ONLINE APPENDIX

Peer Advice on Financial Decisions: A case of the blind leading the blind?

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A Experiment details

A.1 Contents of the education intervention

The text begins with a simple explanation of compound interest illustrated through an iterative calculation. It then introduces a quantitative heuristic, the rule of 72. The rule of 72 is a method for approximating an investment's doubling period. It states that the percentage interest rate on an investment multiplied by the number of periods required for its value to double approximately equals 72. Along with the explanation of the rule of 72 and its applications, the text provides quotes regarding the power of compounding and various anecdotes concerning small investments that grew to impressive sums over long time periods.

To increase the effectiveness of the education intervention, we added practice questions with personalized feedback to the education module.[1] Practice questions are basic compound interest calculation problems and similar to the ones taught in the education intervention.[2] We divide the education video to three similar length clips. After each clip, subjects are required to answer one or more multiple choice practice questions. After the first and second clips, they are asked one practice question. If they answer the question incorrectly in their first try, we provide them feedback based on their incorrect answer. For example, when they choose the answer that corresponds to the simple interest calculation instead of the compound interest calculation, we explain why the answer is wrong with an iterative example. If they answer the question incorrectly in their second try, we let them continue. After the third clip (at the end of the education module), they are asked two more practice questions. For the first question, we walk them through the three steps required to answer the question by using the rule of 72.[3] Subjects are required to correctly answer both questions to be able to continue with the experiment. [4]

[1] We pretest the effectiveness of practice questions with the population used in Ambuehl et al. (2020) and find that education intervention with this tweak is effective at improving the quality of decision making.

[2] E.g. "$100 is invested at 9% for 32 years, compounded yearly. How much will be in the account after these 32 years?"

[3] These steps are: 1. How long does it take for the money to double at a given interest rate? 2. How many times does it double in the given investment period? 3. How much will be in the account after it doubles that many times?

[4] The three videos that belong to the education module can be found here: https://youtu.be/EnFVLiM1dTs, https://youtu.be/3pjkVdOXMlk, and https://youtu.be/kjPYqcZNzPI.

A.2 Design details

Elicitation of valuations We elicit all valuations using once-iterated multiple price lists (Andersen et al., 2006) with comparison amounts ranging from 0 to 109 tokens.[5] Subjects with well-defined valuations will choose the comparison amount V if and only if V is large enough. Any subject whose choices are inconsistent with well-defined valuations view an error message that prompts them to revisit their decisions. Subjects complete all lists at their own pace.

In each decision, the investment compounds to approximately 24, 58, or 88 tokens (with deviations of up to 2 tokens). These amounts are located near the top, middle, and bottom of the multiple decision lists, so that any tendency to choose switching points towards the middle of a list does not systematically influence our results.

Additional elements To assess subjects' comprehension of the mechanics of multiple decision lists, we present them with an initial list that asks them to decide, on each line, whether they prefer to receive x pence or £1 for a range of values x. Since these are decisions between larger and smaller amounts of money to be received at the same point in time, any switching point other than 100 indicates deficient understanding. In addition, subjects see a completed list, and are required to indicate their payment in case the computer selects a given line for implementation. Subjects proceed regardless of their answers to these questions. These decisions are not incentivized.

Before participating in the main stages of the experiment, subjects complete a battery of unincentivized psychological questions. These include a 10-item version of the big-five personality scale (Rammstedt and John, 2007), the Mehrabian and Stefl (1995) conformity scale, and the three-item Cognitive Reflection Test (Frederick, 2005).

Subjects also answer three standard financial literacy questions (Lusardi, 2008). We ask these questions at the beginning of the study to prevent answers from being influenced by subjects' communication partners. The financial literacy questions are:

[5] The first list for each task has a resolution of 10 tokens; the second list has a resolution of 1 token. Appendix A.4 presents screenshots of the decision screens.

- Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? *[More than $102, Exactly $102, Less than $102, Don't know]*

- Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy *[More than today, Exactly the same as today, Less than today, Don't know]*?

- Do you think the following statement is true or false? Buying a single company stock usually provides a safer return than a stock mutual fund. *[True, False, Don't know]*.

At the end of the experiment, subjects complete an unincentivized demographic survey. They also answer questions about their decision-making processes and about their partners.

A.3 Sessions

Table A.1 displays details about each session we conducted. In addition to the listed sessions, we ran three sessions of a preliminary Solitary treatment on February 23, 2016 with a total of 62 subjects. While subjects in the Solitary treatment know that they will discuss with another person, subjects in the preliminary Solitary treatment had no expectation of communication whatsoever, and exert a significantly lower amount of effort.

Table A.1: Experimental sessions.

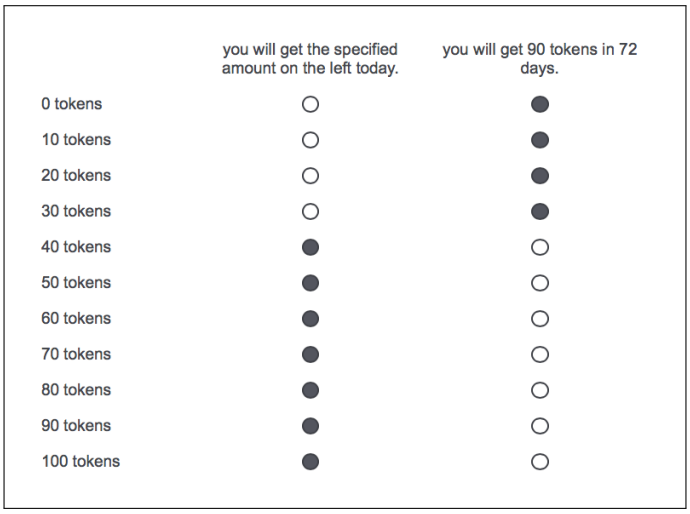
Session	Date	Time	# of Subjects	Type
1	21 October 2015	10am	20	Communication and Indirect Education
2	21 October 2015	2pm	20	Communication and Indirect Education
3	22 October 2015	10am	20	Communication and Indirect Education
4	22 October 2015	2pm	20	Communication and Indirect Education
5	23 October 2015	10am	16	Communication and Indirect Education
6	23 October 2015	2pm	20	Communication and Indirect Education
7	28 October 2015	9am	20	Communication and Indirect Education
8	28 October 2015	12pm	18	Communication and Indirect Education
9	28 October 2015	3pm	20	Communication and Indirect Education
10	29 October 2015	9am	12	Communication and Indirect Education
11	29 October 2015	12pm	12	Communication and Indirect Education
12	29 October 2015	3pm	20	Communication and Indirect Education
13	30 October 2015	9am	8	Communication and Indirect Education
14	30 October 2015	12pm	10	Communication and Indirect Education
15	30 October 2015	3pm	18	Communication and Indirect Education
16	15 February 2016	10am	20	Communication and Indirect Education
17	15 February 2016	2pm	20	Communication and Indirect Education
18	16 February 2016	10am	20	Communication and Indirect Education
19	16 February 2016	2pm	20	Communication and Indirect Education
20	17 February 2016	10am	20	Communication and Indirect Education
21	17 February 2016	2pm	20	Communication and Indirect Education
22	18 February 2016	10am	18	Communication and Indirect Education
23	18 February 2016	2pm	20	Communication and Indirect Education
27	24 February 2016	10am	6	Communication and Indirect Education
28	24 February 2016	2pm	18	Communication and Indirect Education
29	6 May 2016	10am	10	Solitary
30	6 May 2016	2pm	18	Solitary
31	9 May 2016	10am	10	Solitary
32	9 May 2016	2pm	14	Solitary
33	10 May 2016	10am	8	Solitary
34	10 May 2016	2pm	4	Solitary
35	11 May 2016	10am	6	Solitary
36	11 May 2016	2pm	6	Solitary
37	12 May 2016	2pm	16	Solitary

A.4 Decision interface

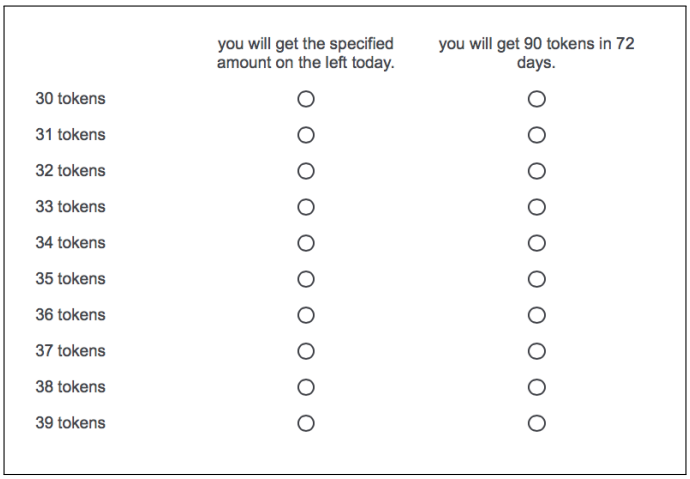
In each round, the first choice list ranges from 0 tokens to 100 tokens. After the subject has made a selection, the second decision list ranges from x tokens to $x + 9$ tokens in steps of 1, where x is the largest number of tokens such that the subject still prefers the evaluation option. In the example in Figure A.1, $x = 30$.

Figure A.1: Decision interface.

First decision list in a round



Second decision list in a round



Notes: The range of evaluation options in the second decision list depends on the switching point in the first decision list, which is 30 in this example.

A.5 Mask for coding audio recordings

var 1-var 2 **Gender**

0 Female
1 Male
99 Unclear

var 3-var 4 **Accent**

0 British
1 Asian
2 Other
99 Unclear

var 5-var 8 **Word Count**

Count the number of words transcribed for Speaker A and Speaker B separately. Count from both transcriptions. You can copy all sentences that belong to a speaker to a separate word doc and use word count feature

var 9 **Did subjects talk about videos they watch and if yes, which video?**

0 Not talked about the videos they watched or unclear

1 Speaker A watched Documentary and Speaker B watched Education
2 Speaker A watched Education and Speaker B watched Documentary
3 Both watched Documentary.

var 10 **Did subjects talk about any formula to calculate the compound interest?**

0 No formula/Unclear
1 The rule of 72-explicit mention
2 The rule of 72-without naming it
3 Compound interest formula
4 Both 1 and 3 or both 2 and 3
TYPE IN Other (Please Specify)

var 11 **Which formula did subjects use when answering the decision problems?**

var 11a **Speaker A**

0 Not clear/No explicit mention
1 rule of 72 (with or without explicit mention)
2 compound interest formula (with or without explicit mention)
3 simple interest formula

var 11b **Speaker B**

0 Not clear/No explicit mention

1 rule of 72 (with or without explicit mention)
2 compound interest formula (with or without explicit mention)
3 simple interest formula

var 12 How many of the decision problems did the participants discuss out of 6?

0 Zero
1 One
2 Two
3 Three
4 Four
5 Five
6 Six
99 Unclear

Var 13 and 14: Whether subjects discussed how to calculate the FV and PV for a problem

var 13 In how many decision problems subjects discussed Future Values?

0 Zero
1 One
2 Two
3 Three
4 Four
5 Five
6 Six
99 Unclear

var 14 In how many decision problems subjects discussed Present Values?

0 Zero
1 One
2 Two
3 Three
4 Four
5 Five
6 Six
99 Unclear

Var 15 and 16: Whether subjects agreed on the FV and PV for a problem

Subjects agree on a future value if they come up with the future value for the problem. This doesn't say anything about whether they will value it similarly or not in the present. Subjects agree on a present value, if they have the same valuation for the problem.

var 15 **In how many decision problems subjects agreed on Future Values?**

0 Zero
1 One
2 Two
3 Three
4 Four
5 Five
6 Six
99 Unclear

var 16 **In how many decision problems subjects agreed on Present Values?**

0 Zero
1 One
2 Two
3 Three
4 Four
5 Five
6 Six
99 Unclear

var 17 **Small Talk?**

var 17a Small Talk about major?
0 No/Unclear
1 Yes

var 17b Small Talk about which year they are in?
0 No/Unclear
1 Yes

var 17c Small Talk about where they are from?
0 No/Unclear
1 Yes

var 17d Small Talk Other?
TYPE IN (Please Specify)

var 18 **Roughly how is the split between decision problems and small talk?**

0 Almost all on other things

1 Most on other things
2 Evenly split
3 Most on tasks
4 All or almost all on tasks
99 Unclear

var 19 Is the communication symmetric?
0 Almost exclusively dominated by Speaker A
1 Mostly dominated by Speaker A
2 Almost equally shared by Speaker A and B
3 Mostly dominated by Speaker B
4 Almost exclusively dominated by Speaker B
99 Unclear

var20 Did one of the participants try to convince the other he/she is more knowledgeable?

0 No
1 Yes, Speaker A tries to convince
2 Yes, Speaker B tries to convince
3 Yes, both speakers try to convince
99 Unclear

var 21 Did the participants discuss something about payments?
var 21a Did the participants discuss market interest rates?
0 No/Unclear
1 Yes
var 21b Did the participants discuss value of Amazon Gift Cards? (what can be bought etc.)
0 No/Unclear
1 Yes
var 21c Did the participants discuss trust in the experimenter?
0 No/Unclear
1 Yes
var 21d Did the participants talk about they think they will more likely to receiver the payment if they go for a sooner date rather than later?
0 No/Unclear
1 Yes
var 21e Did the participants discuss any other thing about payments?
TYPE IN (Please Specify)

var 22 **How did participants compare each others' competence?**

0 None/Unclear
1 Highlight similarities in competence with positive attitude (I'm bad at this too, so let's see whether we can help each other out)
2 Highlight similarities in competence with negative attitude (I'm bad at this too, f*ck this sh*t)
3 Highlight differences in competence with positive attitude (I'm worse at this, would you mind helping me? I'm better at this, let me help you)
4 Highlight differences in competence with negative attitude (I'm better at this, just believe me. I'm worse at this, just tell me what to do)

var 23 According to transcribers view, what was the quality of the audio file?

TYPE IN

var 24 In your opinion, what was the quality of this audio file? whether parts of the transcripts were missing / couldn't be understood.

0 All or almost all parts were missing and/or couldn't be understood.
1 Most parts were missing and/or couldn't be understood.
2 Some parts were missing and/or couldn't be understood.
3 Most parts were available and/or easy to understood.
4 All or almost all parts were available and/or easy to understood.

B Additional Analysis

B.1 Summary statistics

Table B.1 reports the means of 36 subject-level variables across our three treatments (*Solitary*, *Indirect Education*, and *Communication*) for Receivers. For each variable we report four *p*-values, three for each pairwise test of equality of means across treatments, and one for a joint test. Comparing across our three treatments (*Communication*, *Indirect Education*, and *Solitary*), we reject joint equality at the 10% level for four variables and at the 5% level for an additional three variables, which slightly exceeds what is expected by chance. Significant differences appear for gender, age, and credit card ownership. Moreover, differences are present in some of the debriefing questions (e.g. whether subjects had previously talked about the study with others), which possibly reflects the fact that we ran the *Solitary* treatment after the *Communication* treatment.[6] Indeed, most of these differences pertain to the *Solitary* treatment; the sample is reasonably well-balanced between the *Communication* and *Indirect Education* treatments. Hence, sample imbalance does not impact our results concerning the mechanisms of skill transmission, which focus on comparisons within the *Communication* treatment or across the *Communication* and *Indirect Education* treatments. Nonetheless, we statistically account for sample differences by including controls for subject characteristics in all regressions. In the main tables, we control for gender, age, age-squared, ethnicity indicators, an indicator for whether English is the subject's first language, an indicator for whether the subject is an international student, and indicator variables for whether the subject lives in a rural, suburban, or urban area. Appendix Sections B.2 and B.3 show that our results are robust to the exclusion of these controls and the inclusion of additional control variables.

[6] We conducted the *Solitary* treatment at a later time than the treatments involving communication, as our initial hypotheses focused on the comparison between the *Communication* treatment and the *Indirect Education* treatment alone.

Table B.1: Characteristics of subjects in the role of Receiver.

	Means			*p*-values			
	Solitary	Indirect Education	Communication	Solitary v. Indir. Educ.	Solitary v. Comm.	Indir. Educ. v. Comm.	Joint
Pass MPL check	0.852	0.809	0.908	0.388	0.265	0.037**	0.111
Demographic Variables							
Male	0.330	0.473	0.468	0.043**	0.051*	0.942	0.079*
Age	22.932	21.745	21.752	0.048**	0.049**	0.990	0.082*
English native language	0.511	0.527	0.523	0.825	0.872	0.949	0.975
Ethnicity							
Black	0.080	0.073	0.119	0.869	0.338	0.234	0.445
Chinese	0.193	0.191	0.174	0.968	0.736	0.753	0.930
Other Asian	0.159	0.264	0.202	0.074*	0.466	0.264	0.193
Mixed	0.068	0.045	0.028	0.448	0.176	0.526	0.399
Other	0.011	0.027	0.018	0.424	0.726	0.635	0.722
International student							
Yes	0.420	0.455	0.477	0.634	0.430	0.739	0.731
No response	0.045	0.036	0.009	0.707	0.135	0.234	0.281
Living environment							
Suburban	0.295	0.255	0.339	0.532	0.503	0.171	0.391
Rural	0.102	0.100	0.128	0.960	0.563	0.505	0.765
Financial Variables							
Initial financial competence	0.474	0.348	0.365	0.038**	0.072*	0.767	0.085*
Log household income p.c.	0.101	0.049	-0.087	0.648	0.098*	0.203	0.218
Full financial literacy score	0.500	0.464	0.486	0.613	0.848	0.739	0.875
# credit cards	0.466	0.336	0.312	0.060*	0.026**	0.706	0.061*
Used cash advance							
No	0.386	0.327	0.294	0.382	0.171	0.598	0.388
Not applicable	0.511	0.600	0.624	0.210	0.113	0.721	0.256
Credit card debt rolled over							
£1 - £99	0.034	0.073	0.064	0.252	0.373	0.789	0.495
£100 - £499	0.080	0.009	0.046	0.015**	0.242	0.175	0.049**
£500 - £1000	0.023	0.018	0.018	0.819	0.826	0.993	0.968
£1000 - £2500	0.000	0.009	0.000	0.266	1.000	0.240	0.410
> £2500	0.023	0.000	0.009	0.107	0.337	0.491	0.272
Not applicable	0.545	0.709	0.706	0.015**	0.017**	0.967	0.025**
Psychological and Debriefing Variables							
Conformity scale	-6.841	-6.700	-4.817	0.925	0.175	0.181	0.292
Big Five							
Conscientiousness	1.057	0.891	1.229	0.435	0.418	0.092*	0.242
Agreeableness	1.250	1.364	1.211	0.606	0.860	0.463	0.749
Neuroticism	-0.466	-0.382	-0.128	0.744	0.192	0.298	0.380
Openness	1.159	1.173	1.037	0.953	0.598	0.534	0.796
Extraversion	0.648	0.645	0.633	0.993	0.954	0.959	0.998
CRT score	1.284	1.364	1.596	0.629	0.059	0.135	0.133
Never heard about rule of 72	0.852	0.855	0.862	0.964	0.841	0.869	0.977
Heard others talk about study	0.045	0.145	0.183	0.037**	0.004**	0.400	0.014**
Prepared for study	0.023	0.045	0.018	0.348	0.857	0.236	0.452
Allow contact for followup	0.761	0.845	0.872	0.117	0.041**	0.606	0.108

Notes: Reported values include subjects who failed the understanding check on multiple price lists (MPL check). Omitted categories are “white" for *ethnicity*, “no" for *international student*, “urban" for *living environment*, “yes" for *cash advance*, and “£0" for *Credit card debt rolled over*.

B.2 Table 3 with alternative control variables

In this section, we replicate our main results using alternative sets of control variables. On the one hand, we show that our results are robust to excluding demographic control variables (Appendix Table B.2). Second, we show that they are also robust to including financial and psychological control variables in addition to the demographic variables (Appendix Table B.3). Specifically, *Financial variables* encompass log household per capita income, dummies for credit card ownership, having used a cash advance, having rolled over credit card debt, and a dummy indicating whether the subject correctly answered all of the three unincentivized financial literacy questions administered at the beginning of the survey (46% of Receivers answered all of those questions correctly).[7] *Psychological and debriefing variables* consist of subjects' performance on the Cognitive Reflection Test (Frederick, 2005), the five dimensions of the big five personality scale (Rammstedt and John, 2007), subjects' conformity score (Mehrabian and Stefl, 1995), and dummies indicating whether subjects had heard about the study before participating, had talked to others about it, had prepared for it, and wished to be contacted about any follow-up study.

[7] Similarly, 44.3% of U.S. college graduates answered all three questions correctly (Lusardi and Mitchell, 2014). In our sample, 97.7%, 88.2%, and 50.6% of Receivers answered the first, second, and third questions correctly, respectively. To avoid priming the subjects, we did not directly elicit their initial knowledge of the compound interest formula. Assuming subjects discussed the formula if they knew it, however, we can assess the fraction who knew it based on the fraction of pairs who discussed it. 37.4% of pairs did not discuss the formula. Because we paired subjects randomly, we estimate the likelihood that any given subject was initially unfamiliar with the formula as $0.374^{1/2} = 61.2\%$.

Table B.2: Replication of Table 3 without demographic control variables

VARIABLES	(1)	(2)	(3)	(4)	(5a)	(5b)	(6a)	(6b)
	Improvement in Receivers' Deliberative Competence before / after communication							
Benchmark simply framed choices	Contemp.	Stage 0	Contemp.	Stage 0	Contemporaneous		Stage 0	
Set of decision problems								
Discussed	Yes	Yes	Yes	Yes	No	Yes	No	Yes
New	Yes	Yes	No	No	Yes	No	Yes	No
Counterfactual mimicry	No	No	Yes	Yes	No	No	No	No
Improvement in Solitary	0.022	0.000	0.012	-0.009	0.012	0.012	-0.010	-0.010
	(0.018)	(0.020)	(0.023)	(0.025)	(0.021)	(0.021)	(0.021)	(0.021)
Row A: *Communication*								
Improvement	0.064**	0.069**	-0.101**	-0.068	0.066**	0.062**	0.071**	0.067**
(compared to Solitary*)*	(0.027)	(0.028)	(0.047)	(0.045)	(0.028)	(0.029)	(0.028)	(0.030)
Row B: *Indirect Education*								
Improvement	0.073**	0.067**	0.008	0.030	0.054*	0.092***	0.047	0.087***
(compared to Solitary*)*	(0.029)	(0.028)	(0.046)	(0.046)	(0.029)	(0.030)	(0.029)	(0.030)
p-values								
Communication = Indir. Educ.	0.748	0.955	0.046	0.062	0.648	0.290	0.376	0.459
Discussed = Not-discussed if Sender uneducated					0.846		0.819	
Discussed = Not-discussed if Sender educated					0.043		0.033	
Difference in differences					0.016		0.010	
Observations	3,156	3,156	1,572	1,572	526		526	
Subjects	263	263	262	262	263		263	

Notes: Improvement in Deliberative Competence from Stage 1 to Stage 2. Based on all subjects in the role of Receiver. Estimates in the *Improvement in Solitary* row indicate the average level of improvement for a Receiver in the *Solitary* condition. Subsequent rows show the additional improvement from communication and indirect education. All regressions control for initial skills. The dependent variable in Columns (3) and (4) is the hypothetical improvement in Deliberative Competence we would observe if all Receivers blindly mimicked their matched Sender's choices in discussed, complexly framed tasks. All other columns use actual improvements. Columns(1)-(4) present OLS regressions with standard errors clustered by subject. Columns (5a) and (5b), as well as (6a) and (6b), each present estimates of a two-equation SUR regression. In the latter regressions, we average improvement within each task set to obtain a single pair of observations per subject. $^{*}p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

Table B.3: Replication of Table 3 with demographic, financial, and psychological control variables

VARIABLES	(1)	(2)	(3)	(4)	(5a)	(5b)	(6a)	(6b)
	Improvement in Receivers' Deliberative Competence before / after communication							
Benchmark simply framed choices	Contemp.	Stage 0	Contemp.	Stage 0	Contemporaneous		Stage 0	
Set of decision problems								
Discussed	Yes	Yes	Yes	Yes	No	Yes	No	Yes
New	Yes	Yes	No	No	Yes	No	Yes	No
Counterfactual mimicry	No	No	Yes	Yes	No	No	No	No
Improvement in Solitary	0.016	-0.004	-0.002	-0.037	0.009	0.009	-0.011	-0.011
	(0.018)	(0.019)	(0.028)	(0.031)	(0.021)	(0.021)	(0.021)	(0.021)
Row A: *Communication*								
Improvement	0.072***	0.072***	-0.096*	-0.041	0.071**	0.073**	0.072**	0.071**
(compared to Solitary*)*	(0.027)	(0.027)	(0.050)	(0.048)	(0.029)	(0.030)	(0.029)	(0.030)
Row B: *Indirect Education*								
Improvement	0.080***	0.076***	0.038	0.075	0.055*	0.106***	0.048	0.103***
(compared to Solitary*)*	(0.028)	(0.028)	(0.047)	(0.050)	(0.029)	(0.030)	(0.029)	(0.031)
p-values								
Communication = Indir. Educ.	0.747	0.871	0.020	0.030	0.541	0.241	0.393	0.269
Discussed = Not-discussed if Sender uneducated					0.917		0.977	
Discussed = Not-discussed if Sender educated					0.005		0.003	
Difference in differences					0.004		0.001	
Observations	3,156	3,156	1,572	1,572	526		526	
Subjects	263	263	262	262	263		263	

Notes: Improvement in Deliberative Competence from Stage 1 to Stage 2. Based on all subjects in the role of Receiver. Estimates in the *Improvement in Solitary* row indicate the average level of improvement for a Receiver in the *Solitary* condition. Subsequent rows show the additional improvement from communication and indirect education. All regressions control for initial skills, demographic, financial, and psychological control variables. The dependent variable in Columns (3) and (4) is the hypothetical improvement in Deliberative Competence we would observe if all Receivers blindly mimicked their matched Sender's choices in discussed, complexly framed tasks. All other columns use actual improvements. Columns(1)-(4) present OLS regressions with standard errors clustered by subject. Columns (5a) and (5b), as well as (6a) and (6b), each present estimates of a two-equation SUR regression. In the latter regressions, we average improvement within each task set to obtain a single pair of observations per subject. $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$.

B.3 Table 4 with alternative control variables

For brevity, all estimations in Table 4 include demographic control variables and initial skill levels. Here we replicate the analysis of Table 4 by excluding demographic variables (Appendix Table B.4) and by including demographic, financial, and psychological variables as controls (Appendix Table B.5). As the tables show, the alternative sets of control variables leave the coefficient estimates largely unchanged. The additional improvement a below-median Receiver enjoys when communicating with a below-median rather than with an above-median Sender remains highly statistically significant using stage-0 simply framed choices as a benchmark (columns 4 - 6), but p-values exceed 0.1 in some specifications with contemporaneous simply framed choices used as benchmark.

Table B.4: Replication of Table 4 without demographic controls.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Improvement in Receiver's Deliberative Competence							
Benchmark choices in simple frame	Contemporaneous				Stage 0			
Sets of decision problems								
Discussed	Yes		Yes	Yes	Yes		Yes	Yes
Complex$_2$	Yes	Yes			Yes	Yes		
Counterfactual mimicry	No	No	No	Yes	No	No	No	Yes
Improvement in Solitary condition	0.032	0.020	0.043	0.043	0.009	-0.004	0.021	0.016
for bottom half Receiver	(0.015)	(0.017)	(0.016)	(0.016)	(0.017)	(0.019)	(0.018)	(0.019)
Additional improvement from communication if								
Receiver bottom half								
and Sender bottom half (β_1)	0.156***	0.144***	0.168***	0.065	0.180***	0.159***	0.200***	0.016
	(0.046)	(0.050)	(0.047)	(0.058)	(0.047)	(0.051)	(0.048)	(0.075)
and Sender top half (β_2)	0.090**	0.066	0.114**	0.207***	0.057	0.036	0.077	0.203***
	(0.045)	(0.046)	(0.051)	(0.053)	(0.045)	(0.046)	(0.051)	(0.055)
Receiver top half								
and Sender bottom half (β_3)	0.001	0.010	-0.007	-0.291***	0.006	0.014	-0.002	-0.347***
	(0.016)	(0.018)	(0.017)	(0.046)	(0.015)	(0.016)	(0.017)	(0.058)
and Sender top half (β_4)	-0.020	-0.018	-0.023	-0.089***	-0.007	0.001	-0.015	-0.071***
	(0.015)	(0.018)	(0.014)	(0.020)	(0.015)	(0.017)	(0.015)	(0.021)
p-values about effect on Receiver								
(R bottom, S bottom) = (R bottom, S top)	0.184	0.134	0.303	0.033	0.009	0.013	0.014	0.018
(R bottom, S bottom) = (R top, S bottom)	0.002	0.011	0.001	0.000	0.001	0.007	0.000	0.000
(R bottom, S top) = (R top, S top)	0.020	0.087	0.009	0.000	0.180	0.467	0.079	0.000
(R top, S bottom) = (R top, S top)	0.190	0.119	0.366	0.000	0.364	0.362	0.430	0.000
Joint insignificance	0.007	0.029	0.003	0.000	0.004	0.022	0.001	0.000
Observations	3,156	1,578	1,578	1,572	3,156	1,578	1,578	1,572
Subjects	263	263	263	262	263	263	263	262

Notes: Based on all subjects in the role of Receiver. Estimates in the *Improvement in Solitary* row indicate the average level of improvement for a bottom-half Receiver in the *Solitary* condition. Subsequent rows show the additional improvement from communication. The dependent variable in columns (4) and (8) is the hypothetical improvement in Deliberative Competence we would observe if all Receivers blindly mimicked their matched Sender's choices in discussed, complexly framed tasks. All other columns use actual improvements. All regressions control for initial skills, top-half Receiver dummy, and decision problem fixed effects. Standard errors are clustered by subject. $^{*}p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

Table B.5: Replication of Table 4 including demographic, financial and psychological controls.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Improvement in Receiver's Deliberative Competence							
Benchmark choices in simple frame	Contemporaneous				Stage 0			
Sets of decision problems								
Discussed	Yes		Yes	Yes	Yes		Yes	Yes
Complex$_2$	Yes	Yes			Yes	Yes		
Counterfactual mimicry	No	No	No	Yes	No	No	No	Yes
Improvement in Solitary condition	0.028	0.020	0.036	0.036	0.008	-0.002	0.017	-0.005
for bottom half Receiver	(0.016)	(0.016)	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.024)
Additional improvement from communication if								
Receiver bottom half								
and Sender bottom half (β_1)	0.158***	0.150***	0.167***	0.073	0.178***	0.158***	0.199***	0.058
	(0.044)	(0.048)	(0.045)	(0.055)	(0.045)	(0.048)	(0.046)	(0.076)
and Sender top half (β_2)	0.092**	0.062	0.123**	0.222***	0.062	0.035	0.088*	0.242***
	(0.043)	(0.044)	(0.048)	(0.052)	(0.045)	(0.046)	(0.049)	(0.059)
Receiver top half								
and Sender bottom half (β_3)	0.017	0.019	0.015	-0.270***	0.013	0.016	0.009	-0.322***
	(0.022)	(0.025)	(0.023)	(0.044)	(0.020)	(0.023)	(0.022)	(0.057)
and Sender top half (β_4)	-0.019	-0.027	-0.011	-0.089**	-0.012	-0.009	-0.015	-0.063
	(0.025)	(0.027)	(0.026)	(0.035)	(0.021)	(0.024)	(0.023)	(0.039)
p-values about effect on Receiver								
(R bottom, S bottom) = (R bottom, S top)	0.177	0.089	0.393	0.018	0.017	0.018	0.029	0.020
(R bottom, S bottom) = (R top, S bottom)	0.005	0.017	0.003	0.000	0.001	0.009	0.000	0.000
(R bottom, S top) = (R top, S top)	0.027	0.091	0.013	0.000	0.137	0.400	0.050	0.000
(R top, S bottom) = (R top, S top)	0.101	0.050	0.261	0.000	0.244	0.267	0.290	0.000
Joint insignificance	0.003	0.007	0.003	0.000	0.002	0.014	0.000	0.000
Observations	3,156	1,578	1,578	1,572	3,156	1,578	1,578	1,572
Subjects	263	263	263	262	263	263	263	262

Notes: Based on all subjects in the role of Receiver. Estimates in the *Improvement in Solitary* row indicate the average level of improvement for a bottom-half Receiver in the *Solitary* condition. Subsequent rows show the additional improvement from communication. The dependent variable in Columns (4) and (8) is the hypothetical improvement in Deliberative Competence we would observe if all Receivers blindly mimicked their matched Sender's choices in discussed, complexly framed tasks. All other columns use actual improvements. All regressions control for initial skills, top-half Receiver dummy, decision problem fixed effects, and demographic, financial, and psychological controls. Standard errors are clustered by subject. $^{*}p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

B.4 Table 5 with transcriber fixed effects

Here, we replicate Table 5 including the transcriber fixed effects. All the coefficients are similar to those in Table 5 and all the statistically significant results remain significant.

Table B.6: Replication of Table 5 with transcriber fixed effects

VARIABLES	(1) highlight similarities	(2) minutes discussed	(3) # problems discussed	(4) #small talk topics	(5) one person proclaims skills	(6) Rule of 72 discussed	(7) Compounding formula discussed
Panel A: *Communication*							
Different skills (α_1)	0.422	8.264	3.572	0.617	0.287	-0.030	0.732
	(0.075)	(0.799)	(0.291)	(0.123)	(0.072)	(0.053)	(0.080)
Similar skills (α_2)	0.736	10.154	3.511	0.347	0.194	0.015	0.672
	(0.078)	(0.775)	(0.307)	(0.127)	(0.075)	(0.054)	(0.082)
Panel B: *Indirect Education*							
Different skills (α_3)	0.480	8.516	3.477	0.391	0.463	0.744	0.391
	(0.075)	(0.816)	(0.291)	(0.123)	(0.072)	(0.052)	(0.079)
Similar skills (α_4)	0.480	9.499	3.811	0.159	0.395	0.754	0.422
	(0.080)	(0.844)	(0.311)	(0.131)	(0.078)	(0.056)	(0.085)
p-Values							
Effect of similarity							
Communication tr. ($\alpha_1 = \alpha_2$)	0.001	0.091	0.873	0.088	0.320	0.505	0.562
Indirect Education tr. ($\alpha_3 = \alpha_4$)	0.997	0.403	0.380	0.150	0.472	0.887	0.762
Effect of indirect education							
Similar skills ($\alpha_2 = \alpha_4$)	0.009	0.568	0.437	0.239	0.036	0.000	0.017
Dissimilar skills ($\alpha_1 = \alpha_3$)	0.550	0.826	0.800	0.153	0.060	0.000	0.001
All four parameters equal	0.006	0.301	0.817	0.044	0.024	0.000	0.001
Diff-in-diff	0.023	0.576	0.463	0.863	0.854	0.710	0.532
Observations	175	188	171	175	173	172	172

Notes: Hypothesis tests based on linear regressions with coder fixed effects. Column 2 does not include coder fixed effects because minutes discussed is measured directly. Levels are displayed for the coder who encoded the largest number (86 of 175) of the transcripts.

B.5 Effects of Communication on Confidence

In this section, we consider the effect of communication on subjects' confidence about their decision skills. We study whether the effect differs by pair characteristics. At the end of our experiment, subjects answered the following question: "Do you feel you had a firm grasp of how to make good decisions in this study?" Answers ranged from "No, not at all" to "Yes, I'm very confident that I made good decisions" (on a seven point scale). We estimate the following model with OLS, using data on Receivers, pooling across *Communication* and *Indirect Education* treatments:

$$\begin{aligned} Confidence_j &= \beta_0 + \beta_1\left(R\_bottom_j \times S\_bottom_j\right) + \beta_2\left(R\_bottom_j \times S\_top_j\right) \\ &\quad + \beta_3\left(R\_top_j \times S\_bottom_j\right) + \beta_4\left(R\_top_j \times S\_top_j\right) \\ &\quad + \beta_5 R\_top_j + X_j + \epsilon_j \end{aligned} \tag{5}$$

where $Confidence_j$ is the answer of Receiver j to the confidence question, R_bottom_j and R_top_j indicate whether Receiver j is in the bottom or top half of the skill distribution, respectively, S_bottom_j and S_top_j are defined similarly for the Sender paired with Receiver j, and where X_j is a vector of controls that always includes Receivers' preexisting skills. For Receivers in the Solitary treatment, we set $S\_bottom_j = S\_top_j = 0$.

Column 1 of Table B.7 displays the results. We see that bottom Receivers' confidence increases significantly when communicating with top Senders compared to the solitary treatment ($p < 0.05$). While the effect on confidence is greater when talking with a top Sender than with a bottom Sender, the difference not statistically significant ($p > 0.2$). These findings remain qualitatively unchanged when we add controls for demographics (column 2) and, additionally, for financial and psychological variables (column 3), though in the latter case the effect of matching bottom Receivers with top Senders declines slightly both in magnitude and in statistical significance.

Table B.7: Effect of communication on confidence by pair characteristics.

VARIABLES	(1)	(2)	(3)
	Receivers' Confidence in Their Decisions		
Confidence in Solitary condition	4.945	5.033	5.109
for bottom half Receiver	(0.175)	(0.174)	(0.188)
Additional confidence from communication if			
Receiver bottom half			
and Sender bottom half (β_1)	0.432	0.409	0.404
	(0.313)	(0.319)	(0.320)
and Sender top half (β_2)	0.802**	0.822**	0.599*
	(0.348)	(0.355)	(0.339)
Receiver top half			
and Sender bottom half (β_3)	0.149	-0.054	-0.118
	(0.295)	(0.290)	(0.337)
and Sender top half (β_4)	0.002	-0.219	-0.287
	(0.307)	(0.330)	(0.361)
p-values about effect on Receiver			
(R bottom, S bottom) = (R bottom, S top)	0.238	0.185	0.524
(R bottom, S bottom) = (R top, S bottom)	0.512	0.275	0.249
(R bottom, S top) = (R top, S top)	0.086	0.031	0.057
(R top, S bottom) = (R top, S top)	0.545	0.544	0.507
Joint insignificance	0.219	0.206	0.360
Controls			
Demographics	No	Yes	Yes
Financial and psychological	No	No	Yes
Subjects	243	243	243

Notes: Based on all Receivers. Estimates in the *Confidence in Solitary condition for bottom half Receiver* row indicates the average level of improvement for a bottom-half Receiver in the *Solitary* condition. Subsequent rows show the additional confidence from communication. All regressions control for initial skills and top-half Receiver dummy. Additional controls are listed in Appendix B.1. Robust standard errors are in parentheses. $^{*}p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

B.6 Actual Competence and Perceived Competence

In this section, we analyze whether a subject's ability to detect Deliberative Competence in peers is related to their own competence. We first classify each subject according to whether her Deliberative Competence falls into the top or bottom half of the distribution before she communicates with another subject, as in Section 5.3. We measure the perceived competence of the partner using the following question, which we asked at the end of our experiment: "Do you feel your partner had a firm grasp of how to make good decisions in this study?" Subjects answer using a seven point scale. We regress the responses to this question on a set of control variables

and the following indicators: Receiver Bottom Half × Sender Top Half, Receiver Top Half, Receiver Top Half × Sender Top Half. Receiver Bottom Half is the omitted category.

Table B.8 displays the results. The constant term in Column 1, 5.02 (out of 7), is the average perception of Receivers in the bottom half about the competence of Senders in the bottom half. This perception increases by 0.851 points ($p < 0.01$) for Senders in the top half, and by 0.599 points ($p < 0.1$) if the Receiver making the assessment is herself in the top half. These findings suggest that Receivers tend to recognize more competent Senders, on average. While the effect of Sender competence on bottom Receivers' assessments is robust to adding controls (columns 2 and 3), the effect on top Receivers' assessments is not.

Greater Receiver competence is not, however, unambiguously associated with greater ability to recognize sender competence. The difference between the two interaction terms is not statistically significant in any specification. Moreover, a continuous specification yields the opposite effect, again without statistical significance.

Table B.8: Correlations of Receivers' Competence, Senders' Competence and Perceived Competence of Senders.

VARIABLES	(1)	(2)	(3)
	Perceived Competence of Sender		
Receiver bottom half × Sender top half	0.851***	0.857**	0.823**
	(0.312)	(0.330)	(0.353)
Receiver top half	-0.294	-0.247	-0.251
	(0.335)	(0.381)	(0.426)
Receiver top half × Sender top half	0.599*	0.513	0.465
	(0.328)	(0.330)	(0.344)
Constant	5.021***	3.409	1.007
	(0.241)	(4.938)	(5.356)
p-value			
R bottom half × S top half = R top half × S top half	0.578	0.459	0.488
Controls			
Demographics	No	Yes	Yes
Financial & Psychological	No	No	Yes
Subjects	177	177	177

Notes: Based on Receivers in the *Communication* and *Indirect Education* treatments. Classifications to Receiver (Sender) bottom or top half are based on a median split of Receivers' (Senders') Deliberative Competence calculated using their answers to the Stage 1 complexly and simply framed decision problems. Omitted category is Receiver bottom half. Controls are listed in Appendix B.1. Robust standard errors are in parentheses. $^{*}p < 0.1,^{**}p < 0.05,^{***}p < 0.01$.

B.7 Effect of the education intervention

We analyze the direct effect of the education intervention on those who participate. We regress Senders' financial competence in Stage 1 on an indicator of whether they have participated in the education intervention. Table B.9 displays the results. The estimates mentioned in the main text are from Column 1. Column 2 controls for subjects' initial skill levels using decisions in tasks Anc_0.[8] The treatment effect remains similar, showing that the effect does not merely arise because more skilled subjects happened to be assigned to the education treatment. Columns 3 and 4 further control for demographics, as well as financial and psychological characteristics, respectively. Controlling for these covariates slightly decreases the estimated effect size, but it is still substantial.

Table B.9: Direct effect of the education intervention.

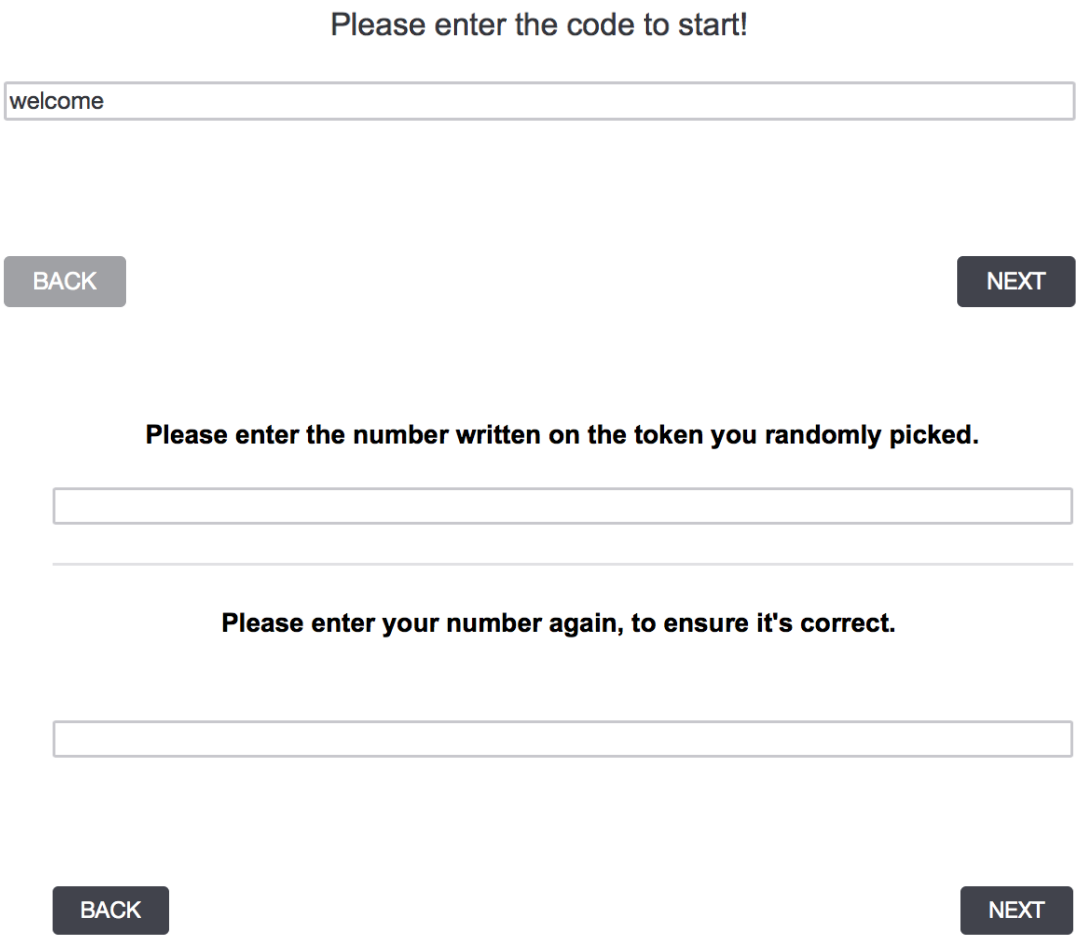
VARIABLES	(1)	(2)	(3)	(4)
	Financial competence among Senders for problems *Discussed*			
Level of Competence				
No education	-0.274***	-0.283***	-0.276***	-0.270***
	0.0390	0.0360	0.0340	0.0330
Education	-0.192***	-0.181***	-0.189***	-0.196***
	0.0290	0.0250	0.0250	0.0270
Treatment effect	0.082*	0.103**	0.087**	0.074*
	(0.049)	(0.045)	(0.041)	(0.045)
Controls				
Initial skills	-	Yes	Yes	Yes
Demographic	-	-	Yes	Yes
Financial & Psychological	-	-	-	Yes
Observations	1,014	1,014	1,014	1,014
Subjects	169	169	169	169

Notes: Financial competence in stage 1. Only Senders who pass the comprehension checks and whose partners pass the comprehension checks are included in the analysis. Initial skills are measured as the absolute deviation between a subject's valuation and the true future value in decision set Anc_0. A full list of demographic, financial and psychological controls is given in Appendix Table B.1. Standard errors clustered by subject. $^{*}p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

[8] In contrast to the previous regressions, we control for preexisting Deliberative Competence using only the Anc_0 tasks and not the Anc_1 tasks, because the educational intervention is administered between these two stages.

C Instructions and Survey Questions

We add comments for the reader in italics.



The University of Birmingham Economics Laboratory uses a procedure that requires all subjects to pick a random token from a bowl with tokens numbered 1 through N where N is the number of subjects in a session. Subjects are seated at computer terminals according to their token numbers. This process happens when all subjects are present or at the beginning of the session, whichever happens first. Subjects who arrive after token selection cannot participate in

the experiment.

PLEASE PUT YOUR HEADPHONES ON!

BACK NEXT

The subject next watches a video in which B.D. Bernheim reads the following script.

Thanks for your interest in our study. My name is Doug Bernheim, and I'm an economics professor at Stanford University.

In this study, you will be making choices that in some ways resemble some of the financial choices we all make in our daily lives.

Because we want you to take the choices we present you seriously, we will pay you for taking part in the study.

You've already earned £2.5 for showing up. You will be paid a fixed fee of £10 for completing the study. That is, at the end of the study, you will receive £12.5 in cash. You will also have the opportunity to earn up to an additional £20 in the form of a gift card, depending on the decisions you make.

We're studying decisions that involve time and money. So the typical choice you make in this study will be between an amount of money to be received today, and an amount of money to be received several days from now.

It's important for you to understand that, if you elect to receive the payment which will be received several days from now, you will definitely receive it. On behalf of the economics department at Stanford University, I guarantee that you will get an Amazon Gift Card with the exact amount of money that we promise and at exactly the time that we promise you.

Again, thank you for your participation, which we very much appreciate.

Please watch the preliminary instructions carefully.

The next button will appear automatically when the video ends (after time equal to the duration of the video passes.).

You can stop the video by clicking on it once and make it full screen by clicking on it twice.

If you reload the page, you will again need to wait for the next button. So please do not close your web browser or reload the page unless it is necessary.

The subject watches a video in which B.D. Bernheim reads the following script.

PRELIMINARY INSTRUCTIONS
WELCOME

You are about to take part in a decision-making experiment. This experiment is run by the "Birmingham Experimental Economics Laboratory" and conducted by the Department of Economics at Stanford University. Just for showing up you have already earned £2.50. You can earn additional money depending on the decisions you will make in this experiment. It is therefore very important that you read these instructions with care.

On your desk you find a pen, paper, and a calculator. You may make use of any of them if you wish. You are not required to do so.

*It is important that you remain silent and do not look at other people's work. You are **NOT** allowed to talk unless you are instructed to do so. If you have any questions, or need assistance of any kind, please raise your hand and an experimenter will come to you. If you talk, laugh, exclaim out loud, etc., you will be asked to leave and you will not be paid. Please do not use cell phones or other electronic devices until after the study is over. Please do not browse the internet, or check emails. The only exception to this rule is the calculator provided on your desk. We expect and appreciate your following of these rules.*

All the instructions will be displayed on the screen and accompanied by an audio clip. If you have any clarifying questions while going through the instructions, please pause the audio clip, raise your hand and wait for the experimenter.

In a later part of this study, you will talk with a pre-assigned partner. Please note that other subject might overhear your conversation due to the room conditions. Audio recording may occur during this study. Your data will be kept anonymous and confidential in a secure location. Thank you.

This study proceeds in **THREE** parts. You will receive the instructions for each part just before that part begins.

PAYMENT

You will be paid a fixed fee of £10 in cash for completing the study at the end of the study, that is you will receive £12.5 in cash upon completing the study including your show-up fee. You will also have the opportunity to earn up to an additional £20 in the form of a gift card. Since, we will pay you this additional amount in the form of a gift card, we will collect your e-mail address. However, it will only be used for payment purposes and for nothing else.

Depending on the decisions you make in this experiment, you will receive a gift card that is worth up to £20 between today and up to 72 days from today. During the experiment your earnings will be calculated in tokens. These tokens will be converted into pounds. Each token is worth **20 pence**.

We will pay you exactly as much as we promise you, at exactly the date that we promise you.

After you are finished with the experiment, the computer will randomly draw one of decision tasks in the experiment for payment. Each decision task has an equal chance of being the decision task that counts. We will pay you for that decision task, and only that decision task. Hence,

You should make every decision as if it is the one that counts, because it might be!

For further reference, you can also download the preliminary instructions by clicking the link below:

Preliminary Instructions

Please enter the email address to which you'd like us to send your amazon.co.uk gift card. Please enter an address that you will still check in up to 100 days.

Please re-enter your email address.

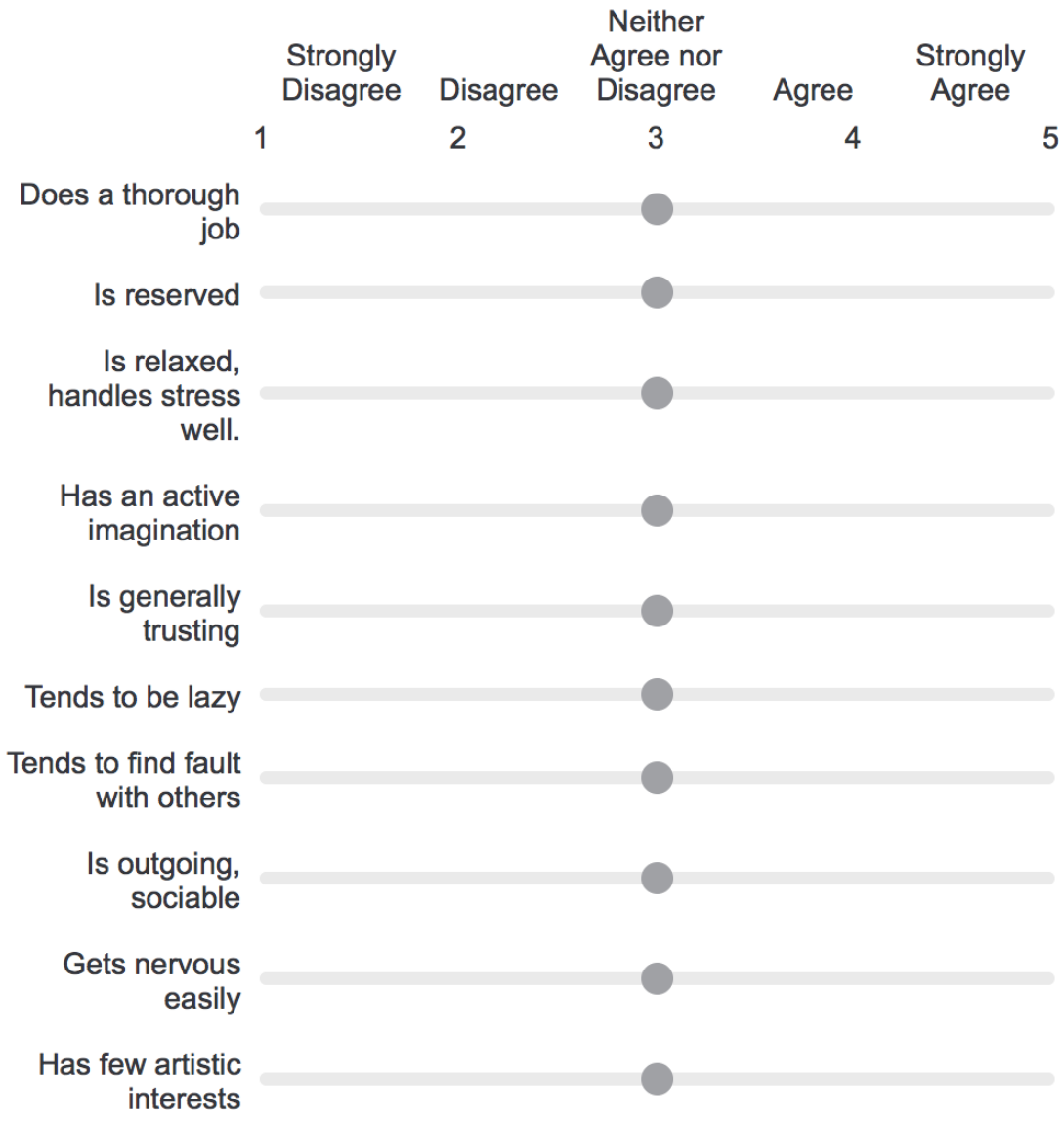
BACK NEXT

Before we start this study, we would like to ask you a few questions about yourself. Please answer these questions truthfully. Your answers will not affect your payment from this experiment in any way.

BACK NEXT

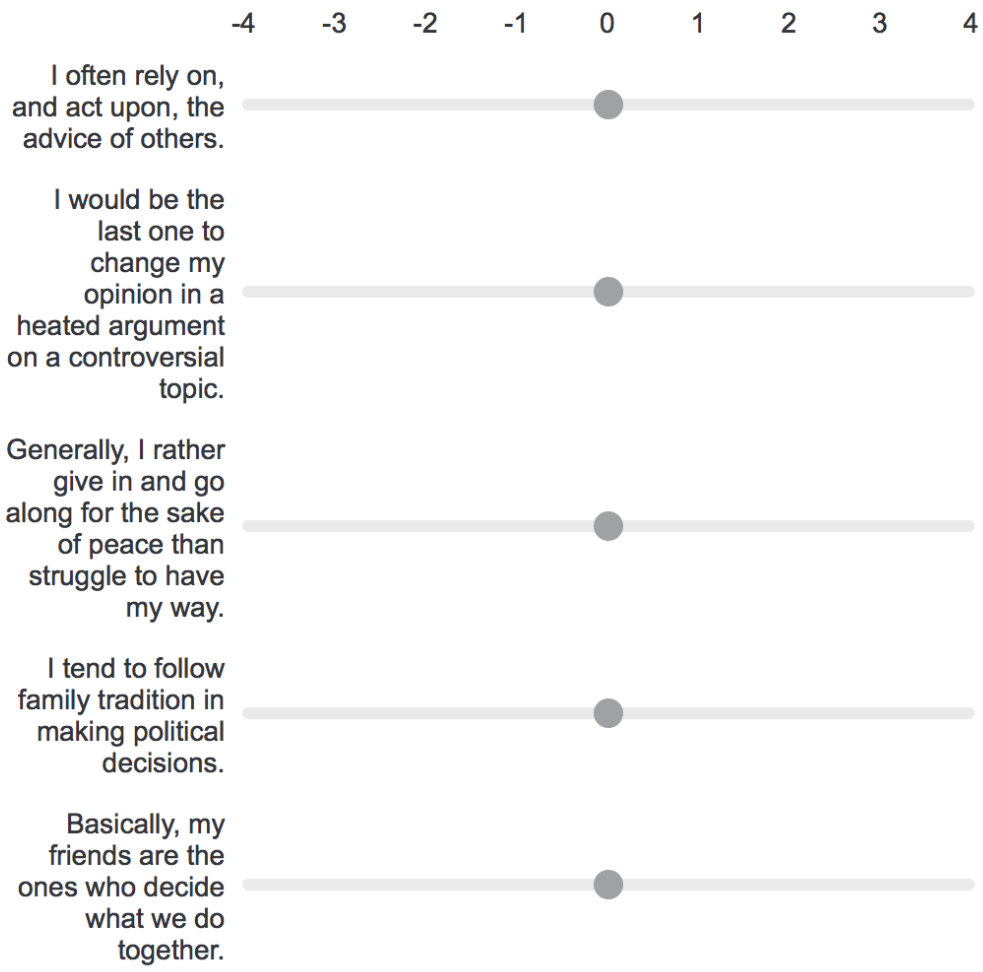
Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please answer all questions below by moving the slider to the scale (1 to 5) which best describes you.

I am someone who



Please indicate the degree of your agreement or disagreement with each of the statements below by moving the slider to the scale. Try to describe yourself accurately and generally (that is, the way you are actually in most situations – not the way you would hope to be):

-4 = very strong disagreement; 0 = neither agreement nor disagreement; +4 = very strong agreement.



A charismatic and eloquent speaker can easily influence and change my ideas.

I am more independent than conforming in my ways.

If someone is very persuasive, I tend to change my opinion and go along with them.

I don't give in to others easily.

I tend to rely on others when I have to make and important decision quickly.

I prefer to make my own way in life rather than find a group I can follow.

BACK NEXT

Please answer the following questions as well as you can.

Remember!

Your answers to these questions will not affect your payment from this experiment in any way.

After 5 minutes, you will automatically advance to the next page.

A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost (in dollars)?

If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?

In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

BACK NEXT

Please answer the following questions as well as you can.

REMEMBER!

Your answers to these questions will not affect your payment from this experiment in any way.

BACK NEXT

Suppose you had $100 in a savings account and the interest rate was 2 percent per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- ○ Less than $102
- ○ Do not know
- ○ Exactly $102
- ● More than $102

Do you think that the following statement is true or false: Buying a single company stock usually provides a safer return than a stock mutual fund?

- ● False
- ○ Do not know
- ○ True

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than today, exactly the same as today, or less than today with the money in this account?

- ○ Do not know
- ○ More than today
- ● Less than today
- ○ Exactly the same as today

BACK NEXT

We now start the main part of this study.

Please pay close attention to the instructions that follow, so that you understand how the decisions you will make will determine your payment for this study.

BACK NEXT

Please watch the instructions carefully.

The next button will appear automatically when the video ends (after time equal to the duration of the video passes).

You can stop the video by clicking on it once and make it full screen by clicking on it twice.

If you reload the page, you will again need to wait for the next button. So please do not close your web browser or reload the page unless it is necessary.

The subject next watches a video in which B.D. Bernheim reads the following instructions, shown on screen.

PART 1

(1 of 3 of this study)

PLEASE READ THESE INSTRUCTIONS CAREFULLY

The study consists of 42 decision tasks in total. The tasks are numbered for your convenience. PART 1 of this study consists of 9 decision tasks.

In each task, you will be presented with **two lists.** All the amounts specified in these lists are in terms of tokens. **Each token is worth 20 pence.**

LIST 1 will look like the following:

	You will get the specified amount on the left today.	You will get 130 tokens in a year.
0 tokens	○	○
10 tokens	○	○
20 tokens	○	○
30 tokens	○	○
40 tokens	○	○
50 tokens	○	○
60 tokens	○	○
70 tokens	○	○
80 tokens	○	○
90 tokens	○	○
100 tokens	○	○

Your task is to choose, **for EACH LINE**, whether you prefer receiving the specified amount on the left or right.

Suppose you filled in LIST 1 like this:

	You will get the specified amount on the left today.	You will get 130 tokens in a year.
0 tokens	○	●
10 tokens	○	●
20 tokens	○	●
30 tokens	○	●
40 tokens	●	○
50 tokens	●	○
60 tokens	●	○
70 tokens	●	○
80 tokens	●	○
90 tokens	●	○
100 tokens	●	○

Let's have a look what this means:

Look at the first line. You prefer 130 tokens in a year to 0 tokens today, so you click the button on the right. Now, look at the second line. You also prefer 130 tokens in a year to 10 tokens today, so again you click the button on the right. Similarly for lines 3 and 4. Now, look at the fifth line where you have to choose between 40 tokens today and 130 tokens in a year. You prefer 40 tokens today, so you click the button on the left. Look at the next line: You prefer 50 tokens today to 130 tokens in a year so again you click the button on the left. Looking at each of the subsequent lines, you also prefer receiving the amount on the left today to receiving 130 tokens in a year so you click the buttons on the left.

The last line at which you prefer the option on the right to the option on the left is your *"switching point"*. Your "switching point" determines the second list that you will be shown.

If you filled in LIST 1 as above, your "switching point" occurs on Line 4. Your choice, on that line, means that you prefer 130 tokens in a year to 30 tokens today. However, your choice on Line 5 means that you prefer 40 tokens today to 130 tokens in a year.

But, we do not know what your choices might be between 30 tokens and 40 tokens. So in LIST 2, which will be shown next, you will fill in the amounts between 30 tokens and 39 tokens (with 1 token increments).

	You will get the specified amount on the left today.	You will get 130 tokens in a year.
30 tokens	○	○
31 tokens	○	○
32 tokens	○	○
33 tokens	○	○
34 tokens	○	○
35 tokens	○	○
36 tokens	○	○
37 tokens	○	○
38 tokens	○	○
39 tokens	○	○

As before, your task is to choose, **for EACH LINE**, whether you prefer receiving the specified amount on the left or right.

In the experiment, you will be making decisions that resemble this example. The particular amounts and choices we have shown in these instructions merely serve as illustrations.

How will your payment be determined?

Remember that the experiment consists of 42 decision tasks. At the end of the study, the computer will randomly draw **one of the 42 decision tasks** for payment. Each task is equally likely to be drawn.

Within the chosen task, the computer will select one line at random from LIST 1 and one line at random from LIST 2.

If your 'switching point' in LIST 1 **is selected**, then you will be paid according to your decision on the chosen line in LIST 2.

If your 'switching point' in LIST 1 **is NOT selected**, then you will be paid according to your decision on the chosen line in LIST 1.

Let's take a look at some examples.

Example 1: Suppose you filled in the two lists for the chosen decision task like below. Further suppose the computer randomly selects Line 6 (the sixth line from the top) from LIST 1 and Line 8 (the third line from the bottom) from LIST 2.

Decision LIST 1

	You will get the specified amount on the left today.	You will get 130 tokens in a year.
0 tokens	○	●
10 tokens	○	●
20 tokens	○	●
30 tokens	○	●
40 tokens	●	○
50 tokens	●	○
60 tokens	●	○
70 tokens	●	○
80 tokens	●	○
90 tokens	●	○
100 tokens	●	○

You will be paid according to this decision.

Decision LIST 2

	You will get the specified amount on the left today.	You will get 130 tokens in a year.
30 tokens	○	●
31 tokens	○	●
32 tokens	○	●
33 tokens	○	●
34 tokens	○	●
35 tokens	○	●
36 tokens	○	●
37 tokens	○	●
38 tokens	●	○
39 tokens	●	○

In this example, your "switching point" is Line 4. Since your "switching point" is NOT selected by the computer, your payment will be determined by LIST 1. You will be paid according to your decision on Line 6 in LIST 1, that is you will get 50 tokens today.

Example 2: Suppose you filled in the two lists for the chosen decision task like below. Further suppose the computer randomly selects Line 4 (the fourth line from the top) from LIST 1 and Line 8 (the third line from the bottom) from LIST 2.

Decision LIST 1

	You will get the specified amount on the left today.	You will get 130 tokens in a year.
0 tokens	○	●
10 tokens	○	●
20 tokens	○	●
30 tokens	○	●
40 tokens	●	○
50 tokens	●	○
60 tokens	●	○
70 tokens	●	○
80 tokens	●	○
90 tokens	●	○
100 tokens	●	○

Decision LIST 2

	You will get the specified amount on the left today.	You will get 130 tokens in a year.
30 tokens	○	●
31 tokens	○	●
32 tokens	○	●
33 tokens	○	●
34 tokens	○	●
35 tokens	○	●
36 tokens	○	●
37 tokens	○	●
38 tokens	●	○
39 tokens	●	○

You will be paid according to this decision.

In this example, your "switching point" is Line 4. Since your "switching point" IS selected by the computer, your payment will be determined by LIST 2. You will be paid according to your decision on Line 8 in LIST 2, that is you will get 130 tokens in a year.

Note that

1. Most people begin a decision list by preferring the option on the right, and then switch to the option on the left.

2. You can switch ***at most once*** from right to left in any given decision list. (You don't have to switch if you don't want to i.e. you *may* choose the right option on every line, or the left option on every line if you wish to do so.)

3. There are a total of **42 decision tasks**, in each of which you will see 2 decision lists.

4. Each token is worth **20 pence**.

Remember!
Each line is a separate decision that may be randomly selected for real payment. Hence, you should make *every* decision as if it is the one that counts, because it might be!

For further reference, you can also download the instructions by clicking the link below:

Part 1-Instructions

BACK NEXT

Please answer the following understanding questions!

The purpose of the following questions is to make sure that you understand the instructions. If you do NOT answer correctly, you will be re-directed to answer them again.

BACK NEXT

Which of the following statements is true? (Select all that apply)

There are 42 decision tasks in this study and I will get paid according to my decisions in

- [ ] the last of them
- [ ] all of them
- [ ] two of them, selected by the computer at random
- [ ] the first and the last of them
- [ ] one of them, selected by the computer at random
- [ ] the first of them

BACK NEXT

Suppose the computer randomly draws one of the 42 decision tasks for payment. Which of the following statements is true? (Select all that apply)

I will get paid according to my decision in

- [ ] one line on LIST 1 OR one line on LIST 2, depending on my "switching point"
- [ ] all lines on LIST 1 and LIST 2
- [ ] one line on LIST 1 AND one line on LIST 2
- [ ] one line on LIST 1, drawn at random by the computer
- [ ] all lines on LIST 2
- [ ] all lines on LIST 1
- [ ] one line on LIST 2, drawn at random by the computer

BACK NEXT

Suppose a decision task is randomly drawn for payment and you filled in LIST 1 on that task like below:

	You will get the specified amount on the left today.	You will get 130 tokens in a year.
0 tokens	○	◉
10 tokens	○	◉
20 tokens	○	◉
30 tokens	○	◉
40 tokens	○	◉
50 tokens	○	◉
60 tokens	○	◉
70 tokens	○	◉
80 tokens	◉	○
90 tokens	◉	○
100 tokens	◉	○

Please answer the questions below according to this decision list.

1. Suppose the computer randomly draws Line 3 (the third line from the top) for payment. What would your payment be in this case?

- ○ 100 tokens today
- ○ 80 tokens today
- ○ 70 tokens today
- ○ 20 tokens today
- ○ LIST 2 is necessary to determine the payment
- ○ 130 tokens in a year

2. Suppose the computer randomly draws Line 8 (the fourth line from the bottom) for payment. What would your payment be in this case?

- ◯ 80 tokens today
- ◯ 70 tokens today
- ◯ 100 tokens today
- ◯ 130 tokens in a year
- ◯ 20 tokens today
- ◯ LIST 2 is necessary to determine the payment

---

3. Suppose the computer randomly draws Line 9 (the third line from the bottom) for payment. What would your payment be in this case?

- ◯ 130 tokens in a year
- ◯ 80 tokens today
- ◯ 20 tokens today
- ◯ 100 tokens today
- ◯ LIST 2 is necessary to determine the payment
- ◯ 70 tokens today

---

4. Suppose the computer randomly draws Line 11 (the line at the bottom) for payment. What would your payment be in this case?

- ◯ 80 tokens today
- ◯ 100 tokens today
- ◯ 70 tokens today
- ◯ 20 tokens today
- ◯ LIST 2 is necessary to determine the payment
- ◯ 130 tokens in a year

Great!

You have understood how our payment mechanism works.

The purpose of the next two questions is to check that you understand how a decision list works.

BACK NEXT

Choose, on each line, the option you genuinely prefer.

	You will get the specified amount on the left.	You will get £1.
0 pence	○	○
20 pence	○	○
40 pence	○	○
60 pence	○	○
80 pence	○	○
100 pence	○	○
120 pence	○	○
140 pence	○	○
160 pence	○	○

BACK NEXT

Now, suppose you filled the decision list like below and this decision list is randomly drawn for payment.

	You will get the specified amount on the left.	You will get £1.
0 pence	○	●
20 pence	○	●
40 pence	○	●
60 pence	●	○
80 pence	●	○
100 pence	●	○
120 pence	●	○
140 pence	●	○
160 pence	●	○

Suppose the computer randomly draws Line 5 (the fifth line from the top) for payment. What would your payment be in this case?

- ○ 140 pence
- ○ 40 pence
- ○ 20 pence
- ○ 100 pence
- ○ 80 pence
- ○ 160 pence
- ○ 120 pence
- ○ 0 pence
- ○ 60 pence

Next, you will start Part 1 of the study.

Note the following things:

1. Most people begin a decision list by preferring the option on the right, and then switch to the option on the left at some line.

2. You are allowed to switch ***once*** from right to left in any given decision list. (You don't have to switch if you don't want to i.e. you *may* choose the right option on every line, or the left option on every line if you wish to do so.)

3. In total, there are **42 decision tasks** in this study, in each of which you will see 2 decision lists.

4. This part of the study consists of **9 decision tasks.**

5. Each token is worth **20 pence**.

Remember!

Each line is a separate decision that may be randomly selected for real payment. Hence, you should make *every* decision as if it is the one that counts, because it might be!

BACK NEXT

Decision Round **1** of **9** in PART 1.

Decision Task **2**

Choose, **for each line**, the option you genuinely prefer.

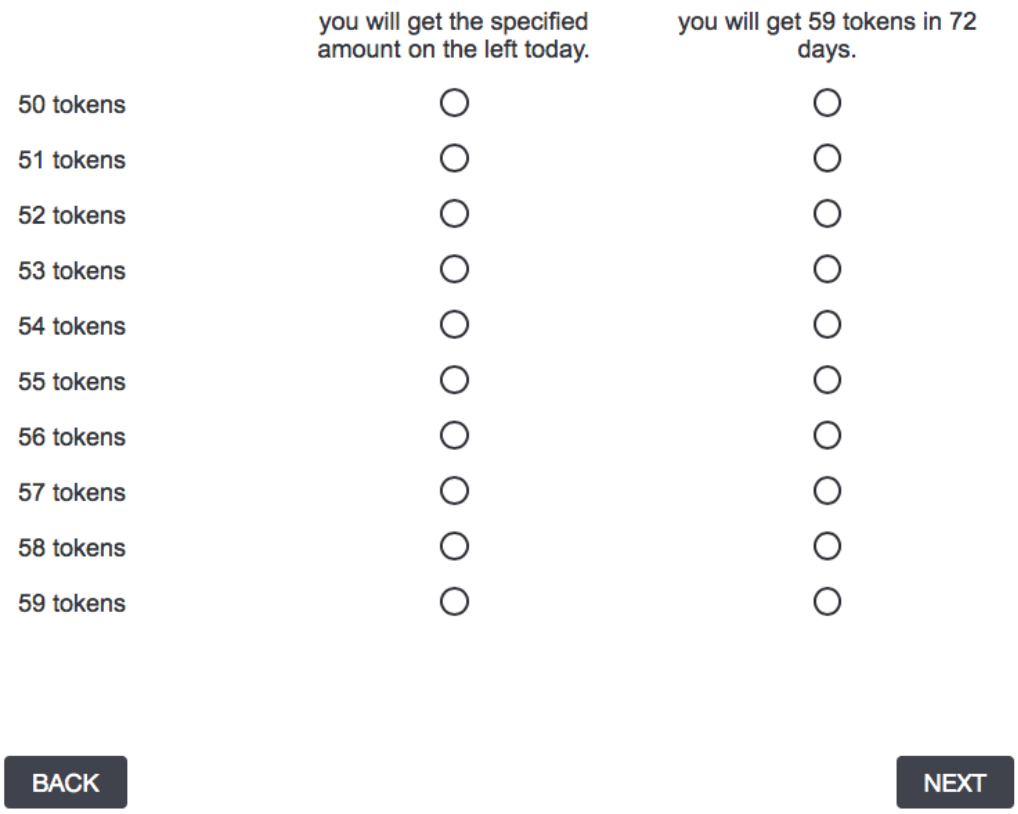
If, on the line selected for real payment, you choose the option on the LEFT, **you will get the specified amount today.**

If, on the line selected for real payment, you choose the option on the RIGHT, **you will get 59 tokens in 72 days.**

---

	you will get the specified amount on the left today.	you will get 59 tokens in 72 days.
0 tokens	○	○
10 tokens	○	○
20 tokens	○	○
30 tokens	○	○
40 tokens	○	○
50 tokens	○	○
60 tokens	○	○
70 tokens	○	○
80 tokens	○	○
90 tokens	○	○
100 tokens	○	○

BACK NEXT



Subjects face eight more decision problems in Part 1. The decision problems presented in the same format. The decision problem shown here serves as an example, and it is not necessarily the first decision problem a subject would encounter due to the randomization.

Part 2 is labeled as Stage 1 in the main text.

Receivers in all treatment groups and Senders in the Communication treatment watch the documentary.

PART 2

(2 of 3 of this study)

In this part of the study, you will first watch a documentary.

BACK NEXT

PLEASE FOLLOW THIS VIDEO CAREFULLY

PLEASE WATCH THE ENTIRE VIDEO

The next button will appear automatically when the video ends (after time equal to the duration of the video passes.).

You can stop the video by clicking on it once and make it full screen by clicking on it twice.

If you reload the page, you will again need to wait for the next button. So please do not close your web browser or reload the page unless it is necessary.

[Some browsers will ask you whether you want to display this content. Please click "display all content".]

Documentary: https://www.dropbox.com/s/w6cb8dablyieidx/documentary.mp4

Senders in the Indirect Education treatment watch the Education Intervention.

PART 2

(2 of 3 of this study)

PLEASE READ THESE INSTRUCTIONS CAREFULLY

In this part of the study, you will first watch an educational video about financial investing and will go through some example questions in detail.

It is important that you pay attention to the video at least for two reasons:

1. The video may help you with your decisions in the remainder of this study.
2. This video may help you with your personal financial decisions in general.

This material in this video was composed by internationally recognized academic experts on financial decision making (Burton G. Malkiel, Charles D. Ellis, and B. Douglas Bernheim).

The examples in the educational video are in terms of dollars, but notice that the same examples apply to tokens or pounds.

PLEASE FOLLOW THIS VIDEO CAREFULLY

PLEASE WATCH THE ENTIRE VIDEO

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Education Intervention, part 1: https://youtu.be/EnFVLiM1dTs

Part 1 Practice Question

If you invest $100 at 2% (compounded yearly), how much will be in your account after 36 years?

- ◯ $102
- ◯ $172
- ◯ $200
- ◯ $202
- ◯ $300
- ◯ $302
- ◯ $400
- ◯ $402

BACK NEXT

If the answer is correct in the first trial:

Great job! Watch the next part of the video to hone your skills even more.

BACK NEXT

If the answer is incorrect in the first trial:

Hmm, that's not quite right.

Please try again. The rule of 72 will help!

If you invest $100 at 2% (compounded yearly), how much will be in your account after 36 years?

- ◯ $102
- ◯ $172
- ◯ $200
- ◯ $202
- ◯ $300
- ◯ $302
- ◯ $400
- ◯ $402

BACK NEXT

If the answer is correct in the second time:

Nice! You got it this time!

Please watch the next part of the video to hone your skills even more!

BACK NEXT

If the answer is incorrect in the second trial:

Hmm, that's still not quite right.

Watch the next part of the video, so you see how you can get a good idea about how compound interest works.

BACK NEXT

PLEASE FOLLOW THIS VIDEO CAREFULLY

PLEASE WATCH THE ENTIRE VIDEO

The next button will appear automatically when the video ends (after time equal to the duration of the video passes.).

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If you reload the page, you will again need to wait for the next button. So please do not close your web browser or reload the page unless it is necessary.

[Some browsers will ask you whether you want to display this content. Please click "display all content".]

Education Intervention, part 2: https://youtu.be/3pjkVdOXMlk

Part 2 Practice Question

Now you try:

$100 is invested at 9% for 32 years, compounded yearly. How much will be in the account after these 32 years?

- ◯ $100
- ◯ $200
- ◯ $388
- ◯ $400
- ◯ $600
- ◯ $800
- ◯ $1200
- ◯ $1600

BACK NEXT

If the answer is correct in the first trial:

This is correct!

Please click next to move on the next part of the video.

BACK NEXT

If the answer is incorrect in the first trial:

Subjects see one of the following explanations depending on their previous answer and they re-attempt the question.

If their previous answer was $100:

You selected $100. That's not quite right.

You start out with $100. Then you get 9% interest each year! Hence after 32 years, you will have MORE than $100!

Please watch the video again to understand how much you will have.

BACK NEXT

If their previous answer was $200:

You selected $200. That's not quite right.

You probably remembered from the example above that at 9%, an investment doubles in 8 years.

Thus, the $100 double to $200 after 8 years.

These $200 then double to $400 in the next 8 years. (That is, until year 16).

In the next 8 years, from year 16 to year 24, these $400 double to $800!

Then, in the next 8 years, from year 24 to year 32, it will double again.

Please give it another try.

BACK NEXT

If their previous answer was $388:

You selected $388. That's not quite right.

You probably got this because you thought you'd get 32 times the interest of 9% on your $100, which is $9.

But, starting from the second year, you also get interest on the interest you earned!

Here's how: You do start out with $100. In the first year, you get 9% interest. That's $9. You start the second year with $109 in your account. Your interest in the second year is 9% of $109, which is MORE than $9. In fact, you'll get 9% of $109, which is $9.80.

Please watch the video again, so you'll understand how compound interest works.

BACK NEXT

If their previous answer was $400:

You selected $400. That's not quite right.

In this question, the $100 are invested for 32 years, not just for 16 years, as in the example above.

Please give it another try.

BACK NEXT

If their previous answer was $600:

You selected $600. That's not quite right.

You probably remembered from the example above that at 9%, an investment doubles in 8 years.

Thus, the $100 double to $200 after 8 years.

These $200 then double to $400 in the next 8 years. (That is, until year 16).

In the next 8 years, from year 16 to year 24, these $400 double to $800!

Then, in the next 8 years, from year 24 to year 32, it will double again.

Please give it another try.

BACK NEXT

If their previous answer was $800:

You selected $800. That's not quite right.

You probably remembered from the example above that at 9%, an investment doubles in 8 years.

Thus, the $100 double to $200 after 8 years.

These $200 then double to $400 in the next 8 years. (That is, until year 16).

In the next 8 years, from year 16 to year 24, these $400 double to $800!

Then, in the next 8 years, from year 24 to year 32, it will double again.

Please give it another try.

BACK NEXT

If their previous answer was $1200:

You selected $1200. That's not quite right.

You probably remembered from the example above that at 9%, an investment doubles in 8 years.

Thus, the $100 double to $200 after 8 years.

These $200 then double to $400 in the next 8 years. (That is, until year 16).

In the next 8 years, from year 16 to year 24, these $400 double to $800!

Then, in the next 8 years, from year 24 to year 32, it will double again.

Please give it another try.

BACK NEXT

Re-attempt the question:

Please try again:

$100 is invested at 9% for 32 years, compounded yearly. How much will be in the account after these 32 years?

- ◯ $100
- ◯ $200
- ◯ $388
- ◯ $400
- ◯ $600
- ◯ $800
- ◯ $1200
- ◯ $1600

BACK NEXT

If the answer is correct in the second time:

This is correct!

Please click next to move on the next part of the video.

BACK NEXT

If the answer is incorrect in the second trial:

Hmm, that's still not quite right.

But let's move to the next part of the video.

BACK NEXT

The next button will appear automatically when the video ends (after time equal to the duration of the video passes.).

You can stop the video by clicking on it once and make it full screen by clicking on it twice.

If you reload the page, you will again need to wait for the next button. So please do not close your web browser or reload the page unless it is necessary.

Education Intervention, part 3: https://youtu.be/kjPYqcZNzPI

Practice Questions at the end of the Intervention

Thanks for watching this video!

We'll now ask you to solve a bunch of problems on your own. We'll first walk you through in steps, and then it's up to you to find the right steps.

These questions are still a part of the education. They don't count for money, but you need to get them right so you can continue with the survey.

BACK NEXT

Question 1(a)

You invest $50 at 8%. Eventually, we want to know how much will be in your account after 27 years. But we'll get there in three easy steps.

1. How long does it take for the money to double at 8%?
2. How many times does it double in 27 years?
3. Hence, how much will be in the account after it doubles that many times?

So let's start with the first one of these.

How many years does it take for this investment to double?

BACK NEXT

If the answer for part(a) is incorrect in the first trial:

Your answer isn't quite correct. Remember: The rule of 72 says

percentage interest rate X number of years it takes for the investment to double = 72

Please try again: You invest $50 at 8%. How many years does it take for this investment to double?

BACK NEXT

If the answer for part(a) is incorrect in the second trial:

That's still not quite correct.

Here's how you can do it correctly:

The rule of 72 says that

percentage interest rate *times* the number of years it takes for the investment to double = 72

or, in mathematical notation,

$$X \times Y = 72$$

In this problem, the percentage interest rate is 8%. Hence you just need to know: 8 times *what* equals 72?

That's how long it takes for the investment to double!

Enter your answer below.

BACK NEXT

If the answer for part(a) is correct in the first trial or later trials:

Great, you've got it!

Question 1(b)

We're still looking at that $50 invested at 8%. As you've figured out, at 8%, the investment doubles in 9 years.

Remember the three steps?

1. How long does it take for the money to double at 8%?
2. How many times does it double in 27 years?
3. Hence, how much will be in the account after it doubles that many times?

We now tackle the second step:

How many times does this investment double over the course of 27 years?

- ◯ once
- ◯ twice
- ◯ three times
- ◯ four times
- ◯ five times
- ◯ six times
- ◯ seven times
- ◯ eight times
- ◯ nine times
- ◯ ten times

If the answer for part(b) is incorrect in the first trial:

Unfortunately, that's not quite right.

As you've figured out, the investment doubles in 9 years. It doubles in every 9 years over the course of 27 years!

Hence, 9 times *what* equals 27?

The answer to this question tells you how many times the investment doubles!

Please choose one of the answers below.

- ◯ once
- ◯ twice
- ◯ three times
- ◯ four times
- ◯ five times
- ◯ six times
- ◯ seven times
- ◯ eight times
- ◯ nine times
- ◯ ten times

BACK NEXT

If the answer for part(b) is correct in the first trial or later trials:

Nice job!

Now to the last one of the three steps.

1. How long does it take for the money to double at 8%?
2. How many times does it double in 27 years?
3. Hence, how much will be in the account after it doubles that many times?

You figured out that over the course of 27 years, your $50, invested at 8% double three times.

Hence, how much will be in your account after 27 years?

- ◯ $50
- ◯ $100
- ◯ $150
- ◯ $200
- ◯ $250
- ◯ $300
- ◯ $350
- ◯ $400
- ◯ $450
- ◯ $500
- ◯ $600
- ◯ $700
- ◯ $800

If the answer for part(c) is incorrect in the first trial:

Oops, that is not quite right.

In the first 9 years, your investment doubles by $50 and is then worth $100. In the second 9 years, these entire $100 double again. So after the second 9 years (that is after 18 years), you have $200.

So, how much will you have after 27 years?

- ◯ $50
- ◯ $100
- ◯ $150
- ◯ $200
- ◯ $250
- ◯ $300
- ◯ $350
- ◯ $400
- ◯ $450
- ◯ $500
- ◯ $600
- ◯ $700
- ◯ $800

BACK NEXT

If the answer for part(c) is correct in the first trial or later trials:

Awesome job!

Now it's up to you to go through the steps in the right order.

Let's try this example:

Question 2

You invest $100 at 6%. How much will be in your account after 24 years?

- ◯ $100
- ◯ $106
- ◯ $148
- ◯ $200
- ◯ $288
- ◯ $300
- ◯ $306
- ◯ $400
- ◯ $406
- ◯ $500
- ◯ $506
- ◯ $600
- ◯ $606

If the answer for Question 2 is incorrect in the first trial:

Oops, that's not quite right. Remember the three steps for using the rule of 72:

1. How long does it take for the money to double?
2. How many times will it double over the years?
3. Hence, how much will be in the account after it doubles that many times?

Give it another shot:

Question 2

You invest $100 at 6%. How much will be in your account after 24 years?

- ◯ $100
- ◯ $106
- ◯ $148
- ◯ $200
- ◯ $288
- ◯ $300
- ◯ $306
- ◯ $400
- ◯ $406
- ◯ $500
- ◯ $506
- ◯ $600
- ◯ $606

If the answer for Question 2 is correct in the first trial or later trials:

Great! Thanks for paying attention to this education module. Before moving forward, we would like to ask you a question about the education module. Your answer to this question will not affect your payments from this study.

BACK NEXT

Post Education Intervention Question

Great! Thanks for paying attention to this education module. Before moving forward, we would like to ask you a question about the education module. Your answer to this question will not affect your payments from this study.

BACK NEXT

Do you feel confident about your ability to correctly use the Rule of 72?

- ◯ I have never heard of the Rule of 72
- ◯ No, not at all (but I've heard of that rule)
- ◯ No, I'd probably get it wrong more often than not
- ◯ Yes, I'd probably get it right more often than not
- ◯ Yes, I'd usually get it right

BACK NEXT

All Subjects

Great! Thanks for paying attention to this video.

Next, you will start Part 2 of the study.

You will now fill in a number of decision lists that are similar to those in PART 1 of the study.

This part of the study consists of **15 decision tasks**, in each of which you will see 2 decision lists.

In total, there are **42 decision tasks** in this study.

REMEMBER!
At the end of the study, the computer will randomly select **one of the 42 decision tasks** and one decision you made in that task for payment. Each line is a separate decision that may be randomly selected for payment. **Hence, you should make every decision as if it is the one that counts, because it might be!**

BACK NEXT

Decision Round **1** of **15** in PART 2.

Decision Task **19**

Please choose, for each line, the option you genuinely prefer.

If, on the line selected for real payment, you choose the option on the LEFT, **you will get the specified amount today**.

If, on the line selected for real payment, you choose the option on the RIGHT, **you will get 24 tokens in 48 days.**

---

	you will get the specified amount on the left today.	you will get 24 tokens in 48 days.
0 tokens	○	○
10 tokens	○	○
20 tokens	○	○
30 tokens	○	○
40 tokens	○	○
50 tokens	○	○
60 tokens	○	○
70 tokens	○	○
80 tokens	○	○
90 tokens	○	○
100 tokens	○	○

BACK NEXT

Subjects face fourteen more decision problems in Part 2. The decision problems presented in the same format. The decision problem shown here serves as an example, and it is not necessarily the first decision problem a subject would encounter due to the randomization.

Part 3 (labeled as Stage 2 in the main text)

Please pay close attention to the instructions that follow.

The next button will appear automatically when the video ends (after time equal to the duration of the video passes.).

You can stop the video by clicking on it once and make it full screen by clicking on it twice.

If you reload the page, you will again need to wait for the next button. So please do not close your web browser or reload the page unless it is necessary.

The subject next watches a video in which B.D. Bernheim reads the following instructions, displayed on screen.

PART 3
(3 of 3 of this study)

PLEASE READ THESE INSTRUCTIONS CAREFULLY

We will now distribute six discussion sheets to each of you. Each sheet contains **one decision problem**. For some of you, these decision problems are identical to those you've already made.

You will discuss these decisions with the person next to you. We call this person your *partner*. Importantly, your partner might have watched a different video than you.

You can discuss with your partner as long as you like. We recommend discussing for 15 minutes. You are welcome to take more or less time if you want to.

After the discussion, you will go back to your terminal, and make another 18 decisions. Hence, there is substantial chance that your payment from this study will be determined by one of the decisions that you will make *after this discussion.*

Some of the decision tasks in PART 3 might be identical to decision problems you've discussed with your partner. You can identify these decisions by their numbers.

You are free to take notes and write on the discussion sheets, but you are not required to do so. You can also use them to communicate with your partner if you wish. These sheets are provided to help you with the decisions you will make in the remainder of this study. You will be able to look at these sheets in the remainder of this study if you wish.

The subject next watches a video in which B.D. Bernheim reads the following instructions, displayed on screen.

PART 3
(3 of 3 of this study)

PLEASE READ THESE INSTRUCTIONS CAREFULLY

We will now distribute decision sheets to you. Each sheet contains **two decision problems**. For some of you, these decision problems are identical to those you've already made.

You will work out how you would decide on these problems on your own. You can think on these decision problems as long as you like. We recommend working for 15 minutes. You are welcome to take more or less time if you want to.

After this exercise, you will go back to your computer, and make another 18 decisions. Hence, there is substantial chance that your payment from this study will be determined by one of the decisions that you will make in the next part of the experiment.

Some of the decision tasks in PART 3 might be identical to decision problems you're about to work on. You can identify these decisions by their numbers.

You are free to take notes and write on the decision sheets, but you are not required to do so. These sheets are provided to help you with the decisions you will make in the remainder of this study. You will be able to look at these sheets in the remainder of this study if you wish.

Next, you will answer some understanding questions.

The purpose of the following questions are to make sure that you understand the instructions. If you do NOT correctly answer them, then you will be re-directed to answer them again.

BACK NEXT

Which of the following statements is true?

- ● You are allowed to take notes on decision sheets and you will keep these sheets until the end of the study.
- ○ You are not allowed to take notes on decision sheets and they will be collected immediately before Part 3.
- ○ You are allowed to take notes on decision sheets and they will be collected immediately before Part 3.

BACK NEXT

Which of the following statements is true?

The decision tasks in PART 3

- ○ will all be new.
- ● might all be new or a mixture of new decision problems and the decision problems I am about to work on.
- ○ will all be the same with the decision problems I am about to work on.
- ○ will be a mixture of new decision problems and the decision problems I am about to work on.

BACK NEXT

Which of the following statements is true?

If one of the decision tasks in PART 3 is identical to the one you are about to work on,

- ○ You must make a different choice than the choice in the problem you are about to work on
- ● You can make the same choice with or a different choice than the choice in the problem you are about to work on.
- ○ You must make the same choice with the choice in the problem you are about to work on.

BACK NEXT

Solitary Treatment

Please raise your hand to notify the experimenter that you are ready for the workout!

Remember the rules of the study:

- Please do not use cell phones or other electronic devices.
- Please do not browse the internet or check emails.

Please enter the code that the experimenter provides to continue to the workout:

BACK NEXT

To continue, please raise your hand, wait for the experimenter and enter the code the experimenter provides you!

BACK NEXT

To prepare for the discussion, please write down

---

at least 2 questions that you may want to ask your partner (about the video or decision problems).

---

at least 2 pieces of advice that you may want to give your partner.

BACK NEXT

Please raise your hand to notify the experimenter that you are ready for the discussion. You might need to wait until your partner is ready for the discussion.

Note the following things:

- Please move to the next seat to start the discussion when your partner is ready.
- You can start the discussion by introducing yourself to your partner.
- Please only communicate with your partner, and not with anyone else.
- You will NOT be allowed to talk or discuss with your partner after you end the discussion.
- Audio recording may occur during the discussion.

Remember the rules of the study:

- Please do not use cell phones or other electronic devices.
- Please do not browse the internet or check emails.

Please enter the token number of the participant who is your discussion partner in this study.

Please enter the code to continue to discussion

BACK NEXT

To end the discussion, please raise your hand and wait for the experimenter!

To continue, please enter the code the experimenter provides you!

BACK NEXT

All Subjects

Next, you will start Part 3 of the study.

This part of the study consists of **18 decision tasks**, in each of which you will see 2 decision lists.

In total, there are **42 decision tasks** in this study.

BACK NEXT

REMEMBER!

At the end of the study, the computer will randomly select **one of the 42 decision tasks** and one decision you made in that task for payment. Each line is a separate decision that may be randomly selected for payment. **Hence, you should make every decision as if it is the one that counts, because it might be!**

BACK NEXT

Decision Round **1** of **18** in PART 3.

Decision Task **32**

Please choose, for each line, the option you genuinely prefer.

If you choose the option on the LEFT, **you will get the specified amount today**.

If you choose the option on the RIGHT, **we will invest 28 tokens in an account with 1% interest rate per day. Interest is compounded daily. We will pay you the proceeds in 72 days.**

	you will get the specified amount on the left today.	we will invest 28 tokens in an account with 1% interest rate per day. Interest is compounded daily. We will pay you the proceeds in 72 days.
0 tokens	○	○
10 tokens	○	○
20 tokens	○	○
30 tokens	○	○
40 tokens	○	○
50 tokens	○	○
60 tokens	○	○
70 tokens	○	○
80 tokens	○	○
90 tokens	○	○
100 tokens	○	○

BACK NEXT

Subjects face seventeen more decision problems in Part 3. The decision problems presented in the same format. The decision problem shown here serves as an example, and it is not necessarily the first decision problem a subject would encounter due to the randomization.

Solitary Treatment

Next, you will discuss the problems on the decision sheets with your partner.

Please raise your hand to notify the experimenter that you are ready for the discussion. You might need to wait until your partner is ready for the discussion.

Note the following things:

- Please move to the next seat to start the discussion when your partner is ready.
- You can start the discussion by introducing yourself to your partner.
- Please only communicate with your partner, and not with anyone else.
- You will NOT be allowed to talk or discuss with your partner after you end the discussion.
- Audio recording may occur during the discussion.

Click to the next button right before you start the discussion.

BACK NEXT

To end the discussion, please raise your hand and wait for the experimenter!

To continue, please enter the code the experimenter provides you!

BACK NEXT

All Subjects

Please answer the following questions truthfully.

Your answers to these questions **do not affect your payment** for this study.

BACK NEXT

What is your gender?

- ◯ Decline to answer
- ◯ Female
- ◯ Male

What is your age?

What is your ethinicity?

- ◯ Mixed
- ◯ Chinese
- ◯ White
- ◯ Other
- ◯ Black
- ◯ Asian

Is English your native language?

- ◯ Yes
- ◯ No

What is your current status at the University of Birmingham?

- ◯ 1st year student
- ◯ 2nd year student
- ◯ 3rd year student
- ◯ 4th year student
- ◯ Master's student
- ◯ PhD student
- ◯ Other

Which of the following best describes the area you live in?

- ◯ Urban
- ◯ Suburban
- ◯ Rural

BACK NEXT

Are you an international student?

- ◯ Yes
- ◯ No

Please list the first major you declared, or which major you think you are most likely to declare. If you do not think any major is more likely than the others, just select undecided.

Please indicate your current grade.

While attending this university, are you receiving financial assistance from any of the options below?

Please check all that apply and write down the annual amount of financial assistance you are receiving from each of these options.

- ☐ No financial assistance
- ☐ Parents / Relatives/ Friends
- ☐ Grants / Scholarships / Fellowships
- ☐ Government Loans
- ☐ Private Student Loans
- ☐ Other

NEXT

How many credit cards do you have?

- ◯ No credit cards
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 or more
- ◯ Do not know

If you have credit cards, have you used a cash advance using any of your credit cards during the last 12 months (i.e. did you use your credit card for withdrawing cash which is not yours)?

- ◯ Yes
- ◯ No
- ◯ Not Applicable

If you have credit cards, how much money did you usually roll over in credit card debt during the last 12 months (i.e. instead of paying your credit card debt in full, do you pay some part of it later)?

- ◯ None, I paid my credit card debt in full.
- ◯ Less than £100
- ◯ £100-£499
- ◯ £500-£1000
- ◯ £1000-£2500
- ◯ More than £2500
- ◯ Not Applicable

Including yourself, how many people currently live in your household?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7 or more

What is your household's approximate annual income, including wages, tips, investment income, public assistance, income from retirement plans, etc.?

- ◯ Less than £10,000
- ◯ £10,000-£24,999
- ◯ £25,000-£34,999
- ◯ £35,000-£49,999
- ◯ £50,000-£74,999
- ◯ £75,000-£100,000
- ◯ More than £100,000
- ◯ Do not know
- ◯ Prefer not to say

BACK NEXT

Please answer the following questions truthfully.

Your answers to these questions **do not affect your payment** for this study.

BACK NEXT

Were the decisions you made in part 3 of this study influenced by the workout?

No, not at all ○ ○ ○ ○ ○ Yes, a lot

Do you feel that the workout helped you make better decisions in part 3 of this study?

No, not at all ○ ○ ○ ○ ○ Yes, a lot

BACK NEXT

Do you feel you had a firm grasp of how to make good decisions in this study?

No, not at all ○ ○ ○ ○ ○ ○ ○ Yes, I'm very confident that I made good decisions

Do you feel your partner had a firm grasp of how to make good decisions in this study?

No, not at all ○ ○ ○ ○ ○ ○ ○ Yes, he / she seemed perfectly competent

Who do you feel had a better grasp of how to make good decisions in this study?

Definitely myself ○ ○ ○ ○ ○ ○ ○ Definitely my partner

BACK NEXT

Have you heard off the Rule of 72 before you attend this study?

- ◯ Yes
- ◯ No

Have you heard other students talk about this study?

- ◯ Yes
- ◯ No

Have you prepared for this study?

- ◯ Yes
- ◯ No

If you have prepared for this study, what did you do?

- ☐ I looked up the compound interest formula
- ☐ I did some practice calculations of the compound interest formula
- ☐ I prepared in some other way. (Please tell us how!)

Do you have any suggestions/comments for us about this study?

BACK NEXT

Have you thought that it is important to talk about the Rule of 72 with your partner?

- ◯ Yes
- ◯ No
- ◯ I have never heard of the Rule of 72

NEXT

Did you attempt to teach the Rule of 72 to your partner?

- ◯ Yes
- ◯ No

Do you think that you have succeeded in teaching the rule of 72 to your partner?

No, not at all ◯ ◯ ◯ ◯ ◯ ◯ ◯ Yes, absolutely

Sometimes in this part of the experiment, you were given a choice such as "We will invest X tokens in an account with Y% interest rate per day. Interest is compounded daily. We will pay you the proceeds in Z days." When deciding about this kind of choices, did you use the rule of 72?

- ◯ Yes
- ◯ No

Do you feel confident about your ability to correctly use the Rule of 72?

- ◯ No, not at all (but I've heard of that rule)
- ◯ No, I'd probably get it wrong more often than not
- ◯ Yes, I'd probably get it right more often than not
- ◯ Yes, I'd usually get it right

Receivers in the Communication and Indirect Education Treatments

Did your partner attempt to teach you a simple rule about interest compounding?

- ◯ Yes, my partner attempted to teach me a simple rule about interest compounding.
- ◯ No, my partner didn't attempt to teach me any simple rules about interest compounding.

NEXT

You stated that your partner attempted to teach you a simple rule about interest compounding. Please pick one of the choices below and enter it's name.

- ◯ The rule of _____
- ◯ I don't know its name, but I know the rule states that the interest rate times the doubling period equals _____
- ◯ I don't know its name.

Do you think that your partner have succeeded in teaching you this rule?

No, not at all ◯ ◯ ◯ ◯ ◯ ◯ ◯ Yes, absolutely

Sometimes in this part of the experiment, you were given a choice such as "We will invest X tokens in an account with Y% interest rate per day. Interest is compounded daily. We will pay you the proceeds in Z days." When deciding about this kind of choices, did you use the rule that your partner taught you?

- ◯ Yes
- ◯ No

Do you feel confident about your ability to correctly use the rule that your partner taught you?

- ◯ No, not at all
- ◯ No, I'd probably get it wrong more often than not
- ◯ Yes, I'd probably get it right more often than not
- ◯ Yes, I'd usually get it right

All Subjects

Lastly, would you like to be contacted in the future for an online follow-up study (If you choose "Yes" here, it doesn't mean you have to participate in this study. You can always say "No" when you are contacted.)?

- ◯ Yes
- ◯ No

BACK NEXT

The numbers shown below serves as an example. Subjects' payoffs vary depending on the choices they have made during the experiment and the randomization.

This is the end of this study.

Thank you very much for participation.

The computer has randomly determined that you will get paid according to Decision Round 15 in PART 2 of this study.

According to the decision you made in that question, your payment for this study is the following: we will invest 3 tokens in an account with 3% interest rate per day. Interest is compounded daily. We will pay you the proceeds in 72 days.

Remember! Each token is worth 20 pence.

BACK NEXT

Thank you for your participation in this experiment.

- You will receive payment via amazon.co.uk gift card as promised.
- Please feel free to ask us any questions.
- **Please leave all materials on your desk.**
- You are welcome to tell your friends that this study is an opportunity to earn money.
- **Please DO NOT discuss the CONTENTS of this study** with anyone.

PLEASE RAISE YOUR HAND!

BACK NEXT

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