

Experiments in Temptation

Every legal system in the world punishes corruption – but the punishments vary widely. The “how” is something that **Christoph Engel**, Director at the **Max Planck Institute for Research on Collective Goods**, and his colleagues **Sebastian Goerg** and **Gaoneng Yu** are studying in a laboratory experiment at two universities in Germany and China.

TEXT **BIRGIT FENZEL**

When a civil servant accepts a bribe, it is more a serious offense than when a citizen attempts to gain an advantage through bribery. This is because the civil servant, as an employee of the state, is abusing the powers that state vested in him. This, at least, is the thinking embodied in many criminal law codes. Offering bribes in these countries does not go unpunished, but the punishment is less severe than that meted out for taking a bribe.

German law takes a different view, promising equal penalties for both parties to a corrupt act. Should German law learn a lesson from such countries as Russia and China? Should German judges at least fully exploit the range of penalties when sentencing the civil servant? “If it were only a question of finding a penalty to match the crime, that

would be fine,” says Christoph Engel. But criminal law is not only backward-looking, aiming to find a justified sanction. It also serves the forward-looking purpose of preventing future crime.

What can the law expect when both parties to an illegal deal are aware that, if the public prosecutor catches up with them, they will face different penalties? “If both of them are only out to make as much money as possible, nothing will change,” says Engel. “But human beings are not money-making machines. When they feel cheated, many of them have a desire for revenge.” In fact, it was this train of thought that led the scientist to translate the difference between legal systems into a game to be tested in the laboratory.

Some of those who took part in the game must have been reminded of a Disney cartoon script when they read the instructions. The money given to them to

Dirty deals: Bribery, kickbacks and corruption are widespread in many countries. The lowest incidence is in New Zealand. On a global scale, Germany ranks 14th, with Somalia at the bottom of the list, in 182nd place.



Photo: Frank Vinken



play with over the next few hours in the experimental laboratories at the Universities in Bonn and Shanghai was denominated in talers. Half of the participants, who were randomly given a proactive role to play, each received 100 talers.

THE BRIBE-GIVER RECEIVES TRIPLE THE STAKE

Their partners – the game was always played in pairs – were given 60 talers to start with. At the end of the experiment, the scientists cashed in the play money for real money. “This is important in order to provide credible incentives,” says economist Sebastian Goerg, who oversaw implementation of the experiments at the BonnEconLab in Germany and the Vernon-Smith Experimental Economics Research Center in China.

He describes the basic idea as follows: “Depending on skill and luck, the participants could increase their pot of money provided that, by offering a payment of 40 talers, the proactive players were able to persuade their partners to do them an unlawful favor.” The reac-

tive player then had two choices: reject the money or accept it.

If he or she decided to accept the offer, they again had two options: do the proactive player a favor, or pocket the money without doing anything in return. In the latter case, their partner not only lost the 40 talers, but they received nothing from the bank, either. “However, the loser did have the opportunity to punish the untrustworthy partner,” explains Sebastian Goerg.

If the player who was cheated, having first played in discrete silence, now publicly announced what had happened, a fine was imposed on the other player, as well as on the one who was cheated. However, even if both parties were agreed on the deal, the prospect of quietly making money through mutual accommodation was offset by a further risk of punishment.

Another risk factor was introduced into the game by random generator, Goerg explains: “There was a 25 percent probability of players losing part of their cash.” If the deal was nevertheless concluded, not only did the recipient of the

bribe make a profit of 40 talers, but the giver of the bribe received three times the stake as a “favor” from the bank.

After the first round, the participants discovered that they were then to play ten more rounds with the same partner. And after each round, the researchers updated the players on the decisions made and the balance on their account. They weren’t, of course, interested in who went home with the biggest profit. “We wanted to study the punishment mechanism,” says Sebastian Goerg, explaining the meaning of the games in the laboratory.

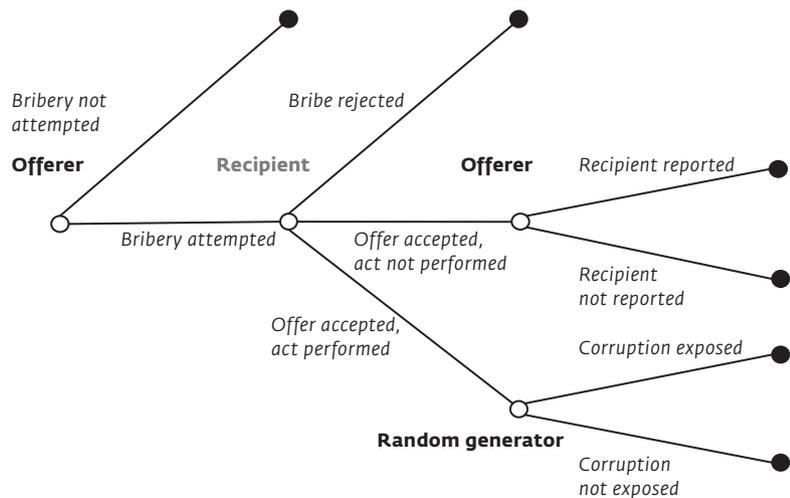
LABORATORY TESTS IN DIFFERING CULTURAL ENVIRONMENTS

The scientists were primarily interested in whether symmetric and asymmetric punishments have differing effects in persuading potential parties to a corrupt act to make or accept an offer, demonstrate their gratitude or turn themselves in if a bribe was accepted but the corresponding consideration failed to materialize.

Playing at corruption: In an experiment, scientists studied how 96 students at the Universities of Bonn and Shanghai played out corrupt scenarios under differing punishment schemes. In 11 rounds of the game, each player was placed in the position of pretending to either procure a corrupt act or receive a bribe for committing one.

Photo: Frank Vinken





Game of opportunities: The player offering the bribe first has to decide whether to make an attempt or not. If he or she goes ahead, the other party not only has the choice of whether to accept or reject the offer, but also the option of performing or not performing the act. Therefore, if the recipient decides to accept the offer of a bribe, but not commit the corrupt act, the question arises as to whether the offerer will report him or her. However, the briber then runs the risk of being punished themselves. But even if the recipient decides to accept and commit the act, there is a 25 percent risk that the recipient and the person offering the bribe will be caught by a random program.

In picking Bonn and Shanghai, the researchers chose locations for the experiments that were distinguished by differing cultures and legal systems. The German legal system, along with those of France, the UK and the US, is one of the major systems to rely – at least in the letter of the law – on the symmetrical punishment of corruption, with both parties to an illegal act being punished equally.

By contrast, in countries such as China, Russia and Japan, the belief prevails that “giving is less evil than taking,” at least as far as the law is concerned:

their legislation follows an asymmetrical approach. The penalties for those who purchase the goodwill of another through gifts or favors are less than those meted out to the recipient.

Christoph Engel sees two arguments that underpin the propensity of this system to let the giver of a bribe off more lightly than one who accepts it. “First, it has to do with perceptions of right and wrong, and morality. Bribery isn’t just an economic crime, it is also a breach of honesty and integrity.” Holders of public office – to whom most potential bribes are generally offered – are

deemed to have accepted their position of their own free will, and with it the particular obligations it entails. So breaching these obligations by accepting a benefit of some kind is considered to be especially serious.

The second argument is purely pragmatic: the party offering a bribe is seen as the weaker party to the transaction, since he is in a less advantageous position. From this perspective, the asymmetric system offers an element of revenge in the event that the official should pocket the bribe but refuse the consideration in return.





Given the number of cases that go unreported, it is impossible in real life to adequately investigate which of the two systems constitutes the better strategy in the fight against bribery, kickbacks and other forms of corruption. "In our experiment, in contrast, we have all of the factors under control, and we can exclude any influences that are not central to the issue," Christoph Engel says, explaining the unbeatable advantage of laboratory games with talers and random generator.

THE RANDOM GENERATOR COMES INTO PLAY

In their experiment with 96 students from the Universities of Bonn and Shanghai, the researchers varied only the systems of punishment, while all other factors remained constant. In the asymmetric round of the game, the giver of the bribe lost 10 talers and the recipient 50 when the random generator applied the punishment mechanism. In the symmetric version, in contrast, both parties were fined 50 talers when this happened.

This procedure enabled the researchers to study the effects of both punishment systems on the player's behavior by comparing the frequency of attempted bribes, considerations performed in return and players turning themselves in. "A laboratory experiment is more meaningful because you can turn the individual cogs of the complex construct of the legal system

as a whole and immediately see whether anything has changed, and if so, what," says Sebastian Goerg. "In this sense, our work is similar to that of physicists."

However, the experiment was also affected by a peculiar paradox of human behavior. Because from a purely rational perspective, bribery ought not to exist – not, at least, if the players' behavior is aimed exclusively at maximizing their own benefits. And that is a basic assumption of game theory. "On this basis, no one would dream of reporting what had happened, even if the consideration were not performed in return," says Christoph Engel, citing the primacy of reason. "A bribe offerer

who is interested solely in maximizing their profit would never report the attempt just for revenge."

After all, it would reduce their profit because they, too, would be penalized. Seen from this point of view, it shouldn't matter whether the penalty paid by the offerer is high, as in a symmetric system, or relatively low, as in an asymmetric system. A rational recipient acting on the same principle would foresee the other party's behavior and accept the offer without performing the consideration.

The recipient makes a profit simply by acceding to the attempt at bribery and need have no fear that the other party will turn themselves in – because

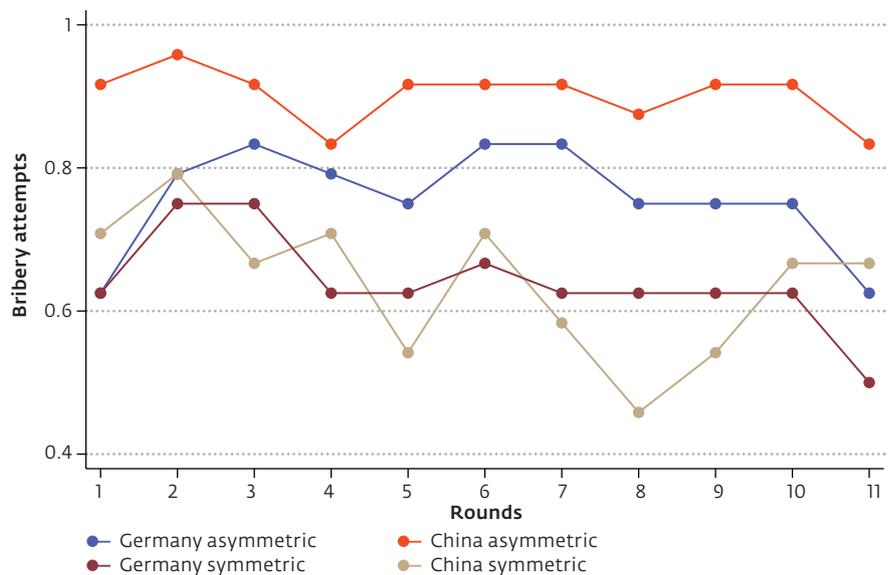
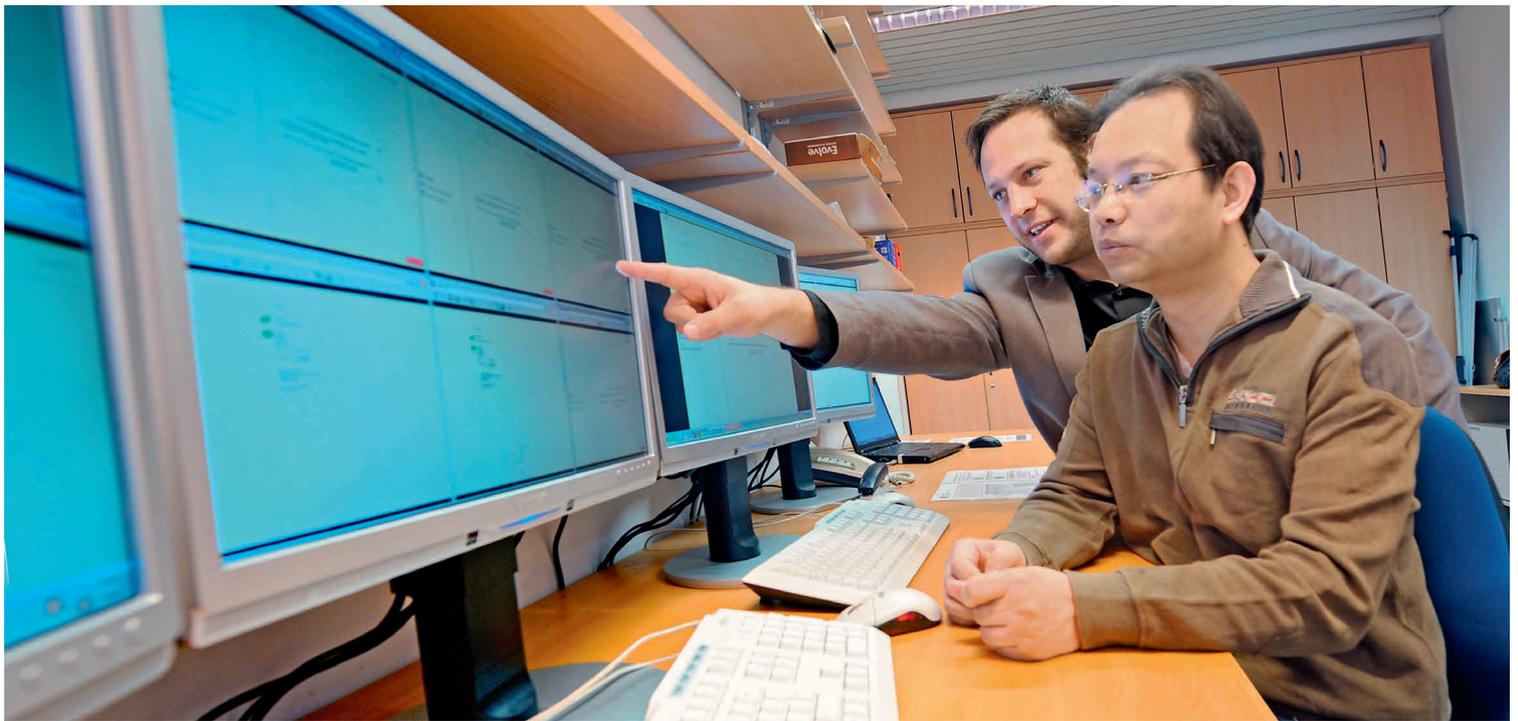


Photo: Frank Vinken; graphic: MPI for Collective Goods



Erika Groß, a participant in the study in Bonn, sits engrossed in her booth. The moves she makes on her computer, in common with those made by all the other participants, are closely monitored by Sebastian Goerg and Gaoneng Yu.

doing so would compound their loss. “Since, however, under these conditions, a rational offerer of a bribe would recognize the logic, they wouldn’t make the offer in the first place,” Christoph Engel explains. “Consequently, under both systems, there ought not to be any attempts at bribery.”

One look at the media, however, shows that, in reality, this is not the case. Not least the annual reports by the independent anti-corruption organization Transparency International serve to prove the point. In fact, bribery of

every kind appears to be an international phenomenon – but with varying characteristics.

Transparency International regularly publishes league tables depicting the level of corruption in various countries around the globe. In the current table, in which New Zealand occupies first place with the lowest level of discovered corruption cases, Germany ranks 14th and China 75th. Lowest-placed is Somalia, at 182.

It is evident that reason is not alone in playing a role. For example, the fact that people are willing to accept some disadvantage to themselves if, in doing so, they can inflict punishment for unfair conduct has regularly been observed in various experiments, and was also in evidence in the bribery games in Bonn. “As we surmised, symmetric and asymmetric systems of punishment had differing effects on the players’ behavior,” says Sebastian Goerg, summing up an observation that is likely to be of interest not only to scientists at the institute in Bonn.

Both in Shanghai and in Bonn, under asymmetric conditions, far more players confessed their guilt rather than simply writing off the 40 talers invested in an uncooperative partner. Of those who offered bribes, 55 percent in Bonn and 69 percent in Shanghai decided to make public a transaction

that, from their perspective, had failed. Under symmetric conditions, the proportions were substantially lower, at 29 and 27 percent.

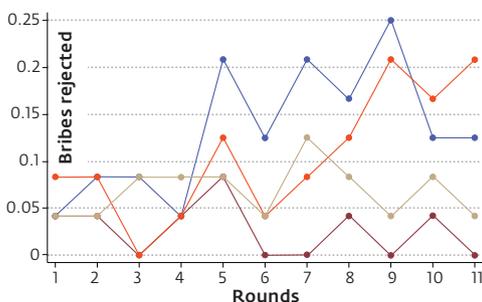
LAWMAKERS ARE OFTEN VAGUE IN SPECIFYING PENALTIES

One positive effect of the unequal punishments was a lower propensity on the part of recipients to run such a risk. “Under asymmetric conditions, far more offers were rejected,” says Goerg. At first sight, this result would indicate that this is the better strategy in the fight against corruption.

However, there were also parallel increases in the number of attempts at bribery, as well as in the number of “cash for favors” transactions completed. Having accepted an offer, 80 percent reciprocated when the other player was due to receive a lower penalty if they confessed; under symmetric rules of punishment, the figure was less than half of those offered a bribe.

“If the situation we investigated goes to the core of the interaction between those who offer bribes and those who hold public office, the message for politicians is clear: lower penalties for offering bribes lead to more corruption,” says Max Planck Director Christoph Engel. This, he warns, is something that especially those should

Striking differences: In both countries, given symmetric punishment, there were fewer attempts at bribery (beige and dark red curves) than with asymmetric punishment (blue and red curves, graph left). On the other hand, if the recipient is more severely punished than the giver of the bribe, the attempts were more frequently rejected (blue and red curves, graph right). However, this effect is far less significant.



be aware of who, in a nominally symmetric system, tend in practice toward an opposite interpretation. In most countries, lawmakers merely set upper and lower limits, without precisely specifying actual punishments. “The courts like to exploit this lack of precision to covertly adopt an asymmetric approach.”

RISK-TAKING IS COLORED BY TIME AND EXPERIENCE

Not least in view of the results of the laboratory games, Christoph Engel doesn’t consider this to be a good idea. Under such circumstances, interested parties would have fewer inhibitions about contacting civil servants and offering a financial inducement to violate their official obligations. Asymmetry is also likely to lead to more stable partnerships in corruption, since doubtful candidates would not get involved in the first place.

In the experiment, time and experience emerged as two important factors that strongly influenced the participants’ appetite for risk. The researchers noted that, rather than establish a strategy from the beginning, players in Shanghai and in Bonn developed their approach as the game went on. And in both locations, they observed that the more experienced the players became, the more cautiously they behaved.

If their attempts at bribery were, from their perspective, successful, the proactive players continued to make enticing offers to their partners. If, on the other hand, they had been punished in the past, they were far more reticent in making offers in subsequent rounds. It was evident, too, that those who had inflicted punishment on a partner who cheated them had no qualms in expecting others to do the same. When switching to the role of recipient, they frequently either declined a risky offer or played their part to the benefit of the offerer.

Under symmetric conditions, in contrast, corruption declined significantly from round to round in both China

and Germany. “To us, this is an indicator of a generally applicable effect that is not influenced by social, political, economic, legal or cultural conditions,” says Christoph Engel. Of course the researchers weren’t able to incorporate the same draconian penalties in the game as may apply in corruption cases in real life – from country to country, the spectrum ranges from loss of employment to exclusion from the community to the death penalty. “But the players certainly felt the financial penalties. They were meant to hurt,” says Goerg.

In the end, however, the results showed that both strategies have their advantages and disadvantages. “Our recommendation to politicians is the usual lawyer’s qualification: it all de-

pends,” says Christoph Engel, himself a legal expert. Nor is his colleague and co-author Sebastian Goerg too keen on handing out concrete advice.

He can’t, however, resist offering one tip for China’s lawmakers to bear in mind: If the results of the bribery games in the laboratories in Shanghai and his home town of Bonn reflect reality – as he and his colleagues believe they actually do – lawmakers in China might consider whether they wouldn’t be better off switching to a symmetric system of punishment. “Ultimately,” says Sebastian Goerg, “our experiment has shown that an asymmetric assignment of sanctions generally doesn’t work any better among Chinese subjects than it does among the citizens of Bonn.” ◀

TO THE POINT

- In cases of bribery in Germany, both parties receive equal punishments, while in other countries, the penalties differ.
- Max Planck researchers used a game played in laboratories in Germany and in China to discover how this difference impacts the decisions of potential parties to corruption.
- Under asymmetric conditions, significantly more players voluntarily admitted their guilt and substantially more offers were refused. On the other hand, there were also increases in the number of attempts at bribery, as well as in the number of “cash for favors” transactions completed.
- One message to politicians: Lesser punishments for those who offer bribes lead to more corruption.

GLOSSARY

Bribery: Section 334 of the German Penal Code states that: “Whoever offers, promises or grants, for the person concerned or a third person, an advantage to a public official, a person under a special obligation in respect of the public service or a soldier of the Federal Armed Forces, in return for his having performed, or his performing in future, an official act, so that the person concerned has violated, or would violate, his official duties, shall be punished by imprisonment of three months to five years. In less serious cases, the sentence shall be imprisonment not exceeding two years or a fine.”

Experimental economic research: This comprises the empirical study of economic issues and employs controlled experiments to investigate the extent to which participants are acting in accordance with economic theory. Results achieved to date have helped adapt the existing image of Homo oeconomicus with his fixation on pure personal gain and broadened economic theory with the introduction of pro-social motives, such as altruism and reciprocity.

Game theory: Game theory facilitates studies of how rational actors act and interact in strategic situations, with a primary focus on cooperation and conflict between decision makers. Such mathematical models are employed in a wide variety of research fields, including economics, evolutionary biology, political science, psychology and law.