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**Working Paper**

## The impact of incentives on prosocial behavior: An experimental investigation with German and Chinese subjects

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INSTITUTE OF  
EAST ASIAN STUDIES

**GUANZHONG YANG**

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**The Impact of Incentives  
on Prosocial Behavior –  
An Experimental Investigation  
with German and Chinese Subjects**

**NO. 113**

**WORKING PAPERS**

**WORKING PAPERS  
ON EAST ASIAN STUDIES**

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**MAY 2017**

UNIVERSITÄT  
**DUISBURG  
ESSEN**

*Offen im Denken*

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**GUANZHONG YANG**

# **The Impact of Incentives on Prosocial Behavior – An Experimental Investigation with German and Chinese Subjects**

**WORKING PAPERS ON EAST ASIAN STUDIES, NO. 113, DUISBURG 2017**

## **Abstract**

Economists believe in (monetary) incentives. However, in the specialized area of prosocial behaviours, (monetary) incentives could backfire because extrinsic motivation might crowd out intrinsic motivation. Moreover, national differences in the perception of incentives should also be considered, taking the cultural background of individuals into account. In this project, we ran a real effort experiment in Germany and in China. In addition to an extrinsic monetary incentive (personal payment) to the subjects, we made a donation to UNICEF, and the amount of the donation depended on the effort of the subjects, which served as an intrinsic motivation. The results indicate that with respect to activities with a prosocial element, Germans tended to exert a high level of effort, regardless of the alternation of the art and the level of their payoff; in contrast, the Chinese did react to extrinsic monetary incentives and exerted more effort with a linear payment or if the level of payment was high. Females exerted significantly more effort than males, and this was true for both the German and Chinese subjects. The last finding is that the Chinese were more motivated by a fixed non-monetary payment than a fixed monetary payment, if the level of payment was relatively low.

## **Keywords**

Monetary Incentives; Prosocial behaviour; Intrinsic and Extrinsic Motivation

## **JEL Classification**

C91, D64, L31

# 1 INTRODUCTION<sup>1</sup>

It is quite common in modern societies for decision makers who are engaged in activities not only to consider their own economic outcomes, but also to take the well-being of others into account. Examples can be found easily in many social and economic situations, ranging from tax-deductible charitable contributions to blood and organ donation, from R&D activities to choosing environmentally friendly transportation. The activities in all the foregoing examples include prosocial elements. These are “a broad range of actions intended to benefit one or more people other than oneself – behaviors such as helping, comforting, sharing and cooperation” (Batson and Powell 2003, 463). Due to the importance of the activities and their (positive) external effects, it is crucial to understand how to incentivise the decision makers. According to economic theory, the use of (monetary) incentives is the standard solution to motivate economic actors to exert effort. But the economic evidence regarding the effect of monetary incentives on activities with prosocial elements is far from clear.

Titmuss (1970) claimed that monetary incentives tend to weaken an individual’s sense of civic duty. He mentioned the example that offering payment for blood donations might lower peoples’ willingness to donate. This could be explained by the possible detrimental effects of monetary incentives, i.e. the intrinsic motivation for prosocial behaviour could be crowded out by the extrinsic monetary incentives. However, the empirical evidence from the lab does not support this hypothesis. Mellström and Johannesson (2008) did not find a statistically significant difference in the willingness to take a physical

test<sup>2</sup> necessary for blood donation among subjects with or without a seven dollar payment. This finding does not support the conjecture of the detrimental effects or the standard economic theory, according to which incentives stimulate effort. Economic evidence from the field provides a picture that is quite different. Goette and Stutzer (2008) conducted a field experiment with two different incentives and reported that a lottery ticket significantly increases the donation rate, while a free cholesterol test has no substantial impact. Lacetera and Macis (2010b) found that a legislative provision that grants a one-day paid leave of absence to blood donors leads existing donors to make one extra donation per year, an increase of approximately 40 %. Ariely et al. (2009) provided strong empirical evidence for the existence of the crowding-out effect of extrinsic monetary incentives on prosocial behaviour in the lab using a real effort game. They argued that introducing monetary incentives dilutes the subjects’ image of being altruistic by taking part in a prosocial activity, and thus, reduces their willingness to do it.

In addition to the existence of monetary incentives, the form of incentives has also been discussed in the literature. Heyman and Ariely (2004) conducted a series of experiments with a real effort task. In two sessions, the subjects were paid either with 10 dollars in cash or five jelly beans of the same value. They found that a low monetary payment decreases the effort relative to no payment, but also showed that a similar effect is not obtained if one provides a nonmonetary form of payment. Lacetera and Macis (2010a) found a similar effect in response to incentives for blood donations, although the finding was based on a hypothetical survey in

1 I thank Jeannette Brosig-Koch, Timo Heinrich and Alexander Haering for their helpful comments. Financial support from the German Federal Ministry of Education and Research (BMBF) is gratefully acknowledged.

2 Among female subjects, however, the fraction of subjects who agreed to the exam was significantly lower when a seven-dollar payment was introduced.

Italy. A substantial share of the respondents declared that they would stop being donors if donations were compensated with 10 Euros in cash, but not with a voucher of the same nominal value.

Another fundamental factor which eventually influences the effectiveness of incentives in this context is the cultural background of the actors who engage in activities with prosocial elements. Hofstede et al. (1991) and Hofstede and Hofstede (2001) suggested that China is very much a collective society, in contrast to the Western industrialised countries. This preference for collectivism might lead to a higher willingness to take part in prosocial activities, although little is known about the interplay of this inclination and different types of incentives. Additionally, the World Values Survey (2015) found that survival values are characteristic of Eastern-world countries and self-expression values are characteristic of Western-world countries, which means that Confucian countries such as China generally have lower levels of trust and tolerance in comparison to Protestant European countries such as Germany. This finding also suggests that cultural differences might influence prosocial behaviour if prosociality is related to trust or tolerance. While there is no laboratory evidence on the country differences regarding prosocial behaviour under different incentive schemes, some recent research showed a difference in socially responsible behaviour among subjects with Chinese backgrounds and subjects with Western European backgrounds. Bartling et al. (2015) found that the level of socially responsible behaviour is much lower in China than in Switzerland in a market context. There was no difference in their degree of social concern in non-market contexts.

The brief literature overview above shows that an ultimate understanding of the effect of incentives, including the existence, the form and the level, on activities with prosocial elements requires further research. The purpose of this

paper is to investigate this issue in a systematic way, by alternating incentives schemes as treatment variables. This work contributes to the literature in the following ways. 1. We conducted a laboratory experiment, and the controlled environment made the comparison of effort among the different incentive schemes easier. 2. We minimised the information effect by using a real effort game. In the field, if (higher) monetary incentives are provided, it might be perceived that the underlying task<sup>3</sup> is less comfortable or more harmful<sup>4</sup>. Consequently, facing (a high level of) incentives, uninformed agents will assume higher costs and therefore will be less motivated to do a task. In the lab, the emotional cost of accomplishing a fairly easy task is stable among the different incentive schemes, and the information effect can be controlled. 3. Cross-country experiments make it possible to compare the effects of diverse incentive schemes on prosocial activities among countries with different cultures.

The remainder of this study is structured as follows. Section 2 describes the experimental design and the variation in the treatment parameters. Section 3 provides details on the experimental procedures and the process for the recruitment of the subjects. Section 4 proposes several hypotheses. Section 5 shows the results, and Section 6 concludes.

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3 Like a blood donation or the acceptance of the construction of a nuclear waste repository in their community (Frey and Oberholzer-Gee 1997).

4 Bénabou and Tirole (2003) presented a theoretical model.

## 2 EXPERIMENTAL DESIGN

### 2.1 THE REAL EFFORT TASK

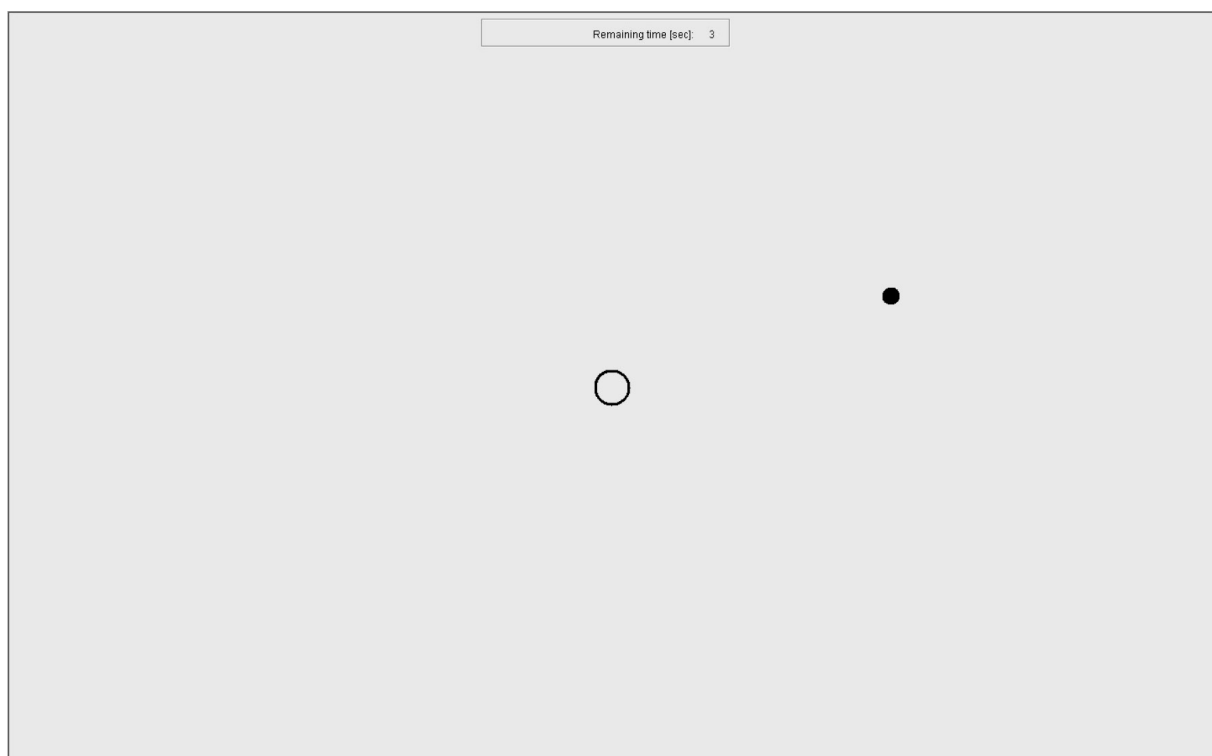
Our experimental design aims to investigate how subjects react to diverse incentives if the underlying task has a prosocial element. The task we introduced here is a real effort game; Figure 1 shows a screenshot of it.

The subjects were given 10 seconds to drag the black ball into the circle in order to collect points, and each successful drag was worth one point. The experiment consisted of 120 rounds, and in each round, a new black ball appeared on the screen from a random position; therefore, each individual subject could collect up to 120 points.

The task was designed to be easy enough to avoid a situation in which a difference in performance was the result of cognitive abilities rather than exerted effort. This task was also meant to be boring and did not generate any positive

utility for the subjects. If the subjects nevertheless finished the task, then they must have had other reasons, i.e. some other extrinsic or intrinsic motivations. We asked them about their ex-post attitude towards the task (0–10, where 0 means “very boring” and 10 means “very interesting”) after they finished the 120 rounds, and the mean attitude was 2.7 (1.4 for the German subjects and 4.0 for the Chinese subjects); thus, we can conclude that the task actually was not interesting. In addition, to make the real effort task even less attractive, we gave the subjects the opportunity to read a provided magazine. Thus, the opportunity cost of finishing the given task was increased. We chose National Geographic (March 2014 issue) with the hope that this English magazine with many pictures would distract the German subjects and the Chinese subjects from the task in a comparable way. Additionally, we assumed that this magazine is generally equally interesting to both male and female subjects. The existence of an alternative

**Figure 1: Screenshot of the Real Effort Task Screen**





activity, namely reading the magazine instead of finishing the task, could ensure that the subjects who did concentrate on finishing the tasks had a better reason for it than merely having nothing else to do.<sup>5</sup>

As described in the last paragraph, the goal of this design was to motivate the subjects to exert effort based on incentives other than the fun or entertainment of the task itself. We built two kinds of incentives into the task. The first one was the individual payoff, which depended on the points they collected in the 120 rounds; we varied the kind and the level of incentives as our treatment variables.<sup>6</sup> This self-regarding incentive served as an extrinsic motivation. The second incentive to motivate the subjects was the amount of a donation to a charity, the “Deutsche Komitee für UNICEF e.V.” and “UNICEF China”, respectively, after the experiment. The amount we donated depended on the sum of the total points collected by all the participants, and each point would result in a donation of 1.5 Euro cents or 0.06 RMB. This other-regarding incentive served as an intrinsic motivation, which provided a pro-social element.

## 2.2 TREATMENTS

The donation to UNICEF was always the same, 1.5 Euro cents or 0.06 RMB, depending upon where the experiment sessions took place. The payoff to the subjects varied according to four different treatment variables, which can be summarised as follows:

- 1** Cultural background: The experiment was conducted in Germany and in China; therefore, the different cultural background of the subjects served as one treatment variable. The German subjects were paid with Euros, and the Chinese subjects were paid with RMB Yuan;
- 2** Monetary or non-monetary payment: The subjects were paid either with cash or with chocolate of the same value;
- 3** The level of payment: The high payment was tenfold the low payment;
- 4** Fixed or linear payment: The payoff, either low or high, cash or chocolate, of an individual subject with a fixed payment was predetermined, and thus, it did not depend on the points he/she collected; however, the payoff of an individual subject with a linear payment was determined by the points.

Thus, the payoff of a German subject was either 1.80 Euros or 12 pieces of chocolate if they were in the fixed low payment treatments; German subjects with high fixed payments got either 18 Euros or 120 pieces of chocolate. The payoff of a German subject with linear payments was determined by the points he/she collected: Each point was worth 1.5 Euro cents or 0.1 piece of chocolate in the low payment treatments<sup>7</sup> and was worth 15 Euro cents or 1 piece of chocolate in the high payment treatments.

The payoff of a Chinese subject was either 7.2 RMB or 12 pieces of chocolate if the subject was in fixed low payment treatments; Chinese subjects with fixed high payments got either 72 RMB or 120 pieces of chocolate. The payoff of a Chinese subject with linear payments was determined by the points he/she collected: Each point was worth 0.06 RMB or 0.1 piece of choc-

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5 It is a common critique of real effort games that the subjects exert effort because there is nothing else to do (van Dijk et al. 2001). It can still be argued that the existence of a magazine does not really help, because reading and finishing the task simultaneously is not forbidden. While this is true theoretically, it is very hard to both read the magazine and finish the task within 10 seconds.

6 See Subsection 2.2 for a detailed explanation.

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7 Payment will always be rounded up to (a maximum of) 15 Euro cents or 1 piece of chocolate.

olate in the low payment treatments<sup>8</sup> and was worth 0.6 RMB or 1 piece of chocolate in the high payment treatments.

Combining the four treatment variables, we had 24 designs and a total of 16 treatments, which have been summarised in Table 1.

**Table 1: Treatments**

Cash			Chocolate	
Germany	Fixed low payment (21)	Fixed high payment (23)	Fixed low payment (22)	Fixed high payment (24)
	Linear low payment (23)	Linear high payment (23)	Linear low payment (22)	Linear high payment (24)
China	Fixed low payment (24)	Fixed high payment (24)	Fixed low payment (24)	Fixed high payment (24)
	Linear low payment (24)	Linear high payment (24)	Linear low payment (22)	Linear high payment (24)

Source: Own table. The number of observations by treatment is inside the brackets.

### 3 EXPERIMENTAL PROCEDURES

A total of 372 subjects participated in the computer-based cross-country experiment using Z-tree (Fischbacher 2007). The experimental sessions in Germany were conducted in June 2014, May 2015 and July 2015 at the “Essener Labor für experimentelle Wirtschaftsforschung” (elfe). The experimental sessions in China were conducted in July 2014 at the Smith Laboratory for experimental studies at the University of Nankai.

#### 3.1 SUBJECT POOL AND RECRUITMENT PROCESS

The pool of participants was split into 182 students from the University of Duisburg-Essen and 190 students from the University of Nankai and Tianjin University<sup>9</sup>. The summary statistics in Table 4 in Appendix A show the key characteristics of the two groups. We used the standard

electronic recruitment procedures via ORSEE (Greiner 2004) to collect the subject pool of students from the University of Duisburg-Essen. To recruit students from the University of Nankai and Tianjin University, we hired one student assistant from each university. With the two assistants, we distributed flyers in different canteens on the two campuses in order to awaken the interest of potential subjects, who had to register in the form of an E-mail or a telephone call, providing their basic demographic and educational information and their available time slots. The registered subjects were invited three or four days before a particular session via telephone calls or sms, and subjects who wanted to participate in this particular session had to confirm either by a telephone call directly or by replying to the sms with a positive answer. Confirmed subjects received a reminder sms on the evening before the session.

In order to create similar conditions in both countries, we made the following adjustments to our study design:

- 1 To minimise the currency effects, we first scaled the monetary amounts using the hourly wage of a student research assistant. Then,

<sup>8</sup> Payment will always be rounded up to (a maximum of) 0.6 RMB or 1 piece of chocolate.

<sup>9</sup> Tianjin University is the neighbour of the University of Nankai. The two universities have a similar ranking in China, and their students have similar backgrounds. The two universities share a range of teaching and research programmes.

we adjusted the payments based on purchasing power parities and the local guidelines for subject payments.

- 2 Both German and Chinese instructions were written by the same experimenter, who speaks German and Chinese.
- 3 To minimise the potential experimenter effects, all the sessions were conducted by the same experimenter (with local experimenters), following the same detailed protocol.

3.2 SEQUENCE OF EVENTS

All the treatments include the same sequence of events, split into six subsequent steps shown in Figure 2.<sup>10</sup> The participants first read the instructions and were given the opportunity to pose clarifying questions (part 1).<sup>11</sup> To ensure that everybody understood the instructions and the general proceeding, the participants were asked to answer three control questions (part 2). The real effort task part was the core of the experiment (part 3), including the different treatment types as summarised in Table 1.

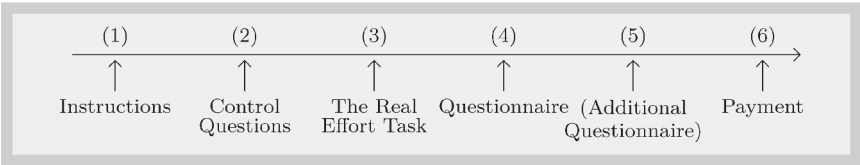
The real effort task part was followed by a questionnaire containing socio-economic questions (part 4). We asked for sex, age, number of siblings, weekly PC hours, weekly PC game hours, final school grade (German Abitur and Chinese NEMT (Gaokao) respectively), number of semesters studied and field of studies. All the subjects were then asked to report their ex-post attitude

towards the task (0–10) and their risk attitude (0–10). The total subject pool is summarised according to these variables in Table 4 in Appendix A.

In part 5, we gave the subjects in the low payment treatments the opportunity to fill out another questionnaire. The subjects were not aware of the existence of this questionnaire until after they had finished the questionnaire with the socio-economic questions and were waiting for payment. They were free to choose to finish the extra task for another payoff amount (5 Euros or 20 RMB, respectively) or not.<sup>12</sup> We introduced this irrelevant questionnaire in order to compensate the subjects in the low payment treatments; otherwise, their payoff would be much lower than their opportunity costs, and this was not because of a bad decision but because of chance. Another possible way to enable the subjects in the low payment treatments to earn enough would be to introduce a higher show-up fee, but this would eventually jeopardise a functioning incentive structure.

At the end of the experiment, the subjects were paid privately (part 6) with cash or cash and chocolates. The experiment took around 75 minutes, and the average payoff among the German subjects was 15.5 Euros (around 21.1 dollars),<sup>13</sup> ranging between a minimum of 8.30 Euros and a maximum of 21 Euros. The average payoff among the Chinese was 61.8 RMB (about 10.0 dollars), ranging between a minimum of 38 RMB and a maximum of 84 RMB.

Figure 2: Sequence of Events



10 Subjects in low payment sessions had the opportunity to fill out another questionnaire, see below.

11 The experimental instructions are provided in Appendix B.

12 All the subjects in the low payment sessions finished the extra task.

13 The money value of the chocolate payoff was added to the show-up fee to calculate the total payoff.

## 4 HYPOTHESES

If intrinsic motivation does not exist, the subjects with the fixed payments should exert no effort according to economic theory, because the performance does not have any effect on their payoff. If intrinsic motivation exists, the subjects with the fixed payments should exert less effort than those with linear payments, because they can allocate more of their time to reading the provided magazine in order to increase the total utility for themselves, unless the magazine is so boring that it does not generate any positive utility, or the intrinsic motivation is high enough to outweigh the utility from the magazine. Thus, we propose Hypothesis I:

**Hypothesis I: Subjects with linear payments exert more effort than subjects with fixed payments.**

Monotonicity of preferences is assumed, and a high level of payment should be more motivating than a low level of payment. Thus, we propose Hypothesis II:

**Hypothesis II: Subjects with high payments exert more effort than subjects with low payments.**

Because the subjects with cash treatments can do whatever they wish with their money, including buying chocolates, a cash payment should at least weakly dominate a chocolate payment if the free disposal of money is assumed. Thus, we propose Hypothesis III:

**Hypothesis III: Subjects with chocolate payments exert less effort than subjects with cash payments.**

Eagly (2009) mentioned that women and men are different in their emphasis on particular

classes of prosocial behaviours. Mellström and Johannesson (2008) found that the fraction of female subjects who agreed to an exam necessary for blood donation was significantly lower when a seven dollar payment was introduced, whereas there is no such effect among male subjects. Lacetera and Macis (2010a) also found that, compared with men, women are more likely to be adversely affected by an offer of a monetary incentive for a blood donation. Although there is still no clear evidence about whether males or females are more interested in prosocial behaviour, based on the literature, we expect them to behave differently. Thus, we propose Hypothesis IV:

**Hypothesis IV: There is a difference in the reaction to incentives between male subjects and female subjects.**

As for the two different subject pools, a priori, the rationale still holds: For both the German and Chinese subjects, linear payments, high payments and cash payments, should be more attractive and therefore result in a higher level of effort than fixed payments, low payments and chocolate payments as discussed above. While it can be argued that the Germans and the Chinese could behave differently due to their different cultural backgrounds, especially if the underlying task has a prosocial element (Hofstede et al. 1991; Hofstede and Hofstede 2001; World Values Survey 2015), Bartling et al. (2015) did not indicate a clear difference between subjects with a Western European cultural background and subjects with a Chinese cultural background regarding socially responsible behaviour. This leads to Hypothesis V:

**Hypothesis V: There is no difference in the reaction to incentives between the German subjects and the Chinese subjects.**

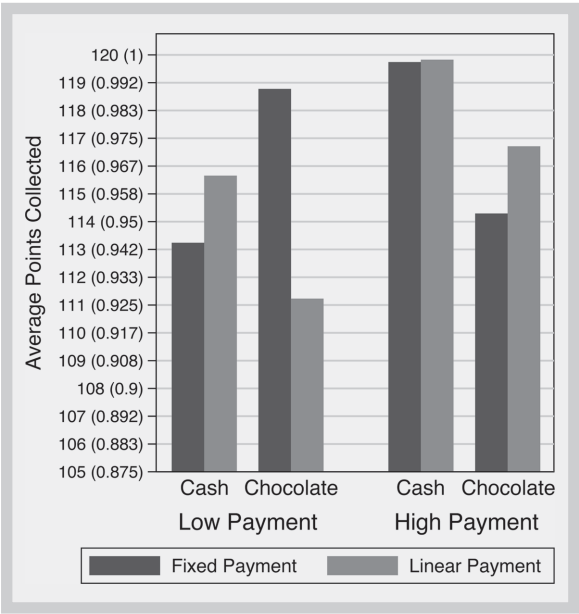
5 RESULTS

5.1 TREATMENTS IN GERMANY

5.1.1 TREATMENT EFFECTS

Figure 3 shows the average points collected by the subjects for all eight treatments conducted in Germany. Among those sessions, the highest average points collected was 119.8 in the linear high cash payment treatment, followed by the fixed high cash payment treatment (119.7), the fixed low chocolate payment treatment (118.8), the linear high chocolate payment treatment (116.7), the linear low cash payment treatment (115.7), the fixed high chocolate payment treatment (114.3), the fixed low cash payment treatment (113.2) and the linear low chocolate payment treatment (111.2).<sup>14</sup>

Figure 3: Average Points Collected by German Subjects by Treatment



Fixed payments vs. linear payments

Testing the difference in the average points collected between fixed payment treatments and

linear payment treatments reveals no clear direction. There is a significant difference between a linear payment and a fixed payment if the level of payment is low ( $p < 0.05$  for both the test linear low cash vs. fixed low cash and the test linear low chocolate vs. fixed low chocolate),<sup>15</sup> but the directions are different for cash payments and chocolate payments. In contrast, the difference is small and insignificant for those with a high payment level.

Low payments vs. high payments

In testing the difference in the average points collected between low payment treatments and high payment treatments, we find that in three of the four compared pairs (fixed low cash vs. fixed high cash; linear low cash vs. linear high cash and linear low chocolate vs. linear high chocolate), the subjects with a higher level of payment exerted a higher level of effort, although the differences are only statistically significant for two of them (fixed low cash vs. fixed high cash with  $p < 0.1$  and linear low chocolate vs. linear high chocolate with  $p < 0.05$ ). The last comparison shows that there is no significant difference between the subjects with a high fixed chocolate payment and those with a low fixed chocolate payment.

Cash payments vs. chocolate payments

Next, we consider the difference in the average points collected between cash payment treatments and chocolate payment treatments. There is a significant difference in only one of the four compared pairs, i.e. the subjects with a linear low cash payment exerted more effort than those with a low fixed cash payment ( $p < 0.01$ ). There is no other significant difference among the other compared pairs.

14 If not indicated differently, the numbers in crammer are the percentage of completion.

15 If not indicated differently, exact two-sided Wilcoxon rank-sum tests are used.

### 5.1.2 REGRESSION ANALYSIS

To examine the data in a more systematic and global way, a regression was used in addition to the standard non-parametric tests; this was also meant to increase the statistical power. Compared to the previous two-sample tests on the differences in means, the regressions allowed us to estimate the treatment effect conditional on a range of potentially important variables. These variables are weekly PC hours and weekly PC game hours, indicating the familiarity with computer-based tasks; attitude towards the

task; risk preferences; socio-economic factors including gender, age and number of sisters and brothers and education. The treatment variable *Linear Payment* is a dummy = 1 in the linear payment sessions and = 0 in the fixed payment sessions; the treatment variable *High Payment* is a dummy = 1 in the high payment sessions and = 0 in the low payment sessions; and the treatment variable *Chocolate Payment* is a dummy = 1 in the chocolate payment sessions and = 0 in the cash payment sessions. The interaction terms of the three treatment variables have also been controlled in Models 2–6. Additionally, in Mod-

**Table 2: Regression Analysis: German Subjects**

	German subjects						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Treatment variable</b>							
Linear Payment	-0.610	2.414	2.532	2.756	2.654	3.984	4.324
High Payment	2.860	6.501	6.477	6.128	6.212	6.960	4.397
Chocolate Payment	-1.976	5.535	5.668	6.635	6.639	7.485	4.603
<b>Interaction terms</b>							
Linear High Payment		-2.327	-2.375	-2.198	-2.352	-3.199	-3.624
Linear Chocolate Payment		-9.960	-10.054	-10.517	-10.307	-12.258*	-10.739
High Chocolate Payment		-10.982*	-10.736*	-10.962*	-10.964*	-11.965*	-4.481
Linear High Chocolate Payment		12.289	12.446	12.335	12.392	14.211	10.860
Weekly PC hours			0.020	0.021	0.018	0.071	0.059
Weekly PC games hours			-0.121	-0.135	-0.129	-0.067	-0.056
Attitude towards the task (0–10)				0.755	0.720	0.939	0.899
Stated risk preferences (0–10)					0.307	0.561	0.628
Male						-7.264***	-8.524
Age in years						0.207	0.210
N siblings						-2.067	-2.052*
Final school grade (Abitur) (1–4)						2.414	2.450
N semesters at university						-0.380	-0.328
Economics major						1.762	1.871
<b>Interaction terms with Male</b>							
Linear Payment Male							-0.967
High Payment Male							4.690
Chocolate Payment Male							5.590
Linear High Payment Male							0.520
Linear Chocolate Payment Male							-2.198
High Chocolate Payment Male							-14.294
Linear High Chocolate Payment Male							6.465
Constant	116.05***	113.238***	113.160***	111.864***	110.299***	104.504***	104.483***
N	182	182	182	182	182	182	182

Source: Own calculations based on experimental data.

Note: Reported values are coefficients from OLS regressions. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

el 7, the interaction terms of the three treatment variables with *Male* have been included in order to verify the gender differences in respect of the three treatment variables and their interaction terms.

The results confirm those from the non-parametric tests above: None of the three treatment dummies had a significant effect<sup>16</sup>, indicating that given the existence of moderate intrinsic incentives (here, the donation to UNICEF), the German subjects tended to be highly motivated in most cases and exerted a rather high level of effort, regardless of how the extrinsic incentives, namely their own payoff, alternated. Note that this finding is consistent in all six statistical models and thus can be assumed to be robust.

Another point that also should be mentioned is the effect of gender. We can see in Model 6 that the male subjects collected fewer points than the female subjects. This effect is of high statistical significance ( $p < 0.01$ ) and is fairly large (about 7.3 points). This finding is in line with the literature, which suggests that women and men are different in their emphasis on particular classes of prosocial behaviours, and that females are more engaged in prosocial activities, which are communal and relational (Eagly 2009). The task in our design is certainly an example of a communal task, where the subjects collected points together in order to obtain the result of a higher level of donation. Note that none of the interaction terms with gender has a significant effect, even *Male* itself is no longer significant because its effect is diluted, just as shown in Model 7.

In summarising the results with the non-parametric tests and regressions, we tried to verify the hypotheses proposed in Section 4. Because

none of the three treatment variables *Linear Payment*, *High Payment* and *Chocolate Payment* showed a significant effect robustly, we generally reject Hypotheses I–III. Therefore, we conclude that when confronted with activities including a prosocial element, the German subjects were highly motivated by a moderate linear intrinsic incentive; they cared about the well-being of the third party and could thus ignore the variations in the form and level of the extrinsic incentives, namely their own payoff from the particular task. Hypothesis IV could not be rejected because the female subjects collected significantly higher points than the male subjects, indicating that females are more interested in this kind of prosocial activity than males in Germany.

## 5.2 TREATMENTS IN CHINA

### 5.2.1 TREATMENT EFFECTS

Figure 4 shows the performance of Chinese subjects analogously. Among those sessions, the highest average points collected was 119.8 in the linear low cash payment treatment and in the linear high cash payment treatment, followed by the linear high chocolate payment treatment (119.7), the linear low chocolate payment treatment (118.7), the fixed high cash payment treatment (118), the fixed high chocolate payment treatment (112.9), the fixed low chocolate payment treatment (111.6) and the fixed low cash payment treatment (107.9).

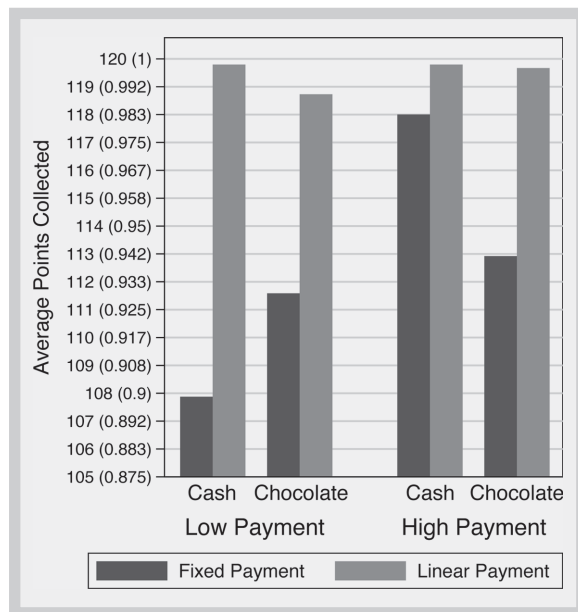
#### Fixed payments vs. linear payments

A test of the differences in the average points collected between the fixed payment treatments and the linear payment treatments shows clear favour toward a linear payment. In all the compared pairs (fixed low cash vs. linear low cash; fixed low chocolate vs. linear low chocolate; fixed high cash vs. linear high cash and fixed high chocolate vs. linear high chocolate), the subjects with a linear payment exerted a higher level of effort than the subjects with a fixed payment, and the differences are significant in three of the four pairs (fixed low cash vs. linear low cash with  $p < 0.01$ ; fixed low chocolate vs. linear low choc-

16 The only significant effect is the interaction term *High Chocolate Payment*, indicating that the subjects with high chocolate payments collected more points than the subjects with low cash payments, and the size of the effect is, taking Model 2 as a reference, about  $6.5 + 5.5 - 11.0 = 1.0$  point.



**Figure 4: Average Points Collected by Chinese Subjects by Treatment**



chocolate with  $p < 0.01$  and fixed high cash vs. linear high cash with  $p < 0.01$ ).

### Low payments vs. high payments

In testing the difference in the average points collected between the low payment treatments and the high payment treatments, we found that in three of the four compared pairs (fixed low cash vs. fixed high cash; fixed low chocolate vs. fixed high chocolate and linear low chocolate vs. linear high chocolate), the subjects with a higher level of payment exerted more effort, and in the last pair, the performance was the same (linear low cash vs. linear high cash), although the differences are only statistically significant in one of them (fixed low chocolate vs. fixed high chocolate with  $p < 0.05$ ).

### Cash payments vs. chocolate payments

We then examined the difference in the average points collected between the cash payment treatments and the chocolate payment treatments. In all four compared pairs (fixed low cash vs. fixed low chocolate; linear low cash vs. linear low chocolate; fixed high cash vs. fixed high chocolate and linear high cash vs. linear high chocolate), the subjects with a cash payment exerted more effort, although the differences are

only statistically significant in two of them (fixed low cash vs. fixed low chocolate with  $p < 0.05$  and linear low cash vs. linear low chocolate with  $p < 0.1$ ).<sup>17</sup> Therefore, we conclude that for the Chinese subjects, if the level of the payment was low, then a cash payment was preferred over a chocolate payment; this was not true if the level of payment was high.

### 5.2.2 REGRESSION ANALYSIS

Regressions of the data from the Chinese subjects were done, as well as standard non-parametric tests, which provide a picture that is quite different from that of the German subjects.

In most statistical models, the treatment effect of the treatment variables *Linear Payment* and *High Payment* has been confirmed.<sup>18</sup> Taking Model 2 as a reference, we see that the subjects with the linear payments collected about 11.9 more points than those with the fixed payments ( $p < 0.01$ ), and the subjects with the high payments collected about 10.1 more points than those with the low payments ( $p < 0.05$ ), holding other factors constant. However, if we consider Model 7, where gender and interaction terms with gender are included, the treatment effect of the variables *Linear Payment* and *High Payment* is no longer significant; instead, gender and most of the interaction terms with gender have a significant coefficient, indicating that the formerly significant treatment effects of *Linear Payment* and *High Payment* are mainly driven by the male subjects. Therefore, we could say that in general, the Chinese males collected fewer points than the Chinese females (about 6.5 points

<sup>17</sup> Please note that the average points collected with a fixed low cash payment are actually lower than those with a fixed low chocolate payment due to more extreme observations with a fixed low cash payment (eight observations under 100 points) than with a fixed low chocolate payment (three observations under 100 points); however, the sum of the rank is significantly higher with a fixed low cash payment.

<sup>18</sup> The interaction term *Linear High Payment* also has a significant coefficient in four of the six statistical models including this term.



in Model 6 and 22.2 points in Model 7) and that the Chinese male subjects reacted strongly to all three of the treatment variables given the existence of intrinsic motivation, whereas the Chinese female subjects did not. For the Chinese males, their own payoff was an important factor for engaging in prosocial behaviours. Interestingly, the sign of the coefficient of *Chocolate Payment Male* is positive, meaning that chocolate payments were more favourable than the cash payments for the Chinese males, which contradicts the standard theory. According to Model 7,

this positive sign is mainly driven by sessions with a low fixed payment, because the coefficients of *Linear High Payment Male*, *Linear Chocolate Payment Male* and *High Chocolate Payment Male* are all negative. This finding, i.e. that a chocolate payment of a low level motivated Chinese males more effectively, is quite consistent with the literature (Heyman and Ariely 2004; Lacetera and Macis 2010a), which suggests that a low level non-monetary form of payment is more preferred than a cash payment of the same level.

**Table 3: Regression Analysis: Chinese Subjects**

	Chinese subjects						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Treatment variable</b>							
Linear Payment	6.877***	11.917***	11.832***	12.466***	12.510***	13.842***	2.236
High Payment	3.123	10.125**	10.208**	10.204***	10.389***	8.251**	-1.797
Chocolate Payment	-0.665	3.708	3.611	3.942	3.887	5.420	-2.021
<b>Interaction terms</b>							
Linear High Payment		-10.125*	-10.267*	-10.746*	-10.927**	-8.738	2.009
Linear Chocolate Payment		-4.773	-5.094	-5.546	-5.822	-9.278*	1.117
High Chocolate Payment		-8.792	-8.976	-9.916*	-9.970*	-9.520*	2.169
Linear High Chocolate Payment		9.731	10.440	11.042	11.560	13.677*	-0.407
Weekly PC hours			-0.003	0.015	0.018	0.094	0.074
Weekly PC games hours			-0.165	-0.197	-0.208	0.025	-0.010
Attitude towards the task (0–10)				0.707**	0.652**	0.735**	0.646*
Stated risk preferences (0–10)					0.415	0.052	-0.025
Male						-6.526***	-22.173***
Age in years						-1.293**	-1.069**
N siblings						1.765*	-1.406
Final school grade (Abitur) (1–4)						-0.014	-0.013
N semesters at university						-0.016	-0.112
Economics major						1.434	0.266
<b>Interaction terms with Male</b>							
Linear Payment Male							21.457***
High Payment Male							22.771***
Chocolate Payment Male							14.254*
Linear High Payment Male							-22.175**
Linear Chocolate Payment Male							-16.802
High Chocolate Payment Male							-26.211**
Linear High Chocolate Payment Male							27.030*
Constant	111.365***	107.875***	108.644***	105.340***	103.088***	138.983***	143.425***
N	190	190	190	190	190	190	190

Source: Own calculations based on experimental data.

Note: Reported values are coefficients from OLS regressions. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

Another point worth mentioning is that the coefficient of the variable *Attitude towards the task* is significant in all the statistical models including it, although the size is not large (about 0.7 points in Model 6 and 0.6 points in Model 7). This finding could be interpreted to mean that the Chinese subjects who liked the underlying task more, or disliked it less, will exert more effort. This is actually a rational behaviour in the economic sense and supports the idea that the Chinese subjects did consider their own payoff (a preference for a higher monetary payoff and/or lower psychological costs) when they made decisions about how much effort to exert in prosocial activities, whereas the German subjects tended to ignore their own payoff.

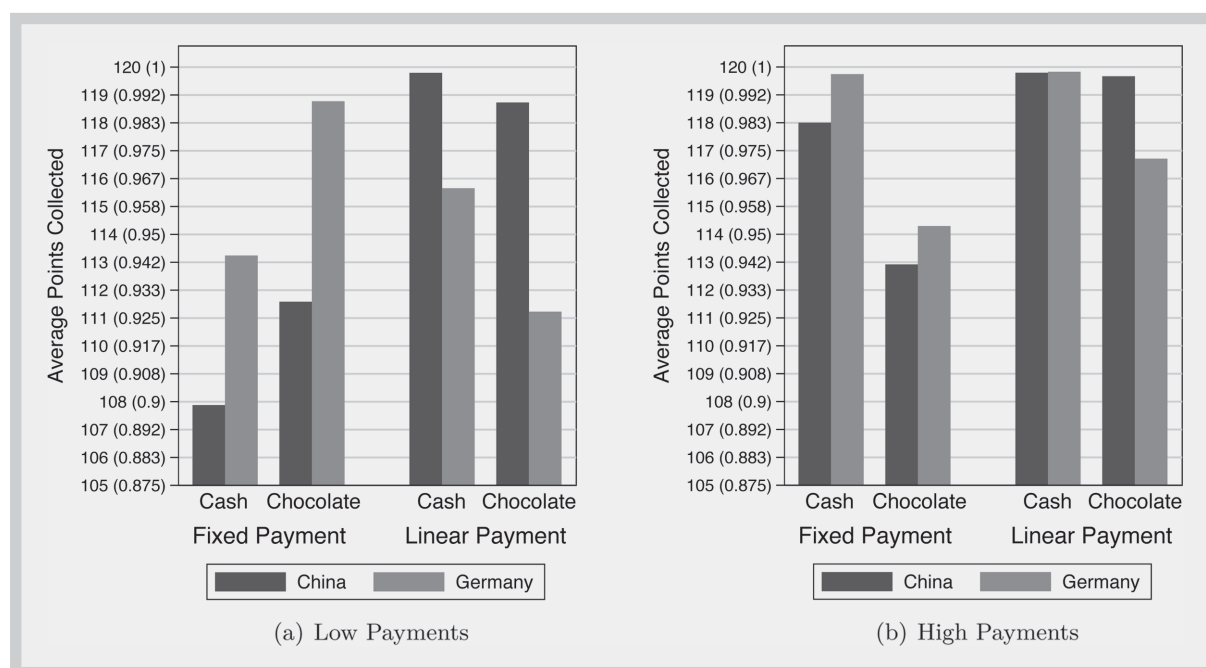
Again, we tried to verify the hypotheses raised in Section 4 with the Chinese subjects. Because of the large and significant effects of the treatment variables *Linear Payment* and *High Payment*, we are not able to reject Hypothesis I and Hypothesis II, and the effect was mainly driven by the Chinese males. Regarding Hypothesis III, the regression provides a different picture than the non-parametric test. Using the non-parametric test, in two of the four compared pairs, a cash payment stimulated significantly greater effort than a chocolate payment, suggesting that Hypothesis III is at least weakly confirmed; however, the regression does not show significance regarding a *Chocolate Payment* in any of the seven statistical models. Moreover, as discussed above, according to the regression results, the male Chinese subjects even preferred a chocolate payment over a cash payment if the payment was fixed and at a low level. To sum up, if the more conservative standard non-parametric test is preferred, we tend to not reject Hypothesis III. Similar to the German subjects, the Chinese females also collected significantly more points than the Chinese males, and thus, we do not reject Hypothesis IV.

### 5.3 COMPARISON BETWEEN GERMAN AND CHINESE SUBJECTS

After describing both the results for the German subjects and those for the Chinese subjects, we are finally able to deal with Hypothesis V. In contrast to the German subjects, the Chinese subjects reacted systematically to a linear payment and to a high level of payment; additionally, their behaviour was influenced by their self-attitude towards the underlying task of the real effort game. All these pieces of evidence show that confronted with activities including a prosocial element, the Chinese subjects cared about their own utility in addition to the well-being of the third party. The German subjects tended to be highly intrinsically motivated, and they always exerted a relatively high effort, regardless of how their own payoffs alternated.

In directly comparing the German subjects with the Chinese subjects, we find that, as shown in Figure 5, if the level of payment was low, the Chinese subjects were more motivated by a linear payment, whereas the German subjects exerted more effort with a fixed payment, although the difference is only significant with a cash payment (Chinese fixed low chocolate vs. German fixed low chocolate with  $p < 0.01$  and Chinese linear low chocolate vs. German linear low chocolate with  $p < 0.01$ ). The picture is quite similar if the payment level was high; the differences among the Chinese subjects and the German subjects are lower, and only one compared pair has a significant difference (Chinese fixed high chocolate vs. German fixed high chocolate with  $p < 0.05$ ). Thus, we reject Hypothesis V and conclude that the Chinese subjects acted significantly differently from the German subjects with respect to prosocial behaviours; in particular, a fixed payment was more acceptable to the Germans, and the Chinese preferred a linear payment.

**Figure 5: Comparing the German Subjects with the Chinese Subjects**



## 6 CONCLUSION

We provide experimental evidence regarding the effect of diverse incentive schemes on activities with prosocial elements. We analysed the response to these incentives by the German and Chinese subjects. Changing the form and the level of the (extrinsic) incentives provides a systematic picture of the effectiveness of different (combinations) of incentive types in motivating prosocial activities, which are common and socially important in modern economies such as Germany and China.

The first finding of the paper is that the German and Chinese subjects behaved differently with respect to activities including a prosocial element. While the Germans failed to react strongly to any of the three treatment variables, namely *Linear Payment*, *High Payment* and *Chocolate Payment*, the Chinese subjects responded to *Linear Payment* and *High Payment* significantly, as standard economic theory predicts. A possible explanation for this evidence is the different level of engagement in prosocial activities. The German subjects tended to be highly motivated

by moderate intrinsic incentives, i.e. the donation to UNICEF, and the alternation of their own payoff did not have much influence on their decision about how much effort to exert. In contrast to the Germans, the intrinsic incentive provided by a donation was not enough for the Chinese subjects, and they exerted a higher level of effort if their payoff was determined by performance and if the level of payment was high. Although this finding is somewhat contrary to the theory on cultural comparison, which suggests that China is a more collective society than Germany, and thus, the Chinese should care more about members within the society (Hofstede et al. 1991; Hofstede and Hofstede 2001), we could argue that a high level of collectivity exists in China only within a small circle of family members and close friends, and thus, the Chinese do not necessarily care about someone who is remote from them, as in the case of the experiment (Greif and Tabellini 2010). Moreover, as the literature suggests, social institutions could affect social preferences, attitudes, beliefs and behaviour (Ockenfels and Weimann 1999; Brosig-Koch et al.

2011; Bauernschuster et al. 2012; Bauernschuster and Rainer 2012); subjects from countries with a communist history are more supportive of state redistribution and progressive taxation (Kuhn 2013). This may lead them to feel less responsible to act prosocially themselves, and this effect continues long after the demise of communism (Brosig-Koch et al. 2011).<sup>19</sup> In addition to the arguments discussed above, China is less developed and is exposed to a higher level of resource scarcity, which could also cause Chinese subjects to be less interested in prosocial activities, compared to the Germans, who do not suffer from this problem (Prediger et al. 2014). Here, we conclude that to motivate Germans to engage in socially beneficial activities such as R&D and organ donation, a fixed payment of a small level could work quite well because of the high salience of intrinsic motivation. For the Chinese, linear incentives work much better than fixed incentives, and the level of payment is very important.

The second finding is that for both the German and Chinese subjects, females were more engaged in the underlying task and collected significantly more points than the male subjects. This finding is consistent with social-psychological theory (Eagly 2009) and evidence from economic experiments revealing that females

behave differently than males with respect to prosocial behaviours (Mellström and Johannesson 2008; Lacetera and Macis 2010a).

The last finding of this paper is that for Chinese males, a non-monetary payment, for example, the chocolates in our experiment, could motivate prosocial behaviours more effectively than a monetary one if it is a fixed payment and the level is relatively low. This finding could possibly be explained by the work of Bénabou and Tirole (2005). They developed a model in which there is heterogeneity in altruism, and individuals care about other people's beliefs about how altruistic they are. Therefore, introducing a monetary incentive for a prosocial activity reduces the level of altruism individuals signal by taking part in this activity, and thus, it will reduce their willingness to do so. In our experiment, providing the male Chinese subjects with a low level fixed payment, which could be perceived as a small extrinsic motivation, does not appear to be enough to convince them to exert a high level of effort; their intrinsic motivation, on the other hand, is also relatively low, because a monetary payment reduces their feeling of helping others and of signaling altruism. In contrast, a low value non-monetary payment could be seen as a gift for acting prosocially, and thus, it will not damage the intrinsic motivation. This suggests that for the Chinese males to be motivated to engage in a prosocial behaviour, a non-monetary payment, such as a gift, might work better than a monetary payment if it is not possible to raise the level of payment or to make the payment contingent on the performance provided by the subjects.

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19 Brosig-Koch et al. (2011) found that East Germans continued to show much less solidarity than West Germans, even 20 years after reunification. For China, we argue that even after almost 40 years of economic reform (since 1978), the influence of the formerly planned economy on human behaviour may still exist.

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## APPENDIX A: DESCRIPTIVE STATISTICS

**Table 4: Descriptive Statistics**

	Full sample		By subject pools			
	Mean	Min/Max	Mean German	Chinese	Diff.	t-stat (p-value)
<b>Dependent variable</b>						
Points collected	116.1	0 / 120	116.2	116.0	0.20	0.13 (0.893)
<b>Socio-demographic variables</b>						
Male	0.47	0 / 1	0.51	0.44	0.06	1.22 (0.222)
Age	22.9	17 / 46	24.3	21.6	2.7	8.11 (0.000)
N siblings	1.2	0 / 5	1.5	0.9	0.6	5.28 (0.000)
Weekly PC hours	23.5	0 / 100	17.6	29.2	-11.6	-5.95 (0.000)
Weekly PC games hours	3.5	0 / 55	3.5	3.5	0.1	0.09 (0.928)
<b>Education</b>						
Final school grade (Abitur) (1–4) / Grade NEMT (Gaokao) (0–750)	NA	NA	2.4	610.8	NA	NA
N semesters at university	5.0	1 / 15	6.6	3.6	3.0	9.48 (0.000)
<b>Field of studies</b>						
Economics	0.24	0 / 1	0.34	0.15	0.18	4.19 (0.000)
Engineering	0.36	0 / 1	0.08	0.63	-0.55	-13.45 (0.000)
Natural sciences / Math	0.12	0 / 1	0.14	0.11	0.03	0.78 (0.433)
Medicine	0.02	0 / 1	0.03	0.01	0.02	1.70 (0.090)
Sociology	0.03	0 / 1	0.04	0.03	0.01	0.36 (0.719)
Humanities	0.10	0 / 1	0.19	0.02	0.17	5.47 (0.000)
Teaching degrees	0.08	0 / 1	0.16	0.00	0.16	6.11 (0.000)
Other	0.04	0 / 1	0.03	0.05	-0.02	-0.93 (0.351)
<b>Attitude and risk</b>						
Attitude towards the task (0–10)	2.7	0 / 10	1.4	4.0	-2.6	-10.21 (0.000)
Stated risk preferences (0–10)	5.6	1 / 10	5.4	5.8	-0.4	-2.00 (0.46)
<b>Payoff experiment</b>						
Payoff in Euro/RMB	NA	NA	15.5	61.8	NA	NA
Payoff in Dollar Equivalent	NA	NA	21.1	10.0	NA	NA
N	372		182	190		

Source: Own calculations based on experimental data.

## APPENDIX B: INSTRUCTIONS

The instructions are translated from the original German / Chinese instructions. German subjects are paid with Euro and Chinese subjects are paid with RMB Yuan. In addition to different currencies, we donate to UNICEF Germany regarding sessions in Germany and to UNICEF Chi-

na regarding to sessions in China. To reduce the length of the Appendix both German and Chinese instructions include the eight incentive structures: numbers for high payment instructions are followed by those for low payment instructions in squared brackets.

## **B.1 INSTRUCTIONS: SESSIONS IN GERMANY**

### **Welcome to the Experiment!**

#### **Preliminary Note**

You are participating in a study of decision-making behavior in the context of experimental economics. During the study you and the other participants will be asked to make decisions. You can earn money in this experiment. How much money you earn depends on your decisions. You are provided with detailed instructions about this in the following. Please note that you will get **3 Euro show-up fee** for the participation additionally. All participants are paid in cash directly after the experiment one by one. To assure this, please remain seated after the experiment until your cabin number is called.

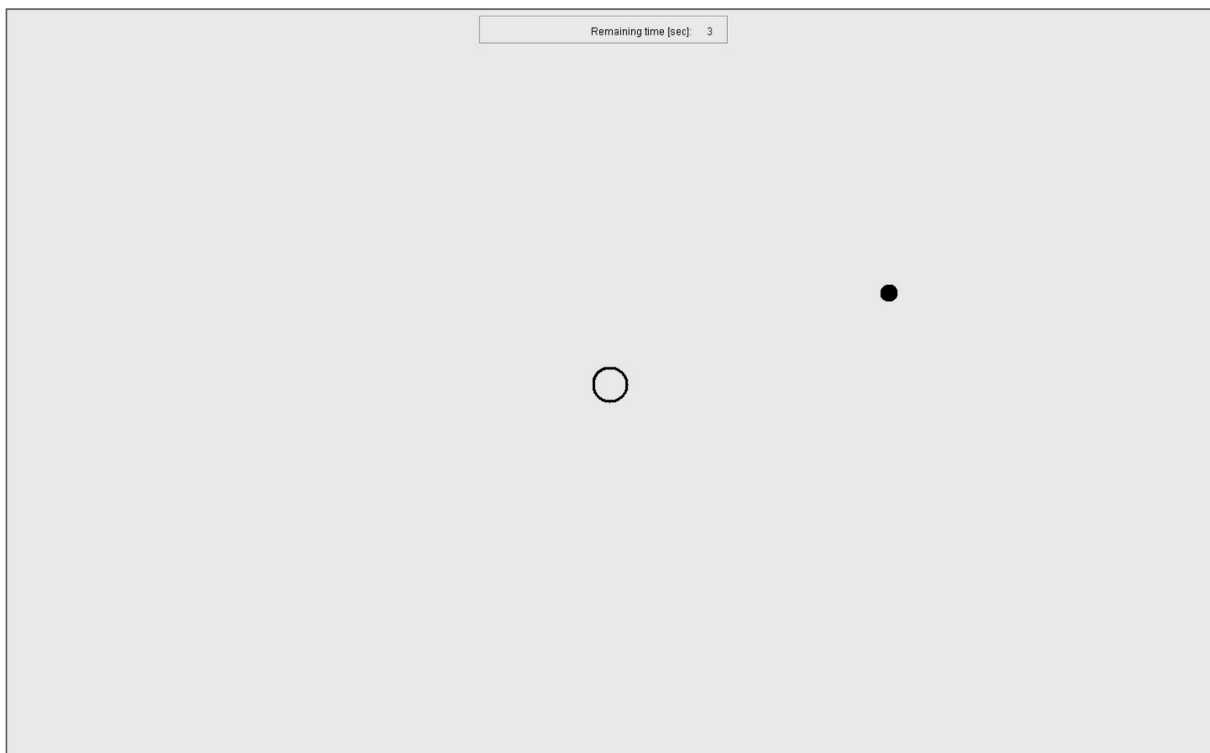
**Throughout the experiment, no participant will receive information about the other participants' identities. All decisions are therefore made anonymously.**

Should you have questions before the start of the experiment, please ask an employee of the laboratory. He will come to your place and help you. **Any communication with the other participants during the experiment is forbidden; breaking this rule will lead to an immediate exclusion from the experiment.**

#### **Description of the Decision**

Please read the following instructions completely and thoroughly. Please click the button only **after you have clarified all questions**. As soon as you have clicked the button, we kindly ask you to answer some questions concerning the experiment. Please drag the black ball on the screen into boxes superscribed with *TRUE* or *FALSE*. Once all participants have correctly answered these questions, the experiment begins. The experiment consists of 120 rounds. In each round you will see the following action screen:

**Figure 6: Screenshot of the Decision Screen**





If you **drag the black ball into the circle in the middle**, you will get one **point**. You have 10 seconds time in each round to drag the black ball into the circle. On the top of the screen, you can see the remaining time. Please note that in each round there is a new black ball appearing on the screen **randomly**.

#### Fixed Low [High] Cash Payment

Your individual **payoff** from the experiment is determined as following: You will get **1.80 Euro**, this does not depend on the points you collected. [You will get **18 Euro**, this does not depend on the points you collected.] Please note that, during the experiment you have the opportunity to read the provided magazine, instead of dragging the balls and collecting points. Your **total payoff** is the sum of the 3 Euro show-up fee and your 1.80 Euro payoff of the experiment. [Your **total payoff** is the sum of the 3 Euro show-up fee and your 18 Euro payoff of the experiment.]

#### Linear Low [High] Cash Payment

Your individual **payoff** from the experiment is determined as following: You will get **1.50 Euro cents** for each point you collected. Your payoff will always be rounded up to (a manifold of) 15 Euro cents. [You will get **15 Euro cents** for each point you collected.] Please note that, during the experiment you have the opportunity to read the provided magazine, instead of dragging the balls and collecting points. You will get the 3 Euro show-up fee **in any case**. This means, your **total payoff** is the sum of the 3 Euro show-up fee and your payoff of the experiment.

#### Fixed Low [High] Chocolate Payment

Your individual **payoff** from the experiment is determined as following: You will get **12 pieces of chocolates** (from a mixture of chocolate brands: MARS®, SNICKERS®, BOUNTY® and TWIX® (approx. 10 g each piece)), this does not depend on the points you collected. [You will get **120 pieces of chocolates** (from a mixture of chocolate brands: MARS®, SNICKERS®, BOUNTY® and TWIX® (approx. 10 g each piece)), this does

not depend on the points you collected.] Please note that, during the experiment you have the opportunity to read the provided magazine, instead of dragging the balls and collecting points. Your total payoff is the sum of the 3 Euro show-up fee and your 12 pieces of chocolates payoff of the experiment.

#### Linear Low [High] Chocolate Payment

Your individual **payoff** from the experiment is determined as following: You will get **0.1 pieces of chocolates** (from a mixture of chocolate brands: MARS®, SNICKERS®, BOUNTY® and TWIX® (approx. 10 g each piece)) for each point you collected. Your payoff will always be rounded up to (a manifold of) one piece. [You will get **1 piece of chocolates** (from a mixture of chocolate brands: MARS®, SNICKERS®, BOUNTY® and TWIX® (approx. 10 g each piece)) for each point you collected.] Please note that, during the experiment you have the opportunity to read the provided magazine, instead of dragging the balls and collecting points. You will get the 3 Euro show-up fee **in any case**. This means, your total payoff is the sum of the 3 Euro show-up fee and your payoff of the experiment.

The experimenter will donate an amount of money to the Deutsche Komitee für UNICEF e.V. after the experiment. The amount we donate depends on the sum of the total points collected by all participants: Each point you collected will result in 1.50 Euro cents donation.

The transfer of money to the Deutsche Komitee für UNICEF e.V. will be carried out after the experiment by the experimenter and one participant. The participant fills the amount (in Euro), which is resulting from the total points collected by all participants, into a money transfer form. This form prompts the payment of the designated amount to the Deutsche Komitee für UNICEF e.V. by the University of Duisburg-Essen's finance department. The form is then sealed in an addressed and stamped envelope and posted in the nearest mailbox by the participant and the experimenter.



After the entire experiment is completed, one participant is chosen at random to oversee the money transfer. The participant receives an additional compensation of 5 Euro for this task. The participant certifies that the process has been completed as described here by signing a statement which can be inspected by all participants at the office of the Chair of Quantitative Economic Policy. A receipt of the bank transfer to the Deutschen Komitees für UNICEF e.V. may also be viewed here.

## **B.2 INSTRUCTIONS: SESSIONS IN CHINA**

### **Welcome to the Experiment!**

#### **Preliminary Note**

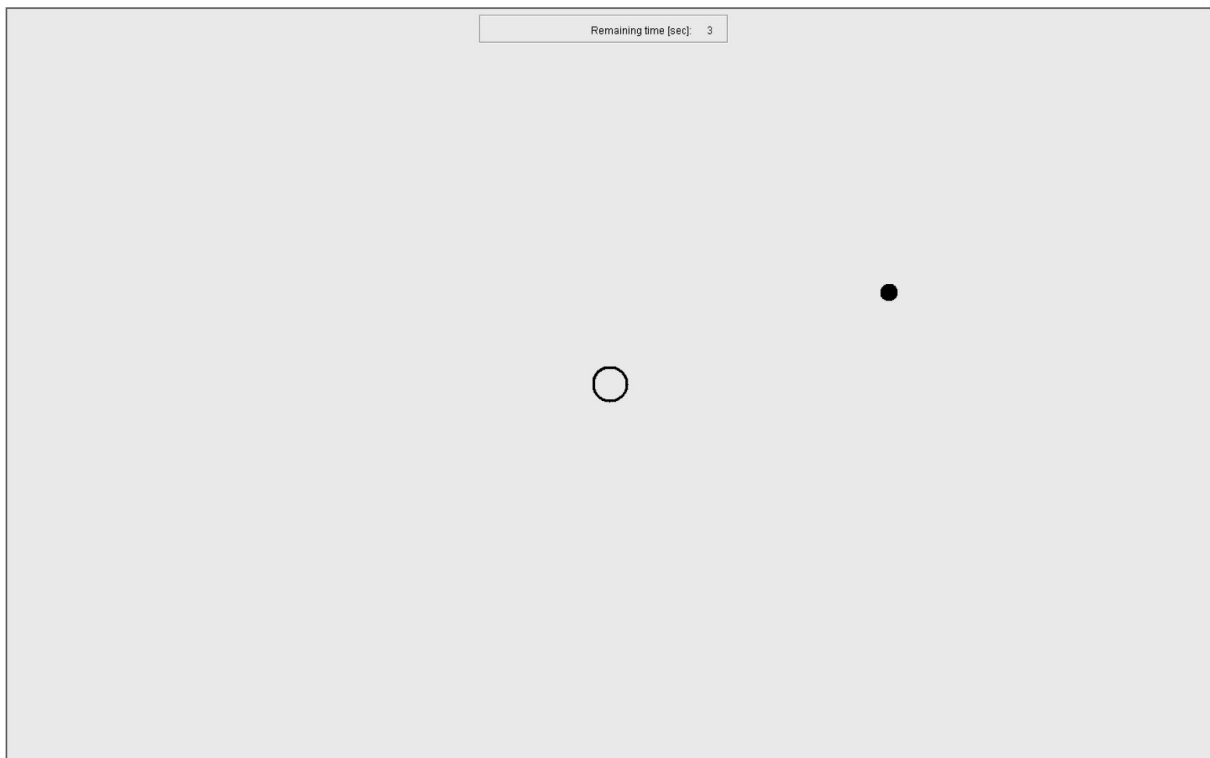
You are participating in a study of decision-making behavior in the context of experimental economics. During the study you and the other participants will be asked to make decisions. You can earn money in this experiment. How much money you earn depends on your decisions. You are provided with detailed instructions about this in the following. Please note that you will get **12 RMB show-up fee** for the participation additionally. All participants are paid in cash directly after the experiment one by one. To assure this, please remain seated after the experiment until your cabin number is called.

**Throughout the experiment, no participant will receive information about the other participants' identities. All decisions are therefore made anonymously.**

Should you have questions before the start of the experiment, please ask an employee of the laboratory. He will come to your place and help you. **Any communication with the other participants during the experiment is forbidden; breaking this rule will lead to an immediate exclusion from the experiment.**

#### **Description of the Decision**

Please read the following instructions completely and thoroughly. Please click the button only **after you have clarified all questions**. As soon as you have clicked the button, we kindly ask you to answer some questions concerning the experiment. Please drag the black ball on the screen into boxes superscribed with *TRUE* or *FALSE*. Once all participants have correctly answered these questions, the experiment begins. The experiment consists of 120 rounds. In each round you will see the following action screen:

**Figure 7: Screenshot of the Decision Screen**

If you **drag the black ball into the circle in the middle**, you will get one **point**. You have 10 seconds time in each round to drag the black ball into the circle. On the top of the screen, you can see the remaining time. Please note that in each round there is a new black ball appearing on the screen **randomly**.

#### **Fixed Low [High] Cash Payment**

Your individual **payoff** from the experiment is determined as following: You will get **7.2 RMB**, this does not depend on the points you collected. [You will get **72 RMB**, this does **not depend** on the points you collected.] Please note that, during the experiment you have the opportunity to read the provided magazine, instead of dragging the balls and collecting points. Your **total payoff** is the sum of the 12 RMB show-up fee and your 7.2 RMB payoff of the experiment. [Your **total payoff** is the sum of the 12 RMB show-up fee and your 72 RMB payoff of the experiment.]

#### **Linear Low [High] Cash Payment**

Your individual **payoff** from the experiment is determined as following: You will get **0.06 RMB**

for each point you collected. Your payoff will always be rounded up to (a manifold of) 0.6 RMB. [You will get **0.6 RMB** for each point you collected.] Please note that, during the experiment you have the opportunity to read the provided magazine, instead of dragging the balls and collecting points. You will get the 12 RMB show-up fee **in any case**. This means, your **total payoff** is the sum of the 12 RMB show-up fee and your payoff of the experiment.

#### **Fixed Low [High] Chocolate Payment**

Your individual **payoff** from the experiment is determined as following: You will get **12 pieces of chocolates** (from a mixture of DOVE® chocolates: Black Chocolate, Nuts Chocolate, Milk Chocolate and Malt Chocolate (approx. 6 g each piece)), this does not depend on the points you collected. [You will get **120 pieces of chocolates** (from a mixture of DOVE® chocolates: Black Chocolate, Nuts Chocolate, Milk Chocolate and Malt Chocolate (approx. 6 g each piece)), this does not depend on the points you collected.] Please note that, during the experiment you have the opportunity to read the provided mag-

azine, instead of dragging the balls and collecting points. Your total **payoff** is the sum of the 12 RMB show-up fee and your 12 pieces of chocolates payoff of the experiment.

#### **Linear Low [High] Chocolate Payment**

Your individual **payoff** from the experiment is determined as following: You will get **0.1 pieces of chocolates** (from a mixture of DOVE® chocolates: Black Chocolate, Nuts Chocolate, Milk Chocolate and Malt Chocolate (approx. 6 g each piece)) for each point you collected. Your payoff will always be rounded up to (a manifold of) one piece. [You will get **1 piece of chocolates** (from a mixture of DOVE® chocolates: Black Chocolate, Nuts Chocolate, Milk Chocolate and Malt Chocolate (approx. 6 g each piece)) for each point you collected.] Please note that, during the experiment you have the opportunity to read the provided magazine, instead of dragging the balls and collecting points. You will get the 12 RMB show-up fee in any case. This means, your **total payoff** is the sum of the 12 RMB show-up fee and your payoff of the experiment.

The experimenter will donate an amount of money to UNICEF China after the experiment. The amount we donate depends on the sum of the total points collected by all participants: Each point you collected will result in 0.06 RMB donation.

The transfer of money to UNICEF China will be carried out after the experiment by the experimenter and one participant. The participant fills the amount (in RMB) which is resulting from the total points collected by all participants, into UNICEF China online donation platform. The source of donation is from the fund for this experiment. The online donation process is finished by the participant and the experimenter.

After the entire experiment is completed, one participant is chosen at random to oversee the money transfer. The participant receives an additional compensation of 20 RMB for this task. The participant certifies that the process has been completed as described here by signing a statement which can be inspected by all participants at the office of the Department of Economics. A receipt of the bank transfer to UNICEF China may also be viewed here.

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