Online Appendix

Section 1: Additional Analysis

The Online Appendix presents the following additional tables:

- 1. Table B1: Results of OLS regressions which show that a participant's confidence in his or her ability to answer questions correctly is not systematically affected by relative performance feedback
- 2. Table B2: Results of OLS regressions that predict the probability of sharing an answer, comparing answers that participants think they got right to answers they are less certain about as a robustness check
- 3. Table B3: Results of OLS regressions that predict the probability of sharing an answer to a question separately for each sub-group with the same performance rank.

Section 2: Benchmark Effect Sizes from Related Studies

Section 2 of the Online Appendix presents how the benchmark effect sizes from the two related studies used for the power analysis were obtained.

Section 3: Instructions

The final section of the Online Appendix presents the screenshots of the instructions and decision screens as they were presented to participants. For this Online Appendix, the faces of participants in the pictures are blurred to preserve their anonymity. In the experiment, the faces were not blurred.

1

Section 1: Additional Analysis

	0	LS predicting	
	belief of partici	pant <i>i</i> of percen	t chance that he
		red question k co	orrectly
	Rank 1	Rank 2	Rank 3
Private RF	1.577	-5.330*	2.594
	(3.183)	(3.144)	(3.179)
Public RF	-1.295	-0.0875	2.260
	(2.526)	(3.348)	(3.323)
Actual correct	31.534****	28.808^{****}	30.054****
	(2.011)	(2.147)	(2.333)
Performance Timed Test	-3.789	-3.090	-0.370**
	(2.641)	(2.254)	(0.156)
Risk attitude	0.360	0.295	0.451
	(0.469)	(0.683)	(0.539)
Female	3.736	-1.997	-2.808
	(2.411)	(2.866)	(2.745)
Constant	48.198****	52.156****	43.985****
	(4.171)	(5.421)	(4.444)
Obs.	700	700	700
R ²	0.2542	0.2097	0.2276

Table B1. Rank Feedback and Self-Confidence

Notes. Private RF and *Public RF* are indicators for participant *i* privately observing his performance rank on the timed task or publicly observing the performance rank of everyone in his group, respectively. *Actual correct* variables indicate whether participant *i* provided a correct answer to a Part 2 question *k. Performance Part 1* records the number of questions that participant *i* answered correctly during the timed test in Part 1. *Risk attitude* is where participant *i* positioned himself on a scale from 1=very risk-averse to 10=very risk seeking. Female indicates whether participant *i* is a woman. Robust standard errors are in parentheses, group clusters allow for correlated observations at the group and subject level. *Significant at the 10% level,** at the 5% level, *** at the 1% level, **** at the 0.1% level.

The following robustness checks suggest that the main result of the paper is not an artefact of the small cost of sharing answers with others. I compare the willingness to share answers to questions that participants believe they got correct, to answers they are less certain about. The dummy variable own answer correct is defined as 1 if a participant reports a subjective probability of own answer being correct exceeding 89%. Others' answer correct takes the value of 0 when participant *i* believes that the other two in his group provided a correct answer with probability 89% or less, takes the value of 1 if s/he believes that both got it correct.

The willingness to share increases by an estimated 34 percentage points, on average, when a participant is certain of a correct answer, over an average willingness to share of 30% in the baseline, conditional on the belief that the other two in the group have provided incorrect answers. The sum of these two estimated coefficients is well below 100%. This suggests that the average participant does not simply share every answer that s/he believes to be valuable to the group. This robustness check is robust to defining the dummy variables *own answer correct* and *others' answer correct* with different cutoffs, e.g., 50% (see column 2).

	(1)	(2)
	89% cutoff	50% cutoff
Private Rank Feedback	-0.035	-0.033
	(0.050)	(0.050)
Public Rank Feedback	0.010	0.001
	(0.053)	(0.054)
Relative Pay	-0.057	-0.058
	(0.047)	(0.048)
Own answer correct	0.337***	0.287^{***}
	(0.035)	(0.031)
Others' answer correct	-0.137***	-0.043
	(0.038)	(0.032)
Constant	0.293***	0.250^{***}
	(0.028)	(0.031)
R-sq	0.089	0.073
# of observations	2820	2820

Table B2. Linear Probability Models Predicting the Willingness to Help

Notes. The outcome variable in both specifications is the decision to share the answer to a question *k*. *Own answer correct* indicates whether participant i believes that his answer to question k is correct with 90% probability or more (model 1) or with 51% probability or more (model 2). *Others' answer correct* takes the value of 0 when participant I believes that the other two in his group provided a correct answer with less than 90% (51%) probability, takes the value of 1 if he believes that both got it correct with probability 90% (51%) or more and takes the value of 0.5 if he believes one got it correct and the other one not. Private RF and Public RF are indicators for participant *i* privately observing his performance rank on the timed task or publicly observing the performance rank of everyone in the group. Relative Pay indicates that participant *i* was in the treatment that paid a bonus to the best performer, in addition to providing rank feedback in private.* p < 0.10, ** p < 0.05, *** p < 0.01 Robust standard errors in parentheses, 94 group clusters allow for correlated observations at the group and subject level.

	Rank 1	Rank 2	Rank3
Private RF	-0.077	-0.085	0.076
	(0.103)	(0.085)	(0.076)
Public RF	-0.034	-0.067	0.129
	(0.101)	(0.094)	(0.096)
Relative Pay	-0.035	-0.124	-0.001
	(0.108)	(0.085)	(0.065)
Belief correct (self)	0.506^{***}	0.542^{***}	0.571^{***}
	(0.116)	(0.112)	(0.082)
Belief correct (other)	-0.152	-0.114	-0.330***
	(0.157)	(0.145)	(0.122)
Constant	0.267^{**}	0.143	0.079
	(0.108)	(0.091)	(0.068)
R-squared	0.065	0.109	0.110
Observations	940	940	940

R-squared0.0650.1090.110Observations940940940Notes. Private RF and Public RF are indicators for participant i privately observing his performance rank on the
timed task or publicly observing the performance rank of everyone in his group, respectively. Relative Pay indicates
that participant i was in the treatment that paid a bonus to the best performer, in addition to providing rank feedback
in private. Belief correct self ranges from [0,1] and is the subjective probability that participant i gives to the event
that the answer he provided to Part 2 question k is correct. Belief correct others ranges from [0,1] and is the subjective
probability that participant i gives to the event that his average group member provided the correct answer to Part 2
question k. Robust standard errors are in parentheses,94 group clusters allow for correlated observations at the group
and subject level. *Significant at the 10% level, ** at the 5% level, *** at the 1% level.

Table B3.S

Section 2: Benchmark Effect Sizes from Related Studies and Explanation of Power Calculations

The two studies also have a between-subject design in which behavior under relative *pay* concerns (pay tournament) is compared to behavior in a baseline in which piece-rates are paid. Both studies document that competing for relative pay in a first stage has negative behavioral spillovers to subsequent prosocial or anti-social behavior in groups when the two stages are in no way strategically linked. For this benchmarking exercise, I used the most relevant outcome variables and treatment comparisons as reported in their publicly available data sets. For the effect size measure, I use the standardized difference means $d = \frac{\mu_1 - \mu_2}{\sigma}$, which is commonly estimated with Cohen's d: the difference in sample means divided by the pooled estimated population standard deviation. With the *esize* command in Stata, Cohen's d can be calculated for any outcome variables and treatment comparisons were selected to calculate benchmark effect sizes.

Effect Size Benchmark Calculation: Carpenter, Matthews and Schirm (2010)

The real effort task in this study was to prepare letters for mailing, which included to stuff a letter in an envelope and to write the address on that envelope. The outcome variable that I use in the benchmark effect size calculations is the difference in the assessment of participant i's production quality when it is done by an objective postal worker or by peers of the same reference groups. Whenever this difference is positive, it means that peer group members engage in "quality sabotage". Quality was rated on a scale from [0,1] for one randomly selected envelope.

I calculated the effect size benchmark comparing quality sabotage in the "Tournament" treatment to quality sabotage in the baseline ("Piece-Rate") condition. I chose this treatment because the peer assessments of the quantity and quality of others' output had no effect on the likelihood of winning the relative pay competition, unlike the "Tournament with Sabotage" treatment. The 25 USD bonus was paid to the group member with the highest quality-adjusted output at a real effort task. In this Tournament condition, only the experimenter's quality and quantity assessment of all group members' work output mattered to determine top performer. Also in the piece-rate benchmark the quality assessment of peers had no material consequences. **Effect Size Benchmark Calculation: Buser and Dreber (2016)**

The outcome variable that I used for effect size calculations are a participant i's contributions in Public Goods Game (PGG). I selected their treatment that is most similar to

my two treatments. In the "Competition with Feedback" treatment, participants compete for relative pay at a real effort task, a slider-task, and observe at the end of this stage whether they won or lost before they make their allocation decisions in the PGG. In the "Competition" treatment, by contrast, participants find out at the very end of the study whether they lost or won the relative pay competition which differs from the timing of feedback in my study.

Explanation of Power Calculations

Given the study's sample size, one can calculate the power π of a specific statistical test to detect hypothetical (standardized) effect sizes, assuming these could be the true effect sizes of relative performance concerns on the willingness to help. I chose to report the power of a t-test to reject the null hypothesis of no effect at the 0.05 level of statistical significance, since this test is also reported in the paper and the significance level 0.05 is standard in economics.

Benchmark standardized effect sizes measured as Cohen's d were obtained from two previous studies, as explained above: |d|=0.586 and d=0.288. The power of a two-sample t-test at the significance level 0.05 was then calculated with STATA's power command. The actual sample size of this study, N = 72 in each group, was an input to this calculation. Other inputs were hypothetical values for the sample mean in each group and the standard deviation, that result in the target standardized effect size obtained from previous studies. For example, to obtain the power for the standardized effect size of d = 0.586, the following values were used as inputs to the power calculation: $\mu_1 = 0.414$, $\mu_2 = 1$ and a standard deviation of 1 in both groups. In this case, the simulated standardized effect size is $d = \frac{1-0.414}{1} = 0.586$.

When the standard deviation is known and the same across the two groups, the power π of the two-sided t-test at significance level 0.05 is then calculated with the following formula (StataCorp (2021), p.159):

$$\pi = \phi\left(\frac{\mu_2 - \mu_1}{\sqrt{\frac{2\sigma}{N}}} - z_{0.975}\right) + \phi\left(-\frac{\mu_2 - \mu_1}{\sqrt{\frac{2\sigma}{N}}} - z_{0.975}\right)$$

Where ϕ () is the cdf of a standard normal distribution and $z_{0.975}$ is the 0.975th quantile of the standard normal distribution.

References

Buser, Thomas, and Anna Dreber. 2016. "The Flipside of Comparative Payment Schemes." *Management Science* 62 (9): 2626–38. https://doi.org/10.1287/mnsc.2015.2257.

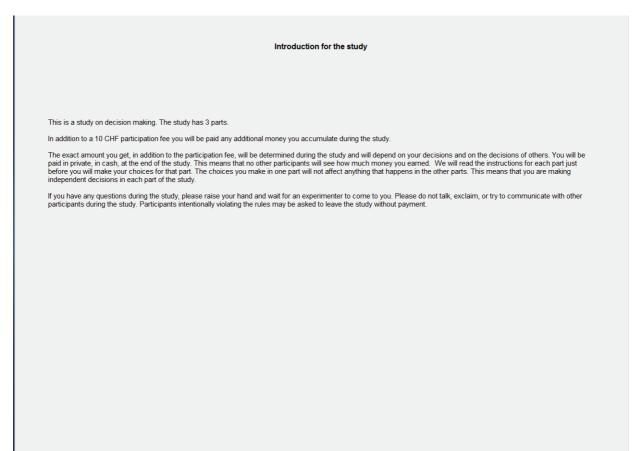
Carpenter, Jeffrey, Peter Hans Matthews, and John Schirm. 2010. "Tournaments and Office Politics: Evidence from a Real Effort Experiment." *American Economic Review* 100 (1): 504–17. https://doi.org/10.1257/aer.100.1.504.

StataCorp (2021). Power, Precision, and Sample-Size Reference Manual Release 17. available at https://www.stata.com/manuals/pss.pdf

Section 3: Instructions

In the following, I reproduce screenshots of the instructions and decision screens exactly as they were shown to participants.

Screen 1: Introduction



Screen 2: Instructions for Part 1 - first untimed general knowledge test

	Instructions for Part 1 Stage 1	
	nputer will select one of the two stages from Part 1 to count for your payment. The computer will select one stage to each stage. Your choices in either of the two stages will not affect which one the computer selects.	at
	0 multiple-choice questions to test your general knowledge. For each general knowledge question, the correct ans lect the answer that you think is correct by clicking on the button next to it. You cannot skip questions. If you are u orrect.	
	converted to CHF at an exchange rate, such that 10 points are worth 0.60 CHF and 25 points are worth 1.50 CHI ce that you will be paid for the questions you are about to answer, if Stage 1 is selected to count for Part 1. The qu f Part 1 the computer selects for payment.	
Your payoff in points for Part 1 Stage 1 in case it is sele	lected for payment is:	
	Payoff for Part 1 Stage 1=25*(number of correct questions) points	
Ľ	ayon for Fait Fotage F-20 (nonnee of concertiquestions) pollits	
You will be able to submit your answers to the general stage of Part 1 when everyone has submitted all 10 ans	I knwoledge questions by pressing the button in the bottom right corner of the screen. We will continue with the suswers.	econd
Please click "Continue" once the experimenter asks yo experimenter.	ou to do so. If you have a question, please raise your hand and wait for the Continue	

Screen 3: Part 1 Stage 1 - First General Knowledge Test Questions 1-5

Part 1 Stage 1- Questions 1-5 out of 10

You can select an answer to a general knowledge question by clicking on the button next to it. If you are unsure, just select the answer that you find most likely to be correct. You will get 25 points for a correct answer if Stage 1 of Part 1 is randomly selected to count for payment. Press <u>Submit</u> when you have answered all questions.

Question 1

Which English law from 1679 already guaranteed protection from arbitrary C Magna Charta and unlawful detention at that time? C Habeas Corpus Act C Petition of Rights C Bill of Rights

Question 2

In which layer of the Earth's atmosphere is the ozone layer? C Troposphere C Stratosphere C Ionosphere C Mesosphere

Question 3

Which sub-organisation of the United Nations is in charge of science and culture? C UNCTAD C IAEA C UNESCO C UNICEF

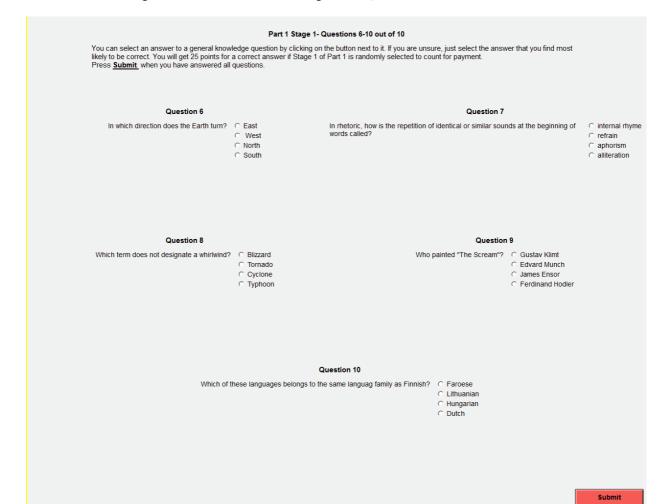
Question 4

Which group is not a denomination within Islam? C Sunnis C Wahhabis C Copt C Shia

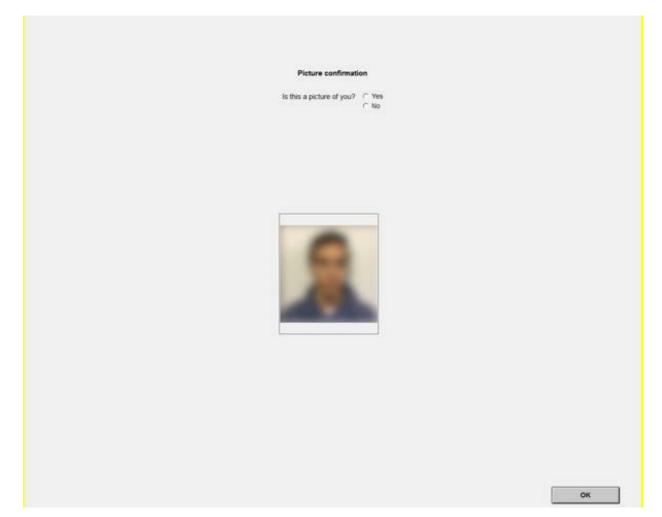
Question 5

Which of these vitamins is essential for proper bone and teeth development? C Vitamin C C Vitamin B C Vitamin A C Vitamin A C Vitamin D

Screen 4: Part 1 Stage 1 – First General Knowledge Test Questions 6-10



Screen 5: Confirmation of picture



Screen 6: Introduction of Groups

Instructions for Part 1 Stage 2

At the onset of today's study you were randomly matched with 2 other participants to form a group. The assignment to groups was entirely random and was not influenced anything that happened in the study so far. You and the two other participants with whom you were matched will stay in a group for the rest of the study. During the study, y may interact with your group members through your computer, but you will not interact directly with any of your group members.

Below, you see the pictures of the three members of your group, including you.

This is your group:

Group Number: 1







Participant 1

Participant 2

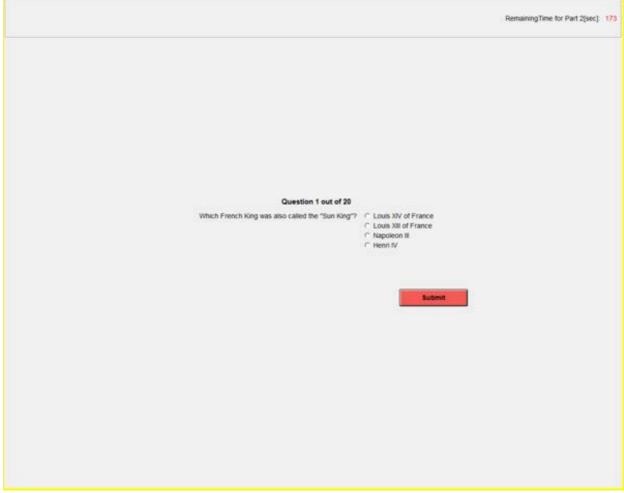
Participant 3

Screen 7: Instructions for the Timed task with varying relative performance feedback (by treatment)

have selected and sub of the same 20 question	Part 1 you will be presented with more general knowledge questions of the same type as the ones you were tested on in the first stage. This time, wer as many general knowledge questions as you can out of 20. You will see one question at a time and you can proceed to the next question once mitted an answer. Note that once you submit the answer to a question you will not be able to return to it and revise it. Everyone sees the same seq ons. For each general knowledge question, the correct answer will be among the 4 answer choices provided. You cannot skip questions. If you are answer that you find most likely to be correct.
	stage of Part 1 are the same as in the first stage of Part 1. If this part is randomly selected to count for payment, you will get 25 points for a correct rverted to CHF at an exchange rate, such that 10 points are worth 0.60 CHF and 25 points are worth 1.50 CHF in payment at the end of the study.
Your payoff in points for	r Part 1 Stage 2 in case it is selected for payment is:
	Payoff for Part 1 Stage 2 =25*(number of correct questions) points
Feedback at the end A clock in the upper rig screen. The screen wi	+ ht corner of your screen will indicate how much time you have left to answer questions. When the 3 minutes have passed you will see a feedback
	A) How many questions out of 20 you answered correctly.

Notes. These are the instructions for the public rank feedback condition. The instructions for the other two feedback conditions only differed in what was described to the participants they would see in the feedback screen. The instructions for the baseline stopped after bullet A) and the instructions for the private rank feedback condition stopped after bullet B) in the textbox in the screen. In the relative pay condition, bullet C) had the following text: "C) Whether or not you receive an additional bonus payment. If you obtain Rank 1 in your group, you will receive an additional bonus payment of 5 CHF". Moreover, in this condition, the summary at the bottom of the screen had the following text: "To summarize: In Part 1 Stage 2 you have 3 minutes to answer as many general knowledge questions as possible out of 20. If this part is randomly selected to count for payment, you will get 25 points for a correct answer. In addition, the group member who ranks first in the group in terms of the number of correct answers obtained during the timed task is guaranteed to receive an additional bonus payment of 5 CHF.[...]" (rest identical to the text displayed above)

Screen 8: Timed task (3 minutes)



Notes. This is the first question of the timed task. Once a subject submitted an answer to a question the next one appeared on the screen.

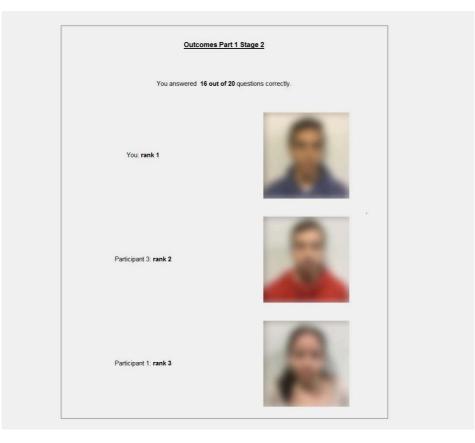
Screen 9: Treatment screen Baseline Condition (feedback about performance on timed task)

Outcomes Part 1 Stage 2	
You answered 2 out of 20 questions correctly.	

Screen 9: Treatment screen (feedback about performance on timed task) Private Feedback Condition

Outcomes Part 1 Stage 2	
You answered 2 out of 20 questions correctly.	
Your rank within your group: rank 2	

Screen 9: Treatment screen (feedback about performance on timed task) Public Rank Feedback Condition



Screen 9: Treatment screen (feedback about performance on timed task) Relative Pay Condition

Outcomes Part 1 Stage 2
You answered 7 out of 20 questions correctly.
Your rank within your group: rank 2
Your additional bonus payment: 0 CHF

Screen 10: Instructions for the Help Game (Part 2)

	Instructions for Part 2
questions of the CHF at an exch	gin with Part 2 of the study. In this part, you and your group members have a chance to earn more money by correctly answering 10 new general knowled e same type as before. Every group member will get 25 points for each question he or she answers correctly in Part 2. Remember, points are converted to range rate such that 10 points are worth 0.60 CHF and 25 points are worth 1.50 CHF in payment at the end of the study. When you see the money your e r payment overview at the end of the study, you will find out how many questions you got correct. This is the only information you will obtain about choices .
a question and of you. You can group member	; you can send your answers to your group. This can help your group members to get a question correct. As you complete Part 2, you will select an answ decide whether to send that answer to your group. Here is how this will work. You will see a multiple-choice general knowledge question on the screen in select the answer that you think is correct by clicking on the button next to it. At the same time, you can also decide whether to send your answer to your s by checking the statement, "Send my answer to question X to my group members.", below where you provide your answer. Sending your answer helps s by replacing their incorrect answers with your answer if it is correct.
Example 1 sho	ws how this works.
	Example 1: If a group member, say Group Member 1, provides an incorrect answer then Group Member 1 gets 0 points for that question. However, if either Group Member 2 or Group Member 3 sent a correct answer to the other group members, then that correct answer replaces Group Member 1's incorrect answer. In this case, Group Member 1 obtains 25 points for submitting a correct answer when his or her answers are evaluated for payment.
	nswer to your group members will cost you 1 point. This cost does not depend on whether the answer that you send is correct or incorrect. Incorrect answ our group members in any way.
To summarize	£
	• In Part 2 you answer new general knowledge questions and decide whether to send your answers to your group members.
	 If you send your correct answer to a general knowledge question it replaces the answer of each other group member who did not get this question correct.
	If you send an incorrect answer it has no effect on your other group members.
	Your payoff in points for Part 2 is:
	Payoff for Part 2=[25*(number of correct questions)-1*(number of answers sent)] points

Screen 11: Control Question Help Game

Question 1: How can you get 25 points in Part 2? Select for each answer wheter or not it ap	pplies.
By receiving a correct answer to a question from a group member.	C applies C does not apply
By guessing the correct answer to a question. C applie	
By sending a correct answer to a question to my group	
By knowing and submitting the correct answer. C applie	
Question 2: What happens if you send your answer to a question to your group member who already has a correct answ	ver for that question?
 This group member's answer only counts as correct if both of us provided correct answers. This group member's answer is replaced with my answer regardless of whether my answer is correct. This group member's answer continues to be correct regardless of whether my answer is correct. My answer is replaced with my group member's answer regardless of whether my group member set. 	

Continue

Screen 12: Instructions for the Help Game (summary after control questions)

Instructions for Part 2 (continued)

After you have made your decisions about your answers and whether to send your answers to your group, the computer will use your choices to determine which questions you got correct. A question will be considered correct either if you provided a correct answer yourself or if you received a correct answer from one of your group members. You will find out how many questions you got correct. The Part 2 in your payment overview at the end of the study. This is the only information you will obtain about choices made in Part 2. You will not find out how many answers were sent to you, who sent answers to you or which questions you got correct.

Your payment for Part 2 will depend on the answers to general knowledge questions that you submitted, the answers that you sent and the answers that your group members sent to you. You will get 25 points for a correct answer, either your own or one that was sent to you. Sending an answer to your group members costs you 1 point.

If you have any questions please raise your hand, otherwise begin now by clicking "Continue".

Continue

Screen 13: Help Decisions 1-5

roup 1	-	8		Outcomes Part 1 You answered 16 out of 20 q You: rank 1	uestions correctly.
	and the second sec			Participant 3 ra	ink 2
	Participant 1	Participant 2		Participant 3 Participant 1 ra	ink 3
		r costs you 1 point.		can send you answer to your group by marking the checkbox below your points for a correct answer, either your own or one that was sent to you.	
	Question 1 of 10			Question 2 of 10	
Calling par	ries "left" and "right" dates back to the seating an century parliament. In which country did this p			Who wrote the play "Waiting for Godol", which is one of the most important works of the Theatre of the Absurd?	 C Oscar Wide C Samuel Becke C Harold Pinter C Eugène Ionesc
	☐ Send my answer to question 1 to my (group members (cos	it 1 point)	Send my answer to question 2 to my group members	s (cost 1 point)
	Question 3 of 10			Question 4 of 10	
What	ch planet of our solar system is the furthest away	ć	Pluto Mercury Eris Neptune	Which Greek mythological figure died because he came too close to the s	sun? C Daedalu: C Sisyphus C Icarus C Tantiaus
	☐ Send my answer to question 3 to my (group members (cos	it 1 point)	F Send my answer to question 4 to my group members	s (cost 1 point)
			Questio		
	About 200) million years ago, 1		single supercontinent on earth. C Panges te name of this supercontinent? C Gondwana C Tethys C Laurasia	
		□ Send my	answer to quest	tion 5 to my group members (cost 1 point)	

Notes. In all conditions, this screen displayed the portrait of every group member. Across conditions, the help decision screens only varied in the summary of performance on the timed task of Part 1, displayed in the box in the upper right corner of the screen. The screen of the *baseline* condition did only show how many question a participant answered correctly. In the *private rank feedback* condition the box also showed the performance rank of the participant who was looking at that screen. In addition to this information, in *the relative pay* condition, the participant who was looking at the screen also found out whether or not he had obtained an additional bonus payment.

Screen 14: Help Decisions 6-10

roup 1	-	2		-	Outcomes Part 1 Stage You answered 16 out of 20 question You: rank 1 Participant 3: rank 2	
	Participant 1	Participant 2		Participant 3	Participant 1: rank 3	
		answer costs you 1 point. You			oup by marking the checkbox below your r your own or one that was sent to you.	
	Question 6	of 10			Question 7 of 10	
The Fre	nch Artist Niki de Saint Phale was knov female bodies. Wit		∩ Naenie ∩ Nana ∩ Natal ∩ Natal ∩ Namur	The teaching of which piloso	pher was the official state religion in China until 1912?	 ← Mengal ← Laozi ← Confuciu ← Zhuanga
	Send my answer to question 6	i to my group members (cost 1 p	point)	Send my a	answer to question 7 to my group members (cost	1 point}
	Question 8	af 10			Question 9 of 10	
Which U	N organisation replaced the GATT (Ger	eral Agreement on Tariffs and Trade) in 1996?	← OPEC ← OEC ← WTO ← OSCE		s are colours from which all other colours can be derived in subtractive colour mixing, colour does not belong to these primary colours?	C green C magent C yellow C cyan
	☐ Send my answer to question to	i to my group members (cost 1 p	point)	☐ Send my a	answer to question 9 to my group members (cost	1 point)
			Question	10 of 10		
	in i	inguistics, what is the part of gra	ammar called	that deals with the structure of sentences?	r semiotics r phonemic r syntax r semantics	
		Send my ansi	wer to question	on 10 to my group members (cost	t 1 point)	

Screen 15: Instructions Belief Elicitation (1)

Instructions for Part 3

We want to know how confident you are in the answers you just gave to the general knowledge questions. We also want to know how confident you are in the answers provided by your group members. The decisions you make here will only affect your own payment. They will not affect the payment of your group members. Nothing you do here can change the answers that were submitted in Part 2 or the earnings from that part of the study.

In this part, you will have the chance to earn additional money by once more submitting answers to the 10 questions from Part 2. You will have the chance to submit 3 answers to each question.

For this part, there are "lotteries" available to help you answer the questions. We have 100 different lotteries and each has a different level of accuracy in providing a correct answer. Each lottery has an accuracy corresponding to an integer between 1 and 100. That is, there is a lottery that provides a correct answer 1% of the time, a lottery that provides a correct answer 2% of the time, a lottery that provides a correct answer 2% of the time, a lottery that provides a correct answer 100% of the time. A lottery that provides a correct answer 75% of the time selects the correct answer to the multiple-choice question 75% of the time and a wrong answer to the multiple-choice question 75% of the time.

You have to decide which lotteries you would allow to submit answers for you. For each of the 10 questions from Part 2, you need to make 3 decisions:

- 1. Would you rather submit your own answer from Part 2 or have a lottery submit an answer?
- 2. Would you rather submit your group member (1)'s answer from Part 2 or have a lottery submit an answer?
- 3. Would you rather submit your group member (2)'s answer from Part 2 or have a lottery submit an answer?

Here's how it will work.

You will see your answer to a question from Part 2. Then, you will decide how confident you are in this answer. You will do this by choosing which lotteries you would allow to submit an answer to this question instead of submitting your answer from Part 2. Specifically, you will choose an accuracy threshold (a number between 1 and 100) for your answer such that for any lottery that has an accuracy higher than or equal to your threshold, you would prefer to have the lottery submit an answer instead of submitting your answer from Part 2. This also means that for any lottery that has accuracy lower than your threshold, you would prefer to submit your answer from Part 2 instead of letting the lottery submit an answer. Thus, your accuracy threshold reflects how confident you are in your answer to this question.

You will indicate how confident you are in your answer to a question from Part 2 by filling in the blank with the number that makes the following statement true for you:

"I think that the chance that my answer is correct (in %) is: ____."

You will then write in your accuracy threshold for this question. You need to enter a number between 1 and 100.

A lottery will then be randomly selected for that question. Each lottery from 1% to 100% is equally likely to be chosen. If the randomly chosen lottery has an accuracy higher than or equal to your threshold for that question, the lottery will submit an answer to the question for you. If the randomly chosen lottery has an accuracy less than your threshold, your answer from Part 2 will be submitted, instead.

Example 2 shows how this works:

Example 2: If you choose 75% as your accuracy threshold for a question, and the lottery randomly selected for that question has an accuracy of 90%, this lottery will submit an answer to the question for you. The lottery will have a 90% chance of getting the question correct. If you choose 75% as your accuracy threshold, and, instead, the lottery randomly selected for that question has an accuracy of 20%, your answer from Part 2 will be submitted instead of the lottery's answer.

Because of this, you are most likely to provide a correct answer when you write exactly what you think the chance is that your answer from Part 2 is correct (i.e. if you believe there's a 75% chance your answer is correct, you should write 75 and not something higher or lower.)

Continue

Notes: I modeled these instructions after Coffman (2014) which are publicly available.

Instructions for Part 3 (continued)

You will also have a chance to submit two more answers for each question. For the second and third answers, you can either submit the answer provided by one of your group members in Part 2, or let a lottery submit an answer. So you will be deciding how confident you are in each of your group members' answers from Part 2. Note that you will not find out the actual answer provided by your group members in Part 2.

You will see a question from Part 2. Then, you will decide how confident you are in your group member's answer to this question. You will do this by choosing which lotteries you would allow to submit an answer to this question instead of submitting your group member's answer. You will choose an accuracy threshold (a number between 1 and 100) for the answer that this person provided such that for any lottery that has an accuracy higher than or equal to your threshold, you would prefer to have the lottery submit an answer instead of submitting your group member's answer. This also means that for any lottery that has an accuracy higher than a necuracy lower than your threshold, you would prefer to submit your group member's answer from Part 2 instead of letting the lottery submit an answer. Thus, your accuracy threshold reflects how confident you are in your group member's answer to this question.

You will indicate how confident you are in your group member's answer to a question from Part 2 by filling in the blank with the number that makes the following statement true for you:

"I think that the chance that Participant X is correct (in %) is: ____ "

You will then write in an accuracy threshold for this question. You need to enter a number between 1 and 100.

A lottery will then be randomly selected for that question. Each lottery from 1% to 100% is equally likely to be chosen. If the randomly chosen lottery has an accuracy higher than or equal to your threshold for that question, the lottery will submit an answer to the question for you. If the randomly chosen lottery has an accuracy less than the threshold you wrote down for that question, your group member's answer from Part 2 will be submitted instead.

Because of this, you are most likely to provide a correct answer when you write exactly what you think the chance is that your group member's answer from Part 2 is correct (i.e. if you believe there's a 75% chance Participant X's answer is correct, you should write 75 and not something higher or lower.)

Payment

You will submit 3 answers to 10 questions, a total of 30 answers. In this task, you can earn up to 6 CHF that will be added to your payment at the end of the study.

You give 3 types of answers for each of the 10 questions. The first answer is based on how confident you are in your own answer from Part 2. The second answer is based on how confident you are in your group member 1's answer from Part 2 and the third answer is based on how confident you are in your group member 2's answer from Part 2. The second answer is based on how confident you are in your group member 1's answer from Part 2. The second answer is based on how confident you are in your group member 2's answer from Part 2. The second answer for Part 2. The computer makes independent choices, when it picks one of the 10 questions for each type of answer. For example, the computer could evaluate whether your own or the lottery's answer for question 10 is correct, whether your group members 1's or the lottery's answer for question 2 is correct and whether your group member 2's or the lottery's answer for question 7 is correct. You will earn 2 CHF for a correct answer, regardless of whether the correct answer was provided by you or one of your group members or by the lottery.

Note that you will not know which lotteries have been chosen or what answers are chosen by the lottery. You will also not know the answers that your group members provided in Part 2. Your answers here cannot change your payment from Part 2. The answers you chose in Part 2 will still count when their correctness is evaluated for payment.

Here is a quick quiz to make sure you understand how this works. Please raise your hand if you have any questions.

Screen 17: Control Questions Belief Elicitation



The order in which these beliefs were elicited was fully randomized at the participant level. Screen 18: Decision Screen Beliefs (1)

Intervention of the standing of	Participant 1 Participant 2 Participant 3 In Part 3 we ask you to indicate your confidence in answers to questions from Part 2 by deciding which lotteries you would allow to submit an answer to a question instead of the answer you are evaluating. You can indicate your confidence in an answer to a question instead of the answer you are evaluating. You can indicate your confidence in an answer to a question instead of the answer you are evaluating. You can indicate your confidence in an answer to a question instead of the answer you are evaluating. You can indicate your confidence in an answer to a question instead of the answer, but the bank with the number that makes the relevant independently selects one of the 10 questions to be evaluated for payment. In Part 3 you will receive 2 CHF for a correct answer, regardless of whether the correct answer was provided by you or one of your group members or by the lottery. For each type of answer, i.e. an answer provided by you or an answer provided by participant 1 or an answer provided by participant 3, the randomly chosen					
C Sisyphus C Laurus C Tanitaus C						
What is the name of this supercontinent? C Gondwana C Tethys I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: Which is the UN organisation that replaced the GATT (General Agreement on C OPEC Tariffs and Trade) in 1996? C OPEC C C WTO I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: Whose philosopher's teaching was the official state religion in China until 1912? C Mengal 1912? C Laozi I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: <td>Which Greek mythological figure died because he came too close to the sun?</td> <td> Sisyphus Icarus </td> <td>I think that the chance that participant 1 is correct (in %) is:</td> <td>]]</td>	Which Greek mythological figure died because he came too close to the sun?	 Sisyphus Icarus 	I think that the chance that participant 1 is correct (in %) is:]]		
Tariffs and Trade) in 1996? C OEC C WTO I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: Whose philosopher's teaching was the official state religion in China until C Mengzi I think that the chance that participant 3 is correct (in %) is: 1912? C Laozi I think that the chance that participant 1 is correct (in %) is: Confuctus I think that the chance that participant 3 is correct (in %) is: Calling parties "leaft" and "right" dates back to the seating arrangement in a 19th century parliament. In which country did this parliament sit? C Germany Calling parties "leaft" and "right" dates back to the seating arrangement in a C Germany C Germany I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is:		⊂ Gondwana ⊂ Tethys	I think that the chance that participant 1 is correct (in %) is:]]		
1912? C Laozi 1912? C Confucius Confucius I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is: I think that the chance that my answer is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 1 is correct (in %) is:		OEC WTO	I think that the chance that participant 1 is correct (in %) is:]		
19th century parliament. In which country did this parliament sit? C USA C France I think that the chance that participant 1 is correct (in %) is:		C Laozi C Confucius	I think that the chance that participant 1 is correct (in %) is:]]		
		CUSA France	I think that the chance that participant 1 is correct (in %) is:]		

The order in which these beliefs were elicited was fully randomized at the participant level. Screen 19: Decision Screen Beliefs (2)

Participant 1 Participant 2 Participant 3 to submit an an under the format of the submit and the submit and an under the submit an under the submit and an under the submit an under the submit an under the submit an under t	Iswer to a question instea ed by you or by each of or you You are most lik t the answer you are e selects one of the 10 que hether the correct answe nswer provided by pa	Infidence in answers to questions from Part 2 by deciding which do for the answer you are evaluating. You can indicate your co your group members by filling in the blank with the number tha ely to provide a correct answer when you write exactly valuating is correct. For each type of answer, the computer stions to be evaluated for payment. In Part 3 you will receive 2 er was provided by you or one of your group members or by the rticipant 1 or an answer provided by participant 3, the ra r than the value that you enter in the box.	nfidence in an answer to a at makes the relevant what you think the randomly and 2 CHF for a correct answer, e lottery.
Which planet of our solar system is the furthest away from the sun? C Plute C Mer C Eris C Nept	cury s	I think that the chance that my answer is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is:	
derived in subtractive colour mixing. Which colour does not belong to these primary colours?	ି green ି magenta ି yellow ି cyan	I think that the chance that my answer is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is:	
structure of sentences? C	semiotics phonemic syntax semantics	I think that the chance that my answer is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is:	
The French Artist Niki de Saint Phalle was known for her colourful, volumptious female bodies. How did she call her sculptures?	C Naenie C Nana C Natal C Namur	I think that the chance that my answer is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is:	
C Harol	uel Beckett	I think that the chance that my answer is correct (in %) is: I think that the chance that participant 1 is correct (in %) is: I think that the chance that participant 3 is correct (in %) is:	
			Submit 2/2

Screen 20: Expected Help by Others

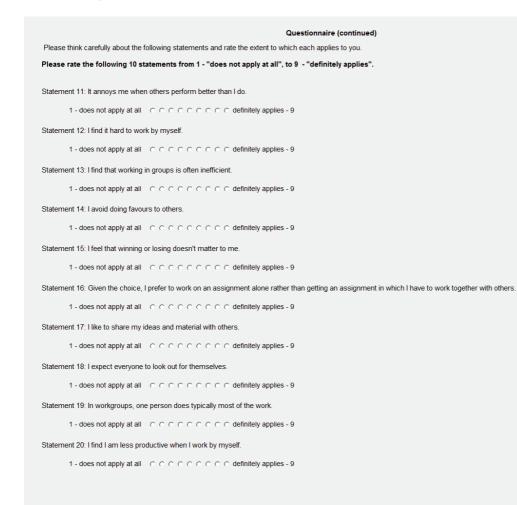
Participant 1 Participant 2	Participant 3
	decisions in today's study in which you will have the chance to make additional money. Afterwards, the study will continue with sets to these questions are important for scientific purposes, so please read them carefully before answering.
In Part 2 of the experiment y answers. We would like you	su and your group members could send answers to questions to one another. You could each send between 0 and 10 to tell us how many questions, you believe, each of your two group members sent to your group.
If your guess is sufficiently c end of the study. Your estim	ose to the actual number of answers that your group member sent to your group, 1 CHE will be added to your payment at the ite is sufficiently close if you guess the actual number of answers sent to your group +/- 1 answer.
For example, if your Group I other guesses would be too	Aember 1 sent 6 answers to the group, a guess of 5, 6 or 7 answers sent would be sufficiently close for you to get 1 CHF. All ar off from the truth and you would get no additional money.
	I believe the number of answers that participant 1 sent is.
	I believe the number of answers that participant 3 sent is.

Screen 21: Questionnaire Manipulation Checks and Attitudes

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Questionnaire
 Next, we would like you to think carefully about the following statements and rate the extent to which each applies to you.
Please rate the following 20 statements from 1 - "does not apply at all", to 9 - "definitely applies".
You answered at least 20 and up to 60 general knowledge questions today.
Statement 1: The questions tested my general knowledge.
                1 - does not apply at all CCCCCCCCC definitely applies - 9
Statement 2: I would be impressed if I found out that someone got 90% or more of the questions that he or she answered correct.
                In part 2 of the experiment you were asked to answer as many questions as possible out of 20. You had 3 minutes for the task and received feedback on your performance.
Statement 3: I wanted to perform well on this timed task
                 Statement 4: I felt in competition with the other two members in my group when performing this task.
               1 - does not apply at all CCCCCCCC definitely applies - 9
Please continue to rate the extent to which the following statements apply to you.
Statement 5: I like to work things out on my own.
                1 - does not apply at all CCCCCCCC definitely applies - 9
Statement 6: I avoid competitive situations.
                1 - does not apply at all \hfill \h
Statement 7: I can learn important things from other colleagues or fellow students.
                1 - does not apply at all OCOCOCOCOC definitely applies - 9
Statement 8: I love to help others.
                1 - does not apply at all OCOCOCOCOCOdefinitely applies - 9
Statement 9: I am drawn to compete with others.
              1 - does not apply at all CCCCCCCCC definitely applies - 9
   Statement 10: I like working in groups.
              1 - does not apply at all CCCCCCCC definitely applies - 9
```

Continue to Statements 11-20

Screen 22: Questionnaire Attitudes (continued)



Screen 23: Positive Reciprocity (Falk et al. 2022)

Questionnaire (continued)						
nagine the following situation: together with a person whom you do not know you won 100 CHF in a lottery. The rules stipulate the following: One of you has roposal about how to divide the 100 CHF between you two. The other one gets to know the proposal and has to decide between two options. He or she can ac roposal or reject it. If he or she accepts the proposal, the money is divided according to the proposal. If he or she rejects the proposal, both receive nothing.						
Suppose that the other person offered the following split: 50 CHF for you and 50 CHF for himself/herself. Do you accept this split? If you do, you will receive 50 CHF and the other person will receive 50 CHF. If you reject, both of you receive 0 CHF	○ I accept ○ I reject					
Suppose that the other person offered the following split: 40 CHF for you and 60 CHF for himself/herself. Do you accept this split? If you do, you will receive 40 CHF and the other person will receive 60 CHF. If you reject, both of you receive 0 CHF	○ Laccept ○ Lreject					
Suppose that the other person offered the following split: 30 CHF for you and 70 CHF for himself/herself. Do you accept this split? If you do, you will receive 30 CHF and the other person will receive 70 CHF. If you reject, both of you receive 0 CHF	○ I accept ○ I reject					
Suppose that the other person offered the following split: 20 CHF for you and 80 CHF for himself/herself. Do you accept this split? If you do, you will receive 20 CHF and the other person will receive 80 CHF. If you reject, both of you receive 0 CHF	○ I accept ○ I reject					
Suppose that the other person offered the following split: 10 CHF for you and 90 CHF for himself/herself. Do you accept this split? If you do, you will receive 10 CHF and the other person will receive 90 CHF. If you reject, both of you receive 0 CHF	⊂ I accept ⊂ I reject					
nagine the following situation: you are shopping in an unfamiliar city and realize you lost your way. You ask a stranger for directions. The stranger offers to estination. The ride in the stranger's own car takes about 20 minutes and costs the stranger about 25 CHF in total. The stranger does not want money for it. Yo ottles of wine with you. The cheapest bottle costs 7 CHF, the most expensive one 35 CHF.						
ou decide to give one of the bottles to the stranger as a thank-you gift. Which bottle do you give?						
C The bottle for 7 CHF C The bottle for 12 CHF						
C The bottle for 17 CHF						
C The bottle for 25 CHF C The bottle for 30 CHF						

Screen 24: Negative Reciprocity (Falk et al. 2022)

Questionnaire (continued)

Please consider the following situation: You and another person, whom you do not know, both participate in a study where you can decide on how to assign a certain amount of money and thereby determine the outcome. The rules are as follows.

Both participants get an account with 20 CHF. At the beginning, both participants thus own 20 CHF. The other person decides first. She can transfer money to your account.
She can transfer any amount: 0, 1, 2 CHF, etc. up to 20 CHF. Each CHF that she transfers to you is tripled by the conductors of the study and booked to your account. After
this first stage the other person therefore has 20 CHF minus the amount she transferred to you in her account. You have 20 CHF plus the tripled amount of the transfer of the
other person on your account. Now you get to decide: you have the opportunity to transfer money back to the other person. You can transfer any amount up to 80 CHF,
depending on how much you have in your account.

This will be the end of the study and the account balances will be final. The other person has in her account 20 CHF minus the amount she transferred to you plus the amount you transferred back. You have 20 CHF plus the tripled amount of what the other person transferred to you minus the amount you transferred back to her. We would like to know how much you would choose to transfer back to the other person, for a given transfer of her to you.

Suppose the other persons transfers 5 CHF to your account. After the first stage yout then own 20+3*5=35 CHF, the other person owns 20-5=15 CHF. What amount do you choose to transfer back?

Suppose the other persons transfers 10 CHF to your account. After the first stage yout then own 20+3*10=50 CHF, the other person owns 20-10=10 CHF. What amount do you choose to transfer back?

Suppose the other persons transfers 15 CHF to your account. After the first stage yout then own 20+3*15=65 CHF, the other person owns 20-15=5 CHF. What amount do you choose to transfer back?

Suppose the other persons transfers 20 CHF to your account. After the first stage yout then own 20+3*20=80 CHF, the other person owns 20-20=0 CHF. What amount do you choose to transfer back?

How do you see yourself : Are you a person who is generally willing to punish unfair behavior even if this is costly? Please use a scale from 0 to 10, where 0 means you are "not willing at all to incur costs to punish unfair behavior" and a 10 means you are "very willing to incur costs to punish unfair behavior". You can also use the values in-between to indicate where you fall on the scale.

not willing at all to incur costs to punish unfair behavior -0 CCCCCCCCCCCCCCCCC10-very willing to incur costs to punish unfair behavior