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Germana Corrado, Luisa Corrado and Francesca Marazzi

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Abstract

Our study examines whether actual corruption, measured by individuals direct experience of corruption episodes (bribery), matches their perceptions of the phenomenon. Our experimental participants play a repeated public good game with mandatory minimum contribution and are given the possibility to bribe a computerized bureaucrat in order to free-ride. We elicit beliefs about the perceived level of corruptibility of the bureaucrat and others' corruption attempts. We study participants' willingness to corrupt and the gap between perceived and actual corruption under two information conditions. Results show that, although anonymous, spreading news about an attempt of corruption is enough to discourage such attempts, lowering the corruption rate. Consequently, when receiving no information, participants expect others to corrupt more, raising the index of perceived corruption.

JEL D73, C92, H41, D90

Keywords Perceived and Experienced Corruption, Lab Experiment, Information

*Corrado G.: Department of Management and Law, University of Rome 'Tor Vergata' - Via Columbia 2, 00133 Rome, Italy (e-mail: corrado@uniroma2.it); Corrado L.: Department of Economics and Finance, University of Rome 'Tor Vergata'- Via Columbia 2, 00133 Rome, Italy (e-mail: luisa.corrado@uniroma2.it); Marazzi F.: CEIS - Centre for Economic and International Studies, University of Rome 'Tor Vergata' - Via Columbia 2, 00133 Rome, Italy (e-mail: francesca.marazzi@uniroma2.eu).

1 Introduction

In this paper we analyse corruptive behaviour commonly defined as 'the misuse of public officer for private gain' (Svensson, 2005; Rose-Ackerman and Palifka, 2016) or, equivalently, as 'the sale by government officials of government property for personal gain' (Shleifer and Vishny, 1993). In particular, via a laboratory experiment, we investigate *i)* how well individuals' perception reflects actual levels of corruption in the group they belong to, *ii)* how such perceptions and the willingness to bribe are affected by the (higher or lower) availability of information about others' corruption attempts and *iii)* how these dynamics evolve over time.

Practices of corruption take place at different levels (i.e., bureaucratic or 'petty' corruption and political or 'grand' corruption) and under different guises that typically include bribery, clientelism, embezzlement and fraud.[1] As a result of its unethical, illegal and secretive nature corruption is not fully observable and its measurement is particularly difficult. Corruption data usually come from either direct observation (e.g. crimes recorded by the judiciary authority and audit reports) or perception surveys (e.g. public opinion surveys, or expert assessments). And perceptions are often used in the empirical literature as proxies for more 'objective measure' such as prosecution and conviction rates. But the use of perceptions, and most often experts' assessments, has been a central critique against leading indices such as the Transparency International's Corruption Perceptions Index (CPI) and the World Bank's World Governance Index (WGI). The literature has highlighted that perceptions do not necessarily reflect 'actual' corruption experienced by residents (Donchev and Ujhelyi, 2014; Ko and Samajdar, 2010); and some empirical studies have, in fact, tested the existence of a corruption 'gap' in single countries (Olken and Pande, 2012; Morris and Klesner, 2010; Rose and Mishler, 2010) or across a sample of countries located in a particular geographic area (Seligson, 2006; Razafindrakoto and Roubaud, 2010). More recently, scholars have argued that perceptions of corruption do not reflect the actual levels of corruption because they are also biased by external factors such as the economic performance, the characteristics of individuals and by local conditions (Olken, 2009; Barr and Serra, 2010; Charron, 2016). This implies that there may be significant differences in both cultural and social norms across and within countries so that individuals residing in one area/region may find certain corrupt practices more acceptable than citizens

[1] See Treisman (2000).

of another.[2]

Recent empirical research tries to overcome the limitations of perception-based country-level indices by developing tools to gather new data on the extent of corruption. Some have tried to administer surveys on actual practices in order to elicit truthful answers on the one hand (Olken and Barron, 2009; Ferraz and Finan 2011, Brollo and Troiano, 2016), and on the other hand to exploit micro-level data on individuals' experience of corruption (Mocan, 2008). Attempts to gather micro-level data on corruption through questions on experiences of corruption have been carried out at both firm and household level, see for example the World Business Enterprise Survey, the Business Environment and Enterprise Performance Survey, the Bribe Payer Index, the Global Corruption Barometer, the International Crime and Victimization Survey, and the recently developed European Quality of Government Index (EQI). These survey-based measures attempt to elicit truthful reporting of bribes through standardised questions to contextualised respondents' actions. But the reliability and accuracy of these survey-based data crucially rely on the quality of the question wording, on the cultural differences among respondents that may lead to very different interpretations of the same question, and also on the respondents' truthful reporting of bribing (Sequeira, 2012).

Because of the above mentioned problems, the analysis of corruption is a threatening empirical challenge, and lab experiments may be employed as one of the most effective tools to gather first-hand information on individual corrupt behavior. Experimental research has recently become the most encouraging approach to study the determinants of corruptibility since the lab offers the possibility to overcome corruption unobservability by generating hard data, while controlling both for the environment and the individuals' characteristics (see Serra and Wantchekon, 2012, for a review). In fact, the laboratory is an easily controlled environment where it is possible to isolate the specific features that can be relevant when, for example, subjects send and accept bribes. Experimental studies may be a promising approach to analyse corruption by providing direct information on individual choices of corrupt behavior (Gneezy et al., 2018; Treisman, 2007; Barr and Serra, 2009; Abbink and Serra, 2012) that may be used to improve the institutional design/quality and boost good governance through anti-

[2]In fact, respondents may have never experienced corruption or their perceptions may be biased since they are highly depending on how much attention the local media devote to reporting corruption facts as well as on the accuracy of media releases (Rizzica and Tonello, 2015; Stanig, 2015; Corrado et al., 2017). Public news about corruption facts may increase the accuracy of individuals' beliefs about corruption through a learning process.

corruption interventions, such as whistleblowing, monitoring, transparency and the enforcement of sanctions (Büchner et al., 2008; Butler et al., 2019; Luz and Spagnolo, 2017).

Our study aims at disentangling whether actual corruption measured by individuals' direct experience of corruption episodes (bribery) matches perceptions of corruption, where perception measures the extent to which people believe that they, or other group members, will be engaged in bribing with the public sector. Moreover, we also aim at checking whether perceptions might motivate an individual to act more or less corruptly, either because (s)he has a prior on the probability of a bribe being accepted[3], or because perception of the level of corruption in the group might shape the social norm of the group itself.

In particular, we investigate the dynamics of individuals' beliefs about the probability of bribe offer and acceptance in the context of a laboratory experiment designed as a repeated public good game between a population of subjects, that we may identify as 'citizens', and bureaucrats. And we consider one potential channel that might affect individuals' beliefs about the corruptibility of the bureaucrat and corrupt behavior of the other players, i.e the exposure to information on corruption attempts.

Furthermore, we believe that corruption is a social phenomenon, and social norms may vary among people; so while an action could be considered as 'normal practice' in a society, in a different one it could be considered as a corruption activity and also the individual's propensity to pay bribes may be affected by other individuals' bribe-giving behavior (see Fisman and Miguel, 2007). Therefore, corruption perception is not the reflection of an absolute evaluation and crucially depends on the amount and flow of information about the actual level of corruption one is able to gather. However, spreading news on a morally questionable action might either deteriorate the social norm and render such actions more acceptable or raise individual's social image concern (see Banerjee, 2016, and Andreoni and Bernheim, 2009).

The main results of our experimental analysis are that (i) beliefs about the prevalence of corruption in a specific context[4] - about how most people behave in a given situation - may influence the decision to engage in corrupt behavior; (ii) spreading

[3]Related literature shows that attitudes towards risk seems not to play a major role in the decision to engage in corrupt acts, i.e. risk-seeking participants are not necessarily more corrupt (see on this point Berninghaus et al., 2013).

[4]We can define these beliefs as descriptive norms of corruption which '...convey information about how most people behave in a given situation, in other words they describe the perceived frequency of a specific act of corruption.' (p.2, Köbis et al., 2015).

public information about corruption regarding the number of bribes offered by other players and how many were accepted reduces the individual beliefs that bribes will be accepted by the bureaucrats[5]; (iii) participants who receive no feedback at all are more likely to over-estimate the overall corruption level of the group; therefore in a no information setting participants expect others to corrupt more, raising the index of perceived corruption; (iv) in a dynamic setting how people have (mis)behaved in the past impacts current corrupt decisions.

These findings suggest that a 'public feedback' on corruption attempts discourages such attempts: individuals are less willing to bribe when news on corruption episodes are spread, and they expect also their counterparts (i.e. the other members of the group) to be less willing to bribe. So individuals are less likely to act corruptly when they have good and detailed information about the actual levels of corruption. This result may have important side-effects on the real world and policy interventions: by publicising information about corruptive behaviour authorities may change people's propensity to engage in bribing because it affects elicited beliefs, even in absence of convictions or other forms of punishment. Also, measures that improve information flows about the individual and social costs of corruption should be adopted by governments and institutions. This can help to deter individuals from acting corruptly and can discourage the temptation to rationalise corrupt acts. Indeed, we find that subjects who received positive feedback on their corruption choice are more likely not only to increase their perceived corruption level of the bureaucrat but also to reinforce their beliefs about the overall corruption behavior. This recalls a mechanism similar to 'a selective consumption of information on corruption', i.e. individuals pay greater attention to information that supports their beliefs about the extent of corruption (Stroud, 2008; Maeda and Ziegfeld, 2015).

The paper is structured as follows. Section two introduces the hypotheses and the experimental design. Section three presents descriptive statistics of beliefs and of corruption and contribution choices, as well as the testing of treatment effects. Section four shows the regression results. Section five concludes.

[5]In Reinikka and Svensson's study (2011) the increase in the availability of information on corruption has been shown to reduce corrupt behavior substantially.

2 Hypotheses and experimental design

2.1 Research Hypotheses

In this section, we present more in detail the research hypotheses we wish to test through our experiment.

RH1: *The availability of public information on bribery attempts affects individuals' perceptions of the corruption level in the group, reducing the gap between perceived and actual corruption.*

We assess whether people's beliefs are affected by the influence of information availability on corruption episodes. In particular, we argue that when information on corruption facts are released and they are sufficiently precise, individual's beliefs on corruption appear to be less biased than in absence of any news about corruption. Therefore, we hypothesise that when public information on corruption facts in the group is available people's perceptions are closer to the number of observed corruption episodes (here cases of bribing) thereby decreasing the gap between observed and perceived corruption.

RH2: *The availability of information about actual corruption in the group affects individuals' choice of engaging in corruption activity.*

We wish to test whether, although anonymous and without consequences in terms of punishment, spreading the information about an attempt of corruption may affect both people's corruption beliefs, and therefore the perceived social norm, and their choices.[6] The direction of this potential effect on the willingness to corrupt depends on which behavioural mechanism prevails: spreading news about bribery attempts might either deteriorate the social norm and reinforce one's willingness to bribe or reduce it because of the stigma associated to information diffusion (see Stephenson, 2020, for a description of the 'reduction of shame' and 'stigma' mechanisms in corruption).

RH3: *Corruption may be described as a path-dependent process: how people have (mis)behaved in the past impacts on their current corrupt decisions as well as on their the expectation of whether the other agents will take part in corrupt exchanges. This self-reinforcing mechanism reproduces a corrupt behaviour over time.*

One reason that might explain why corruption becomes a sticky problem or even a social trap is that none of the agents has reasons to change their strategy (here

[6]Several studies have shown that information can be a powerful tool in reducing corruption (Brunetti and Weder, 2003; Cadot, 1987).

paying a bribe) when they maximize their expected utility, and it does not matter whether a bribe offer is either rejected or accepted (Pierson, 2011). The implication is that a corrupt system shows inertia since misbehaving people usually think: 'Well, if everybody seems to corrupt, why shouldn't I corrupt?' (Myrdal, 1968) so it makes no sense to be the only honest player in a corrupt system because that will not change the outcome (Rothstein and Tegnhammar, 2006).

2.2 Design and details of the experiment

The experiment is divided into 2 independent phases plus a final questionnaire. During phase 1, subjects play repeatedly the public good game with corruption; the two treatments, PRI (Private information) and PUB (Public information), differ in this phase only and are implemented between-subjects. Phase 2 of the experiment consists of an incentivized task aimed at measuring participants' ambiguity aversion. The final questionnaire includes subjects' demographics and a set of corruption-related questions taken from the EQI and ISTAT surveys.[7]

Phase 1 of the experiment is framed as a bribing game (Barr and Serra, 2009, show how the wording in which the game is presented affects bribing decision).[8] At the beginning of phase 1, subjects are randomly matched into 4-participant groups (partner matching protocol) and each subjects is assigned an endowment level, e_i, with $e_i \in \{12, 15, 18, 21, 24\}$. Subjects are informed about the possible values, about them being equally likely and about the impossibility to know how much the other group members have been assigned. The endowment is renewed at the beginning of every period and its level, once assigned before period 1, stays the same for the whole phase 1.

After the matching, subjects play for 24 rounds a public good game with minimal contribution, i.e. the minimum possible contribution is equal to 1/ 3 of the endowment. To each group is associated a computerized bureaucrat, which has some probability p of accepting a bribe of 2 tokens in order to allow participants to free-ride, i.e. contribute exactly 0.[9] The choice of a computerized bureaucrat is due to two main reasons: *i)*

[7]The translated version the final questionnaire, including EQI and ISTAT questions, is reported in Appendix A.

[8]See Appendix B for the translated version of instructions and Appendix C for the translated screenshots of phase 1.

[9]The size of the bribe and its effects were chosen so to *i)* avoid demand effect as much as possible (by avoiding too high positive or negative effects) and *ii)* having a bribe lower than the lowest compulsory

setting an exogenous probability of accepting the bribe allows us to compute the gap between participants' perception and the actual level of corruptibility and *ii)* our main focus is on the active decision to bribe in order to be allowed to free-ride.

In every round, one randomly chosen participant in each group has the possibility to corrupt the bureaucrat. If the bribe is accepted, she only pays 2 tokens to the bureaucrat and gets the returns from the public good. If the bribe is not accepted, she has to pay both the bribe and the minimal contribution. The probability of acceptance, p, is randomly determined every 8 rounds (i.e. at the beginning of rounds 1, 9 and 17) and can be equal to 0, 5, 10..., 95, 100, with all values being equally likely. Although participants know all the possible values, their uniform probability and know when it is going to be re-drawn, they are never informed about its actual value.

Therefore, every subject i belonging to group g has, in every round of play, a payoff function of the form:

$$\pi_{i,g} = \delta_{i,g}[e_{i,g} - (p_g \cdot b + (1 - p_g)(b + \underline{c}_{i,g})) + \alpha\Sigma_{j=1}^{N} c_{j,g}] \tag{1}$$

$$+(1 - \delta_{i,g})(e_{i,g} - c_{i,g} + \alpha\Sigma_{j=1}^{N} c_{j,g})$$

where:

$\delta_{i,g}$ is subject's decision to corrupt the bureaucrat;

$e_{i,g}$, $c_{i,g}$ and $\underline{c}_{i,g}$ are, respectively, her endowment, contribution choice and minimal mandatory contribution;

p_g is the acceptance decision of the (computerized) bureaucrat associated to group g;

b is the bribe offered to the bureaucrat, which is set to 2 tokens;

α is the Marginal Per Capital Return (MPCR hereafter) of the public good, which is set to 0.4.

Using the strategy vector method, we ask our experimental participants to make two choices and to state two hypotheses in each of the 24 rounds:

contribution, i.e. that of subjects endowed with 12 tokens, to avoid contributing being more convenient than bribing.

choice 1 - they have to state how much they want to contribute to the public good, with minimal contribution being 1/3 of their endowment and maximal contribution equal to the endowment itself. This choice is implemented if the subjects is not selected for offering a bribe to the bureaucrat;

choice 2 - they are asked to state whether they want to try to corrupt the bureaucrat *in case they will be selected*. This choice is therefore asked to all 4 participants of the group, even though it will be implemented for only one of them. When a subject is not selected for the corruption attempt, her *choice 1* is automatically implemented;

hypothesis 1 - they are asked to state what is their belief about the bureaucrat's probability of accepting a bribe, p;

hypothesis 2 - they are asked to state how many players in their group they think tried to corrupt the bureaucrat in the current period, n.

Hypotheses are incentivized via a binary lottery: participants gain, for every correct hypothesis of each type, 2% probability of winning the higher prize (10 tokens) in a lottery which is administered at the very end of the experiment.

To sum up, a single round of the game develops according to the following timeline:

1. Contribution choice (strategy method)
2. Corruption choice (strategy method)
3. Beliefs elicitation: how many corruption attempts in the group in the current round, n? How much is the probability of acceptance, p?
4. The program randomly selects the group member whose corruption choice has to be implemented and, if needed, randomly draws the bureaucrat's acceptance or rejection decision according to p.
5. End-of-period feedback is communicated to participants.

As mentioned above, the two treatments differ in the end-of-period feedback. In the *Private information* treatment, hereafter PRI, subjects are only informed about the payoff they earned for the period and whether they have been selected for the corruption attempt. Selected participants are also told whether the bureaucrat accepted the bribe

or not and, therefore, whether their *choice 1* or *choice 2* has been implemented. In the *Public information* treatment, hereafter PUB, end-of-period feedback includes not only own payoff but also the result of the corruption attempt, even for non-selected players. All group members are therefore told whether the selected participant has attempted to corrupt the bureaucrat and, in case she did, whether the bribe has been accepted or not.

It is important, however, to stress that in none of the treatments subjects are able to find out the result of the corruption attempt through the payoff they earn. Similarly, they cannot recover the endowment level of other group members. All they can recover, or at least have an idea about, is the aggregated level of contribution to the public good in their group. Therefore, if they experience poor contributions, this can be due to either a successful corruption attempt, or all group members having low endowments or, lastly, everybody contributing minimal amounts.

The actual payment for phase 1 coincides with how much subjects earned in a randomly selected round, to which we add the outcome of the binary lottery incentive for belief elicitation. Before knowing which round is selected for final payment and the outcome of the binary lottery, subjects perform a task aimed at eliciting their attitude towards ambiguity.[10]

Similarly to Lauriola and Levin (2001) and to Cavatorta and Schröder (2019), participants are asked to choose between pairs of Ellsberg-like urns (see Ellsberg, 1961). In every pair the first urn contains a known number of green and yellow balls, while the second has an unknown composition. We keep the winning prize fixed (10 tokens) and vary the proportion of winning balls in the first urn. Subjects are asked to state their preference between the two urns for every couple and are paid according to the result of a draw from the urn they preferred in one randomly selected pair.

The experiment was programmed in zTree (Fischbacher, 2007) and carried out at CESARE lab (LUISS 'Guido Carli' University, Rome). Participants were recruited via the ORSEE platform (Greiner, 2015) and allowed to participate to a single session only. Each session included either 20 or 24 participants who where randomly matched into four-subject groups; this excludes any possibility of personal identification of members belonging to the same group. In each session, participants were randomly assigned

[10] According to the definitions given by Moore and Eckel (2003), choices under risk are typically those where the probabilities of each outcome are known while in choices under ambiguity such probabilities and/or the outcomes are unknown. We believe that our setting is much closer to this second definition and therefore elicit participants' ambiguity aversion in order to account for it in our analysis.

Table 1: Experimental details

Number of	Participants	Groups	Sessions
Treatment PRI	68	17	3
Treatment PUB	68	17	3
Total	136	34	6
Average session length		90 min	
Average earning		16.5€	

to a computer and, before the experiment started, instructions were read aloud and questions were answered privately. Table 1 reports the details of the experimental sessions, with number of participants, 4-subject independent groups and sessions per treatment.

3 Descriptive statistics and treatment effects

Figures 1a, 1b and 1c show, respectively, the average belief per period on the number of corruption choices in the group, the fraction of beliefs which were above (gray area), equal (white area) or below (dark gray area) the actual number of corrupters in the group and the size of the gap between beliefs and the actual number of corrupters. Figures 2a, 2b and 2c perform the same analysis on the belief regarding the bureaucrat's probability of accepting the bribe offer.

Result 1: when subjects are given no information at all, the perceived number of corrupters is higher. Conversely, when participants are told the corruption choice of the selected group member and its outcome, the belief on the number of corrupters is lower. This result suggests that the availability of information on other people's experience of corruption may affect one's own perception of corruption. If information about cases of corruption is disseminated, individuals might revise their beliefs about corruption through a learning process which increases the accuracy of their perceptions. We can therefore argue that when information on corruption episodes/facts are released individual's beliefs on corruption appear to be less biased than in absence of any piece of information about actual corruption. This finding is important for assessing the role of media in shaping people's perception of corruption which may in turn influence their daily life behavior.

Result 2: Figures 1b and 1c show that, notwithstanding the difference in absolute beliefs, in both treatments subjects have a high tendency to overestimate the actual corruption level of the group. Such tendency is, however, slightly decreasing throughout periods, in favour of a higher fraction of correct beliefs (i.e. the white area increases with periods in Figure 1b) and a weakly decaying overestimation, shown in Figure 1c.

Conversely, from Figure 2 it seems that receiving additional information does not help participants in forming a correct belief on the bureaucrat's level of corruption. Forming such belief is, of course, complicated by the change in probability after periods 8 and 16 and by the wider range of possible values that this probability can assume.

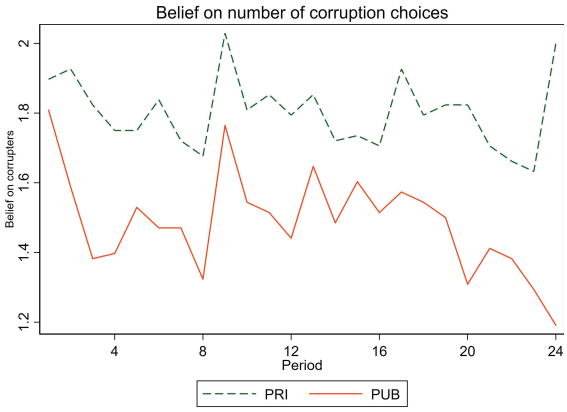
If, however, we analyse how the gap between the belief and the actual probability evolves, we can spot some effect of the information. Figure 2c shows the dynamics of the average gap by period. It seems that, although evaluating the exact probability is very hard (see white area in Figure 2b), receiving an additional information helps participants to form a belief nearer to the actual corruption level of the bureaucrat. Again this finding indicates that public information on the overall level of corruption may help in increasing the accuracy of individuals' beliefs about the real extent of corruption, so perceptions seem to be closer to the number of observed corruption episodes (i.e., the observed cases of bribe acceptance).

Result 3: in both treatments, participants on average underestimate the bureaucrat's corruption level in early periods. However, when receiving no information, they tend to overestimate it more and more throughout repetitions of the game while they are able to form more correct beliefs when receiving feedback.

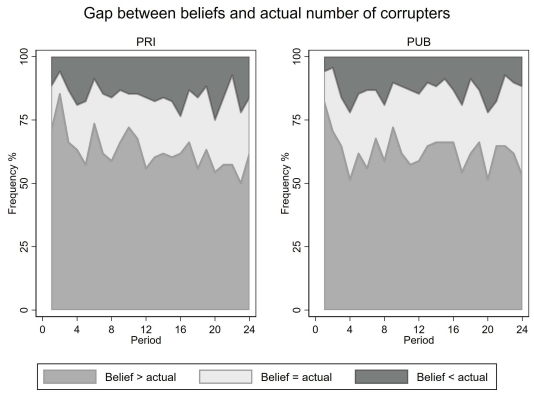
Results 1 to 3 partially support our *Research Hypothesis 1*: disclosing information concerning the outcome of the bribery attempt has an effect on the perceived level of corruption of other group members. The same does not apply to the perceived level of bureaucrat's corruptibility, though the gap between perceived and actual probability of being corrupted seem to decrease over time.

In the figures and tables that follow, by *Corrupt* we refer to a participant's willingness to bribe the bureaucrat, which we elicit through the strategy method; this is, unless otherwise stated, irrespective of whether the subject is selected for attempting to corrupt and of the bureaucrat's acceptance.

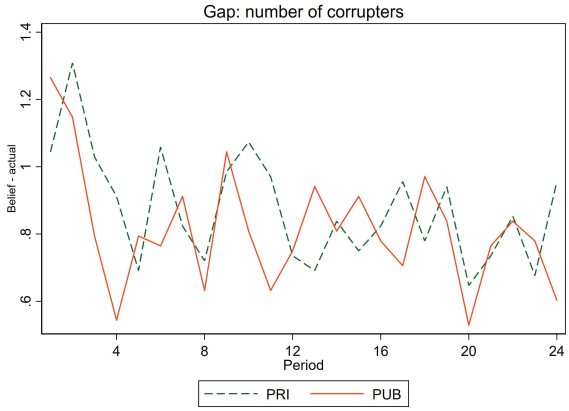
Figure 3 plots the frequency of corruption choices by round. It clearly shows how giving "public" feedback on corruption choices, even if this is anonymous and with no consequences in terms of punishment, discourages subjects to try to bribe the bureau-



(a) Dynamics of beliefs in absolute value

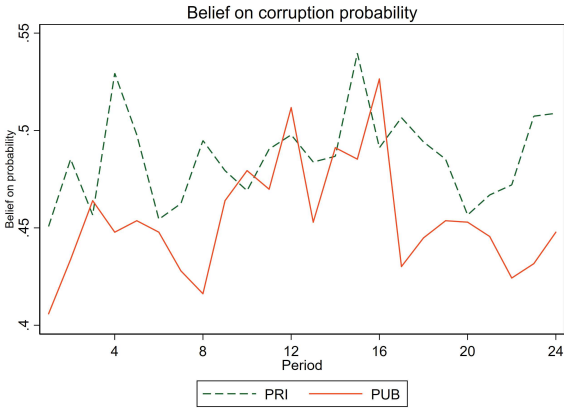


(b) Dynamics of over/correct/under estimation

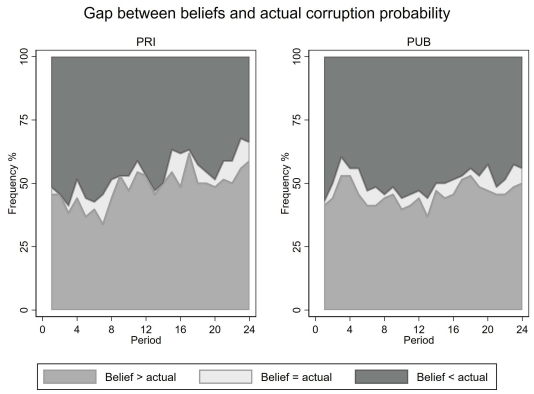


(c) Dynamics of the gap between beliefs and actual value

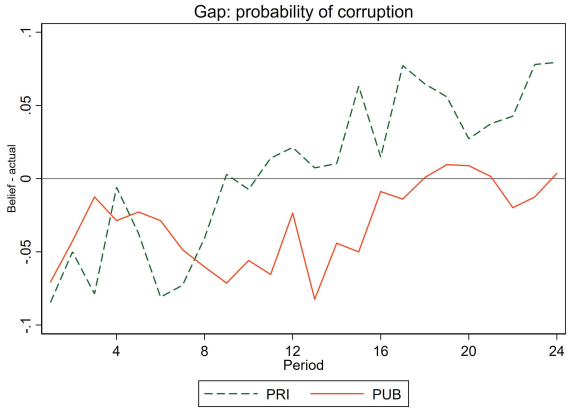
Figure 1: Beliefs on number of corrupters by treatment. Legend: PRI (Private Information); PUB (Public Information).



(a) Dynamics of beliefs in absolute value



(b) Dynamics of over/correct/under estimation



(c) Dynamics of the gap between beliefs and actual value

Figure 2: Beliefs on the bureaucrat's corruptibility by treatment. Legend: PRI (Private Information); PUB (Public Information).

crat. This can be explained by the fact that corruption is a social concern: someone willing to offer a bribe has to overcome the blame that arises from overstepping a moral norm by violating fairness, and so he/she may retain from bribing. Another explanation is that our PRI setting voluntarily does not allow participants to infer others' contribution choices, therefore a low return from the public good can be due to a successful corruption attempt as well as to bad luck in the random assignment of endowment or to all group members contributing minimally. Spreading news about such attempts does not allow subjects to "shift the blame"[11] when they want to corrupt and free-ride. Whatever the reason, it is clear that this mechanism starts from the very beginning of the game. It is not, or at least not entirely, due to the feedback received throughout repetitions, but to the mere fact that information about bribing is spread.

Such lower corruption rate causes a lower perceived group-level corruption in the PUB treatment (see Figure 1a): subjects update their belief about others via taking into account their own behavior, which is in line with the literature on directional learning.[12] Therefore, knowing that they are less willing to bribe when news on corruption behaviour are spread, they expect also other group members to be less willing to bribe. These result show that there is a tendency to 'conformity': people know that corrupt actions are publicly reported so they tend to behave in line with their perceived social norms (beliefs). Moreover, in line with this notion, corruption actions are also strongly correlated with beliefs about the corruption choices of others.

Result 4: Increasing the availability of information on corruption choices discourages bribing offers and therefore reduces the likelihood of engaging in corrupt behavior, supporting our Research Hypothesis 2.

This result suggests that free and independent media outlets may represent an effective tool for lowering corruption since by providing information about corruption, mass media may contribute to a general climate of transparency within the society, which curbs corruption (Kolstad and Wiig, 2009; Lindstedt and Naurin, 2010). Indeed, several studies indicate that a high level of press freedom leads to a low level of corruption in a country (see, among others, Kalenborn and Lessmann, 2013; Sullivan, 2014; Goel et al., 2012).

Lastly, Figure 4 reports average contribution to the public good by round and by treatment, in share of the endowment. As expected, contributions decline across repetition, once again confirming the so-called 'end period' effect (see Andreoni, 1988) which

[11] See Bartling and Fischbacher (2011) for a lab experiment on blame and responsibility.
[12] See Erev and Roth (1998) and Selten and Buchta (1994).

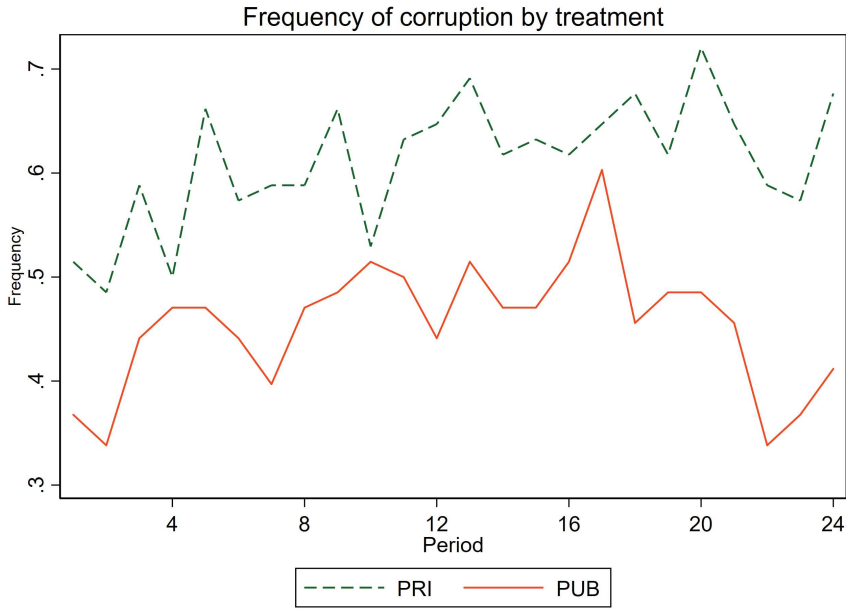


Figure 3: Dynamics of corruption choices by treatment. Legend: PRI (Private Information); PUB (Public Information).

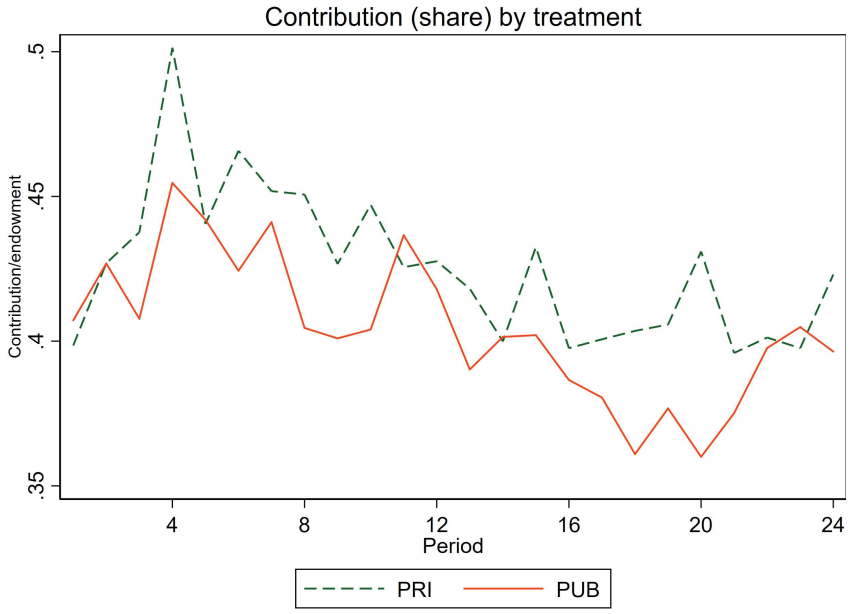


Figure 4: Dynamics of average contribution (share of endowment) by treatment. Legend: PRI (Private Information); PUB (Public Information).

Table 2: List of variables

Variable	Mean	sd	Variable description
Bureaucrat (p)	0.470	0.247	Subject's belief on bureaucrat's acceptance probability
Others (n)	1.645	0.932	Subject's belief on corruption attempts in own group in current round
Corrupt	0.533	0.499	Dummy: subject has attempted to corrupt at period t
Contribute	0.415	0.158	Share of endowment contributed to the public good
Private information	0.199	0.541	Private (individual-level) feedback at round $t-1$: *not selected/did not bribe* = no feedback received (either not selected or did not offer a bribe); *rejected* = selected and offered a bribe which was rejected; *accepted* = selected and offered a bribe which was accepted
Public information	0.449	0.882	Public (group-level) feedback at round $t-1$, PUB treatment only: *did not bribe* = selected subject did not offer a bribe; *rejected* = bribe was rejected; *accepted* = bribe was accepted
Endowment	17.60	4.424	Subject's endowment level, {12, 15, 18, 21, 24}
Treatment	0.500	0.500	Dummy for PUB treatment
Belief - actual p	−0.0125	0.347	Gap between the individual's belief and the true probability of acceptance
Belief - actual n	0.845	1.230	Gap between the individual's belief and the true true number of corruption attempts
Individual Characteristics			
Female	0.404	0.491	Gender dummy (ref. cat.: male)
Age	22.64	2.322	Age
Geo	2.691	0.896	5-categories geographical area: North, Center (ref. cat.), South, Islands and non-Italian
Living with family	0.331	0.471	Dummy: subject lives with family (Vs alone or with other students)
News exposure	2.593	0.706	Exposure to newspaper, news on TV and on internet (0 = 'never', 4 = 'Everyday')
Experienced corr.	0.197	0.270	Self-reported experienced corruption (frequency in 4 possible public services, each $\{0, 1\}$)
Perceived corr.	4.898	2.130	Self-reported corruption level in area of origin (mean of 6 public services, each $[0, 10]$)
Ambiguity aversion	7.500	1.627	Score in ambiguity aversion task
Observations	3,264		

is commonly found in experiments employing repeated public good games. Figure 4 also shows that contributions are slightly lower in the PUB treatment; this difference, however, is admittedly small and needs to be statistically tested.

3.1 Tests of treatment effects

Table 2 lists the variables used in the analyses that follow, with mean and standard deviations.

To avoid the potential bias due to significant differences in the pool of participants randomly assigned to the two Treatments, we report in Table 3 the mean and standard deviations of participants' individual characteristics in both treatments and test, via two independent sample t-test, whether there are significant differences. The balance table shows that the two subjects pools do not differ in terms of individual characteristics.

Table 4 reports average beliefs and contribution shares, as well as fraction of corruption choices by treatment. It also tests the between-treatment differences via a

Table 3: Balance table of participants' characteristics with two-sample t tests on mean differences

Variable	PRI Mean/(SE)	PUB Mean/(SE)	T-test PRI - PUB
Female	0.412	0.397	0.015
	(0.060)	(0.060)	
Age	22.441	22.838	-0.397
	(0.290)	(0.275)	
Geo area	2.588	2.794	-0.206
	(0.094)	(0.121)	
Lives with family	0.382	0.279	0.103
	(0.059)	(0.055)	
News exposure	2.534	2.652	-0.118
	(0.093)	(0.079)	
Experienced corr.	0.221	0.173	0.048
	(0.035)	(0.031)	
Perceived corr.	4.765	5.032	-0.267
	(0.246)	(0.272)	
Ambiguity aversion	7.426	7.574	-0.147
	(0.202)	(0.195)	
N	68	68	

The value displayed for t-tests are the between-treatment differences in the means. ***, **, and * indicate significance at the 1, 5, and 10 percent.

Table 4: Average belief on probability and number of corrupters, frequency of corruption choice and average contribution share by treatment

	Beliefs		Belief-actual		Choices	
	Bureauc. (p)	Others (n)	p	n	Corrupt	Contribute
PRI	0.486	1.802	0.006	0.875	0.612	0.425
PUB	0.454	1.487	−0.031	0.815	0.455	0.404
PRI-PUB	0.032	0.315***	0.037	0.060	0.157***	0.021
p-val	0.151	0.005	0.577	0.473	0.005	0.298

The value displayed for t-tests are the between-treatment differences in the means. ***, **, and * indicate significance at the 1, 5, and 10 percent.

ultra-conservative t-test, i.e. unit of observation is averaged across period and subjects at the group level, in order to perform the test on independent observations.

Results statistically confirm the observations drawn from the graphical analysis. While giving an additional piece of information decreases the perceived corruption level in the group, this has no effect on the belief on bureaucrat's corruption probability. Moreover, when it is commonly known that the behaviour of the selected group member will be disclosed, all participants are less willing to try to corrupt the bureaucrat. This result shows that participants' behavior is less based on their own experience of corruption and more on the behavior of the other members of the group. Lastly, as noted in Figure 4, the difference in average contribution levels is not wide enough to detect any treatment effect.

4 Regression analysis: Results

Via regression analysis, we first analyse the determinants of subjects' hypotheses in Table 5 and then the determinants of subjects' choices, i.e. whether or not to corrupt and how much to contribute to the public good, in Table 6.

For what concerns the two information variables, i.e. 'Private information' and 'Public information', it is worthwhile to point out few important characteristics. Both variables represent the information participants receive at the end of every round in order to update their beliefs. 'Private information' controls for the feedback privately received by participants, in both treatment. The reference category is the absence of information, so here fall all subjects not selected for corruption attempt for that round and selected subject who decided not to bribe. In the two remaining cases, subjects were selected, attempted to bribe but the offer was in one case rejected and in the other accepted. 'Public information' follows the same rationale but represents the common feedback received in the PUB treatment only by all group members. Reference category is the situation in which the selected subject has decided not to bribe; in the two remaining categories, the selected subject has decided to bribe, with a different outcome from the bureaucrat, i.e. offer was either rejected or accepted.

Table 5 shows the results of a set of random-effect truncated regressions[13] where the dependent variable is participants' belief, either on the corruptibility of the bureaucrat

[13]Results are in line with those obtained via random-effect linear models, which allow for clustering standard errors at the group level but do not take into account the truncated nature of our dependent variables.

(i.e. its probability of accepting a bribe, p, in the first two columns of results) or on the corruption level of other group members (i.e. the number of corruption choices in the group, n, in the last two columns). All regressions include the set of individual characteristics presented in Table 2 and period dummies. Moreover, following Mundlak (1978), we add to the set of controls the individual averages of the time-varying covariates to take care of the potential correlation between observed and unobserved variables. Specifications *feedback* and *decision* differ only in how we introduce the decision to corrupt at period $t-1$. In models *feedback* we use such decision in order to build the variable 'Private information', which captures the end-of-period feedback that the subject receives in response to her bribing offer. Reference category for such variable is the situation in which the subject received no feedback whatsoever from her corruption choice in the last round, either because she was not selected for proposing a bribe or because she did not offer one. In models *decision* we introduce directly the decision to corrupt in the previous round, independently from its outcome and whether the subject is then actually selected for offering a bribe.

Results show that participants who received a positive feedback on their corruption choice in the last period, compared to subjects receiving no feedback, are more likely not only to increase their perceived corruption level of the bureaucrat, but also to increase their belief about overall corruption behavior, although their private feedback should have no impact on others' behavior. The opposite effect, although with a weaker significance, is observed when participants are selected but their bribe is rejected only for the belief concerning the bureaucrat's probability of accepting a bribe.

It is also interesting to note that individuals who corrupted in the last round are more likely to increase both their beliefs. One (partial) conclusion might be that individuals who are more prone to corrupt are also more likely to think that the whole community is corrupt as well. However, this potential effect is for sure confounded with the fact that subjects who decide to corrupt and are then selected, have access to additional feedback that might help them to update their beliefs. We therefore cannot reject research hypothesis 1.

Furthermore, as already shown in the descriptive statistics, participants playing in a setting where only private information is available (treatment PRI) are significantly more likely to over-estimate the overall corruption level of the group, compared to subjects receiving public information (treatment PUB). This result suggests that spreading information about corruption events this in turn may trigger a learning

Table 5: Results from random-effect truncated regression with beliefs on bureaucrat and other group members' level of corruption as dependent variables

Hypotheses on corruption level at round t				
	Bureaucrat (p)		Others (n)	
	feedback	*decision*	*feedback*	*decision*
Private information = rejected	-0.031^{*}		-0.113	
	(0.018)		(0.080)	
Private information = accepted	0.071^{***}		0.188^{**}	
	(0.018)		(0.079)	
Corrupt_{t-1}		0.043^{***}		0.222^{***}
		(0.011)		(0.049)
Contribute_{t-1}	0.025	0.030	0.131	0.157
	(0.035)	(0.035)	(0.154)	(0.154)
Treatment = PUB	-0.034^{*}	-0.033	-0.460^{***}	-0.336^{**}
	(0.020)	(0.021)	(0.153)	(0.143)
Endowment	-0.004	-0.003	-0.017	-0.022
	(0.002)	(0.002)	(0.017)	(0.016)
Ambiguity aversion	0.011^{*}	0.010	-0.023	-0.034
	(0.006)	(0.007)	(0.050)	(0.046)
Experienced corr.	-0.046	-0.044	-0.143	-0.200
	(0.038)	(0.040)	(0.293)	(0.271)
Perceived corr.	-0.017^{***}	-0.014^{**}	-0.019	-0.010
	(0.005)	(0.006)	(0.041)	(0.037)
Individual Characteristics	✓	✓	✓	✓
Period dummies	✓	✓	✓	✓
Mundlak correction	✓	✓	✓	✓
Observations	3,128	3,128	3,128	3,128
Number of ID	136	136	136	136

Dependent variables are beliefs about corruption level of the bureaucrat (first two columns of results) and of other group members (last two columns). Specifications include either the information privately received (*feedback* columns, with ref. ctg = not selected/did not bribe) or the corruption choice, both of last round. Additional covariates are defined in Table 2. All specifications are estimated via random-effect tobit regression and include individual means of time-varying covariates and period dummies. Column 1 and 3 refer to end-of-period feedback that the subject receives in response to her bribing offer. Column 2 and 4 decision to corrupt in the previous round, independently from its outcome and whether the subject is then actually selected for offering a bribe.

Standard errors in parentheses: ***p<0.01, **p<0.05, *p<0.1

mechanism leading to more public awareness and to less biased perceptions about corruption. Hence, media reporting about the incidence of corruption is crucial in shaping people's perception of the phenomenon thereby shrinking the gap between perceived and actual corruption. We therefore cannot reject research hypothesis 2.

Lastly, subjects perceiving their hometown as more corrupt (i.e., higher 'Perceived corruption'), under-estimate more the corruption level of the bureaucrat. This result suggests that the contextual features of the place of residence matter in shaping the formation of opinions towards the level of corruption among public officials: those who live in areas with higher levels of corruption tend to be more tolerant or permissive towards the authority's level of corruption and therefore less likely to perceive it (Chang and Kerr, 2017; Tverdova, 2001), at least in a petty corruption environment.[14] Corruption tolerance indicates to what extent people are willing to justify dishonesty in the context of the public good that leads citizens to maximize private rather than public gains: a higher tolerance threshold implies that individuals may judge bribery leniently underestimating the actual level of the phenomenon.

In Table 6 we study the determinants of the two choices that our experimental subjects are asked to make, i.e. attempting to corrupt the bureaucrat and contributing to the public good, using both a static and a dynamic specification.[15] When analysing corruption choices, we use a random-effect probit approach and report the corresponding marginal effects. For contribution choices, we resort again to random-effect tobit. All specifications include, as described above, the individual means of time-varying covariates and period dummies. Following Wooldridge (2005), we also include in both dynamic specifications the choice each subject has made in the very first round of play, in order to get rid of the so-called 'initial conditions problem'.

Results confirm that information plays a role also on participants' choice to corrupt. Having tried in the last round to corrupt the bureaucrat and having the offer rejected decreases the probability of making another attempt. A similar effect, although weakly significant, is achieved when the information about corruption attempts are publicly spread (i.e. in treatment PUB), as was noted earlier via descriptive statistics.

Result 5: When using a dynamic specification, the effect of the treatment is no longer significant: this is due to the fact that behavior in the PUB treatment is different

[14]Citizens of more corrupt countries, however, are also found to have lower trust in and appreciation for their political authorities (Anderson and Tverdova, 2003).

[15]The variable *contribute* is the share of the endowment contributed in a given round, so that we can compare across differently-endowed individuals.

Table 6: Results from static and dynamic random-effect regressions with corruption choice and share of contributed endowment as dependent variable

	Individual choices at round t			
	Corrupt		Contribute	
	static	*dynamic*	*static*	*dynamic*
Private information = rejected	-0.096^{***}		-0.005	-0.003
	(0.025)		(0.010)	(0.010)
Private information = accepted	-0.031		0.008	0.007
	(0.026)		(0.010)	(0.010)
Corrupt_{t-1}		0.181^{***}		
		(0.016)		
Corrupt_1		0.119^{***}		
		(0.028)		
Contribute_{t-1}	-0.081	-0.059		0.178^{***}
	(0.052)	(0.053)		(0.020)
Contribute_1				0.399^{***}
				(0.044)
Treatment = PUB	-0.071^{*}	-0.041	-0.017	-0.019^{*}
	(0.038)	(0.027)	(0.017)	(0.011)
Endowment	0.002	-0.000	-0.005^{**}	-0.003^{**}
	(0.004)	(0.003)	(0.002)	(0.001)
Belief - actual p	0.058^{**}	0.046^{*}	0.007	0.005
	(0.024)	(0.025)	(0.008)	(0.008)
Belief - actual n	0.044^{***}	0.043^{***}	0.000	0.000
	(0.006)	(0.006)	(0.002)	(0.002)
Ambiguity aversion	0.008	0.006	0.014^{**}	0.006
	(0.012)	(0.009)	(0.006)	(0.004)
Experienced corr.	0.041	0.056	0.041	0.003
	(0.072)	(0.053)	(0.033)	(0.022)
Perceived corr.	-0.006	-0.007	0.001	-0.001
	(0.010)	(0.007)	(0.005)	(0.003)
Individual Characteristics	✓	✓	✓	✓
Period dummies	✓	✓	✓	✓
Mundlak correction	✓	✓	✓	✓
Observations	3,128	3,128	3,128	3,128
Number of ID	136	136	136	136

Dependent variables are choice to corrupt (first two columns of results, reporting marginal effects from random-effect probit) and contributed share of endowment (last two columns, reporting coefficients from random-effect tobit). Additional covariates are defined in Table 2. Both dynamic specifications (*dynamic* columns) include, together with the lagged choice, also the initial condition. All regressions include individual means of time-varying covariates and period dummies.

Standard errors in parentheses: ***p<0.01, **p<0.05, *p<0.1

from the very first round (see Figure 3). Given the absence of significant differences in the two samples, neither in demographic characteristics or in corruption-related ones (see the balance test presented in Table 3), we cannot reject the hypothesis that this effect is due to the behavioral consequences of disclosing public information. Lastly, the dynamic specification of the model highlights the presence of state dependence: subjects who choose to corrupt in the previous period (and in the very first period) have a higher probability to corrupt also in the current one, confirming that there exist path-dependence. Based on this evidence we cannot reject *Research Hypothesis 3*.

Lastly, beliefs also play a role. Subjects over-estimating both p and n are more likely to try to corrupt the bureaucrat. The first result can be interpreted simply as believing in a higher probability of success (and, therefore, of higher expected payoff), while the second can be viewed in the light of a different social norm: subjects who think that corruption level is higher in the group, feel less shame in trying to corrupt the bureaucrat. Believing that few of your group members will corrupt the bureaucrat lowers the chances of acting corruptly, while perceiving that such corruption activity reflects a common business practice increases the chances of you acting likewise. This result, therefore, suggests that in a corruption context individuals act as 'conditional norm compliers': the more corruption they believe exists in the society, the less reluctant they become to misbehaving by engaging in corruption activities themselves. In other words, we may say that misbehaviour can be acquired and sustained through the imitation of others' behavior via a social learning process or through the erosion of the social norm, according to which people observing others' misbehaving feel justified when they also want to misbehave (see Bicchieri and Dimant, 2019, for a recent work on norm erosion). This cognitive dimension of corruption relies on the expectations of what other people are doing when faced with similar choices (Young, 2001): individuals adjust their behavior based on what they think other agents are going to do, and these expectations are generated endogenously by information about what other agents have done (as the PUB treatment shows). This means that behind expectations about corruption there is a self-fulfilling mechanism which drives corrupt behavior and make it persistent over time since expectations about others also have a direct impact on people's own (mis)behaviour (Rothstein and Tegnhammar, 2006).

Concerning the share of endowment contributed to the public good, both specifications highlight that subjects with higher endowments contribute smaller amounts (although the effect is admittedly small). Lastly the dynamic specification shows that

there is a clear and strong path dependence in contributions, as it is often found in repeated public good experiments: subjects who contributed more in the last period (and in the very first one) contribute more also in the present one.

5 Conclusions

We provide experimental evidence of how different information conditions affect the gap between perceived corruption and its actual level. Specifically, we investigate the dynamics of individuals' beliefs about the probability of bribe offer and acceptance in the context of a laboratory experiment designed as a repeated public good game between 'citizens' and bureaucrats. During the experiment, we elicit beliefs about the perceived level of corruptibility of the bureaucrat and of corruption attempts made by group members, considering one potential channel that might affect individuals' beliefs about the corruptibility of the bureaucrat and corrupt behavior of the other players, i.e the exposure to information on corruption attempts. Results show that in the absence of information concerning the corruption attempt, participants try to bribe the bureaucrat significantly more whereas spreading the news about an attempt of corruption discourages such attempts. As a consequence, in a no information setting participants expect others to corrupt more, raising the index of perceived corruption.

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Appendix A. Questionnaire

Q1.Gender
Q2. Age
Q3. Faculty
Q4. Geographic area (Italian Regions)

Q5. How often, in a regular week, you happen to read a newspaper?

- Everyday
- More than once a week but not every day
- Once a week
- Less often
- Never

Q6. How often, in a regular week, you happen to read news on the internet?

- Everyday
- More than once a week but not every day
- Once a week
- Less often
- Never

Q7. How often, in a regular week, you happen to watch the news on TV?

- Everyday
- More than once a week but not every day
- Once a week
- Less often

- Never

8. [Unincentivized trust game, not used in the data analysis]

For the following questions, please refer to your area of origin. Please indicate how much the following statements are suitable to describe your city (where 0 means *The statement does not fit at all* and 10 means *The statement fits perfectly*)

Q9. In my area, corruption in the public schooling system is very strong.
Q10. In my area, corruption in the public health system is very strong.
Q11. In my area, corruption in the police is very strong.
Q12. In my area, corruption in public offices is very strong.
Q13. In my area, corruption in the judiciary system is very strong.
Q14. In my area, elections are clean and there is NO corruption.
Q15. It has never happened to you or to other members of your family that a person, who plays a role in a public or private body (e.g. a doctor, a teacher, a judge), has asked or made it clear that (s)he wanted money or other compensations in exchange for a favor (e.g. speed up a practice, a recommendation, remove a fine)?

- Medical and health care: yes / no
- School or university: yes / no
- Police: yes / no
- Other public offices: yes / no

Q16. In the last 12 months, has it ever happened to you or other members of your family to consent to these requests and to pay in cash or via other types of compensations?

- Medical and health care: yes / no
- School or university: yes / no
- Police: yes / no
- Other public offices: yes / no

Appendix B. Experimental Instructions

[Not part of original instructions: translation from Italian. Differences in treatments are signaled in italics]

Welcome! Please read the following instructions carefully. All the participants are reading these same instructions and are participating to this experiment for the first time.

During this experiment you will be asked to make some decisions. Your decisions, along with those of the other participants, will determine your earnings for the experiment, which will be calculated as explained later. The final gain for the experiment will be paid individually and privately by the experimenters at the end of the experiment.

All sums used in the experiment are expressed in tokens. All the tokens that you have earned will be converted in Euros at an exchange rate of:

$$2.5 \text{ tokens} = 1 €$$

This experiment is completely computerized. From this moment on, the use of mobile phones is prohibited as well as any interaction between participants. Those who violate these rules will be excluded from the experiment without receiving any payment. If you have any doubt about the experiment, raise your hand and one of the experimenters will immediately answer your question privately.

The experiment ends with a questionnaire; the information is confidential and will be considered anonymously and only for research purposes.

The experiment consists of 2 phases. The choices you will make during the two phases and the relative payments are completely independent. The profit for the experiment will be equal to the participation fee of 4 euro plus the sum of the payments for the first and second phase.

PHASE 1. Phase 1 of the experiment consists of 24 rounds. In this phase, you will be part of a group of 4 participants, including yourself. These groups will be randomly formed by the computer before the first round and will remain constant throughout the duration of the experiment. Each group is associated with a computerized bureaucrat, who has a certain probability of accepting to be corrupted. Such probability will be randomly determined by the computer and can be any number between 0 and 100% in intervals of 5% (i.e. it can be equal to 0, 5, 10, 15 ..., 95, 100, where all values are equally likely). The role of the bureaucrat will be explained later.

In each round, you and all members of the group will receive an endowment, which is always the same in all the rounds for each individual, but can vary from one group member to another. In particular, the endowment may be 12, 15, 18, 21 or 24 tokens; the value is chosen randomly by the computer for each participant and all values are equally likely. At the beginning of each round you will always be assigned the same amount of tokens; it will not be possible to know which endowment value has been assigned to the other members of your group.

In each round, you will be asked to make two choices; all group members will take the same two choices simultaneously.

Choice 1. At the beginning of each round, you will have to decide how many tokens from your endowment you want to keep for yourself and how many tokens you want to put in a mutual fund, whom earnings are equally redistributed to all group members. The minimum contribution is equal to 1/3 of the initial endowment and the maximal contribution is equal to the budget.

The total profit in each round is equal to: initial endowment - your contribution + 0.4 *(sum of group members' contributions)

In each round one of the group members, randomly selected by the computer, has the possibility to bribe the computerized bureaucrat, offering him 2 tokens to have the possibility of not contributing at all in the common fund. The bureaucrat has a probability p to accept or reject this bribe offer.

Choice 2. In each round, you will have to choose whether you want to bribe the bureaucrat or not, in case you will be the selected group member. You will be asked to make this choice before knowing if you have been selected or not.

If you will be selected by the computer:

- If you decide to try to bribe the bureaucrat and your offer is accepted, your contribution to the mutual fund will be 0 and you will only have to pay 2 tokens to the bureaucrat; your earnings for this round would be: endowment - 2 + 0.4 *(sum of the contributions of the 3 group members)

- If the bureaucrat does NOT accept the offer, you will have to pat both the bureaucrat (2 token) and the minimum contribution equal to a 1/3 of your endowment; your earnings for this round would be: endowment - 1/3 d - 2 + 0.4 *(sum of the contributions of the 4 members of the group)

- If you decide not to bribe the bureaucrat, your contribution (and consequently

your earnings) will be equal to the amount selected in Choice 1.

If you will not be selected by the computer, your Choice 1 will be implemented automatically.

NOTE: every 8 round the bureaucrat will change. This means that after rounds 8 and 16, the computer will select a new probability of acceptance of the bribe proposal.

At the end of each round, before knowing how much you have earned, you will be asked to make two hypotheses:

a) What do you think is the probability that the bureaucrat agrees to be corrupted (the values you can choose are those possible for p, i.e. 0, 5, 10, 15 ..., 95, 100 percent).

b) How many of the other 3 members of the group, in your opinion, have chosen to bribe the bureaucrat (their Choice 2).

NOTE: at the end of the experiment the computer will generate a lottery in which you will have the chance to win alternatively 2.5 tokens or 10 tokens. Your chance to win 10 tokens increases (by 2%) every time your hypotheses a or b are correct. In total, in the 24 rounds, you will have to state 48 hypotheses (24 of type a and 24 of type a); so your chance to win 10 tokens can be at most 96%.

[Not part of original instructions: treatment PRI only] Before the next round begins, the computer will communicate to you if you have been selected to offer a bribe to the bureaucrat (and, in case you have chosen to bribe him, if your offer has been accepted) and your earnings for the round.

[Not part of original instructions: treatment PUB only] Before the next round begins, the computer will communicate to you

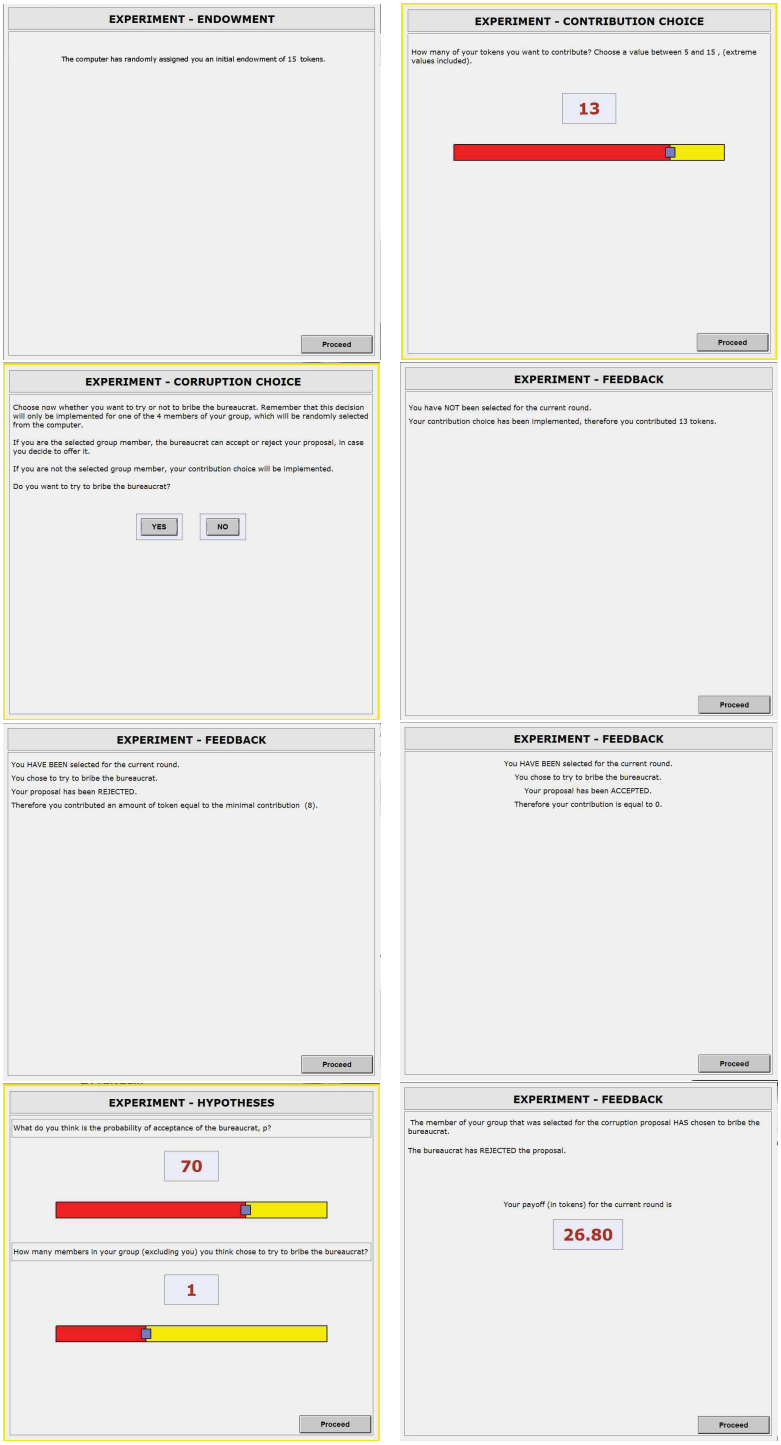
Effective earnings for phase 1

At the end of the experiment the computer will randomly select one of the 24 rounds. Your actual income for Phase 1 will be equal to: earnings realized in the selected round + earnings realized in the lottery on the hypotheses.

PHASE 2. Phase 2 of the experiment will consist of a short series of individual choices. The instructions will be displayed on the screen as soon as Phase 1 is completed.

Final Earnings for the experiment Your final earnings for the experiment will be given by the sum of the participation fee (equal to 4 €) plus the sum earned in Phases 1 and 2.

Appendix C. Translated screenshots



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