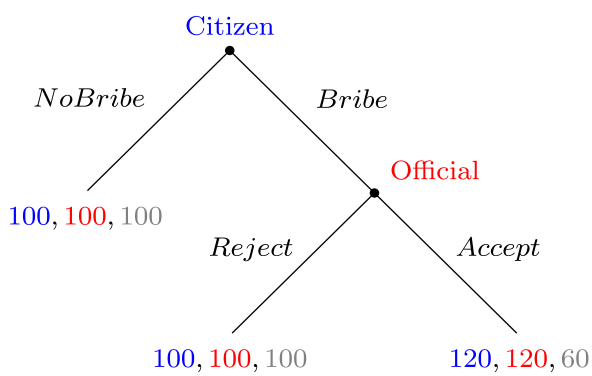

Figure 1: Bribery Game. *Note.* From left to right, the payoffs correspond to the citizen, the official, and the other member of society.

Pure Embezzlement Game (PEG)

This game is essentially a modified three-player dictator game that resembles a standard embezzlement situation where public officials can make a decision that benefits themselves to the detriment of other members of society. In this game, the public official decides whether to embezzle 20 ECUs with no cost from a shared account that holds the cumulative initial endowment obtained by the three players in the game: a public official and two other members of society. The decision to embezzle provides benefit to the official at a cost of 10 ECUs each for the two other members of society. (See Figure 2)

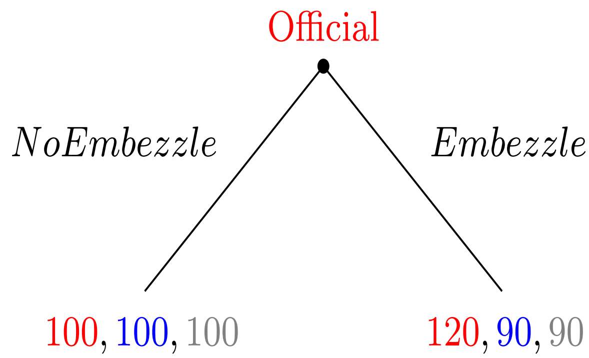

Figure 2: Pure Embezzlement Game. *Note.* From left to right, the payoffs correspond to the official, the first other member of society, and the second other member of society.

The PEG differs from the BG in that the outcome of corruption depends solely on the public official's decision instead of requiring coordination between two decision-makers. However, the two games also differ in a second dimension. While the size of the externality in the BG is 40 ECUs, it is only 20 ECUs in the PEG. This difference results from keeping the benefit to the public official (20 ECUs) and the total welfare (300 ECUs) constant across the games.

To make the bribery situation comparable to the embezzlement situation, I neutralize the dimension of the externality in a third game: the modified embezzlement game.

Modified Embezzlement Game (MEG)

This game is a modification of the PEG that helps make the embezzlement setting comparable to the bribery setting by creating an embezzlement situation with the same outcomes as the BG. That is, in this MEG, if the public official in the three-person game decides to embezzle, the first other member of society is better off by the same embezzled amount, 20 ECUs, but the second other member of society is worse off with a loss of 40 ECUs. [3]

The only difference between this MEG and the BG is the decision-making dynamic. While in the BG, corruption requires coordination between the citizen and the official, in the MEG, corruption depends solely on the public official's decision. Figure 3 shows the graphic representation of the game.

[3] Unlike Salmon & Serra (2017), I abstain from introducing a cost of offering a bribe in the BG as this would compromise the outcome equivalence between the BG and the MEG. In the latter the decision of not embezzling, that is equivalent to the decision of rejecting a bribe if offered, would impose an inexplicable cost on the first other member of society.

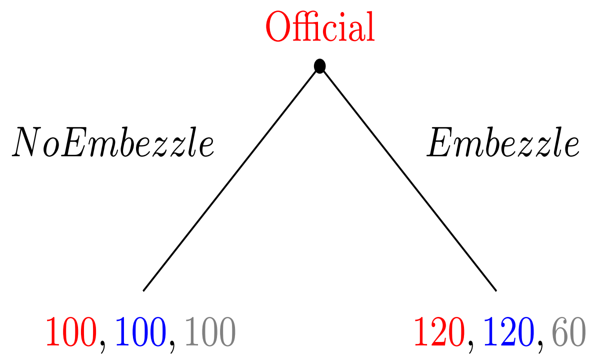

Figure 3: Modified Embezzlement Game. *Note.* From left to right, the payoffs correspond to the official, the first other member of society, and the second other member of society.

2.2 Theorethical Framework and Hypotheses

To provide an intuitive framework for understanding the results from the experiment, I follow Salmon & Serra (2017)'s theoretical approach that is rooted in the preference model developed by Cox et al. (2007). Cox et al. (2007)'s model involves state-dependent other-regarding preferences where the degree to which an individual cares about the welfare of others depends upon his emotional state. In my case, an individual's emotional state is based on the degree of responsibility they bear for the outcome of their decisions given that I am modeling outcome-equivalent situations that differ in the level of involvement of each decision-maker.

Formally, the decision-makers care about both their own and others' payoffs with a utility function of the form $u(x, y) = x^\alpha + \theta(y_1^\alpha + y_2^\alpha)$ where x x is the material payoff of the decision-maker and y_1, y_2 is the material payoff of the other players. The parameter α measures the preference for a more equal distribution of wealth, while θ represents the weight placed on the welfare of the others. The parameter θ is specified as $\theta = \theta_0 + vr$, and it captures the possibility that the weight placed on the welfare of the others can be shifted. The base degree of caring about the welfare of the others is represented by $-1 \leq \theta_0 \leq 1$, and the variable $0 < r \leq 1$ represents the fraction of responsibility borne by the decision-maker when choosing whether to participate in corruption. A value of $r = 0$ would reflect no involvement in a decision of corruption, while higher levels of r would reflect increased involvement in the decision and, therefore, increased responsibility borne for the outcome of it. The parameter $0 \leq v \leq 1$ is the decision-maker's responsibility sensitivity, measuring the importance of those changes in the level of involvement of a decision-maker.

Given that the bribery game requires the coordination of two decision-makers deciding corruptly, while the two embezzlement games involve only one decision-maker and no coordination is required, r is larger in the latter. The fraction of responsibility for the outcome that corresponds to a public official is r_{BG} in the BG and r_{EG} in the EG (PEG and MEG), with $r_{BG} < r_{EG}$. The complete theoretical analysis behind the model is available in Section 6.1 of Appendix 6.

It follows from the model that, assuming a positive responsibility sensitivity to the outcome ($v > 0$), the weight a decision-maker will place on the welfare of the other member of society (θ) is predicted to be increasing in the fraction of the responsibility that the decision-maker bears for the outcome of a corrupt decision.

I now compare how the difference in r affects the likelihood of corrupt behavior between the corruption games. From the two embezzlement games (PEG and MEG), the MEG is equivalent to the BG in the outcome but not in the level of involvement of a decision-maker in the decision of corruption and this can shape the likelihood of the exhibited corrupt behavior. As mentioned, individuals deciding jointly with others are more likely to make a selfish decision than when deciding in isolation (e.g., Dana et al. (2007), Luhan et al. (2009), or Panchanathan et al. (2013)). Therefore it can be expected that the BG yields more corrupt, or selfish, behavior than the MEG because the coordination of two decision-makers on a decision of corruption facilitates individuals to opt for a selfish option. This is due to the fraction of responsibility that each of them bears for the outcome of corruption being smaller in the BG than in the MEG, $r_{BG} < r_{MEG}$.

Hypothesis 1. *The propensity to accept a bribe in the bribery game is higher than the propensity to embezzle in the modified embezzlement game.*

Next, I compare the MEG to the PEG, for which $r_{MEG} = r_{PEG}$ as both games involve only one decision-maker in the corrupt decision. However, the model still predicts differences in the propensity to engage in corrupt behavior between these two scenarios due to distributive concerns. In line with previous literature (Cox et al., 2007), I assume that the parameter that measures a preference for a more equal distribution of wealth, α, is $\alpha < 1$. In the pure embezzlement game, both other members of society are worse off by the same proportion after corruption, whereas in the modified embezzlement game, one of them is better off while the other one is worse off. Since the pure embezzlement game has a more equitable, albeit negative, impact on others in society, I expect participants in this game to show a higher propensity to engage in corruption than in the MEG.

Hypothesis 2. *The propensity to engage in corruption is higher in the pure embezzlement game than in the modified embezzlement game.*

Finally, I explore whether the type of social value preferences revealed by the individuals in the SVO test correlate with the degree to which they engage in corrupt behavior. As the SVO test measures how much a decision-maker is willing to sacrifice in order to make another individual better or worse off, I expect that individuals that are classified as *individualistic* or *competitive* will care less about others' payoffs than those who are classified as *prosocial* or *altruistic*, and will thus be more likely to exhibit corrupt behavior.

Hypothesis 3. *Prosocial or altruistic individuals (as measured by the SVO test) are less likely to engage in corruption than individualistic or competitive individuals.*

2.3 Procedures

The experiment consists of six sessions, each with 24-30 participants, totaling 174 subjects, as presented in Table 1. To ensure clarity in the corruption situations, the roles are labeled as citizen, official, and other member of society. Moreover, the corruption context is made explicit in the game through the use of the terminology ”bribing” and ”embezzling” to refer to the potential actions. All interactions among players are anonymous.

In total, subjects play six different one-shot games (three corruption games, two filler games, and the SVO test) followed by a demographic questionnaire. One out of the six games is randomly selected at the end for determining the payments. If one of the corruption games is selected for payment, groups of three are formed and each subject is assigned to the role of citizen, public official, or other member of society. The respective outcomes from the decisions made under the roles of the decision-makers (citizen and public official for the bribery game, and public official for the embezzlement games) are used to determine payments. This procedure is communicated to all subjects before they make any decisions in the games. The experimental instructions are available in Section 6.3 of Appendix 6.

My sample comprises students at the University of Nottingham, UK. I conducted the experiment at the CeDEx Laboratory using software programmed in z-Tree (Fischbacher, 2007), with subjects recruited using ORSEE, (Greiner, 2015). Each session lasted approximately one hour and the exchange rate used in the experiment was 100 ECU = £10 with a participation fee of £2 and an average payment per subject of £12.

Table 1: Summary of experiment design

	Session	# Subjects
Order 1 (PEG-BG-MEG)	2 sessions/60 subjects	60
Order 2 (MEG-PEG-BG)	2 sessions/54 subjects	54
Order 3 (BG-MEG-PEG)	2 sessions/60 subjects	60
# Subjects		174

Note: In Order 1 sessions, participants first play the pure embezzlement game, followed by the bribery game and the modified embezzlement game. In Order 2 sessions, participants first play the modified embezzlement game, followed by the pure embezzlement game and the bribery game. In Order 3 sessions, participants first play the bribery game, followed by the modified embezzlement game and the pure embezzlement game.

3 Results

Overall, pooling across orders in which the three corruption games were played, the propensity to offer a bribe in the BG is 61%, and the propensity to accept it if offered is 59%. In the embezzlement games, the propensity to embezzle is 50% in the MEG and 60% in the PEG.

Since the focus of this study is the willingness to be corrupt under the role of public official, I am interested in the likelihood of an official choosing the corrupt option at three decision points: to accept a bribe if offered (BG-Accept), to embezzle when leaving one of the other two subjects involved better off and the other one worse off (MEG), and to embezzle when leaving the other two subjects involved worse off (PEG). Figure 4 reports the means of these three decisions. In line with *Hypothesis 1*, the results from a non-parametric test performed on the average corruption rate on BG-Accept, compared to the MEG, show that a subject is more likely to engage in corruption by accepting an offered bribe than by embezzling in an outcome-equivalent situation (Wilcoxon signed rank-sum test, $p < 0.05$). Moreover, from comparing the average corruption rate in the MEG and the PEG, we see that a subject is more likely to engage in corruption by embezzling when the outcome of the decision provides a more equal distribution of wealth as in the PEG compared to the outcome of the MEG (Wilcoxon signed rank-sum test, $p < 0.01$), confirming *Hypothesis 2*. There are no significant differences when comparing the BG to the PEG.

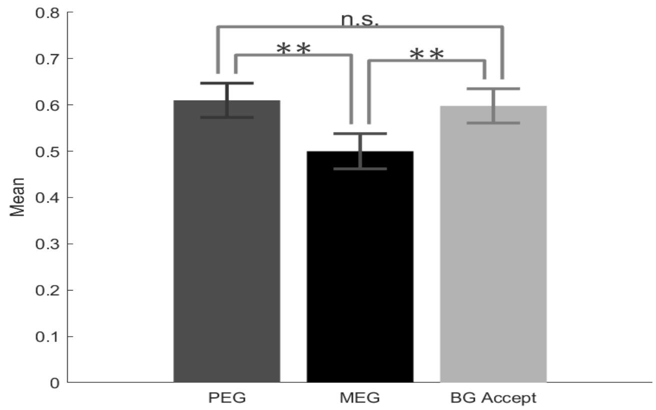

Figure 4: Means of decisions of corruption from the Public Officials. *Note.* *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, *n.s.* no significant. From left to right, means of decision to embezzle in the pure embezzlement game (PEG), the modified embezzlement game (MEG), and decision to accept a bribe in the bribery game (BG).

These results are confirmed in a regression analysis. Table 2 shows estimates from OLS regressions of the decision to act corruptly on game indicators with MEG as the baseline (column I). The findings show that the likelihood of participating in corrupt behavior increases by approximately nine percentage points in the BG compared to the MEG. Further regressions controlling for the order in which the games were played (column II), participant SVO type and demographic characteristics (column III), and the order in which decisions were made in the BG along with the decision under the role of citizen (column IV) yield a similar pattern of increasing propensity to participate in corruption when the situation requires the coordination of two decision-makers opting to be corrupt (BG) instead of an individual decision (MEG).

Result 1. *Subjects are* 9*pp more likely to engage in corruption in the bribery game compared to the outcome-equivalent modified embezzlement game.*

The regression analysis also confirms that the likelihood of participating in corrupt behavior increases by approximately ten percentage points in the PEG compared to the MEG. This finding is in line with *Hypothesis 2*, showing that corruption is more likely if it leads to a more equal distribution of wealth, as the outcome in the PEG is more equitable across the two other members of society than the outcome in the MEG.

Result 2. *Subjects are* 10*pp more likely to engage in corruption in the modified embezzlement game compared to the pure embezzlement game.*

Table 2: Linear probability model for the decision to act corruptly (PO)

	I	II	III	IV
BG Accept	0.098***	0.098***	0.098***	0.098***
	(0.036)	(0.036)	(0.036)	(0.036)
PEG	0.109***	0.109***	0.109***	0.109***
	(0.039)	(0.039)	(0.039)	(0.039)
BG First		-0.033	-0.051	-0.051
		(0.073)	(0.070)	(0.070)
PEG First		-0.089	-0.067	-0.067
		(0.076)	(0.074)	(0.074)
Individualist			0.316***	0.316***
			(0.058)	(0.058)
Constant	0.500***	0.542***	0.414	0.414
	(0.038)	(0.055)	(0.251)	(0.253)
Order of Games	No	Yes	Yes	Yes
Demographic Controls	No	No	Yes	Yes
Order in BG Controls	No	No	No	Yes
N Observations	522	522	522	522
N Clusters	174	174	174	174
R-squared	0.010	0.015	0.130	0.130

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the individual level. Note: The dependent variable is binary and takes the value of 1 if an individual acts corruptly where the baseline is the MEG. Demographic controls include the corruption index of the country of origin, age, and gender. Order in BG controls accounts for making a decision under the role of citizen first in the BG and 0 otherwise.

3.1 SVO test and Decision of Corruption

Although the SVO test allows me to classify subjects into altruistic, prosocial, individualistic, or competitive types, I find my sample exhibits only two types in similar proportions: 48% as prosocial and 52% as individualistic.

To analyze whether participants' decisions related to corruption align with their social values measured by the SVO test, I create an index of corrupt decisions. As subjects face four decisions of corruption (two in the BG, one in the MEG, and one in the PEG), the index increases by one unit with each decision on whether to participate in corruption. Therefore, the index can take values from zero to four. Table 3 shows the result of a regression of the number of corrupt decisions on SVO type, confirming a negative and statistically significant relationship between prosocial types and engaging in corrupt behavior. This result is in line with *Hypothesis 3*.

Table 3: OLS Regression for the Relationship between SVO Type and the Index of Corruption Decisions

	Index
Prosocial	-1.237***
	(0.224)
Constant	2.912***
	(0.144)
Observations	174
R-squared	0.152

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Robust standard errors (in parentheses). Note: The dependent variable is the corrupt-decisions-index and takes values from zero to four for the number of corrupt decisions made in the corruption games. The index is regressed on the SVO Type where the baseline is the individualistic type.

Result 3. *Subjects classified as prosocial engage less in corruption compared to those classified as individualistic.*

3.2 Consistency of behavior

To see if the observed patterns of corrupt decisions are stable, I investigate the consistency of behavior across situations of corruption. Consistency is based on the notion of *stable preferences* as defined in the theoretical framework (Section 6.1 of Appendix 6). That is, I assume that the preference parameters of individuals are fixed, and that these parameters determine their choices in different situations. The color regions in Figure 5 show the combination of preference parameters for which an individual is predicted to be corrupt across the different games. The graph is defined on the space of preference parameters. The y-axis plots the base degree of caring about the welfare of the other player, θ_0, while the x-axis plots the shared responsibility sensitivity, v.[4]

[4]Figure 5 is defined in the area $\theta_0 + vr \leq 1$ and shows the sets of pairs (θ_0, v) where corruption is predicted by the model (assuming $\alpha = 0.075$, $r = 1$ for both MEG and PEG and $r = 0.5$ for the BG). I retrieve the value of α from the parameters estimation in Cox et al. (2007). Regarding r, recall that $0 < r \leq 1$ implying that when the responsibility is concentrated, $r = 1$ and when it is shared, $r < 1$, which allows for the responsibility to be either evenly or unevenly shared. For the purpose of this graphical representation, I let $r = 0.5$ in the BG as if the responsibility was evenly shared between the citizen and the public official.

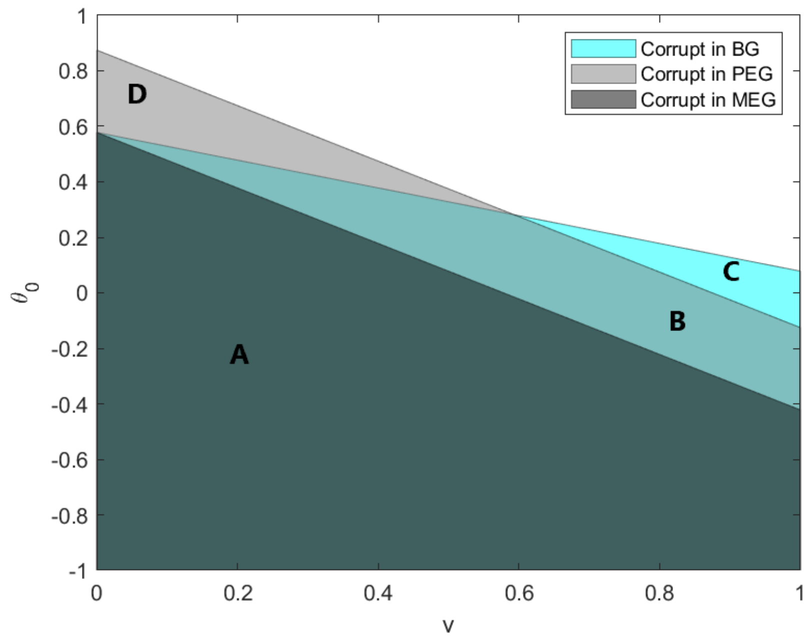

Figure 5: Corrupt behavior in BG-PEG-MEG. *Note.* Defined in the area $\theta_0 + vr \leq 1$ and the colored regions show the sets of pairs (θ_0, v) where corruption is predicted by the model in the three corruption games (assuming $\alpha = 0.075$, $r = 1$ for both MEG and PEG and $r = 0.5$ for the BG).

Table 4 shows the respective percentage of the exhibited behavior in the experiment that corresponds to each of the five regions in Figure 5 that represent the five decision combinations rationalized by the model across the corruption games.

Table 4: Decisions explained by the model

Region	BG	PEG	MEG	Total
A	✓	✓	✓	34.5%
B	✓	✓		10.9%
C	✓			3.4%
D		✓		4%
White				23.6%
Total				**76.4%**

Note: percentage of the exhibited behavior that corresponds to each of the five colored regions contained in Figure 5.

From Table 4, we can see a pattern of behavior that for a subject to be corrupt in the MEG in Region A, they must also be corrupt in the other two games: the BG and PEG. The decision to embezzle in the MEG can be seen as a more *difficult* decision compared to the decisions in the BG and the PEG, as it implies both a high level of responsibility and greater inequality in the distribution of wealth. In contrast, the other two games require a decision with only one of these considerations. Therefore, if someone is willing to be corrupt in the MEG, it follows that they should also be willing to be corrupt in the BG and PEG. The percentages in Regions B, C, and D show that subjects can be willing to be corrupt in the BG and PEG in conjunction and also separately.

Accounting for all regions, including the White Region that corresponds to no corruption decisions, the model can rationalize 76.4% of the exhibited behavior in the experiment. The remaining 23.6% of the individual decisions are from subjects who exhibit corrupt behavior to some extent, but whose choices of whether to do so do not match the model's specifications. The largest share of this 23.6% is comprised of subjects who decide to participate in only one of the two corrupt actions in the BG (13.2%), regardless of their decisions in the PEG and MEG. The two decisions involved in the BG are symmetric under the assumption that each decision-maker (citizen and public official) bears the same level of responsibility for the outcome of corruption $r = 0.5$. However, it is possible that some subjects view the level of responsibility for each decision asymmetrically. In other words, it might be the case that subjects perceive the responsibility for the outcome to be greater under the role of public official, given that 5.7% decide to accept a bribe but not to offer it, than under the role of citizen, where 7.5% decide to offer a bribe but not to accept it.

Result 4. *Individuals are consistent in their behavior when facing different situations of corruption. The model can explain 76.4% of the exhibited behavior.*

4 Norm Elicitation Experiment

Following Guerra & Zhuravleva (2021) who conduct a norm elicitation experiment after their corruption experiment, I conduct a follow-up study to investigate if social norms align with the behavior exhibited in the corruption games. More specifically, I examine how individuals perceive the social appropriateness of corrupt decisions. To conduct this analysis, I use a norm-elicitation experiment with a new group of participants, following Krupka & Weber (2013)'s methodology.

In the norm elicitation experiment, I elicit social norms towards the decisions of bribery and embezzlement involved in the corruption games by asking subjects to evaluate each of the actions that players can take in the bribery game (BG), the pure embezzlement game (PEG), and the modified embezzlement game (MEG). For each game, I elicit judgments about the appropriateness of the actions available: a citizen's decision to offer a bribe to a public official (OfferBribe) and an official's decision to accept the bribe (AcceptBribe) for the BG; an official's decision to embezzle in the PEG (Embezzle), and an official's decision to embezzle in the MEG (Embezzle). For every game, participants are required to evaluate what they think others will deem to be the social appropriateness of every action using a rating system consisting of four points: 'very socially inappropriate,' 'somewhat socially inappropriate,' 'somewhat socially appropriate,' and 'very socially appropriate'.

This experiment uses a within-subject design where participants evaluate all available actions in each of the three games in random order. Subjects are required to select the rating of social appropriateness that they think the other participants in the experiment would assign to an action for each of the actions in the games. To incentivize subjects to disclose what they think is socially seen as appropriate instead of their own personal perception of appropriateness, I implement the payment procedure in Krupka & Weber (2013). In particular, subjects earn an extra amount (in addition to the participation fee) if they match the modal rating of a randomly-selected action.

My sample comprises 45 students at the University of Nottingham, UK, recruited using ORSEE (Greiner, 2015). The experiment was conducted online with the CeDEx Laboratory and programmed in Lioness (Giamattei et al., 2020). Subjects could participate at a time convenient for them within a one-hour window. It took them about 15 minutes to complete the experiment, and the average payment was £3. They were paid via PayPal. The experimental instructions are available in Section 6.4 of Appendix 6.

4.1 Norm Elicitation Results

As in Krupka & Weber (2013), I normalize participants' social norm ratings between -1 and 1, where a more positive (negative) score implies that a given action is seen as more acceptable (unacceptable). Therefore, a rating of 'very socially inappropriate' results in a score of -1, 'somewhat socially inappropriate' in a score of $-1/3$, 'somewhat socially appropriate' in a score of $1/3$, and 'very socially appropriate' in a score of 1.

Table 5 presents the ratings of social appropriateness given by participants for each action across all three games, including the complete distribution of responses, means, and standard deviations. Note that the most common ratings (shown in bold) are highly similar across all games, indicating that most subjects consider corrupt actions as very socially inappropriate. More specifically, the actions of offering and accepting bribes are considered very socially inappropriate, consistent with the findings in previous literature (d'Adda et al., 2016; Guerra & Zhuravleva, 2021)). Similarly, they rate embezzling as very socially inappropriate in both the PEG and MEG. Overall, the norm-elicitation experiment indicates that a norm of no-corruption exists; however, the results from the main experiment show that this norm is not always followed in practice.

When comparing the average appropriateness rating for each game, I observe that the situation considered least inappropriate is the BG, followed by the PEG, and the MEG, although these differences are not significant. An interesting pattern emerges when observing the ratings for just the BG. Here, AcceptBribe is perceived as significantly more inappropriate than OfferBribe (Wilcoxon signed rank-sum test, $p < 0.05$), suggesting that accepting a bribe as an official is judged more harshly than offering a bribe as a citizen. This is in line with the behavior observed in the main experiment, where more participants are willing to offer a bribe than to accept one.

Table 5: Appropriateness ratings

Action	- -	-	+	++	Mean	Std. Dev.
Bribery Game						
OfferBribe	**53.33%**	42.22%	2.22%	2.22%	-0.644	0.44
NoOfferBribe	0%	4.44%	22.22%	**73.33%**	0.792	0.371
AcceptBribe	**75.56%**	20%	0%	4.44%	-0.777	0.471
RejectBribe	0%	0%	15.56%	**84.44%**	0.896	0.244
Pure Embezzlement Game						
Embezzle	**77.78%**	20%	2.22%	0%	-0.837	0.322
NoEmbezzle	0%	2.22%	22.22%	**75.56%**	0.822	0.33
Modified Embezzlement Game						
Embezzle	**80%**	18%	2.22%	0%	-0.851	0.314
NoEmbezzle	0%	0%	24.44%	**75.56%**	0.837	0.289

Note: Responses are 'Very Socially Inappropriate' (−−) = 1; 'Somewhat Socially Inappropriate' (−) = 1/3; 'Somewhat Socially Appropriate' (+) =1/3; 'Very Socially Appropriate' (++) =1. Modal responses are in bold.

Result 5a. *There are non-significant variations between the social appropriateness ratings across the corruption games.*

Result 5b. *Individuals perceive the act of offering a bribe differently from the act of accepting a bribe. The former is rated as less socially inappropriate than the latter.*

5 Conclusion

This paper explores differences in the propensity to engage in bribery versus embezzlement by exploiting the role responsibility plays in these types of corruption. Bribery is a situation that involves two decision-makers (a citizen and a public official) who coordinate in a joint decision of corruption, sharing between them the responsibility for the outcome their decision generates, whereas embezzlement involves only one decision-maker (a public official) who bears full responsibility for the outcome of corruption. To test for differences in the propensity to engage in these types of corruption, I conduct an experiment with three games: a bribery game, a pure embezzlement game, and a modified embezzlement game that takes features from the two previous games. Specifically, the modified embezzlement game involves only one decision-maker, similar to the pure embezzlement game, but is outcome-equivalent to the bribery game. This novel design feature allows me to isolate the effect of shared responsibility on the decision to participate in corruption.

My main finding is that participants are more likely to make the corrupt decision when they coordinate in the decision with another participant. The findings show that subjects are 9 percentage points more likely to engage in corruption in a bribery game compared to the modified embezzlement game. This finding is consistent with my theoretical model that predicts the BG to yield more corrupt behavior than the MEG due to the fraction of responsibility that each decision-maker bears for the outcome of corruption being smaller in the former than in the latter. My model also predicts more corrupt behavior in the PEG than the MEG because the former yields a more equitable impact on others in society, and the empirical results are consistent with this prediction. Participants are 10 percentage points more likely to engage in corruption in the pure embezzlement game than in the modified embezzlement game. Overall, the model is able to rationalize 76.4% of the observed behavior.

To further understand subjects behavior in the corruption games, I conduct a social norms experiment eliciting perceptions of social appropriateness of situations of bribery and embezzlement. I find that a large majority judge engaging in corrupt behavior as very socially inappropriate although this judgement does not align with the observed behavior in the corruption games. The misalignment between social judgment and behavior in situations of corruption is not unique from my study but rather a usual finding as shown by others exploring social norms in bribery (Banerjee, 2016; d'Adda et al., 2016; Guerra & Zhuravleva, 2021). This misalignment goes beyond normative domains and transpires even to the theoretical predictions domain. In Armand et al. (2023), the corruption game leads to a subgame-perfect Nash equilibrium (SPNE) in which no citizen gives any bribes. However, the authors find that their participants largely engage in corrupt transactions. These findings posit a concern for the opportunism of corruption, showing that although corruption is not predicted to occur and it is socially disapproved, participants engage in corruption when they are presented with the opportunity to participate in it.

The factors influencing decisions of corruption that have been identified in the literature are primarily trust, reciprocity, the cultural background of the decision makers, the possibility of detection, and the threat of punishment. My paper suggests that decision-making dynamics that lead to decreased levels of responsibility entailed by the decision makers is yet another factor influencing decisions of corruption. This factor has received little attention from the literature in the domain of corruption, and here I provide a first approximation that shows that sharing the responsibility for the outcome eases a decision of corruption. My results are particularly relevant for policymakers and suggest that anti-corruption efforts should be mindful of factors that facilitate rule-breaking, such as coordinated decisions that lead to shared responsibility for the outcome.

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Declaration of Competing Interest

The author declares that she has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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6 Appendix

6.1 Theory and Parameters

I adopt and extend the model by Salmon & Serra (2017) to inform the hypotheses of this paper. It is a variation of the theory presented in Cox et al. (2007) given that *it was designed to deal with other-regarding preferences where the degree to which an individual cares about the welfare of others depends upon his emotional state*. The situations of corruption I aim to investigate here are also related to state-dependent other-regarding preferences. In my case, the individual's emotional state is based on the fraction of responsibility for the final outcome that the decision-maker bears.

As stated in the main text, the underlying utility function used in the model is $u(x, y) = x^\alpha + \theta(y_1^\alpha + y_2^\alpha)$ where x is the material payoff of the decision maker and $y_{1,2}$ is the material payoff of the other players. The parameter α measures the preference for a more equal distribution of wealth, and θ represents the weight placed on the welfare of the others. The parameter $\theta = \theta_0 + vr$ express that the decision to be corrupt depends not only on the material payoffs but also on the decision-maker's preferences represented by θ_0 and v. Where $-1 \leq \theta_0 \leq 1$ is the base degree of caring about the welfare of others and $0 \leq v \leq 1$ is the responsibility sensitivity. The parameter v measures the importance of the changes (if any) on the fraction of responsibility, r, for the outcome of a decision. This implies that the decision to be corrupt varies with the degree of responsibility a player bears for the outcome of his decision.

The situations of corruption that I focus on are bribery and embezzlement, and I implement them through three games: a bribery game (BG), a pure embezzlement game (PEG), and a modified embezzlement game (MEG) that shares the feature of only one decision-maker as the PEG and is outcome equivalent to the BG. All three games involve three players i: public official ($i = p$), citizen/other member of society 1 ($i = c/s_1$), and other member of society 2 ($i = s_2$). In the games, all players start with an initial endowment w_i. Depending on their decisions, if corruption occurs, the public official benefits by b, the citizen/other member of society 1 benefits by m, and the other member(s) of the society suffer a loss of l.

The Bribery Game (BG)

In the BG, the private citizen can decide whether to offer a bribe, b, to the public official in exchange for a corrupt service, m. The public official decides whether to accept the bribe while the other member of society suffers a loss, l, if a bribe is offered-accepted.

The normal form of the game showing the utility of the decision makers given each strategy pair is presented in table 6. The weight θ each player assigns to the others involved in the game is specified as follows: θ_c is the weight placed on the citizen's welfare by the public official, θ_p is the weight placed on the public official's welfare by the citizen, and θ_s is the weight placed on the other member of society's welfare by the decision-makers.

Table 6: Bribery Game Matrix

Citizen\Official		
	Accept	Reject
Bribe	$(w_c - b + m)^\alpha + \theta_p(w_p + b)^\alpha + \theta_s(w_s - l)^\alpha$, $(w_p + b)^\alpha + \theta_c(w_c - b + m)^\alpha + \theta_s(w_s - l)^\alpha$	$(w_c)^\alpha + \theta_p(w_p)^\alpha + \theta_s(w_s)^\alpha$, $(w_p)^\alpha + \theta_c(w_c)^\alpha + \theta_s(w_s)^\alpha$
No Bribe	$(w_c)^\alpha + \theta_p(w_p)^\alpha + \theta_s(w_s)^\alpha$, $(w_p)^\alpha + \theta_c(w_c)^\alpha + \theta_s(w_s)^\alpha$	$(w_c)^\alpha + \theta_p(w_p)^\alpha + \theta_s(w_s)^\alpha$, $(w_p)^\alpha + \theta_c(w_c)^\alpha + \theta_s(w_s)^\alpha$

Lemma 6.1 *Given* $\alpha \in (-\infty, 0) \cup (0, 1]$, $r, w_p, w_c, w_s, b, l, m$, *for each* θ_0 $\exists$ v *where* $U_p(Accept|Bribe) = U_p(Reject|Bribe)$. *In the same way, for each* θ_0 $\exists$ v *where* $U_c(Bribe|Accept) = U_c(NoBribe|Accept)$.

I use the same parameters as in the experiment: the initial endowment is equal for all players, $w = 100$, $b = 20$, $l = 40$, $m = 40$, and I define the conditions for corrupt behavior to happen. For the pair (Bribe, Accept) to be an optimal strategy, the conditions $(U_c(bribe) \geq U_c(NoBribe))$ for the citizen and $(U_p(Accept) \geq U_p(Reject))$ for the public official must be satisfied.

The condition for the public official is:

$$(w_p + b)^\alpha + \theta_c(w_c - b + m)^\alpha + \theta_s(w_s - l)^\alpha \geq (w_p)^\alpha + \theta_c(w_c)^\alpha + \theta_s(w_s)^\alpha \tag{1}$$

Substituting the value of the game parameters into (1) yields:

$$(120)^\alpha + \theta_c(120)^\alpha + \theta_s(60)^\alpha \geq (100)^\alpha + \theta_c(100)^\alpha + \theta_s(100)^\alpha$$

$$(120)^\alpha + \theta_c(120)^\alpha - (100)^\alpha - \theta_c(100)^\alpha \geq \theta_s(100)^\alpha - \theta_s(60)^\alpha$$

$$(120^\alpha - 100^\alpha) + \theta_c(120^\alpha - 100^\alpha) \geq \theta_s(100^\alpha - 60^\alpha)$$

$$(1 + \theta_c)(120^\alpha - 100^\alpha) \geq \theta_s(100^\alpha - 60^\alpha)$$

$$\frac{(1 + \theta_c)(120^\alpha - 100^\alpha)}{(100^\alpha - 60^\alpha)} \geq \theta_s \tag{2}$$

Assuming that $\theta_s = \theta_0 + vr$ and $\theta_c = \theta_p = \theta_s$, expression (2) simplifies to:

$$\frac{(120^{\alpha} - 100^{\alpha})}{(100^{\alpha} + 100^{\alpha} - 120^{\alpha} - 60^{\alpha})} - vr \geq \theta_0 \tag{3}$$

The condition for the citizen is:

$$(w_c - b + m)^{\alpha} + \theta_p(w_p + b)^{\alpha} + \theta_s(w_s - l)^{\alpha} \geq (w_c)^{\alpha} + \theta_p(w_p)^{\alpha} + \theta_s(w_s)^{\alpha} \tag{4}$$

Substituting the value of the game parameters into (4) yields:

$$(120)^{\alpha} + \theta_p(120)^{\alpha} + \theta_s(60)^{\alpha} \geq (100)^{\alpha} + \theta_p(100)^{\alpha} + \theta_s(100)^{\alpha}$$

$$(120)^{\alpha} + \theta_p(120)^{\alpha} - (100)^{\alpha} - \theta_p(100)^{\alpha} \geq \theta_s(100)^{\alpha} - \theta_s(60)^{\alpha}$$

$$(120^{\alpha} - 100^{\alpha}) + \theta_p(120^{\alpha} - 100^{\alpha}) \geq \theta_s(100^{\alpha} - 60^{\alpha})$$

$$(1 + \theta_p)(120^{\alpha} - 100^{\alpha}) \geq \theta_s(100^{\alpha} - 60^{\alpha})$$

$$\frac{(1 + \theta_p)(120^{\alpha} - 100^{\alpha})}{(100^{\alpha} - 60^{\alpha})} \geq \theta_s \tag{5}$$

Again, if $\theta_s = \theta_0 + vr$ and $\theta_c = \theta_p = \theta_s$, this can be re-written as:

$$\frac{(120^{\alpha} - 100^{\alpha})}{(100^{\alpha} + 100^{\alpha} - 120^{\alpha} - 60^{\alpha})} - vr \geq \theta_0 \tag{6}$$

As can be seen, equation (3) and equation (6) are equal given the assumption of $\theta_c = \theta_p = \theta_s$. This implies that the decision to offer a bribe under the role of citizen is symmetric to the decision to accept a bribe under the role of public official. I find a condition that expresses the relationship between the shared responsibility sensitivity (v) and the base degree of caring about the welfare of the other (θ_0). Figure 6 is defined in the area $\theta_0 + vr \leq 1$ and shows the sets of pairs (θ_0, v) under which corruption is predicted to happen by the model, assuming $\alpha = 0.075$ and $r = 0.5$.

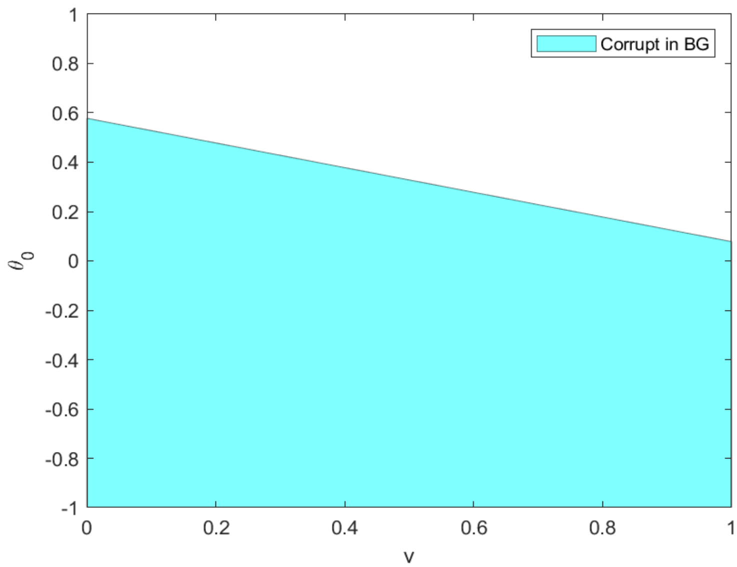


Figure 6: Corrupt behavior in BG

Pure Embezzlement Game (PEG)

In the PEG, the public official can decide whether to embezzle money, b, from a shared account that the three individuals share and to which they contributed equally. If a public official decides to embezzle, he leaves the other members of society worse, suffering a loss of (l).

The normal form of the game using the decision maker's utility given each strategy is presented in table 7.

Table 7: Pure Embezzlement Game Matrix

Society\Official	
No Embezzle	Embezzle
$(w_p)^\alpha + \theta_{s_1}(w_{s_1})^\alpha + \theta_{s_2}(w_{s_2})^\alpha$	$(w_p + b)^\alpha + \theta_{s_1}(w_{s_1} - l/2)^\alpha + \theta_{s_2}(w_{s_2} - l/2)^\alpha$

Lemma 6.2 *Given* $\alpha \in (-\infty, 0) \cup (0, 1]$*,* $r, w_p, w_c, w_s, b, l, m$*, for each* θ_0 $\exists$ v *where* $U_p(Embezzle) = U_p(NoEmbezzle)$*.*

I use the same parameters' values as in the experiment: the initial endowment is equal for all players, $w = 100$, $b = 20$, $l = 20$. For the strategy (Embezzle) to be an optimal strategy, the condition $(U_p(Embezzle) \geq U_p(NoEmbezzle))$ for the public official must be satisfied.

The condition for the public official is:

$$(w_p + b)^\alpha + \theta_{s_1}(w_{s_1} - l/2)^\alpha + \theta_{s_2}(w_{s_2} - l/2)^\alpha \geq (w_p)^\alpha + \theta_{s1}(w_{s_1})^\alpha + \theta_{s_2}(w_{s_2})^\alpha \qquad (7)$$

Substituting the the value of the game parameters into (7) yields:

$$(120)^\alpha + \theta_{s_1}(90)^\alpha + \theta_{s_2}(90)^\alpha \geq (100)^\alpha + \theta_{s1}(100)^\alpha + \theta_{s_2}(100)^\alpha$$

$$(120)^\alpha + \theta_{s_1}(90)^\alpha + \theta_{s}(90)^\alpha \geq (100)^\alpha + \theta_{s_1}(100)^\alpha + \theta_{s}(100)^\alpha$$

$$(120^\alpha - 100^\alpha) + \theta_{s_1}(90^\alpha - 100^\alpha) + \geq \theta_s(100^\alpha - 90^\alpha) \tag{8}$$

Assuming that $\theta_{s_1} = \theta_{s_2} = \theta_s = \theta_0 + vr$, expression (8) simplifies to:

$$\frac{120^\alpha - 100^\alpha}{2(100^\alpha - 90^\alpha)} - vr \geq \theta_0 \tag{9}$$

Equation (9) expresses the relationship between the shared responsibility sensitivity (v) and the base degree of caring about the welfare of the other (θ_0). Figure 7 is defined in the area $\theta_0 + vr \leq 1$ and shows the sets of pairs (θ_0, v) for which the model predicts the public official to embezzle in the PEG, assuming $\alpha = 0.075$ and $r = 1$.

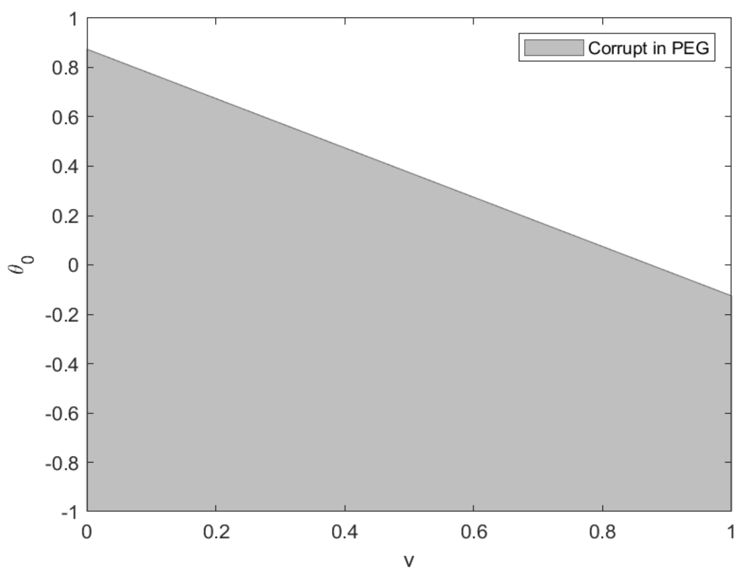


Figure 7: Corrupt in PEG

Modified Embezzlement Game (MEG)

In the MEG, the public official can decide whether to embezzle money, b, from a shared account that the three individuals share and to which they contributed equally. If a public official decides to embezzle, he leaves the first other member of society better off by m, and the second other member of society worse off suffering a loss of l.

The normal form of the game using the decision maker's utility given each strategy is presented in table 8.

I use the same parameters' values as in the experiment: the initial endowment is

Table 8: Modified Embezzlement Game Matrix

Society\Official	
No Embezzle	Embezzle
$(w_p)^\alpha + \theta_{s1}(w_{s_1})^\alpha + \theta_{s_2}(w_{s_2})^\alpha$	$(w_p + b)^\alpha + \theta_{s_1}(w_{s_1} + m)^\alpha + \theta_{s_2}(w_{s_2} - l)^\alpha$

equal for all players, $w = 100$, $b = 20$, $m = 20$, $l = 40$. For the strategy (Embezzle) to be an optimal strategy, the condition ($U_p(Embezzle) \geq U_p(NoEmbezzle)$) for the public official must be satisfied.

The condition for the public official is:

$$(w_p + b)^\alpha + \theta_{s_1}(w_{s_1} + b)^\alpha + \theta_{s_2}(w_{s_2} - l)^\alpha \geq (w_p)^\alpha + \theta_{s1}(w_{s_1})^\alpha + \theta_{s_2}(w_{s_2})^\alpha \tag{10}$$

Substituting the value of the game parameters into (10) yields:

$$(120)^\alpha + \theta_{s_1}(120)^\alpha + \theta_{s_2}(60)^\alpha \geq (100)^\alpha + \theta_{s1}(100)^\alpha + \theta_{s_2}(100)^\alpha$$

$$(120)^\alpha + \theta_{s_1}(120)^\alpha + \theta_s(60)^\alpha \geq (100)^\alpha + \theta_{s_1}(100)^\alpha + \theta_s(100)^\alpha$$

$$(120^\alpha - 100^\alpha) + \theta_{s_1}(120^\alpha - 100^\alpha) + \geq \theta_s(100^\alpha - 60^\alpha) \tag{11}$$

Assuming that $\theta_{s_1} = \theta_{s_2} = \theta_s = \theta_0 + vr$, expression (11) simplifies to:

$$\frac{\frac{120^\alpha - 100^\alpha}{100^\alpha - 60^\alpha}(1 + vr) - vr}{1 - \frac{120^\alpha - 100^\alpha}{100^\alpha - 60^\alpha}} \geq \theta_0 \tag{12}$$

Equation 12 expresses the relationship between the shared responsibility sensitivity (v) and the base degree of caring about the welfare of the other (θ_0). Figure 7 is defined in the area $\theta_0 + vr \leq 1$ and shows the sets of pairs (θ_0, v) for which the model predicts the public official to embezzle in the MEG, assuming $\alpha = 0.075$ and $r = 1$.

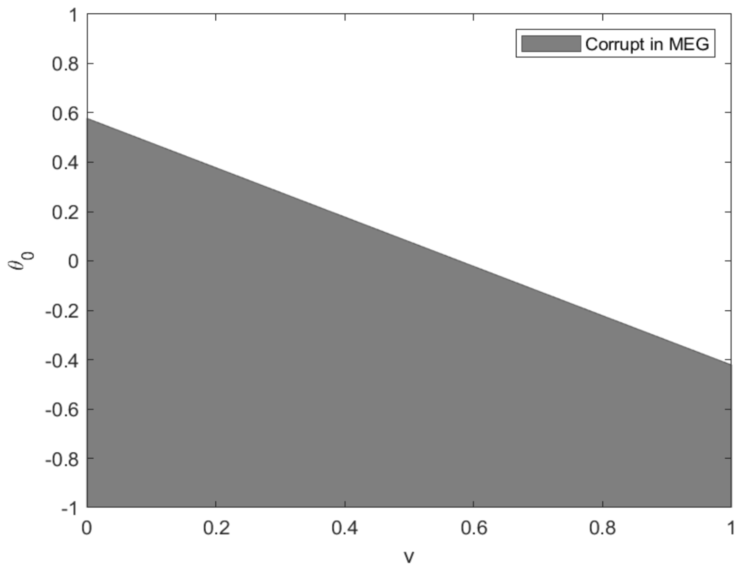


Figure 8: Corrupt in MEG

Hypotheses

Figure 9 shows the sets of pairs (θ_0, v) predicted by the model, assuming $\alpha = 0.075$, where corruption happens in all three games. The main predictions of my model are shown in this figure. First, the region for which subjects are corrupt in the BG is larger than the region in which subjects are corrupt in the MEG, implying that a situation of bribery leads to more corruption than an outcome equivalent situation of embezzlement given a fixed set of preference parameters (*Hypothesis 1*). Second, the area in which subjects are corrupt in the PEG is larger than the area in which subjects are corrupt in the MEG, implying that, given a fixed set of preference parameters, a situation of embezzlement that equally divides the externality between the two other members of society (a more equal distribution of wealth) leads to more corruption than a situation of embezzlement that benefits one of the other two members of society while harming with the externality the second other member of society (*Hypothesis 2*). Third, the scenarios of always being corrupt and never being corrupt are possible, given a fixed set of preference parameters. And fourth, there are unique sets of preference parameters for which a subject is indifferent between PEG and BG, and between MEG and BG.

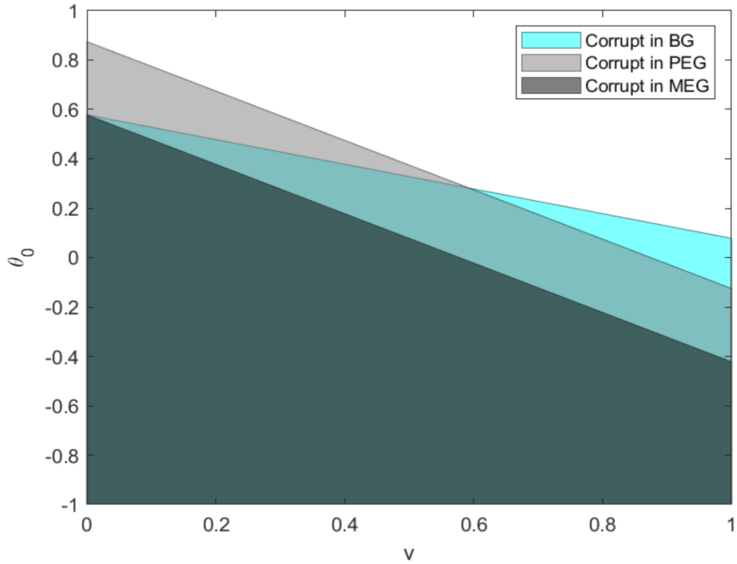


Figure 9: Corrupt in BG-PEG-MEG

Proposition 1 *Given* $\alpha \in (-\infty, 0) \cup (0, 1]$, $r_{BG}, r_{PEG}, r_{MEG}, w_p, w_c, w_s, b, l, m$, $\exists$ *an unique pair* (θ_0, v) *where:*

- $U_p(Accept|Bribe) = U_p(Reject|Bribe)$, *and also* $U_p(Embezzle) = U_p(NoEmbezzle)$ *in the MEG.*
- $U_c(Bribe|Accept) = U_c(NoBribe|Accept)$, *and also* $U_p(Embezzle) = U_p(NoEmbezzle)$ *in the MEG.*

and $\exists$ *another unique pair* (θ_0, v) *where:*

- $U_p(Accept|Bribe) = U_p(Reject|Bribe)$, *and also* $U_p(Embezzle) = U_p(NoEmbezzle)$ *in the PEG.*
- $U_c(Bribe|Accept) = U_c(NoBribe|Accept)$, *and also* $U_p(Embezzle) = U_p(NoEmbezzle)$ *in the PEG.*

Proposition 2 *Given* $\alpha \in (-\infty, 0) \cup (0, 1]$, $r_{PEG}, r_{MEG}, w_p, w_c, w_s, b, l, m$, $\forall$ (θ_0, v) *where* $U_p(Embezzle) \geq U_p(NoEmbezzle)$ *in the MEG, then* $U_p(Embezzle) \geq U_p(NoEmbezzle)$ *in the PEG.*

Proofs

Proof for Lemma 6.1

Given θ_0 and the condition for the public official that $U_p(Accept|Bribe) = U_p(Reject|Bribe)$, the following expression needs to be satisfied:

$$(w_p + b)^\alpha + \theta_c(w_c - b + m)^\alpha + \theta_s(w_s - l)^\alpha = (w_p)^\alpha + \theta_c(w_c)^\alpha + \theta_s(w_s)^\alpha \tag{13}$$

Assuming $\theta_p = \theta_c = \theta_s = \theta_0 + vr$, the simplification of the Expression (13) yields a v that satisfies the equality of the condition for the public official:

$$v = \left(\frac{\frac{(w_p)^\alpha - (w_p+b)^\alpha}{(w_c-b+m)^\alpha + (w_s-l)^\alpha - (w_c)^\alpha - (w_s)^\alpha} - \theta_0}{r} \right). \tag{14}$$

Now, given θ_0 and the condition for the citizen that $U_c(Bribe|Accept) = U_c(NoBribe|Accept)$, the following expression needs to be satisfied:

$$(w_c - b + m)^\alpha + \theta_p(w_p + b)^\alpha + \theta_s(w_s - l)^\alpha = (w_c)^\alpha + \theta_p(w_p)^\alpha + \theta_s(w_s)^\alpha \tag{15}$$

Assuming $\theta_p = \theta_c = \theta_s = \theta_0 + vr$, the simplification of the Expression (15) yields a v that satisfies the equality of the condition for the citizen:

$$v = \left(\frac{\frac{(w_c)^\alpha - (w_c-b+m)^\alpha}{(w_p+b)^\alpha + (w_s-l)^\alpha - (w_p)^\alpha - (w_s)^\alpha} - \theta_0}{r} \right). \tag{16}$$

Proof for Lemma 6.2

Given θ_0 and the condition for the public official $U_{off}(Accept|Bribe) = U_{off}(Reject|Bribe)$, the following expression needs to be satisfied:

$$(w_p + b)^\alpha + \theta_{s_1}(w_{s_1} - l/2)^\alpha + \theta_{s_2}(w_{s_2} - l/2)^\alpha = (w_p)^\alpha + \theta_{s1}(w_{s_1})^\alpha + \theta_{s_2}(w_{s_2})^\alpha \tag{17}$$

Assuming $\theta_p = \theta_c = \theta_s = \theta_0 + vr$, the simplification of the Expression (17) yields a v that satisfies the equality of the condition for the public official:

$$v = \left(\frac{\frac{(w_p)^\alpha - (w_p+b)^\alpha}{(w_{s_1}-l/2)^\alpha + (w_{s_2}-l/2)^\alpha - (w_{s_1})^\alpha - (w_{s_1})^\alpha} - \theta_0}{r} \right). \tag{18}$$

Proof for Proposition 1

The conditions for the public officials $U_p(Accept|Bribe) = U_p(Reject|Bribe)$ in the BG and $U_p(Embezzle) = U_p(NoEmbezzle)$ in the MEG game, can be expressed as lines in the coordinate space (v, θ_0). The slope for the condition of the BG is $-r_{BG}$, which is the responsibility for the outcome of the BG. The slope for the condition of the MEG is $-r_{MEG}$, which is the responsibility for the outcome of the MEG. As in the BG, the responsibility for the outcome is shared between the decision-makers, while in the MEG, it is concentrated in the single decision-maker. It follows that the fraction of responsibility that each decision-maker bears for the outcome in each of these games differs in the following way: $r_{BG} < r_{MEG}$. Then, the expression for the intercepts of the BG and the MEG is:

$$\frac{(w_p)^\alpha - (w_p + b)^\alpha}{(w_{s_1} - l/2)^\alpha + (w_{s_2} - l/2)^\alpha - (w_{s_1})^\alpha - (w_{s_1})^\alpha} < \frac{(w_p)^\alpha - (w_p + b)^\alpha}{(w_c - b + m)^\alpha + (w_s - l)^\alpha - (w_c)^\alpha - (w_s)^\alpha} \tag{19}$$

The same logic applies for the comparison between the condition of the public official in the BG to the condition of the public official in the PEG. It also applies for the comparison between the condition of the citizen in the BG to the condition of the public official in the MEG and PEG.

Proof for Proposition 2

The conditions $U_p(Embezzle) \geq U_p(NoEmbezzle)$ in the MEG and $U_p(Embezzle) \geq U - p(NoEmbezzle)$ in the PEG, can be expressed as lines in the coordinate space (v, θ_0). The slope for the condition of the MEG is $-r_{MEG}$, and the slope for the condition of the PEG is $-r_{PEG}$. As in both the MEG and the PEG the responsibility is concentrated in the single decision-maker; it follows that $-r_{MEG} = -r_{PEG}$. Then, the expression for the intercepts of the MEG and PEG is contained in the Expression (20), which means that the entire area below the line of the MEG game is contained in the area below the PEG game.

$$\frac{(w_p)^\alpha - (w_p + b)^\alpha}{(w_{s_1} + b)^\alpha + (w_{s_2} - l)^\alpha - (w_{s_1})^\alpha - (w_{s_1})^\alpha} < \frac{(w_p)^\alpha - (w_p + b)^\alpha}{(w_{s_1} - l/2)^\alpha + (w_{s_2} - l/2)^\alpha - (w_{s_1})^\alpha - (w_{s_1})^\alpha} \tag{20}$$

6.2 Robustness of Results

Probit Regression Model

To provide greater confidence in the results, I conduct an estimation using a probit model and find the same results as those generated by the Linear Probability model in the main text.

Table 9: Probit Model for the Decision to Act Corruptly (PO)

	I	II	III	IV
BG Accept	0.098***	0.097***	0.096***	0.096***
	(0.036)	(0.036)	(0.036)	(0.036)
PEG	0.109***	0.110***	0.108***	0.108***
	(0.039)	(0.039)	(0.039)	(0.039)
BG First		-0.034	-0.045	-0.045
		(0.072)	(0.069)	(0.069)
PEG First		-0.089	-0.064	-0.064
		(0.075)	(0.072)	(0.072)
Individualist			0.315***	0.315***
			(0.057)	(0.057)
Demographic Controls	No	No	Yes	Yes
Order in BG Controls	No	No	No	Yes
N Observations	522	522	522	522
N Clusters	174	174	174	174
Pseudo R-squared	0.007	0.011	0.099	0.099

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Standard errors (in parentheses) are clustered at the individual level. Note: The dependent variable is binary and takes the value of 1 if an individual acts corruptly and 0 otherwise, where the baseline is the MEG. Demographic controls include the corruption index of the participant's country of origin, age, and gender. Order in the BG controls accounts for making a decision under the role of citizen first in the BG as 1 and 0 otherwise.

6.3 Instructions - Corruption Games Experiment

General Instructions

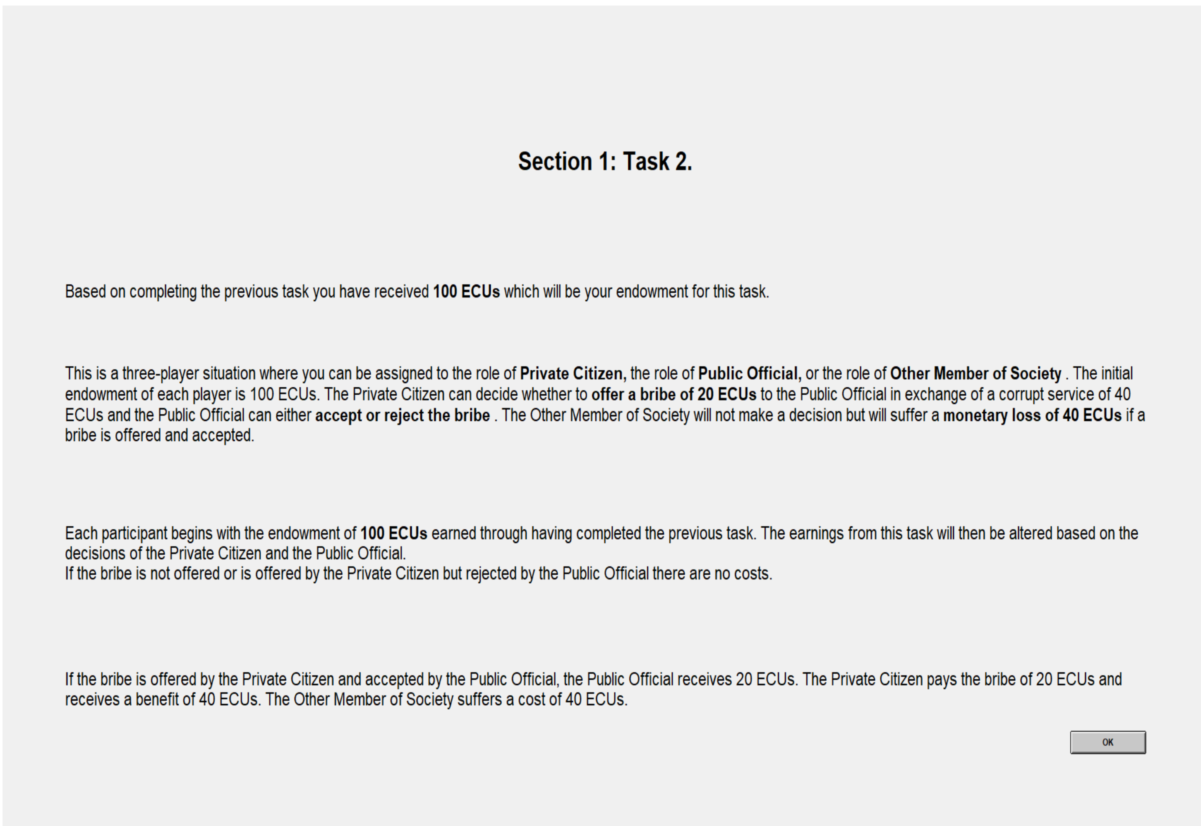
Welcome to this experiment. Please switch your phone off.

This session will take about 60 minutes. In this experiment, you will have the opportunity to earn money depending on your and other participants' decisions. All payments will be made in cash at the end of the session. Your decisions and payment will be kept strictly confidential. If you have any questions during the session, please raise your hand. One of us will come to your place and answer your question privately.

The experiment consists of six different sections and a short questionnaire. In each section, you will make one or more decisions. At the end of this session, the computer will randomly select one out of the six sections as the section-that-counts for payment and it will be the same for all the participants in the room. Please notice that each section has the same probability of being selected.

You will see the instructions for each section on the screen in front of you. The earnings of the session are calculated in Experimental Currency Units (ECUs hereafter) and at the end of the session, the ECUs you earn will be converted to pounds according to the conversion rate: 100 ECU = £10. This payment will be added to a £2 participation fee.

Bribery Game Screens



Section 1: Task 2.

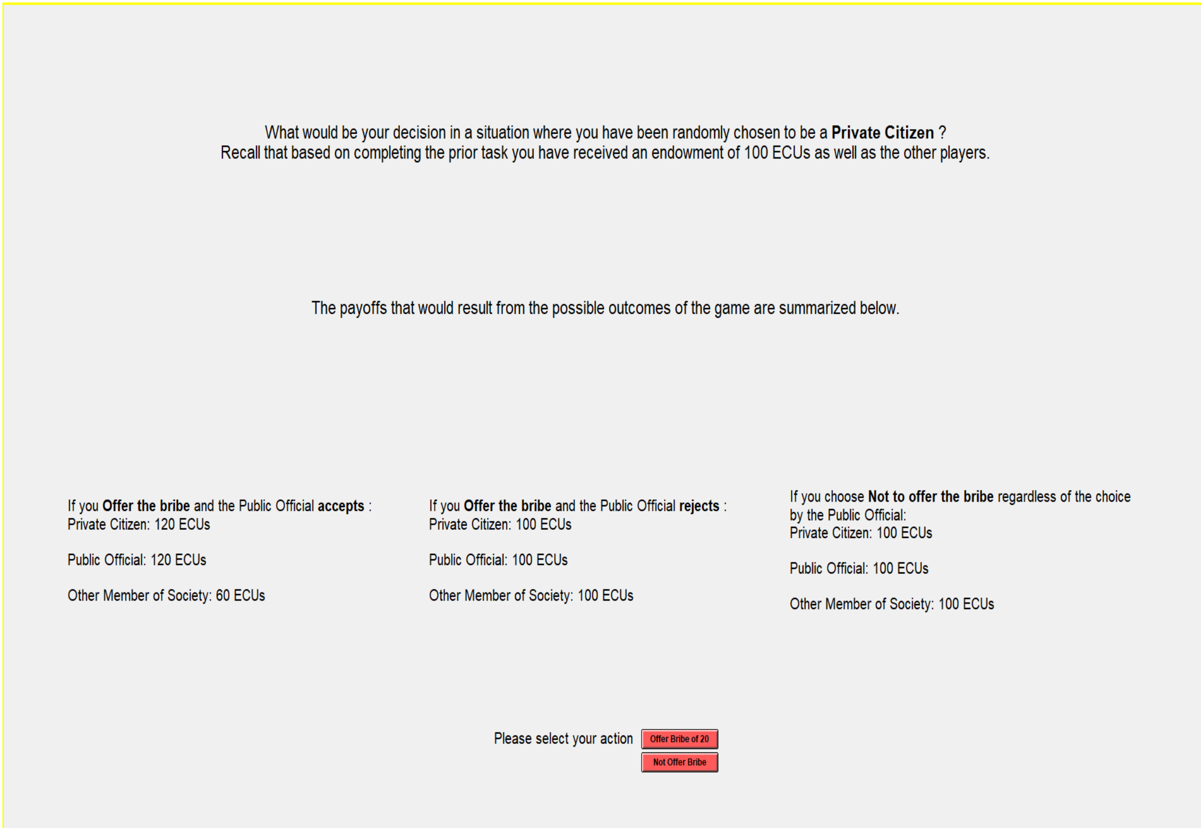
Based on completing the previous task you have received **100 ECUs** which will be your endowment for this task.

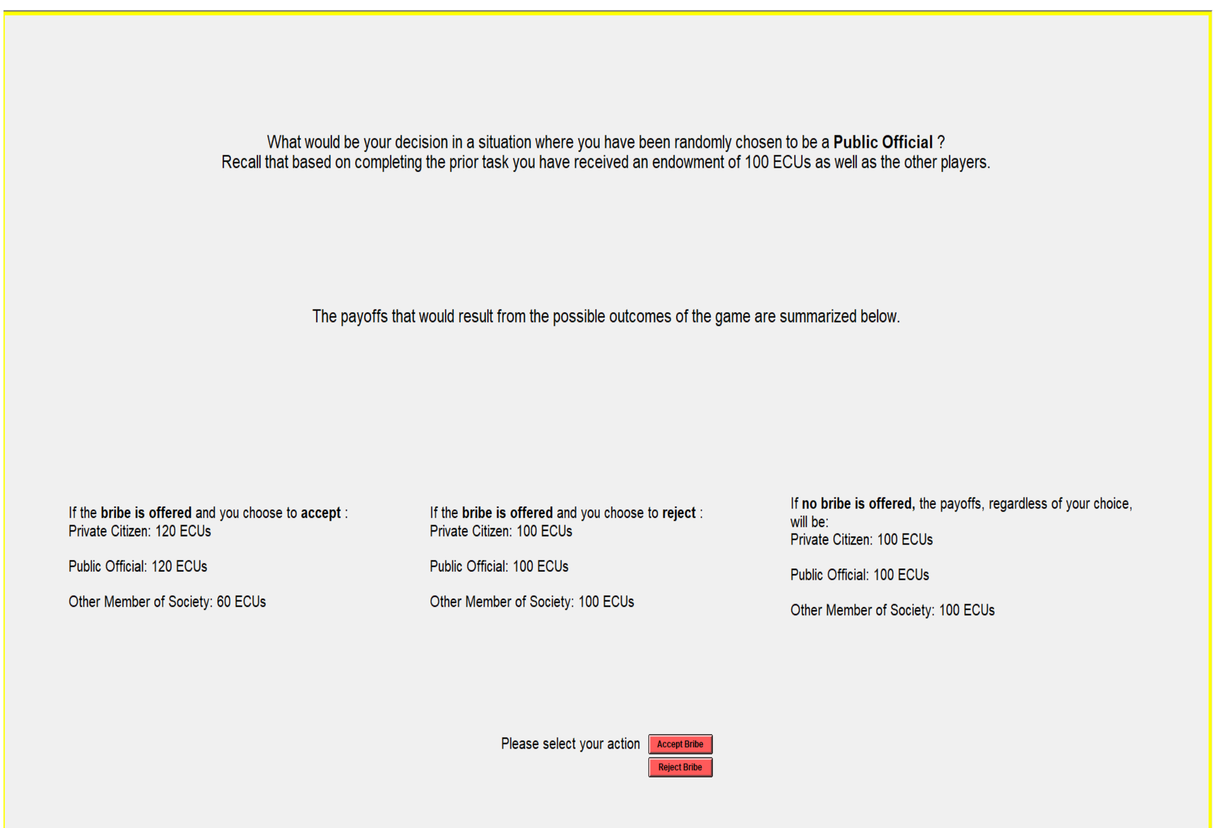
This is a three-player situation where you can be assigned to the role of **Private Citizen,** the role of **Public Official,** or the role of **Other Member of Society** . The initial endowment of each player is 100 ECUs. The Private Citizen can decide whether to **offer a bribe of 20 ECUs** to the Public Official in exchange of a corrupt service of 40 ECUs and the Public Official can either **accept or reject the bribe** . The Other Member of Society will not make a decision but will suffer a **monetary loss of 40 ECUs** if a bribe is offered and accepted.

Each participant begins with the endowment of **100 ECUs** earned through having completed the previous task. The earnings from this task will then be altered based on the decisions of the Private Citizen and the Public Official.
If the bribe is not offered or is offered by the Private Citizen but rejected by the Public Official there are no costs.

If the bribe is offered by the Private Citizen and accepted by the Public Official, the Public Official receives 20 ECUs. The Private Citizen pays the bribe of 20 ECUs and receives a benefit of 40 ECUs. The Other Member of Society suffers a cost of 40 ECUs.

OK


What would be your decision in a situation where you have been randomly chosen to be a Private Citizen ?
Recall that based on completing the prior task you have received an endowment of 100 ECUs as well as the other players.
The payoffs that would result from the possible outcomes of the game are summarized below.
If you Offer the bribe and the Public Official accepts :
Private Citizen: 120 ECUs
Public Official: 120 ECUs
Other Member of Society: 60 ECUs
If you Offer the bribe and the Public Official rejects :
Private Citizen: 100 ECUs
Public Official: 100 ECUs
Other Member of Society: 100 ECUs
If you choose Not to offer the bribe regardless of the choice by the Public Official:
Private Citizen: 100 ECUs
Public Official: 100 ECUs
Other Member of Society: 100 ECUs
Please select your action
Offer Bribe of 20
Not Offer Bribe


What would be your decision in a situation where you have been randomly chosen to be a Public Official ?
Recall that based on completing the prior task you have received an endowment of 100 ECUs as well as the other players.
The payoffs that would result from the possible outcomes of the game are summarized below.
If the bribe is offered and you choose to accept :
Private Citizen: 120 ECUs
Public Official: 120 ECUs
Other Member of Society: 60 ECUs
If the bribe is offered and you choose to reject :
Private Citizen: 100 ECUs
Public Official: 100 ECUs
Other Member of Society: 100 ECUs
If no bribe is offered, the payoffs, regardless of your choice, will be:
Private Citizen: 100 ECUs
Public Official: 100 ECUs
Other Member of Society: 100 ECUs
Please select your action
Accept Bribe
Reject Bribe

Pure Embezzlement Game Screens

Section 3: Task 2.

Based on completing the previous task you have received **100 ECUs** which will be your endowment for this task.

This is a three-players situation where you can be assigned to the role of **Public Official,** the role of **Other Member of Society 1,** or the role of **Other Member of Society 2.** The initial endowment of each player is 100 ECUs and the three players **share an account** where they save their initial endowments. This means that the shared account holds **300 ECUs,** 100 ECUs from each player. The Public Official can decide whether to **embezzle 20 ECUs.** The Other two Members of Society will not make a decision but will suffer a **monetary loss of 10 ECUs each** if the Public Official decides to embezzle money from the shared account.

Each participant begins with the endowment of **100 ECUs** earned through having completed the previous task. The earnings from this task will then be altered based on the decision of the Public Official.
If the Public Official decides not to embezzle money from the shared account, there are no costs.

If the Public Official decides to embezzle money from the shared account, the Public Official receives 20 ECUs. The Other Member of Society suffer a cost of 10 ECUs each.

OK

What would be your decision in a situation where you have been randomly chosen to be a **Public Official** ?
Recall that based on completing the prior task you have received an endowment of 100 ECUs as well as the other players.

The payoffs that would result from the possible outcomes of the game are summarized below.

If you decide to **embezzle money from the public account:**
Public Official: 120 ECUs

Other Member of Society 1: 90 ECUs

Other Member of Society 2: 90 ECUs

If you decide **not to embezzle money from the public account:**
Public Official: 100 ECUs

Other Member of Society 1: 100 ECUs

Other Member of Society 2: 100 ECUs

Please select your action Embezzle 20 ECUs

Not to embezzle

Modified Embezzlement Game Screens

Section 5: Task 2.

Based on completing the previous task you have received **100 ECUs** which will be your endowment for this task.

This is a three-players situation where you can be assigned to the role of **Public Official,** the role of **Other Member of Society 1,** or the role of **Other Member of Society 2.** The initial endowment of each player is 100 ECUs and the three players **share an account** where they save their initial endowments. This means that the shared account holds **300 ECUs,** 100 ECUs from each player.
The Public Official can decide whether to **embezzle 20 ECUs.** The Other Members of Society 1, will not make a decision but will have a monetary **gain of 20ECUs** if the Public Official decides to embezzle money from the shared account. The Other Member of Society 2, will not make a decision but will **suffer a monetary loss of 40 ECUs** if the Public Official decides to embezzle money from the shared account.

Each participant begins with the endowment of **100 ECUs** earned through having completed the previous task. The earnings from this task will then be altered based on the decision of the Public Official.
If the Public Official decides not to embezzle money from the shared account, there are no costs.

If the Public Official decides to embezzle money from the shared account, the Public Official receives 20 ECUs. The Other Member of Society 1 receives 20 ECUs and the Other Memberof Society 2 suffers a cost of 40 ECUs.

OK

What would be your decision in a situation where you have been randomly chosen to be a **Public Official** ?
Recall that based on completing the prior task you have received an endowment of 100 ECUs as well as the other players.

The payoffs that would result from the possible outcomes of the game are summarized below.

If you decide to **embezzle money from the public account:**
Public Official: 120 ECUs

Other Member of Society 1: 120 ECUs

Other Member of Society 2: 60 ECUs

If you decide **not to embezzle money from the public account:**
Public Official: 100 ECUs

Other Member of Society 1: 100 ECUs

Other Member of Society 2: 100 ECUs

Please select your action Embezzle 20 ECUs
Not to embezzle

6.4 Instructions - Norm Elicitation Experiment

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 **£1.50** participation fee if you complete the study. Additionally, you can earn up to **£2.00** depending on yours and other participants' decisions.

The study consists of **three different parts and a questionnaire**.
You will be paid only for one part, which will be selected at random at the end of the study. Each part has an equal chance of being selected.

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.

1006007

Please click continue to proceed.

Continue

Instructions

On the following screens, you will read descriptions of a series of situations. These descriptions correspond to situations in which a person must make a decision. These descriptions will include several possible choices available to, let's say, "Individual A".

After you read the description of a situation, you will be asked to evaluate the different possible choices available to Individual A and to decide, for each of the possible actions, whether taking that action would be “socially appropriate” and “consistent with moral or proper social behavior” or “socially inappropriate” and “inconsistent with moral or proper social behavior.”

By socially appropriate, we mean behavior that most people agree is the “correct” or “ethical” thing to do. Another way to think about what we mean is that if Individual A were to select a socially inappropriate choice, then someone else might be angry at Individual A for doing so.

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

Your earnings for this study will be computed as follows:

You will be asked to assess the possible choices in 3 different situations. At the end of the study, we will randomly select one of these 3 situations and one of the possible actions in that situation. For that random selection, we will check which response was most frequently given by the participants in this study (this is called the modal response). If you guess the modal response, you receive £2.00; otherwise, you only receive the participation fee of £1.50. In other terms, if you give the answer most frequently given by the participants in this study, then you receive another £2.00.

To give you an idea of how the study will proceed, we will go through an example and show you how you will indicate your responses.

Example Situation

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

The picture below presents a list of the possible choices available to Individual A. For each of the choices, you will be asked to indicate whether you believe choosing that option is *very socially appropriate*, *somewhat socially appropriate*, *somewhat socially inappropriate*, or *very socially inappropriate*.

To indicate your response, you would click on the corresponding box.

1. Take the wallet

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

2. Ask others nearby if the wallet belongs to them

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

3. Leave the wallet where it is

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

4. Give the wallet to the shop manager

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

If this was the situation for this study, you would consider each of the possible choices above and, for that choice, indicate the extent to which you believe taking that action would be "socially appropriate" and "consistent with moral or proper social behavior" or "socially inappropriate" and "inconsistent with moral or proper social behavior".

Recall that by socially appropriate we mean behavior that most people agree is the "correct" or "ethical" thing to do.

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

1. Take the wallet

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

2. Ask others nearby if the wallet belongs to them

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

3. Leave the wallet where it is

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

4. Give the wallet to the shop manager

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

Control question

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

1. If the example situation above was the situation randomly selected for payment along with the choice of *taking the wallet*, what would your earnings be? Recall that we suppose you thought that taking the wallet was very socially inappropriate.

If the most frequently given evaluation to the choice taking the wallet was somewhat socially inappropriate, you earn another £2.00

If the most frequently given evaluation to the choice taking the wallet was very socially inappropriate, you earn another £2.00

If the most frequently given evaluation to the choice taking the wallet was somewhat socially appropriate, you earn another £2.00

Continue

Attempts left to answer the control questions: 2

Norm Elicitation Screens for Modified Embezzlement Game

Situation 1

This is a situation that involves 3 people: an official, and two other members of society that we call person 1 and person 2.

Each of them previously earned £10.00 and they share an account where they save their initial earnings. This means that the shared account holds £30.00.

The Official can decide whether to embezzle (corruptly appropriate for private use) £2.00 from the shared account. If the Official decides to embezzle, person 1 gains £2.00, and person 2 loses £4.00.

If the Official decides to embezzle, the final earning of the Official is £12.00, that of person 1 is £12.00, and that of person 2 is £6.00. Otherwise, each of them gets what they initially had, £10.00 each.

In this next screen, you will have to evaluate the possible choices of the official.

Control question

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

1. What are the final earnings if the Official decides to embezzle?

Official:£12.00, Person 1: £12.00, Person 2: £10.00

Official:£10.00, Person 1: £10.00, Person 2: £10.00

Official:£12.00, Person 1: £12.00, Person 2: £6.00

Situation 1

We show all the possible choices for the official below. For each of them, indicate whether it is *very socially appropriate*, *somewhat socially appropriate*, *somewhat socially inappropriate*, or *very socially inappropriate*.

Remember:

- We are not asking what you personally think should be done, but what you think that most people find socially inappropriate or appropriate.
- If one of these choices is the one randomly selected for payment, you receive £2.00 if your answer is the one given most frequently by the other participants in this study.

1. The official decides to embezzle

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

2. The official does not embezzle

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

Continue

Norm Elicitation Screens for Pure Embezzlement Game

Situation 2

This is a situation that involves 3 people: an official, and two other members of society that we call person 1 and person 2.

Each of them previously earned £10.00 and they share an account where they save their initial earnings. This means that the shared account holds £30.00.

The Official can decide whether to embezzle (corruptly appropriate for private use) £2.00 from the shared account. If the Official decides to embezzle, each of the other two members of society loses £1.00.

If the Official decides to embezzle, the final earning of the Official is £12.00, that of person1 is £9.00, and that of person 2 is £9.00. Otherwise, each of them gets what they initially had, £10.00 each.

In this next screen, you will have to evaluate the possible choices of the official.

Control question

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

1. What are the final earnings if the Official decides to embezzle?

Official:£12.00, Person 1: £9.00, Person 2: £9.00

Official:£10.00, Person 1: £10.00, Person 2: £10.00

Official:£9.00, Person 1: £9.00, Person 2: £9.00

Situation 2

We show all the possible choices for the official below. For each of them, indicate whether it is *very socially appropriate*, *somewhat socially appropriate*, *somewhat socially inappropriate*, or *very socially inappropriate*.

Remember:

- We are not asking what you personally think should be done, but what you think that most people find socially inappropriate or appropriate.
- If one of these choices is the one randomly selected for payment, you receive £2.00 if your answer is the one given most frequently by the other participants in this study.

1. The official decides to embezzle

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

2. The official does not embezzle

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

Continue

Norm Elicitation Screens for Bribery Game

Situation 3

This is a situation that involves 3 people: a citizen, an official, and another member of society. Each of them previously earned £10.00.

The citizen can decide whether to offer a bribe of £2.00 to the official in exchange for a corrupt service that will grant the citizen £4.00, and the official can either accept or reject the bribe. The other member of society will lose £4.00 if the bribe is offered and accepted.

If the bribe is offered by the citizen and accepted by the official, the final earning of the citizen is £12.00, that of the official is £12.00, and that of the other member of society is £6.00. Otherwise, each of them gets what they initially had, £10.00 each.

In this next screen, you will have to evaluate the possible choices of both the citizen and the official.

Control question

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

1. What are the final earnings if the bribe is offered and accepted?

Citizen: £12.00, Official:£10.00, Other Member of Society: £6.00

Citizen: £12.00, Official:£12.00, Other Member of Society: £6.00

Citizen: £10.00, Official:£10.00, Other Member of Society: £10.00

Situation 3

We show all the possible choices for both the citizen and the official below. For each of them, indicate whether it is *very socially appropriate*, *somewhat socially appropriate*, *somewhat socially inappropriate*, or *very socially inappropriate*.

Remember:

- We are not asking what you personally think should be done, but what you think that most people find socially inappropriate or appropriate.
- If one of these choices is the one randomly selected for payment, you receive £2.00 if your answer is the one given most frequently by the other participants in this study.

1. The citizen offers the bribe

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

2. The citizen does not offer the bribe

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

3. The official accepts the bribe

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

4. The official rejects the bribe

Very Socially Appropriate	Somewhat Socially Appropriate	Somewhat Socially Inappropriate	Very Socially Inappropriate

Continue

Questionnaire

Questionnaire

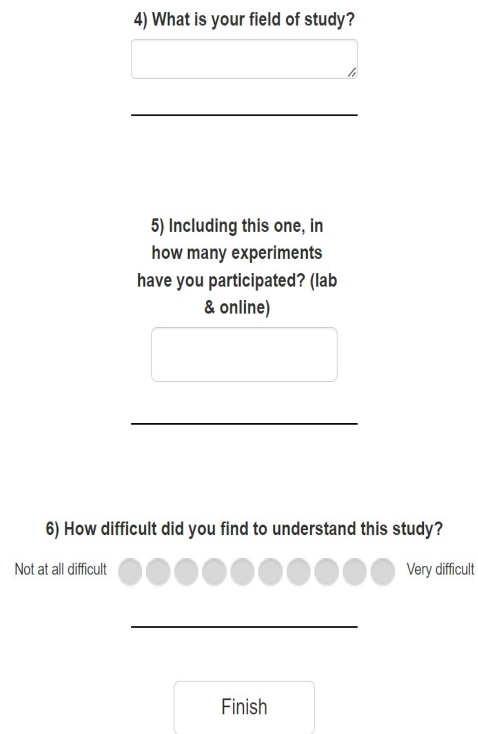
1) What is your age?

2) What is your gender?

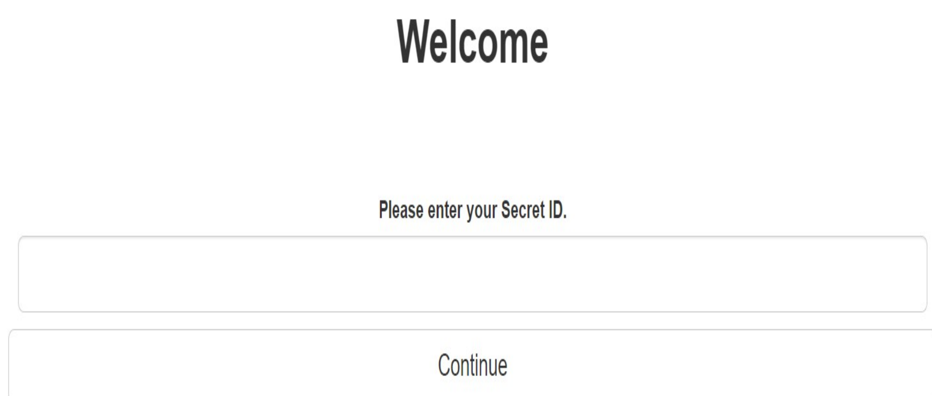
Male

Female

3) Which country are you from?


4) What is your field of study?
5) Including this one, in how many experiments have you participated? (lab & online)
6) How difficult did you find to understand this study?
Not at all difficult
Very difficult
Finish

Feedback


Welcome
Please enter your Secret ID.
Continue

Your Feedback

The situation randomly selected for payment was the one that involves an official, and two other members of society that we call person 1 and person 2. These 3 people share an account with £30.00 (£10.00 from each of them), and the official can decide whether to embezzle £2.00. If the Official decides to embezzle, person 1 gains £2.00, and person 2 loses £4.00.

You evaluated two choices available to the official: embezzle, and not to embezzle.

From these two choices, the one randomly selected for payment was the choice **embezzle**.

The modal evaluation to that choice was: **Very Socially Inappropriate**

Your evaluation of that choice was: **Somewhat Socially Appropriate**

Therefore, your final payoff, including the participation fee, is (in £): **1.5**

Thank you for participating.