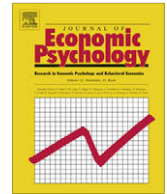




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## Bribing versus gift-giving – An experiment

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## ABSTRACT

We let students play a corruption game, embedded into a variant of the ultimatum game. Those allotted the role of public servants chose between whistleblowing, opportunism and reciprocity (delivery of a contract) and those acting as businesspeople chose how to frame the game (calling their payment either a gift or a bribe) and whether to blow the whistle at the end of the game. Opportunism and abstaining from whistleblowing is the Nash equilibrium. In line with widespread experimental evidence we find instead that businesspeople and public servants depart from maximizing payoffs. Businesspeople who strongly preferred to call the payment a bribe were more willing to punish non-delivering public servants. Translated to the real world, this finding reveals that gift-giving is a less effective method for influencing public servants because gifts fail to signal businesspeople's willingness to retaliate opportunism.

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## 1. Introduction

How should bribers label their illicit payment? There is widespread belief that the standard behavior would be to camouflage a bribe as a gift. [Pinker, Nowak, and Lee \(2008\)](#), for example, carry out a linguistic analysis and argue that bribers prefer indirect speech when trying to bribe a policeman. Instead of stating “if you let me go without a ticket, I'll pay you \$50,” they consider a more indirect wording to be preferable, such as “is there some way to take care of it here?” The advantage from such a wording would be that bribe-takers understand this as an offer, while honest policemen may either not understand the insinuation or at least find no clear evidence for attempted bribery. [della Porta and Vanucci \(2005, pp. 122–123\)](#) also observe that parties to a corrupt transaction develop an alternative language. The purpose of such language is to ascertain that payments are regarded as regular, normal and accepted business transactions. The word “gift” is preferred as it suggests an innocent type of behavior. Gifts are given as a sign of friendship and solidarity, rather than entailing allegations of wrongdoing. In order to preserve this innocence, those involved will even avoid negotiations about the size of the gift and what might be expected in return. Corrupt systems may become so strong that gifts are given and adequate favors are returned without stating even a link between the two ([della Porta & Vanucci, 2005, p. 128](#)). In other instances, for

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example in international business transactions, explicit negotiations are necessary. But Moody-Stuart (1997, pp. 27–28) observes that also in such contexts the term bribe would be avoided. Corrupt actors, it is widely claimed, always prefer calling their payments “gifts” rather than “bribes”.

We challenge this viewpoint. Bribes and gifts differ with respect to one key dimension: the existence of an explicit quid-pro-quo. Bribes include a clear request for reciprocity. Gifts, if at all, include a vague expectation of favorable future treatment (Rose-Ackerman, 1999, p. 92). This, certainly, is not to say that gifts are motivated by altruism. Quite often, the true intentions are more camouflaged, less transparent. For businesspeople bribes and gifts are thus substitutes. Both are employed to induce favorable treatment by a public servant. A gift-giver may hope for favorable treatment while a briber may be more explicit in requesting it. But both risk that their requests for reciprocity will not be fulfilled. Public servants may imply, or explicitly promise, to reciprocate but deliberately fail to do so.

First, they may silently renege on their promises. This type of betrayal is a good thing from the point of view of society at large. It ensures that bribery and gift-giving is a troublesome business and induces potential participants to refrain from getting involved in it (della Porta & Vanucci, 1999; Kingston, 2007; Lambsdorff, 2002, 2007; Lambsdorff, Schramm, & Taube, 2005; Ogilvie, 2005; Rose-Ackerman, 1999, pp. 91–110).

Second, businesspeople who hand out either gifts or bribes also run the risk that the public servants will blow the whistle, that is, report to prosecutors or superiors before or after a deal has been finalized. Altruism and a sense for public interests may motivate such behavior among public servants. The same selfless motivation might hold true for whistleblowing among businesspeople. On the other hand, a less altruistic motive may contribute: negative reciprocity. Actors who were cheated in a relationship that involved gifts or bribes may retaliate by blowing the whistle.

Our experiment confronts participants in the role of public servants with a gift/bribe to find out in how far their gratitude (positive reciprocity) or their fear of retaliation (expected negative reciprocity) may impact on their performance. A key question is whether their behavior differs, depending on whether a gift or a bribe was exchanged.

In our experiment those attributed the role of businesspeople could choose whether to call their payment a bribe (with an explicit request for reciprocity) or a gift (without such an explicit request).<sup>1</sup> We observe how public servants react to these requests and how businesspeople retaliate against opportunism among public servants. We find that some of those attributed the role of businesspeople have strong preferences on how to frame their payment. While some businesspeople preferred the less offensive wording and called the payment a gift, to our surprise others preferred to call the payment a bribe. For those in the role of public servants it made no significant difference how the payment was framed. Both gifts and bribes lead to some whistleblowing, some opportunism and some reciprocity among public servants. We observe that cheated businesspeople behaved differently, depending on whether they called their payment a bribe or a gift. Those who called it a bribe more often retaliated. The term bribe, thus, could have been used by businesspeople as an indication that opportunism among the public servants would trigger negative reciprocity.

We provide a review of related experiments in Section 2. Section 3 explains our design and in the subsequent Section 4 we provide details on how this is implemented. Section 5 presents our findings. To what extent these findings may relate to behavior outside the laboratory is discussed in Section 6, where we also present policy recommendations.

## 2. Previous experimental literature

That opportunism represents a substantial threat to informal contracting has recently been corroborated by laboratory experiments. These experiments build on regular (non-corrupt) games of reciprocity. Drawing on the gift-exchange literature, Abbink, Irlenbusch, and Renner (2000) let two participants hope for reciprocity when exchanging gifts. In case of defection, one of them can spend resources on punishment. Game theory would predict that such punishment would not be carried out because it does not increase the punisher's income. Expecting that sanctions will not be imposed, the other player would have no incentive to return a gift. This suggests that none of the participants would hand out gifts in the first place. However, contrary to game-theoretical predictions, retribution is found to be quite common. Hostile actions tend to be punished (negative reciprocity) while the friendly ones are rewarded (positive reciprocity). Even when this runs counter to payoff maximization, players do bad to those who did them bad and good to those who did them good.

Experimental investigations on corruption represent a rather novel area of research, see Abbink (2006), Andvig (2005) and Dušek, Ortman, and Lízal (2004) for reviews. In one of the first investigations, Frank and Schulze (2000) focused on individual tendencies to engage in corruption in procurement and whether economists are more likely to accept bribes. In a later contribution, Schulze and Frank (2003) extended their analysis to how intrinsic motivations are affected by threats of penalties.

Subsequent studies focused on the interaction between businesspersons and public servants. One starting point for modeling interaction is the classical ultimatum game. For a review of experimental findings on ultimatum games see Camerer (2003, pp. 48–83). In these games, a first mover can propose a division of a cake and a second mover can accept or reject, inducing a zero-payoff for both. Preferences for fairness and reciprocity motivate players to deviate from the payoff-maximizing Nash equilibrium. A second mover may reject, either because he dislikes inequality or because of negative reciprocity, that is, the willingness to retaliate. First movers may share fairly with second movers, either because they anticipate the second mover's willingness to reject or because they themselves dislike inequality.

<sup>1</sup> In order to make the instructions for both treatments sound equally natural, changing the wording from “gift” to “bribe” required a small number of further linguistic adjustments, documented in Appendix. The one that could actually contribute to determining subjects' behaviour is the explicit request for something in return for the bribe. In the remainder of the paper we simply refer to the treatments as “bribe” and “gift” treatments, as this is the key difference in wordings.

Slightly different from corruption experiments based on the ultimatum game are those that are essentially trust (or gift-exchange) games. Abbink and Hennig-Schmidt (2006) design a game where players can jointly profit by exhibiting trust and sending money to each other. Every time money changes hands the payoffs to third players are reduced, resembling the negative externality of corruption. The authors find no effect of the size of this externality on the way the game is played. The corrupt externality thus seems to have no impact. Abbink (2004) extends this game to investigate the effect of staff rotation. Jacquemet (2007) shows that a third party (a principal) can lower the willingness to engage in corruption by deliberately choosing a higher wage for the agent. This induces agents to reject bribes more often and slightly lowers reciprocity towards bribers when these are accepted. Surprisingly, agents that are endowed with a higher initial payoff reciprocate more often.

Camerer (2003, p. 87) speculates that cross-country differences in levels of trust might be related to a country's overall level of corruption. This idea is picked up by Cameron, Chaudhuri, Erkal, and Gangadharan (2005) who investigate a game where a third party that suffers from corrupt externalities can devote resources to punish corrupt firms and public servants. The authors find differences between treatments with locals in India, Indonesia, Australia and Singapore. But these differences do not correlate with these countries' perceived levels of corruption. The finding suggests that more analysis is needed and that country-specific differences in overall levels of corruption cannot easily be traced to differences in individual attitudes.

### 3. Experimental design

We extend previous laboratory experiments in various respects. We embed a gift-exchange game in a corrupt context with negative externalities. For this purpose we utilize a simple mini-ultimatum-game with only three pre-determined alternative choices for the public servant (blow the whistle, behave opportunistically, reciprocate). This simple structure allowed us to focus our attention on the question of who might be more willing to reciprocate and who may prefer opportunism. The businessperson acted as a responder with the opportunity to blow the whistle (nullify the corrupt deal) or do nothing. A formal treatment of the game can be found in Lambsdorff and Nell (2007). Fig. 1 shows the game tree.

Our experiment does not model the initial choice of whether or not to pay a bribe/gift. All those assigned the role of businesspeople were supposed to have already made such a payment. Our game thus relates to a high-corruption environment where bribes and gifts are routinely offered. A participant's individual dislike of bribery was, however, only postponed, as they have the chance to blow the whistle at the end of the game.

One novel aspect of our experiment is that subjects taking the role of businesspeople can try to play with their preferred framing, labeling their payment either a "gift" (gift framing) or a "bribe" (corrupt framing). Round 1 in Fig. 1 represents this choice. Typically experimenters tend to use neutral language in order to avoid suggesting the 'right' answer. But it was criticized that such approaches might 'neutralize away' important aspects of behavior, (Abbink, 2006, p. 425). In reality public servants will operate in a context where behavior is morally loaded, and/or where strategic decisions depend on expectations about others' moral concerns. The predicted reactions, in turn, should depend on (expected) concerns about the morality of the alternatives. While it is plausible that framing contributes to determining decisions through these channels in our experiment, evidence on framing effects in other experimental reconstructions of corrupt interactions is mixed. Barr and Serra (2009) found an effect at least on bribers' behavior (but not on that of the agents), while Abbink and Hennig-Schmidt (2006) found no impact of a non-neutral framing on the results.

We extend this analysis in two ways. First, we do not compare a neutral and a loaded framing, but two different loaded framings. To offer the choice between the bribe framing and the gift framing in an otherwise neutral environment would have led

Numbers in parenthesis indicate payoffs (businessperson; public servant) excluding show-up fee

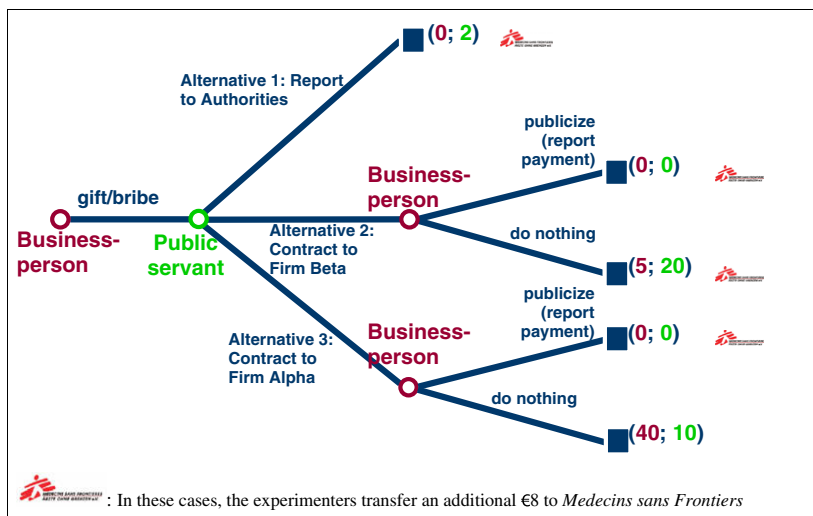


Fig. 1. The game in extensive form. Numbers in parenthesis indicate payoffs (businessperson; public servant) excluding show-up fee.

participants to make up their own cover stories, uncontrolled by the experimenters. Second, we endogenize the choice of the frame. Businesspeople were allowed to choose between a corrupt instruction and a less offensive instruction, where gifts were exchanged with a public servant without explicit requests for reciprocity (gift framing). Thus, there is an endogenous determination of the frame, which allows an investigation of how behavior in the game is related to the choice of the frame. The less offensive frame emulates the fact that in reality a briber may camouflage a bribe as a gift. In line with the prevailing viewpoint, we expected our participants to strictly prefer this camouflaged version, but were surprised by a considerable number of our participants.

In Round 2 of our game, the public servant takes the role of a proposer by deciding whether to blow the whistle (Alternative 1), to behave opportunistically (Alternative 2) or to reciprocate (Alternative 3). In Round 3 the businessperson acts as a responder by doing nothing or blowing the whistle (“publicize”), resulting in both players receiving nothing.

The main difference between a standard ultimatum game or gift-exchange game and any reasonable corruption experiment is that in the latter case, “successful” bilateral negotiations should impose an externality on a third party. [Abbink, Irlenbusch, and Renner \(2002\)](#) designed this externality as a certain amount subtracted from the payoff of all other participants in the experiment who played the same game at the same time. However, this externality may not be strongly felt by participants, as it extends to other potentially corrupt actors. If a subject expects other participants to opt for corrupt action, this might provoke, or justify, his or her decision to do the same.

This possible effect is avoided if the externality is imposed on parties not involved in the experiment. This corresponds better with real cases of corruption, where bribers and officials do harm to people who will never get the chance to pay them out in their own coin. In our case, the third party is *Médecins Sans Frontières*, a well-known non-profit organization, the donation to which would depend on the subjects’ behavior.<sup>2</sup> [Eckel and Grossman \(1996\)](#) have introduced donations to charities in experiments, focusing on a dictator game. They report that charities, as opposed to anonymous players, are better in motivating altruism among players. They argue that charities, in their case the American Red Cross, are recognized as deserving popular support. Players in the role of the dictator thus share more than 30% of their payoff with a charity. This is much more than they share with an anonymous player who may not deserve support. The donation in our game is therefore capable of invoking sentiments of altruism. Failure to achieve the payment suitably captures the societal losses caused by corruption.

#### 4. Implementation of the experiment

All participants were shown [Fig. 1](#), revealing the payoffs that were identical for both framings. Starting from an endowment of €25, the businessperson gives €20 (as a gift or bribe) to the public servant, resulting in a remnant endowment of €5. The businesspeople were allowed to choose between a corrupt instruction (bribe framing) and a less offensive instruction, where gifts were exchanged with a public servant without explicit requests for reciprocity (gift framing). Thus, there is an endogenous determination of the frame, which allows an investigation of how behavior in the game is related to the choice of the frame. He or she would win a further €35 as a profit from the contract in case of reciprocity and lose €5 if someone blows the whistle. The public servant obtains a payoff of €20 (gift or bribe) from the businessperson. He would have to pass on €10 for arranging the awarding of the contract (reciprocity). Upfront whistleblowing induces confiscation of the gift or bribe but a bonus of €2. If the contract is not awarded to the businessperson in Clausthal (either due to opportunism or whistleblowing) no damage results, hence €8 are donated to *Medecins sans Frontiers*.<sup>3</sup>

Participants taking the businesspeople’s part in the experiment were recruited at the Clausthal University of Technology from lectures held by one of the authors in introductory economics (first year students of business economics and engineering economics) and microeconomics (second or third year students of business economics and engineering economics). The experiment took place in the classroom (or rather lecture halls), but participation was voluntary – students knew the experiment would take place, would be played anonymously, and that it did not relate to topics covered in the lectures. Hence they could easily choose to stay away. Altogether, 192 students took part in the first-round of the experiment, 12 of them were excluded from the data set due to incompleteness of the questionnaires or a mistake in a control question.

The completed forms were then sent to Passau University, where participants took the role of the public servants. Hundred and seventy six students were recruited for this purpose from a course in macroeconomics (third year students of business administration and economics as well as governance and public policy).<sup>4</sup> The sheets with the two different framings were

<sup>2</sup> As mentioned above, [Jacquemet \(2007\)](#) designs his experiment with a more explicit principal–agent relationship where the official harms another player, his principal, when taking bribes.

<sup>3</sup> For calibrating our experiment, the most important evidence were results of a mini-ultimatum game experiment by [Falk, Fehr, and Fischbacher \(2003\)](#). In one version of their game, a proposer can offer either (8, 2) or (2, 8) with the first figure denoting the proposer’s payoff and the second figure denoting the responder’s payoff. The authors observe that 73% of proposers chose (8, 2), the rest proposed the outcome that is less favorable to themselves (2, 8). 26.7% of responders rejected when they were confronted with (8, 2). With (20, 5) and (10, 40) our payoffs are similar to the ones used by [Falk et al. \(2003\)](#). Either the proposer obtains four times the payoff of the responder, or he/she gets only a quarter. Our game differs from the one by [Falk et al.](#) because our subjects played only once. We felt that this might reduce rejection rates because players cannot hope to recoup their lost payoff elsewhere. We intentionally increased the attractiveness of reciprocity on corrupt promises by doubling the players’ payoff relative to the payoff in case of opportunism. But this was offset by promising a donation to a charity provided the businessperson did not obtain the contract. These changes disallow a comparison of our results to those by [Falk et al. \(2003\)](#). Still, our guess was that our results would be fairly similar to theirs.

<sup>4</sup> We had 180 “businesspeople” in the first stage, but only 176 public servants in Passau. We thus needed a procedure that secured a returned sheet for all 180 businesspeople where all are treated similarly. The practical solution was to clone four actual public servants (or their decisions, respectively). Cloning implied using the given probabilities for the three alternatives for a random determination of the public servant’s behavior. We noted these responses on the four sheets, but did not further process the results statistically.

randomly assigned to the participants. The completed forms were then sent back to Clausthal, where 152 of the eligible 180 first-round participants showed up to play Round 3. Afterwards, 25 forms (i.e., 50 participants) were randomly chosen, and participants received their payments either in Clausthal or Passau from a secretary in a separate room, their identity remaining hidden from the other participants and from the experimenters. While Bolle (1990) has shown that the random reward mechanism produced reliable results in his ultimatum game experiments, our considerations were not mainly budgetary. Rather, it was important to keep the initial transfer markedly above the €10 threshold, below which gifts are more likely to be tolerated in the German public service, which our participants probably knew.

The Round 1 participants in Clausthal received three sheets (see Appendix). The first sheet contained general instructions and explained how participants should choose a nickname plus two-digit code number and how this would ensure anonymous payments. The second sheet asked for some personal data (nationality and gender) and contained details on whether participants prefer to call their payment a bribe or a gift. Participants could bid to secure their preferred framing (bribe or gift). If they failed to secure this by bidding, the framings were assigned randomly with a 50% probability each.

During Round 1, in each of the two lectures in Clausthal 12 “rights to play with the gift fame” and another 12 “rights to play with the bribe frame” were auctioned in a simple multi-unit Vickrey auction (which gets complicated when participants can bid for more than one unit; that was not the case here.) This method implied that the price of a preferred frame was determined by the 13th highest bid, the first one that remained unsuccessful. To introduce participants to the Vickrey auction, the sessions started with the second-price sealed-bid auctioning of a CD,<sup>5</sup> which we used to demonstrate the incentive compatibility of the mechanism and to explain how deviations of the bid from true valuations are dominated. Of course, rubbing this under the participants’ noses would be questionable if our aim had been to investigate bidding behavior as such. However, we were interested only in subjects’ valuations of the framings and hence in bringing bids as close as possible to valuations. In retrospect, the auction was rather complicated and a simple sale of the preferred frame for, say, €2 would have been easier. But this option was not possible as the distribution of subjects’ bids for framings as reported in Section 5.1 below was unknown to us.

Participants were placed at an appropriate distance from one another and communication between them was not allowed as long as they had the forms. All sheets were collected and the third page sent to Passau University. Actually sending the original sheets by mail, instead of transmitting the decisions electronically, had the advantage of preventing any possible suspicion concerning the authenticity of the counterparts’ decisions. The disadvantage is that one week laid between the first and the final decision of those taking the role of businesspeople.

At Passau University the sheets (containing the third or fourth page only) were distributed in a sealed envelope among the participating students. The rules of the game were explained in neutral wording, without addressing the two different labelings. Envelopes were then opened and the game was played. On a separate sheet, personal data such as nationality and gender was asked for. The game in Passau lasted 30 min. Altogether, €274 was paid to the students (which implies an average hourly earning of €3.13 per participant) and another €152 to *Medecins sans Frontiers*. In order to increase the credibility *ex ante*, it was announced that the transfer voucher would be made publicly available after the experiment. We believe that our participants understood that our failing to make the donation would have led to embarrassment not compensated by the money saved.

The sheets were returned to Clausthal, where the businesspeople observed the public servant’s reaction and decided whether or not to blow the whistle. In Clausthal, overall the experiment lasted about an hour. Altogether €445 was paid to the students. The hourly earnings for those 25 participants who were drawn and paid was about €18. This includes a €10 show-up fee that was wholly or partly used for the Vickrey auction. The hourly earning of an average participant was about €2.50. One concern is that these payments were rather low, such that only participants with a low opportunity cost of participation are attracted. However, fixed costs of attending were zero, as participants could simply stay after a regular lecture, which a vast majority did. Hence we expect no selection bias affecting our experiment. The incentives faced by participants also remained strong, given that they varied considerably depending on the chosen strategies.

## 5. Results

### 5.1. Approaching the agent

In our experiment, like in some industries or countries with a reputation for high levels of corruption, businesspeople did not have the option to refrain completely from making a transfer to the agent. Their chance to reveal the extent of their tolerance towards corruption did come, however, at a subsequent node in the course of the experiment. The only choice they had to make in the first stage of the experiment was *how* to approach the agent. Table 1 shows participants’ preferences for the two framings. If participants voiced no preference for either of the framings each of them was assigned with a 50% probability. A bid that was sufficiently high would secure a framing with certainty, thus increasing the probability by 50%.<sup>6</sup>

Offering a gift instead of a bribe might be considered as desirable, as the moral connotations are possibly less negative. We had initially expected this all the more as our subjects did not have a choice whether to offer something or not; even the most scrupulous ones could only choose between offering a gift and a bribe and should opt for the gift as the morally less

<sup>5</sup> The group size was half the sample size (one CD being sold in each group); the winners paid with their own money. It was made clear that this holds for the CD only and not for the “real” experiment where we made sure that auction winners could pay by having their payoff reduced.

<sup>6</sup> The number of bribe framings handed out is slightly higher than the number of gift framings. This was a purely random effect, because only few sheets were tendered while the rest was assigned with a 50% probability.



**Table 1**

Businesspeople's preference for gifts or bribes.

	Bidding for corrupt framing	Bidding zero	Bidding for gift framing
Number of bids	39	67	74
Average bid	3.77	0	4.09
Median bid	2.50	0	3.01
Playing with corrupt/gift framing	30/9	37/30	26/48

controversial alternative. Furthermore, those indifferent to possible moral connotations between the two framings might still expect the agent not to be indifferent. However, we observe that 22% of the businesspeople (39 out of a total of 180) preferred the corrupt framing and were willing to place substantial bids to obtain this form, Table 1. Businesspeople may have liked the more direct request for reciprocity in the corrupt framing. They might also consider the corrupt wording as an announcement that non-performance by the public servant would be retaliated. The corrupt framing would thus signal the willingness to retaliate. We will return to this idea later.

Thirty seven percentage of our subjects (67 out of the total of 180) did not show a preference for one of the framings and bid zero. With hindsight, these zero bidders had a correct guess of the true difference in the value of the framings, as will be shown in the next section.

### 5.2. The public servant reacts

Forty nine participants out of 176 in Passau preferred to blow the whistle, see Fig. 2.<sup>7</sup>

As expected, there is a considerable deviation from payoff maximizing, subgame perfect Nash equilibrium. Businesspeople allocated funds to retaliation and public servants reciprocated on the gift/bribe.

For statistical analysis we use Fisher's exact probability test. In a  $2 \times 2$ -matrix this test determines the probability that both columns follow a joint distribution (the null hypothesis), where differences arise only randomly. Fisher's test would then determine the likelihood that the observed or even more unequal results occur at random. Low values thus indicate a low probability that the observations emerged randomly under the constraints of the null hypothesis.

There is no direct framing effect in the sense that the choice of the framing would have a significant impact on the agents' decision making, Table 2.

We observe a considerable number of public servants reciprocating the bribe/gift. This might be motivated either by fear of negative reciprocity or because they prefer to do those good who did them good. This finding is in line with typical ultimatum bargaining experiments, where relying on the subgame perfect equilibrium leads to notoriously bad predictions of outcomes. A more surprising result is that we cannot find less whistleblowing in case of gifts as opposed to bribes. Also, there is no less opportunism in case of a bribe framing. It is equally attractive to just keep an amount of money called bribe as it is to keep one called gift, despite possible differences in moral connotations. We observe a slight tendency to more often reciprocate a bribe (16%) rather than a gift (13%). But this tendency is far below reasonable levels of significance. Overall, we do not find evidence that public servants in Passau distinguish between an outright bribe and a related favor that is camouflaged as a gift.

This failure to find such evidence, however, may also relate to the little emphasis placed in Passau on differences in framing. The experiment was explained to students without mentioning that two alternative forms existed. We purposely did not mention differences explicitly to avoid overshadowing the written forms by morally loaded explanations of the game. We also feared that such details would have overemphasized the importance of framing effects beyond the participant's recognition of such effects. We thus followed to the standard approach of not informing participants about the range of different frames. The slight difference of 16% of bribes being reciprocated but only 13% of gifts is thus likely to denote the lower bound of the effect of wording on the public servants' behavior.

### 5.3. Costly punishment by the disappointed bribee?

The chosen framing was important to the businesspeople in Clausthal when deciding whether to blow the whistle. Those choosing the corrupt framing in Clausthal were more willing to punish opportunism instead of maximizing their payoff, see Table 3.<sup>8</sup> This was an effect we did not expect a priori. We had already guessed in Section 5.1 that the corrupt framing might have been chosen in order to announce negative reciprocity. The terms "bribe" and the request to deliver the contract may have

<sup>7</sup> This appears to be a strong framing effect. Whistleblowing might already be motivated by the externality (the donation). However, the high degree of whistleblowing cannot be explained by the externality alone. Students in Passau may have a preference for donating €8 to Médecins Sans Frontières. Still, whistleblowing is dominated by both alternatives. Playing reciprocity brings about the prospect of obtaining €10. Donating €8 and keeping €2 would replicate the outcome of the whistleblower, while retaining the liberty to donate more or less. Choosing the opportunistic action would even provide the prospect of collecting €20 and donating even more. Looking only at payoffs, however, provides a rather narrow viewpoint towards charitable behavior. Such behavior is often supported by direct encouragement, for example by collectors in the streets. The instructions may have been understood as such an encouragement. We are grateful to an anonymous referee for pointing this out.

<sup>8</sup> As the actual price for receiving the money bribe framing for sure was higher than 1€, a small number of participants bid more than 1€ and played with the gift framing. Including them in the group of "determined money bribers" slightly reduces the level of significance, but does not change the results qualitatively.

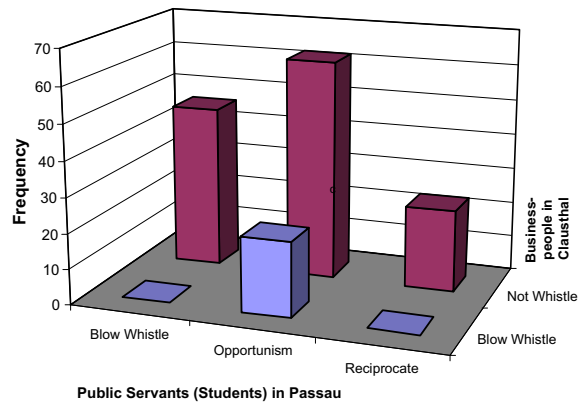


Fig. 2. Corrupt reciprocity – student's behavior.

Table 2

Public servants response to different frames.

		Framing		Fishers' exact probability test (one-sided): probability of distribution within row not being different to rest of matrix
		Gift	Bribe	
Public servant's reaction	Whistle	24 (29%)	25 (27%)	0.45
	Opportunism	48 (58%)	53 (57%)	0.52
	Reciprocate	11 (13%)	15 (16%)	0.37
		83 (100%)	93 (100%)	

been preferred so as to threaten retaliation in case of opportunism. While this threat was certainly not subgame perfect for payoff-maximizing players it was played nonetheless, and more often by those with the corrupt framing (Fig. 3).

In a related publication (see Lambsdorff & Frank, 2007) we find strong gender effects in our experiment: men were more likely to retaliate than women. We therefore checked whether the results from Table 3 can be explained by gender, that is, male bribers retaliating and female gift-givers not blowing the whistle? We apply a bootstrap-approach.<sup>9</sup> Such an approach yields results that converge (with higher repetitions) towards the Fisher coefficient for all of the above tests and is equally valid here. As reported in Table 3, 32 women and 51 men were faced with opportunistic public servants. Of these, 2 women and 10 men were determined bribers. Our null hypothesis, which we seek to reject, would now be that being a determined briber has no impact on whistleblowing. To disprove the null, we randomly drew 2 women from the total sample of 32 women and noted how many of these blew the whistle, the likelihood for each being 5/32 (because 5 women out of 32 blew the whistle). Likewise, we drew 10 men from the total sample of 51, their likelihood for blowing the whistle each being 16/51 (because 16 men out of 51 blew the whistle). If a total sum of 6 or more from these two draws blow the whistle, we replicate our finding as a purely random result without determined bribers actually exhibiting a different behavior, which is our null. We ran 100,000 repetitions of this algorithm and observed 6 or more whistleblowers only in 7.6%. This allows us to reject the null at the 10% error level. Thus, determined bribers are more likely to retaliate.

We checked whether this interpretation of the choice of frames was also intended by our players by distributing questionnaires at the end of the game in Clausthal. The choice of gifts was mostly motivated because the milder wording might less offend public servants in Passau, but also because businesspeople in Clausthal felt that they were acting less illegitimately themselves. Others mentioned a less apparent quid-pro-quo of gifts that appeared preferable to them. The choice of the corrupt framing was sometimes explained by the better fungibility of monetary payments as opposed to the in-kind character of gifts. Also, the game was considered to be better described as a game of bribes rather than gifts, the bribe-form thus having the advantage of clarity. Bribers also seemed to be risk-loving and curious about the public servant's reaction. Finally, in line with our results, we observed players preferring the corrupt framing because it entails a clearer quid-pro-quo and because the illegality may help avoid opportunism.

## 6. Policy implications and conclusion

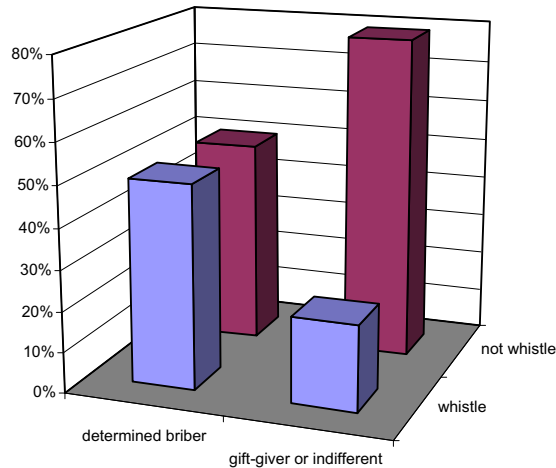
Our experiment reveals a noteworthy deviation from the subgame perfect Nash equilibrium. A considerable number of public servants depart from a payoff maximizing strategy by blowing the whistle. Whether this result can be swiftly applied to the world outside the laboratory/classroom is a challenging question. Some participants may have felt that whistleblowing is the behavior expected from the lecturers due to their reputation of being engaged in anticorruption. But the wording used by the experimenters was tightly controlled and did not entail normative judgments beyond the wording reported in

<sup>9</sup> A binary regression would require some more complicated procedures, due to the fact that equivalence of rows is tested (and not just single figures) and participants decide on their behavior but are pre-determined with regard to their sex. A bootstrap approach provides a shortcut to these complexities.

**Table 3**

Punishment of opportunistic behavior, by preference for framing.

		Type of businessperson	
		Determined briber <sup>a</sup>	Gift-giver or indifferent
Businessperson's reaction to opportunism	Whistle (punish)	6 (50%) [5, 1]	15 (21%) [11, 4]
	Not whistle	6 (50%) [5, 1] 12 (100%)	56 (79%) [30, 26] 71 (100%)

Fisher's exact probability test:  $p = 0.044$  (one-sided).<sup>a</sup> A determined briber plays with the bribe frame and bid at least €1 for this frame. Details on gender [male, female] in brackets.**Fig. 3.** Cheated businessperson's reaction to opportunism.

Appendix. We thus do not consider this aspect to explain the relatively frequent whistleblowing of public servants. Admittedly the extent of whistleblowing in real corruption cases surely depends on many factors not modeled in our experiment – a caveat that should apply equally across treatments.

Another noteworthy observation is the frequent choice of reciprocity, again departing from the subgame perfect Nash equilibrium. Common reasons for the choice of this strategy is either the desire to do good to those who did oneself good, or the fear of retaliation in case of non-performance. Applying this to reality, again, is not trivial. On the one hand, stakes in real corrupt transactions are much higher. Levitt and List (2007) cite evidence, although mixed, that in ultimatum games higher stakes bring outcomes closer to the Nash. This would indicate that opportunism is even a bigger risk in reality and reciprocity more seldom. This caveat is particularly relevant as the hourly earnings in our game were rather low.

On the other hand, some chance of repetition is commonly given in reality and likely to reduce opportunism. Repetition was ruled out in our game, suggesting that the probability of opportunism was overestimated.<sup>10</sup> Even when considering these caveats, opportunism represents a real threat to bribers which they seek to ameliorate by finding mechanisms to enforce the transaction. Our experiment reveals that usage of the term “bribe” was employed to precisely serve this purpose.

Similar to the choice in the real world, the experiment allowed for two different approaches to bribing public servants. While transferring a “gift” is preferred because it appears less offensive and demanding, a bribe is chosen precisely for the opposite reason: it is more demanding. A bribe makes it clearer that reciprocity is expected, including the threat to retaliate in case of opportunistic behavior. Participants were willing to live up to this threat and devote resources to retaliation after naming their payment a bribe. This suggests that the use of the word bribe is intended to help enforcement of the corrupt agreement.<sup>11</sup> The stakes in the game were comparatively low, certainly never close to the bribes and gifts we sometimes observe in reality. This might influence behavior by letting participants depart from the Nash equilibrium. But this effect will be equal for the bribe and the gift treatment. Our result on the framing effect is thus likely to hold in reality.

One conclusion for reform would be to improve incentives for the “good” whistleblowers (those public servants who report upfront of those businesspeople who report after obtaining the contract) and deter the “bad” whistleblowers (who

<sup>10</sup> However, participants in laboratories are sometimes suspected of playing as if repetition were possible, contrary to explicit instructions (Levitt & List, 2007). The relevance of opportunism is also confirmed in a recent field study by Maréchal and Thöni (2007). They found that gifts given by sales representatives to businesspeople result in higher sales revenues, but only if buyers and sellers are not interacting for the first time. Hence, overall we have little reason to assume that opportunism in one-shot interaction is less or more likely in reality.

<sup>11</sup> Quite often bribers and gift givers self select themselves into their desired strategy from the beginning. If possible they might abstain from giving anything. Allowing this option in an experiment would be interesting and go beyond our findings. Payment of a bribe/gift might then provide a stronger signal to recipients that reciprocity is expected and maybe a more pronounced threat of negative reciprocity. The relevance of such ideas and whether a bribes or gifts differ in such a setting deserve further research.



threaten to retaliate after being cheated). In particular businesspeople who explicitly labeled their payments a bribe and requested reciprocity appear to be bad whistleblowers. They should less qualify for leniency as compared to gift givers. Another conclusion relates to prohibiting gift-taking. Some observers fear that any gifts induce reciprocity and are thus similar to bribes. Our results are more nuanced. Gift-takers may not fear retaliation in case of non-performance. Legislators may thus alert bureaucrats to report gifts when they feel pressurized into reciprocity, which is often the case when payments are called bribes. But bureaucrats might be allowed to accept gifts as long as they can demonstrate that nothing was given in return and prove that allegations to the contrary are unfounded.

A final concern might be that our results are valid only for sophomore students but not for practitioners. In July 2007, 2008 and 2009 we also played the game at a summer school with more than 150 senior prosecutors and fraud investigators from various continents and found results that are much along the lines of those reported here. In discussion we detected similar patterns of reasoning, confirming our findings.

Overall, we observe two different approaches to bribing public servants. While transferring a “gift” is preferred because it appears less offensive and demanding, a bribe is chosen precisely for the opposite reason: it is more demanding. A bribe makes it clearer that reciprocity is expected, including the threat to retaliate in case of opportunistic behavior. Participants were willing to live up to this threat and devote resources to retaliation after naming their payment a bribe. This suggests that the wording of a bribe is intended to help enforce a corrupt agreement. This disproves the notion that corrupt actors strictly prefer to camouflage a bribe as a gift.

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### Appendix. Instructions and forms

(slightly abridged)

*Cover sheets of instructions for all participants in Clausthal (“businesspeople”)*

Many thanks for participating in this experiment, which runs roughly as follows: you send a message to a student in Passau. You will not know who exactly that person is, and vice versa. After having received your message, your opponent makes one decision. Then 25 pairs of players, randomly drawn, get paid, the amount depending on your final decision.

The game will be played only once. There are two variants, which do not differ in possible payments, but in the wording of your message.

[Some technical advice on choosing an alias and code number for claiming the payoffs, and on entering personal data, omitted]

*Second page*

- Carefully read form A and form B. Decide for yourself with which form you would prefer to play.
- A random mechanism will determine whether you actually play with form A or form B.
- However, you have the chance to get one form for sure. 12 forms of each kind will be auctioned off; you will be asked to submit your bid. Most likely the price you have to pay will not equal your bid; the 12 participants with the highest bids will play with their favoured forms and pay a price that equals the 13th highest bid. If less than 13 bids for one forms are made, the price of that form is 0.

(control question omitted)

If you could, which form would you choose?

Form A (gift for the agent).

Form B (bribe for the agent).

What is your bid for the rights to choose the preferred form, instead of receiving one randomly?

€\_\_.

Third page

Sheet A*[Section to be filled out by agent:]*

I am the public servant responsible for the awarding of the public contract. My pseudonym and code number are:

--	--

Firm Alpha gave me a gift worth €20. Firm Beta, a competitor of Alpha, could carry out the contract better. If Beta got the contract, the general public would benefit to the tune of €8. That benefit is paid to *Médecins sans Frontières* by the experimenters.

I decide to take the following action (please mark with a cross):

Alternative 1	I report the acceptance of the gift to my agency. Though I may not keep the gift, I receive a €2 bonus. Firm Alpha has to pay a €5 penalty.	<input type="checkbox"/>
Alternative 2	I keep the gift, but I do not favor firm Alpha. Rather, I award the contract to the better firm Beta.	<input type="checkbox"/>
Alternative 3	I keep the gift and I give a part of it (€10) to my colleagues to ensure that firm Alpha really is awarded the contract. Firm Alpha then makes a profit of €35.	<input type="checkbox"/>

*[Section to be filled out by firm:]*

I am the owner of firm Alpha (businessperson). My pseudonym and code number are:

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From my initial endowment of €25 I used €20 to purchase a gift for a public servant. The public servant was responsible for awarding the contract that I was interested in. Now I see (on the upper half of the sheet) how the public servant dealt with the gift. I cannot react to Action 1. In response to Action 2 or 3 I decide to take the following action (please mark with a cross):

do nothing	<input type="checkbox"/>
publicize	<input type="checkbox"/>

If I decide to “publicize” this means that I report to the government agency that I paid a gift to the public servant. If I was awarded the contract, the contract would then be revoked. In any case I have to pay a €5 penalty. The gift is retained by the agency.

If I decide to “do nothing” I get

- nothing if the public servant took Action 1
- €5 if the public servant took Action 2
- €40 if the public servant took Action 3

*[end of instructions]*

In Sheet B on the fourth and final page of the instructions (corrupt framing), the wording was changed as follows:

gift → bribe;  
 purchase a gift → pay a bribe and in return requested me to award the contract;  
 report the gift to my agency → report the bribe to the public attorney;  
 the gift is retained by the agency → the bribe will be confiscated

...

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