How Tempting is Corruption? More Bad News About Economists [1)]

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Abstract

In this paper, we report on an experiment on corruption which investigates various determinants of corruptibility. We find that economics students are significantly more corrupt than others, which is due to self-selection rather than indoctrination. Moreover, our results vary with gender. Also, agents are no less corrupt if rewarded in addition to, and independently of, a possible bribe. Our experiment isolates the influence of self-interest on cooperation from other influences such as risk attitude and expectations regarding the behavior of others.

1. Introduction

Do economists behave in a more self-interested way than other people? Some empirical studies argue that they do; however, this view has been seriously challenged recently (cf. Yezer et al. 1996). In this paper we provide additional empirical support for this controversial hypothesis in an experiment that – for the first time – tests for corruptibility. Our setup is different from most of the previous studies in that the notion of 'fairness' is indisputable in our context and, hence, likewise shared by economists and non-economists. This allows us to identify whether economists are more prone to deviate from 'the morally good', or whether their different behavior is simply caused by a different notion of fairness or different perception of other people's behavior. We also test whether the different behavior is a result of self-selection, or due to indoctrination. Moreover, our analysis provides insights into whether gender plays a role and whether the level of fixed rewards alters the inclination to corruption.

Three different approaches have been used to explore whether economists behave more in accordance with their self-interest than other people: Laboratory and 'real-world' experiments, and

surveys. Marwell and Ames (1981) conduct a laboratory experiment on free riding: individuals are asked to allocate a given financial endowment to private use and contributions to a public good. After allocations have been made, each individual receives his/her entire private resources one-to-one whereas the contributions to the public fund are pooled, multiplied by a factor greater than one and shared by all individuals regardless of their contributions. Obviously, the socially optimal solution is that all individuals allocate their entire resources to the public fund while the individually rational strategy is the exact opposite. Maxwell and Ames find that high school majors (i.e. non-economists) contributed an average of 42 % to the public fund, which is significantly more than the average contribution of 20 % of first year graduate students in economics. A survey of what the two groups considered a "fair contribution" to the public fund revealed a similar marked difference.

Carter and Irons (1991) use an ultimatum bargaining game where the 'proposer' offers a division of a given amount of 10 $ between him/her and the 'responder'. The responder either accepts the division, which is then actually implemented or (s)he rejects the proposal, in which case both players receive nil. The game-theoretic prediction is that the proposer offers the minimum positive amount (say 1 ¢) to the responder which he then accepts. It is well established that this is not the typically observed outcome. Carter and Irons (1991) provide the additional evidence that economics students behave 'closer' to strategies predicted by game theory.[3)] On average, they accept a minimum of 1.70 $ as compared to 2.44 $ for non-economics students and proposed to keep 6.15 $ (5.44 $ for non-economists), which are different values at a 2.5 % significance level (one-tailed).

Selten and Ockenfels (forthcoming) investigate the 'solidarity' within groups of three. Each subject has a 2 in 3 chance of winning 10 DM. Independently, each individual in a group has to precommit what portion of their winning they will share with the loser(s) should one or both other member(s) of the group not win. Selten and Ockenfels find that females give significantly more than males, and male economists give significantly less than male non-economists (both findings are significant at the 1 % level).

Robert Frank et al. (1993) conduct a prisoner's dilemma experiment[4)] and find that economics majors defect significantly more often (60 %) than non-majors (39 %). Male students are more likely to defect than females (difference in probability is 0.24) and, even after controlling for gender, the probability of an economists to defect is 0.17 higher than for a non-economist. Overall, the defection rate declines significantly with duration of study. This trend, however, is absent for economics majors. The authors conclude that the difference in behavior of economists is acquired rather than the result of self-selection. However, the difference between economics majors and other majors vanishes if the players are allowed to make (non-enforceable) promises to cooperate. The problem with the interpretation of these results is that a value judgment does not follow straightforwardly – to 'play safe' or to maximize individual profit is not necessarily 'morally bad' for all subjects in the experiment.[5)]

Yezer et al. (1996) attack Frank's et al. (1993) conclusion that the "exposure to the self-interest model commonly used in economics alters the extent to which people behave in self-interested ways." (p. 159). They argue instead that the different performance in structured games like the ones reported may result from a better understanding of the situation and a more realistic view about the non-cooperative behavior of people in general. They call for a *real world* experiment to test for actual different behavior on part of economists. In a 'lost letter experiment' they intentionally 'drop' an unsealed, addressed and stamped letter with no return address in the classroom. The letter contains 10 dollars and a hand-written note indicating that the sender is paying back an informal loan. Economics students returned significantly *more* (at the ten percent level) letters: Of the 32 letters dropped before an economics undergraduate class started, 18 were returned (i.e. 56 %). Contrastingly, only ten of 32 letters dropped in other classes (i.e. 31 %) were returned. This is claimed to contradict the previous results.

Which interpretation is correct? While it is true that we are ultimately interested in real world behavior and experimental situations are different from them, results from ‘real world’ observations are almost always open to conflicting interpretations as we cannot exclude influences other than those we want to test for. For instance, we cannot exclude that the challenging results by Yezer et al. are produced by a different gender or age structure in the two subgroups as we simply do not know who picked up the envelope. The major advantage of laboratory experiments is that different influences can be controlled for. Moreover, there is evidence that people take the experiments very seriously (Dawes 1980), so that the results might be a good approximation to real world behavior.

Both real world and laboratory experiments have their relative merits. We are, however, very skeptical about survey results[6)] due to weaknesses, such as answer tendencies inherent in the method; peoples’ answers may, for example, be biased towards what they perceive as ‘socially acceptable’ or ‘normal’. Economists and non-economist may simply differ in their perception of what constitutes "socially acceptable" behavior. The different answers of the two groups may thus reflect a different bias, rather than a difference in actual behavior. On the other hand, economists might behave less cooperatively because they expect (or perceive) their counterparts to be less cooperative, not because they *are* less cooperative.

An experiment on economists’ behavior must therefore disentangle the effects of different perceptions about others’ behavior from the effects of different motivation. Prisoner’s dilemma situations typically cannot do that,[7)] just as ultimatum bargaining games cannot. In contrast, an experiment in which an individual’s reward does not depend on another person’s behavior will exactly isolate precisely the latter effect of different motivation. Yet, because we want to study the degree to which self-interest dominates the concern for others (as the previous experiments tried to), we need to design an experiment where pursuing the own interest runs counter other people’s well-being. To control for possible varying perceptions of "socially acceptable" behaviro amongst economists and non-economists, the self-interested behavior in an experiment should clearly conflict with generally accepted moral standards. Our experiment on corruption meets all these requirements. It has the additional advantage over the lost letter experiment that we have data on each individual and can therefore control for gender, which turned out to be a significant behavioral determinant in Frank et al. (1993) and Selten and Ockenfels (forthcoming). Moreover, data on the number of semesters studied allows us to address the issue whether students become more cooperative as they progress in their studies and whether economists’ behavior changes over time, which would point to an indoctrination effect. (Both effects have been found by Frank et al. 1993.)

2. Design

Corruption can be regarded as a special manifestation of the familiar principal-agent problem. The agent has an incentive to favor a third party at the expense of the principal and in exchange for some compensation (the bribe). In our experiment, the subjects take on the role of agents. Bribers are fictitious, but the principal is real: it is the students’ film club on behalf of which students had to make a decision. Students’ film clubs are part of the general students’ organization (‘*Allgemeiner Studentenausschuß*’). They are self-financed, non-profit and show a weekly movie, which they finance through cheap ticket fees. This is all common knowledge.

The experiment was conducted at the University of Hohenheim, Germany in the summer semester of 1997. Prior to the film ("The Usual Suspects"), moviegoers were asked (orally and on a handout) to imagine the following situation: "Assume that the student’s film club has lost a 200 Deutschmark bill (approximately 110 US $). It has fallen into a drain-pipe and can only be retrieved by a plumber company. The film club has asked you to select the firm with the most favorable offer. Ten firms place an offer which only you (not even the film club) know. It consists of two

parts: First, the price the film club has to pay for the plumber's service and, second, the amount which you receive from the plumber if you select the respective company."

The offers listed on the handout were:

Firm	*The price the film club has to pay (DM)*	*The amount you receive (DM)*
A1	20	0
A2	40	16
A3	60	32
A4	80	48
A5	100	64
A6	120	80
A7	140	96
A8	160	112
A9	180	128
A10	200	144

After the film, the participants were assured, one of the response form would be drawn randomly, and payments would be made to the lucky decision maker and to the film club[8)], that is, the student's film club would receive 200 DM minus the payment to the plumber who was selected. The individual in turn would receive the payment by the company (s)he had selected. An example was given and people were asked to state their decision (the firm they choose), their names or pseudonyms, sex, field of study and number of semesters for which they had studied that field. People were assured that payment could be made confidentially after the movie if they wished.

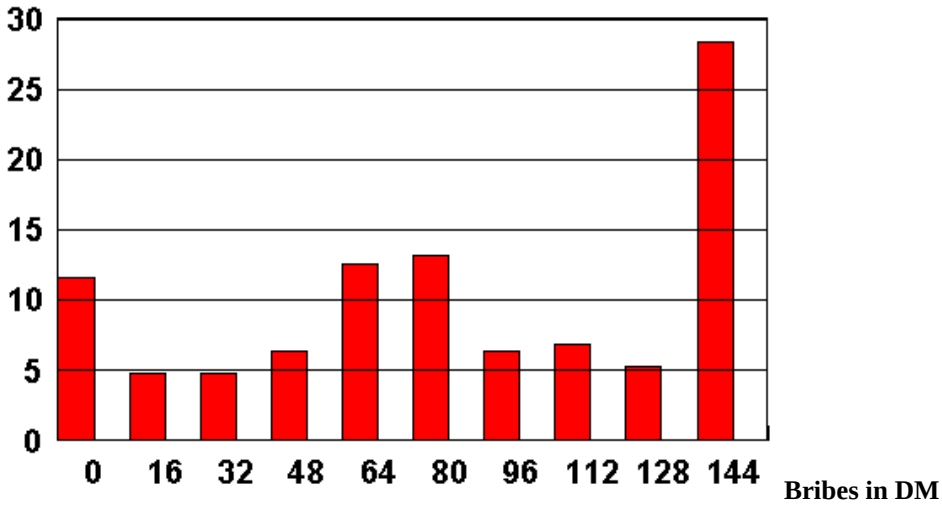
In order to test the hypothesis that fixed payment may influence corruptibility , the following sentence was added (in bold print) on about half of the sheets: "If your sheet is drawn, you will receive an extra payment of 40 DM, no matter which firm you choose."

190 individuals participated in the experiment. 29 people were excluded from the sample due to a failure to report either their sex, their field or year of study. Of the remaining 161 subjects, 105 were non-economists and the remaining 56 consisted of equal numbers of (a) students of economics and (b) economic pedagogy or agricultural economics, which both have less economics classes. 79 participants were female, 82 male. 30 percent were first year students, the corresponding figure for the economics students was 29 percent. During the first year, economics students in Hohenheim take no core economics classes, but study mathematics, statistics, sociology, law and the like. Handouts were distributed, filled in and collected before the movie started, the 'winner' was selected and payments were made after the film.

3. Results and Discussion

The distribution of bribes is given in Figure 1. The mean bribe is 85 DM, the median is 80 DM; only 12 percent were honest while 28 percent went for the maximum bribe of 144 DM.

Figure 1: Distribution of Bribes (in percentage)



Since we seek to identify possible behavioral difference of economics students and non-economists we define the dummy variable Econ which takes on the value one if the person is enrolled in economics (zero otherwise) and Econped which is one if the person is a student either of economic pedagogy or agricultural economics. Both fields contain a reduced number of economics classes compared to economics. In order to control for gender (cf. Frank et al. 1993 for gender effects), we define the dummy Female being one for women. We include the number of semesters studied (Semester) to identify whether the attitude towards corruption changes as people progress in their studies. We also define a dummy Freshman for students in the first year. Descriptive statistics on all variables are provided in the appendix.

We deliberately disregard the possibility of detection and punishment as we focus on different attitudes towards the conflict of self-interest versus social concerns, and not towards risk. We do, however, include, fixed payments for half of the subjects (represented by the dummy Fixedpay) in order to find out whether this reward reduces the corruptibility of people. The underlying rationale is a fairness argument: people who are rewarded for their job would be less inclined to harm their principal because they feel they are treated more fairly than if they would receive nothing for their efforts.

All regressions were run using ordered logit and probit models as OLS is obviously inappropriate for these kinds of problems. Because point estimates were only slightly different for both types of models and the qualitative results (sign, significance, order of magnitude) were the same, we report only the results from probit regressions. Suppressing the threshold parameters,[9)] the results are:

Table 1: ordered probit model I, dependent variable: recoded step variable Bribe (0-9)

Variable	Coefficient	Standard error
Constant	1.1103***	0.179902

Econ	0.74762***	0.24073
Econped	0.46638**	0.20500
Female	0.12027	0.18645
Fixedpay	-0.007371	0.17665
Freshman	-0.056402	0.21967

161 observations, ***/ **/ * indicate significance at the 1 % / 5% / 10 % level

Economists are more corruptible than others, the same holds true for agricultural economists and economic pedagogists, however to a lesser extent. Both coefficients are highly significant (Econped a little less at the five percent level), but only insignificantly different from each other[10)]. Women are insignificantly more prone to corruption; the fixed payment has the expected sign, but is insignificantly different from zero. First year students behave no differently than older students, which runs counter to Frank's et al. (1993) results[11)].

Although the average student does not change his or her attitude towards corruption as he or she progresses through university, it could be that economists do (which would not show in the first regression). This is particularly interesting possibility as it could constitute an explanation for the different behavior of this group: As economics students are increasingly exposed to the model of self-interested behavior, they acquire this behavioral pattern themselves. In order to trace such effect, we define first year dummies for economists and non-economists separately: Econ-Freshman and Nonecon-Freshman. During the first year, economics students are not exposed to economic theory and, if indoctrination were the driving force behind the behavioral difference, Econ-Freshman should turn out significantly negative. Since students of economics and economic pedagogy did not behave significantly different we aggregated them; thus we use Econall instead of Econ and Econped . Results are reported in table 2.

Table 2: ordered probit model II, dependent variable: recoded step variable Bribe (0-9)

Variable	Coefficient	Standard error
Constant	1.1075***	0.19818
Econall	0.64338***	0.19818
Female	0.10932	0.18640
Fixedpay	-0.03178	0.17438
Nonecon-Freshman	-0.002240	0.32300
Econ-Freshman	-0.19746	0.29494

161 observations, ***/ **/ * indicate significance at the 1 % / 5% / 10 % level

Obviously, there is no significant differential effect between economists and non-economists concerning the first year students and thus no evidence of an indoctrination effect.[12)] This result is very robust with respect to exclusion of insignificant variables. Because we cannot find any indoctrination effect, we conclude that economics students behave differently to begin with ('self-selection effect').

As Frank et al. (1993) reported a clear gender pattern in their prisoner's dilemma experiment (the effect of which was even stronger than the effect of being an economist), we disaggregated both

economists and non-economists into female and male subgroups. It could have been that the strong 'economics effect' in regression I and II was caused by only one subgroup and that gender was significant for a subgroup (economists or non-economists), but not for the sample as a whole. We aggregated students of economics and economic pedagogy (who behaved similarly in regression I) to economics students in a wider sense to ensure sufficiently large subgroups. Then we defined the following dummies: F-nonecon for female non-economists, M-nonecon for male non-economists, and F-econ for female economists (with male economists being the reference group). The results are reported in table 3:

Table 3: ordered probit model III, dependent variable: recoded step variable Bribe (0-9)

Variable	Coefficient	Standard error
Constant	1.8039 ***	0.18666
F-nonecon	- 0.48330**	0.21339
M-nonecon	- 0.78379***	0.22526
F-econ	- 0.38392	0.29153
Fixedpay	- 0.023405	0.16975
Freshman	- 0.054021	0.21070

160 observations, ***/ **/ * indicate significance at the 1 % / 5% / 10 % level

Male economists are most corrupt; however, female economists are only insignificantly less so. Both female and male non-economists are significantly less corrupt than male economists with male non-economists being the least corrupt subgroup! Surprisingly, men take the extreme positions with respect to economist/non-economist differences whereas women have a middle position. It seems as if women would be less self-selective in their choice of subject than men are. This finding explains why no clear gender pattern emerged in regression I.

We tested on parameter restrictions and could not reject that F-nonecon was equal to M-nonecon. The likelihood ratio (LR) test statistic amounts to 2.019, which is short of the $\chi^2(1)$ critical 5 % value of 3.84. Likewise, we could not reject the hypothesis that F-econ is equal to F-nonecon (LR of 0.087). Lastly, we tested whether the joint restriction that economists behaved equally and that gender had equal influence for both subgroups, i.e. we tested the model with a constant, econall, female, allfresh, and fixedpay, and could not reject the hypothesis that these restrictions were justified. The LR statistik of 2.7418 falls short of the critical 5 % value of the $\chi^2(2)$ distribution, 5.99. Although we could not reject model I at the usual significance levels, this interesting gender pattern points out that it may not be sufficient to look at the overall gender pattern. Rather one should consider the possibility of different influences of gender for subgroups[13)].

The number of semesters studied (or the first year dummy) again turned out insignificant as did the fixed payment. The latter result nicely complements the cross-US-state study by Goel and Rich (1989) and cross-country study by Van Rijckeghem and Weder (1997) on the determinants of corruption. These studies cannot discriminate between the various explanations for the observed negative correlation of public officials' relative pay and the level of corruption. First, higher wages increase opportunity costs of corruption, as corrupt officials run the risk of being caught and fired. In other words, if they earn less in the private sector after being fired, they have an incentive to refuse bribes. Second, in some countries, officials' wages are so low that accepting bribes is necessary for living.[14)] Third, higher wages increase loyalty – people, who are rewarded independent of their choice, will tend to make this choice more in accordance with their principal's

interest. As we deliberately excluded detection and punishment from our experiment and subjects were far above subsistance levels, we tested only for a possible loyalty effect, which we could not find. This does not imply that such a loyalty effect does not exist; but, obviously, it did not materialize in our situation. Our finding points to the relative importance of the other explanations, though. This *may* lead, at least in principle, to the selection of different, more successful avenues of combating corruption. However, further research is needed to determine efficacy and efficiency of loyalty-enhancing and alternative measures.

4. Concluding Remark

We conducted an experiment on corruption, in which individuals could simultaneously choose the bribe they receive and the level of damage done to their principal; both magnitudes were positively linked. As detection or any other interaction between individuals were absent, decisions were determined only by individuals' willingness to place self-interest over the concerns for others. In our experiment neither different degrees of risk aversion nor different expectations about the behavior of others mattered, which – contrary to previous experiments – makes interpretation easy.

Our results support the notion that economists tend to pursue their own interest more consequently than other people. This result was very robust with respect to different specifications of the model and is in line with other experiments (which, however, suffer from the described identification problem). Students do not alter their attitude towards corruption as they progress through university, regardless of whether they are students of economics or of any other field. This contradicts the notion that the more self-interested behavior of economists is a result of economics education; rather, it supports the self-selection hypothesis.

Contrary to previous results, we found an interesting (albeit not very significant) gender pattern. Women turned out to be slightly, but not significantly less corrupt in the experiment. However, the dominance of self-interest regarding economists versus non-economists was stronger for men than for women. Male non-economists were the least corrupt of all, male economists the most. Furthermore, we found no evidence that a fixed reward independent from individual choice reduces corruptibility. We interpret this as the absence of a fairness or loyalty effect: People are just as much inclined to harm their principal, regardless how they are treated.

Our results suggest that the hypothesis of behavioral differences of economists and non-economists cannot easily be discarded as Yezer et al. (1996) do. They also show that preconceived notions about gender differences need to be reexamined carefully. What is more, we need to clearly identify the situations in which such differences arise. Corruption is a particularly interesting case, since illegal activities are extremely difficult to measure and therefore experimental results may help to overcome the lack of real world data. Our experimental design is suitable for the investigation of many other interesting issues. For instance, it would be interesting to test whether the observed behavioral pattern carries over to a situation in which corrupt individuals risk detection and punishment. It is possible that differences in risk attitudes could offset the observed pattern. The comparison of such results would then allow for deducing differences in risk aversion across subgroups. Moreover, it would be interesting to learn to what extent the fixed payment will exert an influence under these circumstances and to vary payoffs, probabilities of detection, and fixed payments. Eventually, these experiments could lead to cautious policy recommendations as the behavioral determinants of corruption become clearer.

Appendix:

1. Descriptive Statistics

The following table provides descriptive statistics on the data used in the models I - III.

Variable	*Mean*	*Std. Dev.*	*Skew.*	*Minimum*	*Maximum*	*no. obs.*
Bribe[15)]	85.3053	49.9784	-0.3	0	144	190
Econ	0.1742	0.3803	1.7	0	1	178
Econped	0.1742	0.3803	1.7	0	1	178
Econall	0.3483	0.4778	0.6	0	1	178
Female	0.4706	0.5005	0.1	0	1	187
Fixedpay	0.5053	0.5013	0.0	0	1	190
F-nonecon	0.3684	0.4837	0.5	0	1	178
M-nonecon	0.2368	0.4263	1.2	0	1	178
F-econ	0.0684	0.2531	3.4	0	1	178
Semester	5.8944	3.6411	0.8	1	22	161
Freshman	0.3043	0.4616	0.8	0	1	161
econ-Freshman	0.0994	0.3001	2.7	0	1	161
Nonecon-Freshman	0.2050	0.4049	1.5	0	1	161

2. Full Set of Estimates on Model I

Below we provide the full set of maximum likelihood estimates for the ordered probit model I[16)]

Dependent variable	BRIBE (recoded)
Number of observations	161
Iterations completed	16
Log likelihood function	-337.4361
Restricted log likelihood	-341.8364
Chi-squared	8.800742
Significance level	0.06627762

Cell frequencies for outcomes

Y	CountFreq	Y	CountFreq	Y	CountFreq
0	15.093	1	7.049	2	9.055
3	9.055	4	20.124	5	21.130
6	11.068	7	13.080	8	9.055
9	46.285				

Estimation Results:

Variable	Coefficient	Standard Error	z=b/s.e.	P[|Z|=z]	Mean of X
Constant	1.1305	0.19677	5.745	0.00000	
ECONALL	0.55868	0.17932	3.115	0.00184	0.3540
FEMALE	0.12107	0.18321	0.661	0.50874	0.4845
FIXEDPAY	-0.043672	0.17157	-0.255	0.79907	0.5093
FRESHMEN	-0.048318	0.21675	-0.223	0.82360	0.3043
Threshold parameters					
MU(1)	0.25279	0.094367	2.679	0.00739	
MU(2)	0.47465	0.11654	4.073	0.00005	
MU(3)	0.66113	0.12940	5.109	0.00000	
MU(4)	1.0170	0.14057	7.234	0.00000	
MU(5)	1.3559	0.15017	9.029	0.00000	
MU(6)	1.5347	0.15312	10.022	0.00000	
MU(7)	1.7586	0.15609	11.267	0.00000	
MU(8)	1.9281	0.16024	12.033	0.00000	

Index function for probability

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Footnotes

1) We are indebted to seminar participants at Hamburg and Hohenheim, at the GEW workshop in Rauischholzhausen, especially to Reinhard Selten, and to Joachim Inkmann, Thomas Schneeweis and Werner Smolny for helpful suggestions. The usual disclaimer applies.

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3) These strategies would be optimal if all individuals were rational, known to be rational, and endowed with stoic preferences concerning the payoff distribution. However, people who are aware of the rigidity of these assumptions, or of the observed behavioral pattern, would of course not offer only 1 ¢, but considerably more to reduce the risk of rejection. This underlines that the optimal strategy depends on the expected behavior of others.

4) In a prisoner's dilemma situation both players can choose either to cooperate or to defect. If both cooperate they achieve the social optimum, i.e. the maximum of joint payoffs; however each player has an incentive to defect as this will give him a higher individual outcome and make the other worse off. If both players defect both are worse off than if they both cooperated, but better off than the one playing the cooperative strategy while the other defects. The payoff matrix can be described by

		Player 2	
		Cooperate	Defect
Player 1	Cooperate	(2,2)	(0,3)
	Defect	(3,0)	(1,1)

The first (second) value denotes the payoff of player 1 (2). If promises cannot be made binding - as in the experiment - the individually rational strategy is to defect.

5) Frank et al. (1993) address the first possibility that individuals defect because they expect their opponent to defect by asking people whether they would defect even if they knew with certainty that the other player would cooperate. Still, a significantly larger share of economics undergraduates answered 'yes'.

6) Frank et al. also report results of honesty surveys concerning ethical dilemmas, in which economics students answered more cynically at the end of the semester, which the authors interpret as a result of the exposure 6) Frank et al. (1993) sent out questionnaires to college professors of various disciplines asking for the amount of their charitable contributions. They find that economics professors give significantly less relative to their incomes (i.e. 91 percent as much as other professors do, on the basis of their imputed income). Another finding, however, is that economists are almost equally likely to vote in presidential elections and spend as much time in volunteer activities as others.

7) This still holds, even if people are asked how they would behave if the other cooperated, as Frank et al. (1993) do. Their answers are still subject to the same bias described above. Economists might simply respond more truthfully as they look upon the issue more soberly and realistically – they might not be as embarrassed to reveal their true behavior, because they consider it more common than others would do.

8) One cannot be sure that the same results would be obtained if every subject actually knew that his or her decision is the one that counts. However, for the ultimatum game, Bolle (1990) presents theoretical considerations as well as empirical evidence according to which deterministic and probabilistic rewards yield similar results.

9) We report the full set of estimation results, including the threshold parameters, in the appendix.

10) The likelihood ratio test results in a χ^2 value of 0.878 which falls short of the critical value at the five per cent significance level of 3.84.

11) This set of results is very robust with respect to excluding any insignificant variable. We also included number of semesters instead of Freshman which likewise turned out insignificant in all regressions (not reported).

12) The hypothesis of equality of Nonecon-Freshman and econ-Freshman could not be rejected: The likelihood ratio test statistic is 0.2502, the critical value (5%) is 3.84. Also the disaggregation into econ and econped made no difference (LR test statistic of .796).

13) Note that these tests are deliberately biased against rejecting the hypothesis on parameter restrictions (for good reasons); hence the failure to reject this hypothesis does not imply that a gender pattern as suggested by model III does not exist. On the contrary, our results suggest that for future work it is necessary to check for different gender patterns across subgroups.

14) Corruption might also be seen as the cause rather than the effect. The reservation wage of corrupt officials, compared to honest ones, is lower, as they can rely on bribes as additional income. Thus, corruption allows governments to save money (in the short run, at least) by paying less than the honest officials' reservation wage.

15) Bribe here denotes the original bribe received, it was recoded into a step dummy for the ordered probit regression of course.

16) We use Econall instead of Econped and Econ since they behave not statistically different.