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Abstract

We investigate how prescriptive and descriptive norms affect the development of corruption over time. In particular, we are interested in whether the extent of corruption converges. If it does, we study how the level at which it converges depends on the prescriptive norms in the environment in which it takes place and on the information individuals have about others' corrupt choices, that is, on descriptive norms. In a laboratory experiment implemented in Italy, China and the Netherlands, a Gneezy-type corruption task is used, with a real-effort task. We use a Krupka-Weber elicitation method to obtain information about existing prescriptive norms with respect to corrupt behavior. To induce natural variation in descriptive norms, we vary the type of information about others' choices. Our results show that corruption is highly contagious everywhere, that is, descriptive norms affect choices. Nevertheless, differences in the effects of descriptive norms are evident across countries. Prescriptive norms concerning bribers' and judges' behaviors are observed to differ across the considered subject pools. While in China and the Netherlands it is highly socially inappropriate to bribe and, if you are a decision maker, to treat unfavorably people with high efforts and low bribes, in Italy the norms are the opposite.

Keywords

Corruption, bribery, laboratory experiments, contagious effect.

JEL classification: C91, D73

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1 Introduction

Corruption is one of the most significant problems the world economy faces. It is a widespread phenomenon, affecting every country across the globe. According to recent IMF estimates, the costs of bribery amount to 2% of the global GDP. While some researchers argue that corruption might increase efficiency (the "greasing the wheels" effect, Lui [1985]), most conclude that corruption has a negative effect on economic growth and development because it increases inequality (Gyimah-Brempong [2002]) and poverty (Gupta, Davoodi and Alonso-Terme [1998]), reduces investments (Wei [2000]) and has a deleterious effect on the allocation of government expenditure (Mauro [1997]).

Attention for corruption and anticorruption policies has increased dramatically in recent decades, but in practice the results of these policies are unimpressive. Some researchers argue that "decision-makers should focus on policies that change the basic social contract, instead of relying solely on measures that are intended to change incentives for corrupt actors" (Rothstein [2018]). In this respect, it is very important to understand how citizens perceive corruption, and whether they consider abuse of power as a violation of social norms, because social norms may be a central element of a social contract. In this paper we hope to contribute to this understanding.

For successful policy, it is also important to understand how people respond to the damage their corruptive choices may cause to third parties. Different policy options become relevant if people care about the negative externalities that their choices entail, in contradiction to the situation when they pursue only their personal gains. In a pioneering experimental study on corruption, Abbink, Irlenbusch and Renner [2002] find that negative externalities have no apparent effect. However, later studies Barr and Serra [2009] obtain the opposite results, that people feel a sense of responsibility and the level of corruption is significantly reduced in the presence of the negative externality. On the other hand, if people only care about their own interests, policies must aim at these personal gains. Options like severe punishment and high probabilities of being caught are treatments that are often advocated by politicians and applied in practice. Yet, evidence from both academic research and individual countries shows that this is not always the most efficient path to follow. Indeed, some research studies do show that corruption levels are reduced by monitoring and punishment (Abbink et al. [2002]; Schulze and Franck [2003]; Cameron, Chaudhuri, Nisvan and L.Gangadharan [2009]; Serra [2011]), but others find evidence to the contrary (Armantier and Boly [2011]). As a case in point, consider China, which remains one of the most corrupt countries in the world, despite the existence of the death penalty for some types of corruption (Zhu [2015]).

We hope to contribute to this literature by studying an alternative channel through which it might be possible to govern corrupt behavior. We investigate what we call the 'contagion effect'. Essentially, this means that we aim to understand the effects of descriptive norms. If an individual

sees that corruption is common amongst her peers, then she might consider acting corruptly herself to be morally more acceptable than if it is a rare phenomenon. We thus investigate whether corrupt behavior by an individual is sensitive to the disclosure of information about such choices by others. We also ask whether the level of corruption in a group converges over time. Even if it does, however, the level to which it converges may depend crucially on the environment in which it takes place. In particular, such dynamics may vary across countries. In various cultures, distinct social norms may exist, prescribing the extent to which corruptive choices are deemed (in)appropriate. Such prescriptive norms may interact with the descriptive norms, i.e, with the information individuals have about others' corrupt choices.[1] Köbis, van Prooijen, Righetti and van Lange [2015] provide evidence that information about others' corruptive behavior affects one's own decisions. In this way, the interaction between prescriptive and descriptive norms may strongly affect the dynamics of corrupt behavior. This interaction addresses the 'basic social contract' in a natural way and does not rely on individuals taking the negative externalities of their actions into account.

We study this using laboratory experiments. When comparing behavior across countries one needs to account for a plethora of differences in culture and institutions that might affect this behavior. In the laboratory one can hold constant the institutions and measure aspects of culture (such as the relevant prescriptive norms). We conduct a series of experiments in Italy, China and the Netherlands. In Italy and China we recruit students who are all either Chinese and Italian; in the Netherlands the student community is multicultural and we recruit students from different countries. In this way, we collect data about the behavior of people coming from societies with different perceptions of corruption (CPI score ranges from 40 in China to 83 in the Netherlands).[2]

We study corrupt behavior by applying a Gneezy-type (Gneezy, Saccardo and Veldhuizen [2018]) corruption game with a real-effort task as developed in Zheng, Dogan and Schram [2018]. Two performers of this task are grouped with a judge. The latter is informed about the performers' scores on the task and must allocate a prize to one of the two. In the main treatment, performers may transfer money to the judge before she decides. This is interpreted as a bribe. If the judge allocates the prize to a performer who performed worse but bribed more, we interpret this as corruption.[3] We believe that the real-effort task makes the decision environment more realistic. Furthermore, we change the

[1]The distinction between these two types of norm is important (Brennan, Eriksson, Goodin and Southwood [2013]). Prescriptive (or 'moral') norms prescribe what one 'ought to do', while descriptive norms, or 'norms as social practice', describe how things are usually done in a group, organization or society.

[2]CPI is the Corruption Perception Index developed by Transparency International since 1995. The CPI currently ranks 176 countries on a scale from 100 (very clean) to 0 (highly corrupt). More information can be found here https://www.transparency.org/

[3]The judge receives both bribes in any case and in the subsequent round she plays with other bribers, thus there is no personal gain for her to behave dishonestly.

composition of groups between rounds, in order not to allow the players to establish long-run reciprocal relationships.To allow for descriptive norms to develop, the type of information about others' choices is varied. Finally, we use a Krupka-Weber elicitation method (Krupka and Weber [2013]) to obtain information about existing prescriptive norms with respect to corrupt behavior in each country.

The results show that corruption is highly contagious everywhere, in the sense that seeing corruption by others makes one more corrupt. There are, however, noticeable differences across countries. Moreover, the prescriptive norms concerning bribers'and judges'behaviors differ across the subject pools. For example, while in China and the Netherlands it is considered highly socially inappropriate to bribe and, if you are a decision maker, to treat unfavorably 'deserving' people (i.e., those with higher performance and lower bribes), in Italy the norms are the opposite. This is important, because a proper understanding of the interaction between prescriptive and descriptive norms is crucial for the development of successful anti-corruption policies. The potential for such policies is discussed in our concluding discussion.

The remainder of this paper is structured as follows. In Section 2 we present the experimental design and the experimental procedures, Section 3 describes the empirical methodology and results and Section 4 concludes.

2 Experimental design

2.1 General setup

We use a ten-round bribery game with a real-effort task.[1] Participants are re-matched in groups of three at the start of each round. Re-matching takes place within matching groups of 12 subjects. We interpret the setup as a set of ten one-shot interactions. Earnings in the experiment are depicted in "tokens". At the end of the experiment, tokens are exchanged for the local currency of the country concerned. The exchange rate was 1 token=1 euro in Bologna and Amsterdam, and 1 token = 3 yuan in Wuhan.

Each group consists of two 'performers' and one 'judge'. Rolls are determined randomly and remain constant throughout the experiment. At the beginning of each round each participant receives 10 tokens. Subsequently, each round consists of three stages. At stage one, the two performers of each group carry out a real-effort task. At stage 2, performers have an opportunity to send a bribe to the judge and at stage 3, the judge allocates a monetary prize to one of the performers.

We first describe the real-effort task. Performers are repeatedly and independently presented with two 10*10 matrices filled with two-digit numbers. Their task is to individually find the highest

[1] See Appendix A for the instructions.

number in each of the two matrices and add them up (see *Figure 1* for an illustration). After entering a number, a new set of randomly chosen matrices appears on the screen, irrespective of whether the number entered was correct. Each performer is given five minutes to solve as many of these matrix summations as they can. Each correct answer adds one token to the performer's total earnings. During these five minutes the judge waits without a task to do.

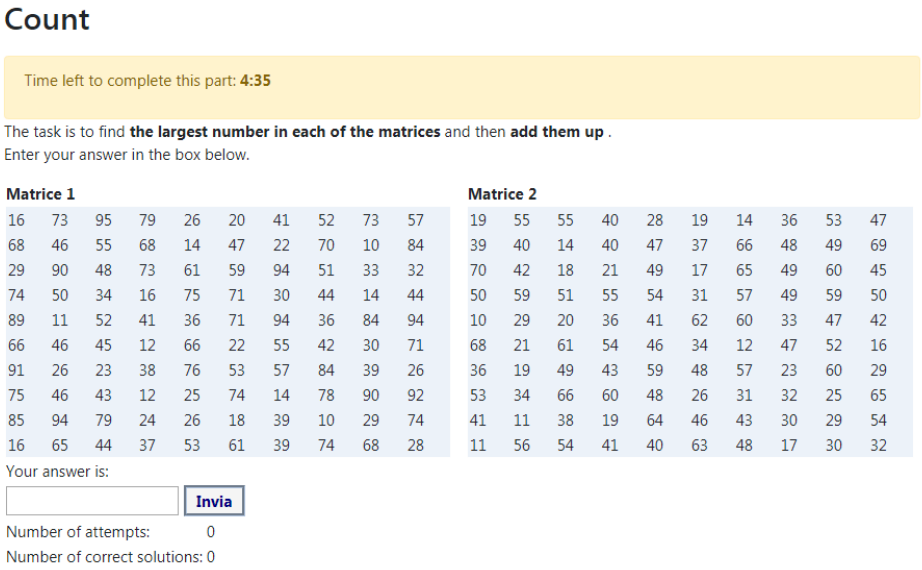


Figure 1: **Real effort task.**

At the second stage, each performer i and j sees on her screen (only) her number of correct summations, denoted by P_i and P_j, respectively. Then she is given the opportunity to transfer tokens to the judge -which we interpret as a bribe. The number of tokens transferred is denoted by B_i and B_j, respectively. Any amount between 0 and 10 can be transferred. The transfer is final and irrevocable, that is, independent of the judge's decision at stage 3. The judge remains idle during this stage.

At the third stage the judge is informed about each performer's score, and transfer. That is, she knows P_i, P_j, B_i, and B_j. The judge then allocates ten tokens to one of the performers. The prize money is *not* deducted from the judge's earnings. Performers do nothing at this third stage.

2.2 Treatments

The first treatment dimension varies the country in which the experiment was run. This was either in China ('*CH*'), Italy ('*IT*'), or the Netherlands ('*NL*'), (obviously) varied between subjects.

The second treatment dimension (also varied between subjects) concerns the information available to subjects about the transfers made by other performers. In a benchmark ('*LowInfo*'), only group-

level information is provided. At the end of each round, participants are told the realized P_i, P_j, B_i, and B_j and the judge's decision. Note that this only allows information about others' choices to spread slowly through a matching group.

In a second treatment ('*HighInfo*') we inform performers at the end of each round about P_i, P_j, B_i, and B_j, the judge's decision, *and* the average bribe in their matching group. The following message appears on each performer's and on the judge's monitor:

"This round, the average amount transferred per person to the judge is ... points"

Each group member has to confirm this message before they can proceed to the next round.

Figure 2 summarizes the information differences between *LowInfo* and *HighInfo*.

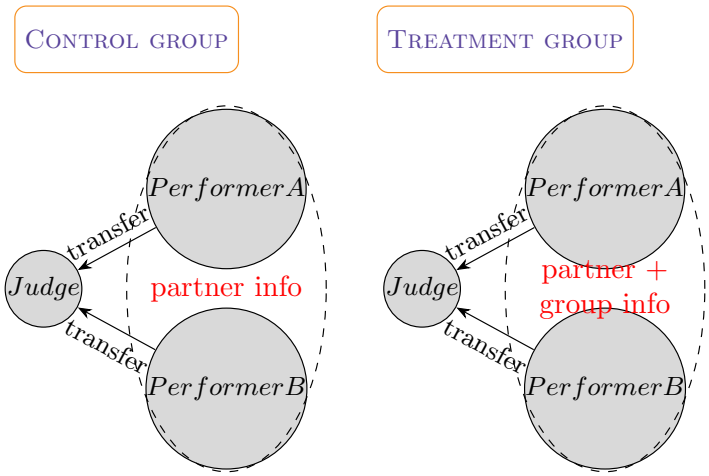


Figure 2: **Information differences between treatments**

2.3 Players' payoffs

The monetary payoffs for both performers i and j in the group are given by:

$$\pi_i = 20 - B_i$$

$$\pi_j = 10 - B_j$$

if the judge decides to allocate the prize of 10 tokens to player i; and

$$\pi_i = 10 - B_i$$

$$\pi_j = 20 - B_j$$

if the judge decides to allocate the prize to player j.

The judge's payoff π in each round is given by:

$$\pi = 10 + B_i + B_j$$

All players are paid for one randomly selected round. Furthermore, each participant receives a participation fee. This was 5 euros in *IT*, 15 yuan in *CH* (equivalent to 2 euros) and 7 euros in *NL*.

2.4 Social norm session

To measure prescriptive norms in each country, we apply a Krupka-Weber elicitation method (Krupka and Weber [2013]). We do so in a separate session in each country.[1] The method uses a coordination game to reveal the collective perception regarding the appropriateness of different types of behavior. We analyze separately views on the appropriate behavior by bribe givers and bribe takers, thus identifying social norms governing behavior of people who are allowed to give bribes and norms regarding the behavior of people who may receive bribes and are empowered to make allocation decisions.

The social norm need not necessarily be a binary variable:"to do or not to do". Similar to Krupka and Weber [2013] we measure the extent to which corrupt behavior is socially appropriate or inappropriate by giving respondents a four points scale with the options "very socially inappropriate", "somewhat socially inappropriate", "somewhat socially appropriate", and "very socially appropriate". Moreover, people may vary in their own assessment of the appropriateness of an action. For example, consider the action of giving a bribe to a traffic police officer. This might be considered as "somewhat socially inappropriate" by some people, but "very socially inappropriate" by others. Observing, however, that a (prescriptive) social norm involves a shared understanding about the (in)appropriateness of an action, the Krupke-Weber method rewards subjects for choosing the category that is most often chosen in the population. In our implementation, a participant receives a payment of 10 euros if she chooses the modal response among all the other participants in the extra session. Otherwise, she receives only the participation fee.

The appropriateness of an action will typically depend on circumstances, institutions, and culture. In the example of the police officer, a bribe might become "somewhat socially appropriate" if the violation of the rules is not serious and both agents want to avoid wasting time in bureaucratic procedures or even "very socially appropriate" if the driver is taking a pregnant woman to the hospital and a policeman refuses to let them go. Moreover, it could be "very socially inappropriate" if the driver killed a man to death and, through a bribe, wants to avoid punishment. The laboratory environment allows us to control for circumstances and institutions. These are held constant in all of our sessions. What remains is that these norms might differ across cultures. This is why we organized a session in each of the three countries.

[1] Instructions for these sessions are presented in Appendix B.

The elicit norms concerning bribing behavior, we first consider an environment where an average player performance score is $P_i = 12$ and ask our participants to judge situations where the other performer has a score of 12. We vary the decision maker's score to be either below, equal to, or above average (12) and consider bribes of 0, 3, or 7. This results in nine different situations for which the respondent is asked to judge the appropriateness. We then ask the participant to evaluate the judge's behavior for different situations. These involve the judge nominating (1) a player with a higher score and a higher bribe than the other, (2) a higher score and a lower bribe; (3) a lower score and a higher bribe; or a (4) a lower score and a lower bribe. Because we have two sets of bribes (7 - 3, and 3 - 0) we have eight different scenarios. A precise overview of the in total 17 decisions that subjects face is given in the instructions of Appendix B.

After subjects have indicated social appropriateness ratings for all 17 scenarios, one is randomly selected for payment. The experimenter computes the modal response for this scenario and pays every respondent with this answer 10 euros in Italy and the Netherlands and 30 yuan (the equivalent of 4 euros) in China.

2.5 Experimental procedures

The experiment was run in three countries; at the CREED laboratory at the University of Amsterdam in September 2018; at the BLESS laboratory at the University of Bologna in June 2018 and at the Center for Behavioral and Experimental Research (CBER) at Wuhan University in September 2018.

Within each country we ran three sessions of *LowInfo*, three sessions of *HighInfo* and one social norm session. Each session of *LowInfo* and *HighInfo* consisted of 24 subjects and was divided into two matching groups. Each social norm session consisted of 40 subjetcs. Each subject participated in only one session. In total 552 participants took part (in each country 184: 144 for the basic sessions and 40 for the social norm session). Each session lasted approximately 1.5 hour and the average earnings were 18.3 euro in Bologna; 20.3 euro in Amsterdam and 55 yuan (the equivalent of 7 euros) in Wuhan.

In Nanjing all the participants were Chinese, in Bologna all the participants were Italian, in Amsterdam we worked in a multicultural environment: 33% were Dutch, 14% came from the other parts of Western Europe and the rest came from other countries, including 17% from Italy and 10% from China.

Upon arrival at the laboratory all 24 subjects were greeted, directed to separate workstations and given five minutes to read the instructions; then the experimenter read the instructions out loud and answered any questions on an individual basis. In Nanjing we used instructions written in Chinese, in Bologna they were written in Italian, in Amsterdam they were written in English[1]. The version of the

[1]It is common to run experiments in English at CREED

instruction distributed to the students in Amsterdam is included in Appendix.

2.6 Hypotheses

In the subsequent analysis we intend to test the following hypotheses:

1. Prescriptive social norms differ across countries. In more corrupt countries corrupt behavior is considered to be more socially appropriate.

2. Prescriptive norms affect bribing behavior.

3. Corruption is contagious: the disclosure of information about average bribes leads performers to bribe more if this average is above their own previous bribe level.

4. No corruption is healing: the disclosure of information about average bribes leads performers to bribe less if this average is below their own previous bribe level.

5. Prescriptive norms matter, but that their impact diminishes as more information about others' choices becomes available, that is, as descriptive norms have a chance to develop.

3 Experiment results

We start with an analysis of the prescriptive norms as measured in the norm-measurement sessions in each country. This is a natural place to begin because it describes, as it were, the point of departure for the subjects themselves. Subsequently, we discuss the development of choices over time and how this is affected by information, that is, we consider the development of descriptive norms. In doing so, we split the discussion in those related to the performers (bribes) and those for the judges (corruption).

3.1 Analysis of the prescriptive norms

To analyze subjects' responses in the Krupka-Weber coordination games, we convert responses to a numerical index. Following Krupka and Weber [2013], a rating of "very socially inappropriate" is given a score of -1, "somewhat socially inappropriate" a score of $-\frac{1}{3}$, "somewhat socially appropriate" a score of $\frac{1}{3}$, and "very socially appropriate"a score of 1. [1] We thus arrive at an index that varies from -1 to 1. The closer the index is to -1, the more subjects estimate the given situation as socially inappropriate. The closer the index is to 1, the more subjects estimate the given situation as socially appropriate. An index close to zero indicates a lack of a strong prescriptive normregarding appropriate

[1] The precise conversion used is somewhat arbitrary, of course. Our conclusions do not change if we score the 'somewhat' categories as $-\frac{1}{2}$ and $-\frac{1}{2}$.

behavior in a specific situation. *Table 1* summarizes subjects'prescriptive norms concerning bribing behavior.

Table 1: **Prescriptive norms: bribing.**

Player score	Player bribe	NL	IT	CH
4	0	0.50	0.38	0.25
4	3	-0.06	-0.13	-0.27
4	7	-0.22	-0.24	-0.15
12	0	0.3	-0.05	0.35
12	3	0.23	0.18	0.08
12	7	0.03	0.03	0.1
20	0	0.21	-0.41	0.58
20	3	0.11	-0.17	0.3
20	7	0.13	0.3	0.23
Number of observations		39	40	40

Notes: The table reports the index of social appropriateness. 1=very socially appropriate. -1 = very socially inappropriate. Participants were asked to consider an average score equal to 12.

Each row corresponds to different scenarios of bribing depending on player' score. We first note that the scores for the Netherlands and China are very similar. The recorded means in these two countries are highly correlated (Pearson $\rho = 0.64, p = 0.066$), indicating a large similarity in prescriptive norms. We observe that in the Netherlands and China not bribing (a transfer equal to zero) is considered as moderately to highly socially appropriate, and in both countries bribing (a transfer larger than zero) is much less socially appropriate than not bribing. Interestingly, in China the higher a player's score is, the more socially appropriate it is not to bribe; in the Netherlands the situation is the opposite: the index of not bribing is 0.5 if a player's score is equal to 4, 0.3 if a player's score is equal to 12 and only 0.21 if a player's score is equal to 20.[1]

The situation in Italy is different than in the other two countries. The Italian scores do not correlate with those in Netherlands (Pearson $\rho = 0.16, p = 0.684$) or China (Pearson $\rho = -0.05, p = 0.892$). This seem mainly attributable to a lack of a consistent pattern in Italy. Here, no clear prescriptive norms appear to be applicable to the environment in which the participants are placed.

Recall that these prescriptive norms are expected to be most influential in the first round. Based on these measurements, we then expect more bribing in the first round in Italy than in the other two countries. This means that we expect mean bribes to be higher in Italy and to observe more positive

[1]Permutation t-test and Wilcoxon rank-sum test indicate that the increase of the bribing appropriateness with the increase of player's score in China and its decrease in the Netherlands are both statistically significant.

bribes. We will test these predictions when studying briber behavior, below.

We now turn to prescriptive norms concerning judge's behavior. *Table 2* presents subjects' prescriptive norms for judges' behavior.

Table 2: **Prescriptive norms: judge behavior.**

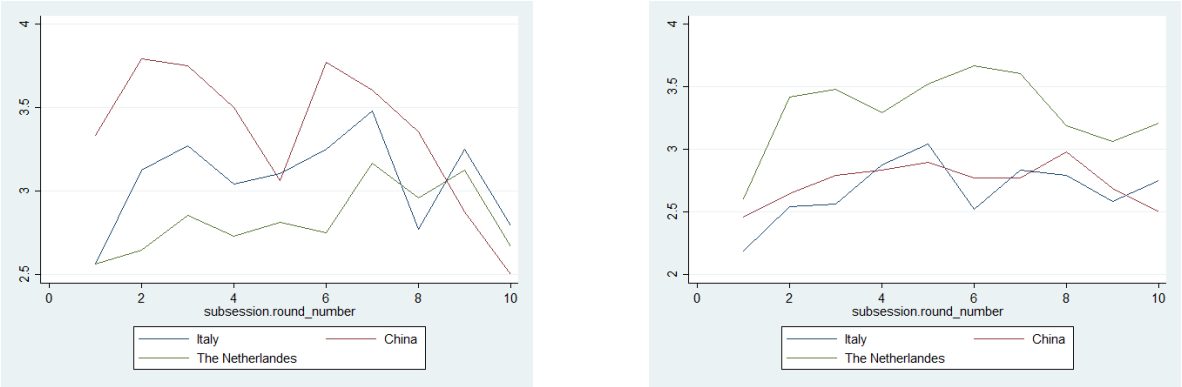
		NL	IT	CH	NL	IT	CH
A score is 20.							
B score is 12.							
A bribe:	B bribe:	Judge nominates A			Judge nominates B		
7	3	0.65	0.35	0.73	-0.51	-0.22	-0.73
3	0	0.6	0.5	0.72	-0.62	-0.38	-0.67
3	7	0.25	-0.13	0.63	-0.13	0.15	-0.47
0	3	0.31	-0.23	0.62	-0.23	0.13	-0.46
Number of observations		39	40	40	39	40	40

Notes: The table reports the index of social appropriateness. 1=very socially appropriate. -1 = very socially inappropriate.

Across all situations, there now appears to be higher agreement about what is appropriate. Nevertheless, the correlations between mean scores in Italy and Netherlands (Pearson $\rho = 0.57, p = 0.142$) and between Italy and China (Pearson $\rho = 0.31, p = 0.448$) are statistically insignificant. On the other hand, the correlation between prescriptive norms in the Netherlands and China is very high and statistically significant (Pearson $\rho = 0.90, p = 0.003$).

As expected, in all subjects pools the situations when the judge nominates a player with a higher score and a higher transfer is considered to be highly socially appropriate. More interesting, however, is the situation where the player with the better score bribes less. This is the case for which 'corruption' is possible. It occurs when the judge allocates the prize to the player with the lower score. In *Table 2* these are the cases depicted in the third and fourth row, where performer A scores better than B but B bribes more. The (non-)corruptive act for the judge is then to allocate the prize to B (A). We observe that in China and the Netherlands, this non-corruptive act is considered to be much more appropriate than the corruptive choice. This result is most pronounced in China where the difference between the appropriateness score of the non-corrupt versus the corrupt choice ($-0.63 - (-0.47)$ and $-0.62 - (-0.46)$) is around 1.1 while it is around 0.4 in the Netherlands. The permutation t-test results: $p = 0.014$ in the Netherlands; $p = 0.0000$ in China.

Again, the situation is very different in Italy. Here, the corruptive act is considered more appropriate than the non-corruptive choice. The difference in appropriateness score is approximately 0.25. It appears that our Italian participants find it more appropriate to reward a bribe than to reward performance. The permutation t-test indicates that for Italians reward bribe is statistically more ap-



(a) LowInfo

(b) HighInfo

Figure 3: Bribes

propriate than reward performance with $p = 0.055$. Based on these measures, we expect that in the first round (when the prescriptive norms have the largest impact), corruption will be lowest in China and highest in Italy. We will test this below. Here we summarize our findings on prescriptive norms in our first formal result.

RESULT 1. The prescriptive norms concerning bribers' and judges' behaviors differ across the considered subject pools. While in China and the Netherlands the most appropriate thing to do is not to bribe and, if you are a decision maker, to reward performance. In Italy, it is deemed most appropriate to bribe and to reward bribes.

3.2 Bribes

We start with an overview of bribes. *Figure 3* depicts the bribes per round separately per country and treatment.

We observe that the mean level of bribes is between two and four (out of a possible ten) in both treaments and all countries. Moreover, there does not appear to be a general trend across rounds. The figure suggests that the Netherlands stands out with higher bribes in the *LowInfo* treatment, while China appears to bribe more (especially in early rounds) in *HighInfo*. The dynamic processes involved are complicated, however, and will likely depend on the information participants receive in each round and on how they respond to such information. We will discuss this in more detail below.

Here, we consider behavior in round 1. Recall that this is where we expect prescriptive norms to have the strongest effect. In fact, decisions in round 1 cannot be influenced by descriptive norms, because no information about others' choices has yet been disseminated. For this reason, we aggregate

the numbers for *LowInfo* and *HighInfo*. Average bribes are then 2.6 *LI* and 2.2 *HI* in Italy; 3.3 *LI* and 2.5 *HI* in China; 2.6 *LI* and 2.6 *HI* in the Netherlands. All pairwise differences are statistically insignificant (permutation t-tests[1]: p=0.24 for the pair NL-CH; p=0.67 for the pair NL-IT; and p=0.16 for the pair IT-CH). We therefore conclude that prescriptive norms have no influence on first-round bribery in our experiments. This is our second formal result.

RESULT 2. Prescriptive norms do not affect bribes in the first round of our experiment.

Our second important research question pertaining to bribes is how information affects the spread of bribery through the population. The experiment aims to identify how the spread of information about prevailing bribes affects participants' choices in subsequent rounds. Specifically, we intend to analyze whether a player increases her bribing when she sees that her transfer is below average (which we refer to as the 'contagion effect' of information) and decreases it if she has bribed above average (a 'healing effect' of information). In other words, we now consider the effects of descriptive norms.

To investigate this in *LowInfo*, we consider how a performer adjusts her bribe to information about the difference between her own bribe and that of the other performer in the previous round. [2] This information is observed by participants in both treatments. In addition, the performer observes both performance scores and he judge's decision. We expect that information about the peer's previous bribe affects the performer's bribe decision in the current round. To investigate this, we create two variables for each performer i:

$$D^i_{<j,t} = \begin{cases} B^j_{t-1} - B^i_{t-1}, & \text{if } B^j_{t-1} \geq B^i_{t-1} \\ 0, & \text{otherwise} \end{cases}$$

$$D^i_{>j,t} = \begin{cases} B^i_{t-1} - B^j_{t-1}, & \text{if } B^j_{t-1} < B^i_{t-1} \\ 0, & \text{otherwise} \end{cases}$$

In words, $D^i_{<j,t}$ measures the difference between i's bribe and that of her peer j if i previously bribed less than j, and $D^i_{<j,t}$ measures this difference if i bribed more. For our purposes, it is not enough to consider only the bribe difference. The performer might also respond to the judge's decision, which in turn might depend on the bribe difference. In particular, we expect that observing a judge rewarding the other performer for transferring a larger bribe will induce a player to increase her own bribe in the next round. In order to disentangle this effect from the 'pure' contagion and healing effects we create

[1] 5000 random permutations

[2] Note that the information available in *LowInfo* is also available in *HighInfo*, bit not *vice versa*. We will therefore conduct the analysis that follows for the combined data of both treatments.

a dummy variable that depicts the cases where the judge acts 'unfairly'. We denote this by F_t^i, where $F_t^i = 1$ when the judge allocates the prize to the performer with a lower performance and a higher bribe, and $F_t^i = 0$, otherwise.

We estimate the following linear model:

$$B_t^i - B_{t-1}^i = \beta_o + \beta_1 * D_{>j,t}^i + \beta_2 * D_{<j,t}^i + \beta_3 * F_t^i + \beta_4 * P_t^i + \sum_k^{22} \gamma_k C_k^i$$

The dependent variable in this regression model measures the change on i's bribe from period $t-1$ to t. P_t^i is the performance of player i in t. C_k^i represents a vector ofpersonal characteristics of player i, including her age, nationality, gender, field of study, risk attitude, financial situation etc. See Appendix C for more details. β_1 and β_2 are the coefficients of our interest. A positive β_1 indicates a contagion effect and a negative β_2 indicates a healing effect. The results for the aggregate data per country are presented in *Table 3*.[1]

Table 3 provides evidence of both contagion and healing effects. Even after correcting for unfair behavior by the previous judge, both effects are highly significant for all the three subject pools. If a player observes that the bribe of her previous peer was larger than her own, she tends to increase her bribe in the subsequent round. In the opposite situation, if she observes that her peer previously bribed less, she decreases her bribe. Though these coefficients are highly significant in all countries, the magnitude of the effects differ. In particular, in Italy and China the contagion effect is lower than the healing effect. Wald test for the null hypothesis about the equality of these effects gives for Italian data $F(1,7) = 1.12$, $Prob > F = 0.3255$; for Chinese data $F(1,3) = 3.96$, $Prob > F = 0.1408$; for the Netherlands data the hypothesis about the equality of two effects is not rejected $F(1,7) = 0.03$, $Prob > F = 0.8578$). Italian and Chinese participants thus reduce their bribes much more in response to having bribed more than they increase them after bribing less than the other. *Ceteris paribus*, this gives a downward pressure on bribes in Italy and China. Together, this gives:

RESULT 3.

a) The higher a performer's bribe is compared to the other, the more she will decrease her bribe in the subsequent round; the lower her bribe is relative to the other, the more she will subsequently increase her bribe.

b) In Italy and China the contagion effect is lower than the healing effect.

[1] In each round there are 16 performers, giving 160 bribe observations per session and 160*6=960 observations per country. Given the specification of our model, all first round observations are dropped, and we are left with 864 observations per country; one participant in China did properly fill out the survey; the missing values were replaced with the average Chinese values.

Table 3: The effect of information (peer) on bribers' behavior.

	The Netherlands	Italy	China
Contagious effect (peer)	0.273***	0.288***	0.250**
	(0.0645)	(0.0725)	(0.0564)
Healing effect (peer)	-0.293***	-0.343***	-0.427***
	(0.0666)	(0.0512)	(0.0497)
Unfair judge last period	-0.193	0.215	-0.540
	(0.287)	(0.138)	(0.275)
Player performance	0.0591	0.155	0.167
	(0.0421)	(0.0836)	(0.0895)
Constant	0.167	2.826	-0.170
	(4.034)	(2.862)	(3.720)
Observations	432	432	432

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. There are 22 personal characteristics included as regressors but not reported in the table such as player's age," "gender, nationality, field of study etc. See Appendix for more details. Data are clustered by groups.

Next, we consider the effects of the additional information that is available to performers in *High-Info*. Recall that they were informed of the average previous bribe in their matching group. In the same spirit as above, we create two variables that capture the difference between the own bribe and the this average bribe, which is denoted by A.

$$D^i_{<A,t} = \begin{cases} A_{t-1} - B^i_{t-1}, & \text{if } A_{t-1} \geq B^i_{t-1} \\ 0, & \text{otherwise} \end{cases}$$

$$D^i_{>A,t} = \begin{cases} B^i_{t-1} - A_{t-1}, & \text{if } A_{t-1} < B^i_{t-1} \\ 0, & \text{otherwise} \end{cases}$$

where A_{t-1} is the average bribe among the eight performers in the corresponding matching group. We estimate the following linear model.

$$B^i_t - B^i_{t-1} = \beta_o + \beta_1 * D^i_{<A,t} + \beta_2 * D^i_{>A,t} + \beta_3 * F^i_t + \beta_4 * P^i_t + \sum_k^{22} \gamma_k C^i_k$$

Table 4: The effect of information (average) on bribers' behavior

	The Netherlands	Italy	China
Contagious effect (average)	0.636***	0.147**	0.370**
	(0.107)	(0.0529)	(0.0789)
Healing effect (average)	-0.514**	-0.634***	-0.529**
	(0.167)	(0.148)	(0.163)
Unfair judge last period	0.495	0.294*	0.558
	(0.265)	(0.128)	(0.257)
Player performance	0.394***	-0.0612	0.0293
	(0.0569)	(0.0436)	(0.0262)
Constant	4.921	2.156	1.916
	(4.082)	(4.299)	(2.187)
Observations	432	432	432

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. There are 22 personal characteristics included as regressors but not reported in the table such as player's age," "gender, nationality, field of study etc. See Appendix for more details. Data are clustered by groups.

The estimation results for the *HighInfo* treatment are reported in *Table 4*.

The results are very much in line with the effects of peer-level information as reported in *Table 3*. We again observe both contagion and haling. By and large, a comparison of the coefficients reported in *Table 4* and *Table 3* suggests that both effects are stronger when the information is about more peers. The only case where the coefficient is larger for the peer comparison than for the average comparison is the contagion effect in Italy. Note that this is the effect that was weakest to start with. The effects are once again statistically very significant for all three countries and the country comparisons are similar as above. In particular, Italian and Chinese subjects are much more sensitive to the healing effect than to the contagion effect.

RESULT 4.

a) In the information treatment, the higher a performer's bribe is compared to the matching-group average, the more she will decrease her bribe in the subsequent round; the lower her bribe is relative to the other, the more she will subsequently increase her bribe.

b) In Italy and China the contagion effect is lower than the healing effect.

Finally, we examine the relative effect of both types of information when a performer knows both, her bribe relative to her previous peer, and her bribe relative to the average in her matching group. We do so only for *HighInfo* because performers do not know the matching-group average in *LowInfo*. For this purpose, we estimate the following model:

$$B_t^i - B_{t-1}^i = \beta_o + \beta_1 * D_{<j,t}^i + \beta_2 * D_{>j,t}^i + \beta_3 * D_{<A,t}^i + \beta_4 * D_{>A,t}^i * T + \beta_5 * F_t^i + \beta_6 * P_t^i + \sum_k^{22} \gamma_k C_k^i$$

In this specification β_1 and β_2 measure the impact of peer information, while β_3 and β_4 measure the effects of matching-group averages. A priori, performers in *HighInfo* to focus more on the average information, because it is based on more peers. Thus, we expect $|\beta_3| > |\beta_1|$ and $|\beta_4| > |\beta_2|$. The results are shown in *Table 5*

We observe that the information about one's direct peer has only limited effect on the bribe in *HighInfo*. Only the healing effect in IT is statistically significant at the 5% level. The effects of the matching-group average are larger and statistically stronger, albeit relatively weak in *CH*.

Table 5: Bribes in *HighInfo*: Peer and Average information

	The Netherlands	Italy	China
Contagious effect (average)	0.537***	0.115**	0.330*
	(0.127)	(0.0424)	(0.111)
Healing effect (average)	-0.555**	-0.477**	-0.538
	(0.190)	(0.142)	(0.231)
Contagious effect (peer)	0.114*	-0.0178	0.0454
	(0.0561)	(0.0534)	(0.0743)
Healing effect (peer)	0.0597	-0.199**	0.0175
	(0.0766)	(0.0605)	(0.113)
Unfair judge last period	0.452	0.193	0.525*
	(0.258)	(0.137)	(0.182)
Player performance	0.386***	-0.0665	0.0299
	(0.0547)	(0.0459)	(0.0246)
Constant	4.740	1.708	1.904
	(4.079)	(4.032)	(2.231)
Observations	432	432	432

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. There are 22 personal characteristics included as regressors but not reported in the table such as player's age," "gender, nationality, field of study etc. See Appendix for more details. Data are clustered by groups.

3.3 Corruption

The only difference for judges between *LowInfo* and *HighInfo* treatment is that in the latter case the judge observes not only the information about the bribes of the two players in his group, but at the end of each round also observes the average bribe among eight performers in the matching group. We ask whether this additional information will affect her behavior.

Within each country in each session there are eight judges, which results in 80 observations per session and 480 observations per country. We define a judge as making a corrupt decision if she nominates a less successful performer who offers a larger bribe, i.e., the judge allocates the prize to player i when $B_i > B_j$ & $P_i < P_j$. Note that there are various situations where a corrupt choice is not possible. In particular, no corruption can occur if bribes or performance by the two performers are equal or if the performer with the higher score also bribes more. *Table 6* summarizes all possible cases and reports the number of observations in each.

Table 6: **Possibility of corruption: distribution**

Case		Country			Possibility of corruption
		NL	IT	CH	
equal performance $P_i = P_j$	equal bribe $B_i = B_j$	14	10	12	corruption not possible
	unequal bribe $B_i \neq B_j$	60	68	62	corruption not possible
unequal performance $P_i \neq P_j$	equal bribe $B_i = B_j$	69	63	66	corruption not possible
	player with higher performance bribes more	216	168	192	corruption not possible
	player with higher performance bribes less	121	171	148	corruption possible
Total number of observations		480	480	480	

Notes: Cell entries give the number of observations for each situation and country.

A few interesting things can be noted from *Table 6*. First, corruption is possible in 25.2%, 35.6%, and 30.8% of the cases in *NL*, *IT*, and *CH*, respectively. Second, of the cases where one performer has a higher score than the other (406, 402, 406, respectively), the number of times the bribe is equal is more or less the same across countries.

Third and interestingly, when one performer scores better than the other and the bribes differ, then

the fraction of times that the better performer also bribes more differs across countries. This fraction is $\frac{216}{216+121}100 = 64.1\%$ in *NL*, $\frac{168}{168+171}100 = 49.6\%$ in *IT*, and $\frac{192}{192+148}100 = 56.5\%$ in *CH*. We use a binomial test to investigate whether these fraction differ from 50%. The results show that the fraction is significantly different than 50% in *NL* ($p < 0.01$, two-tailed test) and *CH* ($p = 0.02$, two-tailed test). In *IT*, however, when one performer scores better than the other, she is equally likely to bribe more or less than this other performer ($p = 0.91$, two-tailed test). This suggests that there is a tendency in *NL* and *CH* to avoid situations where the judge might act corruptively, by 'outbribing' the other if one outperforms her. In *IT*, however, there is no relationship between having the better performance and the higher bribe. Recall that our prescriptive norm measurement shows little evidence of norms that find bribing inappropriate. This is consistent with our finding here, that 'winning the bribe' is unrelated to relative performance in *IT*.

The prescriptive norm analysis also led us to predict that first-round corruption is lowest in *CH* and highest in *IT*. Note that we have low numbers of observations here. The number of situations where a corrupt decision was possible was 13, 15, 14 in *IT*, *NL*, *CH*, respectively. The judge made the corrupt decision 85% of times in Italy, 66% in the Netherlands, and 50% of the time in China.

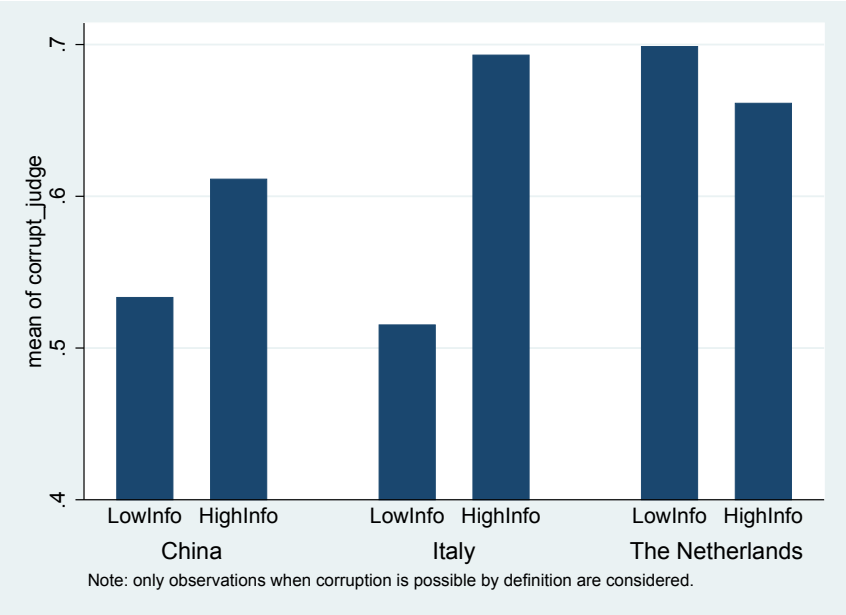


Figure 4: **Proportion of corrupt choices**

Next, we consider judges' decisions across all rounds. *Figure 4* depicts the number of corrupt choices as a fraction of the number of times a corrupt choice was possible. We observe that the corrupt

choice was made 50-70% of the times it was possible. In *CH* and, especially, *IT* the *LowInfo* treatment is associated with a lower proportion of judges who take an unfair decision.

To further investigate how corruption varies across information treatments and countries, we use a probit regression of choosing corruptly on a treatment dummy, the sum and difference of performers' bribes, and the difference between performers' scores. The estimated marginal effects are presented in *Table 7*.

Table 7: Determinants of corrupt judges

	The Netherlands	Italy	China
corrupt_judge			
Treatment effect: 0=no info	0.407***	0.1706	0.255*
	(0.172)	(0.1915)	(0.155)
The sum of performers' bribes	0.0038	-0.0236	0.0079
	(0.0039)	(0.0181)	(0.0267)
The distance between performers' bribes	0.097***	0.064***	0.0733***
	(0.288)	(0.0207)	(0.0057)
The distance between performers' scores	-0.0246	-0.1047***	-0.1327***
	(0.314)	(0.0256)	(0.0188)
Round number	0.015	-0.0191	0.0127
	(0.018)	(0.0139)	(0.0101)
Round number*treatment	-0.0605	0.0189	0.0025
	(0.0423)	(0.0209)	(0.0290)
Observations	121	171	148

Notes: The table reports marginal effects. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. There are 22 personal characteristics included as regressors but not reported in the table such as player's age," "gender, nationality, field of study etc. See Appendix for more details. Data are clustered by groups.

We find no evidence of an income effect on the likelihood of acting corruptly; the sum of bribes has no significant effect. However, we determine that the distance between players' scores as well as the distance between players' bribes are both very significant factors. Both the distance between two bribes offered to a judge and the difference in performance do, however, matter. A larger difference in score makes a corrupt choice less likely (except in *NL*), but this likelihood increases with the difference

in bribes. It is interesting that performance differences matter in *IT*. This suggests that across all rounds, the prescriptive norms do not have a strong impact on judges' decisions.

Finally, we consider the impact of information. The treatment effect is a dummy variable, equal to zero in *LowInfo* and to one in the *HighInfo* treatment. The regression results show that the disclosure of the information about average bribes in *HighInfo* treatment induces judges to become more corrupt in the Netherlands and China, but not in Italy. Note that the effect for *NL* (which appears negative in *Figure 4*) is positive and statistically significant in *Table 7*. It appears that observing that bribes are 'normal' makes it easier for Dutch and Chinese judges to choose the corrupt option. This yields:

RESULT 5.

a) The prescriptive norm analysis predicts that first-round corruption is lowest in China and highest in Italy;

b) In the subsequent rounds the disclosure of information about average bribes induces judges to be more corrupt in the Netherlands and China, but not in Italy.

The important question that remains is *why* information about prevailing bribes affects judges' behavior and induces them to become more corrupt. Recall that a judge in *LowInfo* sees only the bribes in her group while the judge in *HighInfo* sees the same as well as the average bribe in the matching group. One might venture that the difference between the mean bribe in the group and the matching group average matters. The data, however, do not provide support for this hypothesis. The gap between group-level bribes and matching-group mean bribes is never significant, whether it is positive or negative. This suggests that the mere disclosure of aggregate information regardless of the size of the average disclosed, makes corruption a more acceptable alternative to the judge.

4 Conclusion

To develop anti-corruption policies, it is important to understand the determinants of corrupt behavior. In this paper, we have focused on the role of prescriptive and descriptive norms. We observe that prescriptive norms differ per country. For example, we find evidence of norms against bribery and corruption in China and the Netherlands but both are deemed more appropriate behavior in Italy. Chinese participants are even more averse to corruption than the Dutch. This is interesting, because China is considered to feature much higher levels of corruption[1]. This suggests that institutional differences between China and the Netherlands (which are held constant in the experiment) are important

[1] According to the Corruption Perception Index 2017: China's rank is 77/180; Italy's rank is 54/180; the Netherlands rank is 8/180

determinants of corruption in the field. A similar conclusion with respect to tax evasion in Albania and the Netherlands was reached in Gërxhani and Schram [2006]. More research is needed to understand the interaction between prescriptive social norms, institutions, and descriptive social norms.

We find that the disclosure of information about a common level of corruption induces players to adjust their behavior and to converge towards this common level. The speed of this convergence differs across cultures. Our results suggest that in Italy players are much more sensitive to a situation when others bribe less than they do (they strongly decrease their bribes) but do not increase bribes at a similar rate when the common level is above their bribe. In other words, the contagion effect is weaker than the healing effect in Italy. We do not find significant differences between these effects in China or the Netherlands. The relatively strong healing effect we observe in Italy does suggest that a policy that reveals average bribe levels in Italy will reduce bribes by those who are above this average than it will reduce the bribes of those below average.

Italy is also the odd-one-out when it comes to making corruption possible. In contrast to the Netherlands and China, Italians do not adjust their bribes to their performance in an attempt to avoid putting the judge in a position where corruption is possible. As a consequence there are more such situations with a potential for corruption in Italy. Yet, we do not observe less corruption there. Furthermore, in contrast to Chinese and Dutch judges, Italian judges do not increase corrupt choices when the information about average bribe the group is disclosed. It appears that corruption is simply accepted as a 'reasonable' possibility. This is supported by the prescriptive norms that we elicited in Italy.

An interesting direction for future research is to incorporate punishment into this game. Since punishment continues to be one of the most common methods used to combat corruption, it would be interesting to allow performers to punish judges if the latter are corrupt, and to analyze how this affects, first, the propensity of judges to be corrupt and, second, the behavior of bribers. Such effects might shed further light on the role of social norms in corrupt behavior.

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Appendix

4.1 Instructions (Amsterdam).

Please find below the instructions used in Amsterdam. The same instructions were used in China and Italy translated in Chinese and Italian respectively.

4.1.1 Treatment with no information.

Welcome to our experiment!

This is an experiment on decision-making where you may earn money. The amount of money you earn will depend upon the decisions you make and on the decisions other people make. You will be paid privately at the end of the experiment, there is no obligation to tell others how much you earn. In the experiment you will remain anonymous. The experiment will take approximately one-and-a-half hour.

You have already received 7 Euros for showing up. Your total earnings will be the sum of this 7 euros and your payoffs in the experiment. In this experiment we use experimental tokens. At the end of the experiment these will be exchanged to euros at a rate of 1 token = 1 euro and you will be paid in cash.

Please read the instructions carefully and do not communicate with each other during the experiment. If you have a question, please raise your hand and an experimenter will come to help you. There are 24 participants in this experiment. All the participants are randomly divided into two types. Sixteen of you are players, eight are judges. There will be 10 independent rounds in this experiment.

At the beginning of every round each participant of each type receives 10 tokens. Groups of three are formed, each consisting of two players and one judge. The two players will perform a task during 5 minutes. The task is explained below. The task gives each of these players a score. The better a player does at the task, the higher will be her or his score. After they have finished, the judge will decide on the winner. The winner will receive 10 points. The judge will not perform the task. He or she can give the prize to either of the two players in his or her group. Please note that the judge must allocate this prize to one of the two players. The amount of the prize will be added to the final payoff of the players. This prize will NOT be deduced from the earnings of the judge. Before the judge decides, each of the two players decides whether to transfer tokens to the judge in their group. They may transfer any amount between 0 and 10. As soon as both players have made their choices, the judge will see on her or his computer screen the information about the score of both players and their transfers. Then a new round starts and all will be randomly rematched into new groups of three (two players and one judge). You will not change your type, players remain players and judges remain

judges. The rules for all 10 rounds are identical. All rounds are independent.

At the end of the experiment every participant of each type will receive his or her earnings from one randomly picked round plus the show-up fee of 7 euros.

The Task

You will see two matrices on the computer screen. Each matrix has 10 rows and 10 columns and is filled with randomly generated numbers. Your task is to find the largest number in each of the matrices and add them up. You are not allowed to use calculators but you can use the paper and pencil that you have found on your desk. After entering the number, the computer will tell you whether it is correct or incorrect (the time will continue to run while you see the result). Then, irrespective of whether your answer is correct or incorrect a new pair of matrices will appear. New matrices will appear as long as you are within the 5 minutes limit with the max of 10 matrices. When the 5 minutes limit ends, participants A and B will see the total number of correct solutions that they have achieved.

4.1.2 Treatment with information.

Welcome to our experiment!

This is an experiment on decision-making where you may earn money. The amount of money you earn will depend upon the decisions you make and on the decisions other people make. You will be paid privately at the end of the experiment, there is no obligation to tell others how much you earn. In the experiment you will remain anonymous. The experiment will take approximately one-and-a-half hour.

You have already received 7 Euros for showing up. Your total earnings will be the sum of this 7 euros and your payoffs in the experiment. In this experiment we use experimental tokens. At the end of the experiment these will be exchanged to euros at a rate of 1 token = 1 euro and you will be paid in cash.

Please read the instructions carefully and do not communicate with each other during the experiment. If you have a question, please raise your hand and an experimenter will come to help you. There are 24 participants in this experiment. All the participants are randomly divided into two types. Sixteen of you are players, eight are judges. There will be 10 independent rounds in this experiment.

At the beginning of every round each participant of each type receives 10 tokens. Groups of three are formed, each consisting of two players (A and B) and one judge. The two players will perform a task during 5 minutes. The task is explained below. The task gives each of these players a score. The better a player does at the task, the higher will be her or his score. After they have finished, the judge will decide on the winner. The winner will receive 10 points. The judge will not perform the task. He or she can give the prize to either of the two players in his or her group. Please note that the judge

must allocate this prize to one of the two players. The amount of the prize will be added to the final payoff of the players. This prize will NOT be deduced from the earnings of the judge.

Before the judge decides, each of the two players decides whether to transfer tokens to the judge in their group. They may transfer any amount between 0 and 10. As soon as both players have made their choices, the judge will see on her or his computer screen the information about the score of both players and their transfers. Then a new round starts and all will be randomly rematched into new groups of three (two players and one judge). You will not change your type, players remain players and judges remain judges. The rules for all 10 rounds are identical. All rounds are independent. At the end of the experiment every participant of each type will receive his or her earnings from one randomly picked round plus the show-up fee of 7 euros.

At the end of each round we will show you on your monitor information about what occurred in four randomly chosen groups (eight players and four judges). This information will involve the average transfers by players to the judges.

The Task

You will see two matrices on the computer screen. Each matrix has 10 rows and 10 columns and is filled with randomly generated numbers. Your task is to find the largest number in each of the matrices and add them up. You are not allowed to use calculators but you can use the paper and pencil that you have found on your desk. After entering the number, the computer will tell you whether it is correct or incorrect (the time will continue to run while you see the result). Then, irrespective of whether your answer is correct or incorrect a new pair of matrices will appear. New matrices will appear as long as you are within the 5 minutes limit with the max of 10 matrices. When the 5 minutes limit ends, players A and B will see the total number of correct solutions that they have achieved.

4.1.3 Social norm session.

Welcome to our experiment!

This is an experiment on decision-making where you may earn money. The amount of money you earn will depend upon the decisions you make and on the decisions other people make. You will be paid privately at the end of the experiment, there is no obligation to tell others how much you earn. In the experiment you will remain anonymous. The experiment will take approximately half an hour. You have already received 5 Euros for showing up. Your total earnings will be the sum of this 5 euros and your payoffs in the experiment.

Please read the instructions carefully and do not communicate with each other during the experiment. If you have a question, please raise your hand and an experimenter will come to help you.

There are 39 participants in this experiment.

Assume that there is the following situation.

There is a group of three that consists of two players, A and B, and one judge. Initially each player has 10 points. The two players perform a task during 5 minutes. The task gives each of these players a score. The better a player does at the task, the higher will be her or his score. On average, players score 12 on this task. After the two players have finished, the judge will decide on the winner. The winner will receive 10 points. The judge will not perform the task. He or she can give the prize to either of the two players. Please note that the judge must allocate this prize to one of the two players. The amount of the prize will be added to the final payoff of the players. This prize will NOT be deduced from the earnings of the judge.

Before the judge decides, each of the two players decides whether to transfer tokens to the judge. They may transfer any amount between 0 and 10. As soon as both players have made their choices, the judge will see on her or his computer screen the information about the score of both players and their transfers.

You will not participate in this situation. Instead, your task today is to analyze the potential outcomes. We are interested in what you think about what most people feel is the appropriate choice in certain situations. So, we are not asking what you personally think that one should do, but what you think that most people feel is appropriate.

On the following pages, you will read descriptions of a series of situations. These descriptions correspond to situations in which one person, either the judge or one of the players, must make a decision. For each situation, you will be given a description of the decision faced by the individual. This description may include several possible choices available to the individual. After you read the description of the decision, you will be asked to evaluate the different possible choices 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 the individual A were to select a socially inappropriate choice, then someone else might be angry at her or him 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 payoffs for this experiment will be formed in the following way. You will be asked to respond to 17 different situations (split across four answer sheets). At the end we will randomly select one of these 17 situations for payment. For this situation we will check which answer was given most often (this is called the "modal" answer). You will receive 10 euros if you guess the modal answer among all the 39 participants. If you do not guess the modal answer, you will receive only the participation

fee. In other words, if you give the same response as that most frequently given by other people, then you will receive an additional 10 euro.

To summarize, your task for each situation is to predict the answer that is most often chosen by everyone in this room today. If you guess correctly, you will earn 10 euros.

Answer Sheet 1

Recall that the average player scores 12 on this task. Consider the situation where

- player A scores 20
- player B scores 12

In the table below we show different transfers by player B and different decisions by the judge. Indicate for each of the situations whether the judge's decision is "very socially inappropriate ", "somewhat socially inappropriate ", "somewhat socially appropriate ", or "very socially appropriate ". For each situation, you may indicate your response by marking the corresponding cell with an "X". Remember, if one of these situations is the one chosen for payment, then you will receive 10 euros if your choice is the response most often given by other people in today's session.

			The judge decision is:			
Player A transfers:	Player B transfers:	The judge gives the prize to:	very socially inappropriate	somewhat socially inappropriate	somewhat socially appropriate	very socially appropriate
7	3	A				
7	3	B				
3	7	A				
3	7	B				

Notes: Recall that player A has a score of 20 and player B has a score of 12. Note that answering for these situations requires that you place four X (one in each row).

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Answer Sheet 2

Recall that the average player scores 12 on this task. Consider the situation where

- player A scores 20
- player B scores 12

In the table below we show different transfers by player B and different decisions by the judge. Indicate for each of the situations whether the judge's decision is "very socially inappropriate ", "somewhat socially inappropriate ", "somewhat socially appropriate ", or "very socially appropriate ". For each situation, you may indicate your response by marking the corresponding cell with an "X". Remember, if one of these situations is the one chosen for payment, then you will receive 10 euros if your choice is the response most often given by other people in today's session.

			The judge decision is:			
Player A transfers:	Player B transfers:	The judge gives the prize to:	very socially inappropriate	somewhat socially inappropriate	somewhat socially appropriate	very socially appropriate
3	0	A				
3	0	B				
0	3	A				
0	3	B				

Notes: Recall that player A has a score of 20 and player B has a score of 12. Note that answering for these situations requires that you place four X (one in each row).

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Answer Sheet 3

Recall that the average player scores 12 on this task. In the table below we show different scores for one of the players (which we call player C) and different transfers by the same player. Indicate for each of the situations whether this transfer is "very socially inappropriate ", "somewhat socially inappropriate ", "somewhat socially appropriate ", or "very socially appropriate ". For each situation, you may indicate your response by marking the corresponding cell with an "X". Remember, if one of these situations is the one chosen for payment, then you will receive 10 euros if your choice is the response most often given by other people in today's session.

		Player C's transfer decision is:			
Player C's score:	Player C transfers:	very socially inappropriate	somewhat socially inappropriate	somewhat socially appropriate	very socially appropriate
12	0				
20	3				
4	7				
4	0				

Notes: Note that answering for these situations requires that you place four X (one in each row).

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Answer Sheet 4

Recall that the average player scores 12 on this task. In the table below we show different scores for one of the players (which we call player C) and different transfers by the same player. Indicate for each of the situations whether this transfer is "very socially inappropriate ", "somewhat socially inappropriate ", "somewhat socially appropriate ", or "very socially appropriate ". For each situation, you may indicate your response by marking the corresponding cell with an "X". Remember, if one of these situations is the one chosen for payment, then you will receive 10 euros if your choice is the response most often given by other people in today's session.

		Player C's transfer decision is:			
Player C's score:	Player C transfers:	very socially inappropriate	somewhat socially inappropriate	somewhat socially appropriate	very socially appropriate
12	7				
12	3				
20	0				
20	7				
4	3				

Notes: Note that answering for these situations requires that you place four X (one in each row).

4.2 The survey

1. Your age.
2. Your nationality[1]
    - the Netherlands
    - Western Europe excluding the Netherlands
    - Russia
    - Eastern Europe excluding Russia
    - Italy
    - Southern Europe excluding Italy
    - China
    - Other
3. Your gender:
    - male;
    - female
4. Your height (in centimeters)
5. Your field of studies:
    - economics, finance, management;
    - social science, psycology, political science ;
    - law ;
    - international relation ;
    - mathematics, computer science ;
    - humanities ;
    - media, journalism, design ;
    - other
6. Do you like risk or avoid risk?
    - I like risk;

[1]This question was included only in the survey in Amsterdam

- rather like risk;
- neutral to risk;
- rather avoid risk;
- avoid risk

7. Which statement most accurately describes the financial situation of your family?
   - money is not enough to survive;
   - enough money only for urgent needs;
   - There is enough money for daily expenses, but already buying clothes requires savings;
   - There is enough money, even some savings, but large purchases need to be planned in advance;
   - We can afford large expenses at the first necessity.
8. Given all the circumstances, how satisfied are you with your life in general? (from 1 "completely dissatisfied" to 10 "completely satisfied")
9. In your opinion, in general, most people can be trusted, or when communicating with other people caution never hurts? Please mark the position on the scale, where 1 means "You have to be very careful with other people" and 10 means "Most people can be completely trusted"
10. Some people feel that they have complete freedom of choice and control their lives, while other people feel that what they are doing does not have a real impact on what is happening to them. To what extent are these characteristics applicable to you and your life? Please mark the position on the scale, where 1 means "I do not have freedom of choice" and 10 means "I have total freedom of choice"

4.3 The effect of information on bribers' behavior: personal characteristics included

	The Netherlands	Italy	China
Contagious effect (peer)	0.293***	0.174***	0.226***
	(0.0280)	(0.0372)	(0.0346)
Healing effect (peer)	-0.219***	-0.357***	-0.326***
	(0.0534)	(0.0468)	(0.0421)
Unfair judge last period	0.124	0.211*	-0.0497
	(0.184)	(0.103)	(0.220)
Player performance	0.143***	0.0313	0.0967**
	(0.0283)	(0.0498)	(0.0280)
Age	-0.0402***	-0.0307	0.0312
	(0.00916)	(0.0251)	(0.0494)
Gender: 1=female	-0.126	-0.117	-0.172
	(0.253)	(0.142)	(0.0731)
Height	-0.0107	-0.0152*	-0.0126
	(0.0157)	(0.00766)	(0.00801)
Risk attitude	0.150*	-0.0157	-0.147
	(0.0737)	(0.0619)	(0.102)
Income	0.0862	0.109	-0.190***
	(0.0773)	(0.0883)	(0.0276)
Life satisfaction	-0.0464	-0.0270	0.0280
	(0.0455)	(0.0458)	(0.0701)
Trust	-0.0155	0.00935	0.0895
	(0.0464)	(0.0270)	(0.0452)
Freedom	0.0902**	0.0422	-0.000457
	(0.0373)	(0.0298)	(0.0582)

Field of studies: economics	0.0413	0.00569	-0.147
	(0.193)	(0.146)	(0.138)
Field of studies: social science	0.213	-0.199	-0.296
	(0.232)	(0.405)	(0.250)
Field of studies: law	-0.550	-0.0993	-0.470
	(0.346)	(0.223)	(0.276)
Field of studies: international relations	-0.0553	0.184	0
	(0.448)	(0.333)	(.)
Field of studies: mathematics	-0.162	0.00425	0.110
	(0.310)	(0.176)	(0.209)
Field of studies: humanities	0.466	-0.00876	0.243
	(0.325)	(0.272)	(0.482)
Field of studies: journalism	0.237	0.309	0
	(0.313)	(0.393)	(.)
Nationality: Dutch	-0.138	0	0
	(0.329)	(.)	(.)
Nationality: Western Europe	-0.298	0	0
	(0.271)	(.)	(.)
Nationality: Russia	-0.0750	0	0
	(0.704)	(.)	(.)
Nationality: Eastern Europe	-0.171	0	0
	(0.291)	(.)	(.)
Nationality: Italy	-0.333	0	0
	(0.317)	(.)	(.)
Nationality: South Europe	-0.249	0	0
	(0.428)	(.)	(.)
Nationality: China	-0.584**	0	0

	(0.233)	(.)	(.)
Constant	1.278	2.967	1.691
	(3.124)	(1.818)	(2.098)
Observations	864	864	864

Standard errors in parentheses

Notes: There are 22 personal characterisctics included as regressors but not reported in the table such as player's age, gender, nationality, field of study etc. See Appendix for more details. Data are clustered by groups.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$