

# Who knows it is a game? On strategic awareness and cognitive ability (Dietmar Fehr, WZB Berlin, and Steffen Huck, WZB Berlin & UCL)

## Online Appendix

### A) Experimental Procedures

**Table A1: Subject characteristics**

Variable	N	Mean	SD
Female	240	0.40	0.49
Age	240	24.41	4.83
Major: engineering	240	0.70	0.46
# of terms enrolled (semesters)	240	6.02	4.41
Reading BCG instructions (in seconds)	240	92.83	38.70

The beauty-contest game (BCG) was conducted alongside other experimental modules (for more details, see Fehr 2013). The sequence of these modules was as follows. Subjects participated first in a repeated minimum-effort game (ten rounds) and completed the cognitive reflection test (CRT) – see Appendix C – as well as questions about how many other subjects answered each of the CRT questions correctly afterwards. Then they were informed about the BCG. They received instructions for the BCG on the computer screen and they learned that they were matched into new groups of six. There was a break of 3-5 minutes between the CRT and BCG for reading the instructions, questions and the setup of the program. After they played the BCG, subjects had to complete a risk elicitation task and had to answer several questions regarding hypothetical sooner or later payments. Finally, they completed a five-minute 20-question variant of the Wonderlic Personnel Test (WPT). Subjects were aware that a session would consist of several different modules, but they had no a priori information on the nature of these modules. There was no feedback about outcomes between modules, but subjects received feedback about their payoff after each of ten rounds in the minimum-effort game. Although only 5 of 10 rounds of the minimum-effort game were selected randomly for payment at the end of a session, subjects could infer the approximate range of their payment from their feedback after each round. However, we do not find evidence that subjects' payoffs in the minimum-effort game affected their subsequent play in the BCG ( $p > 0.87$ , two-sided t-test, standard errors clustered on the group level) and also not their performance in the CRT ( $p > 0.53$ , two-sided t-test, standard errors clustered on the group level) or WPT ( $p > 0.54$ , two-sided t-test, standard errors clustered on the group level).

## **B) Instructions (Translation from German)**

Task:

You will be randomly matched into a group with 5 other participants. The group will not be the same as in the previous part.

Your task is to choose a number between 0 and 100. The number 0 and 100 are also possible and the number you choose can have up to two decimals.

Payoff:

First, we will calculate a target number. The participant in a group, who is closest to this target number, will get 5 Euro. All other participants in a group will get nothing. If two or more participants in a group are equally close to the target number, the prize will be shared among those participants.

How we determine the target number:

First, we will calculate the average of all chosen numbers in your group. That means that we add up all numbers and then divide the sum by six. Then we multiply this average by  $2/3$  (two-thirds), that is the target number =  $2/3 \times$  the average of chosen numbers in your group.

Here is an example:

Suppose the other five participants in your group all choose 100 and you will choose 99. In this case, the average of the chosen numbers in your group is 99.83  $[(5 \times 100 + 99)/6]$  and thus the target number will be 66,55  $[=2/3 \times 99,83]$ . Therefore your chosen number will be closest to the target number and you would get the prize of 5 Euro.

If you have any questions, please raise your hand and the experimenter will clarify your question in private.

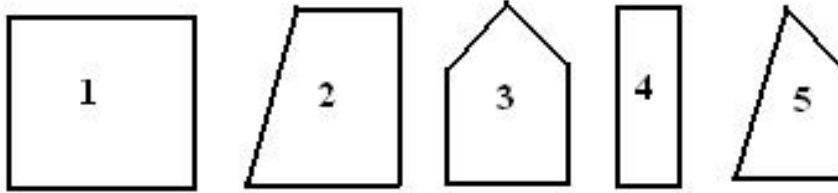
**C) CRT questions:**

1. **BBQ:** A bat and a ball cost 1.10 Euro in total. The bat costs 1.00 Euro more than the ball. How much does the ball cost?
2. **Widgets:** If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?
3. **Lake:** 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?

**D) Wonderlic questions:**

1. Consider the following sequence of numbers. Which number comes next?  
27, 9, 3, 1,  $1/3$ ,  $1/9$ , ?
2. Assume the first 2 statements are true. Is the final one: true, false, not certain?  
The boys play soccer. All soccer players wear white shoes. The boy wears white shoes.
3. Paper sells for 21 cents per 100 grams. What will 500 grams cost?
4. How many of the five pairs of items listed below are exact duplicates? Nieman, K.M. Neiman, K.M.; Thomas, G.K. Thomas, C.K.; Hoff, J.P. Hoff, J.P.; Pino, L.R. Pina, L.R.; Warner, T.S. Wanner, T.S.
5. A basketball player averaged 20 points a game over the course of six games. His scores in five of those games were 23, 18, 16, 24, and 27. How many points did he score in the sixth game?
6. A train travels 6 meters in  $1/5$  second. At this same speed, how many meters will it travel in three seconds?
7. When rope is selling at \$.10 for 30 centimeters. How many centimeters can you buy for sixty cents?
8. The eight month of the year is: October, February, June, September, May, August.
9. Which number in the following group of numbers represents the smallest amount?  
6, 0.25, 0.7, 1,  $1/3$ , 9.
10. In printing an article of 48,000 words, a printer decides to use two sizes of type. Using the larger type, a printed page contains 1,800 words. Using smaller type, a page contains 2,400 words. The article is allotted 21 full pages in a magazine. How many pages must be in smaller type?
11. Three individuals form a partnership and agree to divide the profits equally. X invests €9,000, Y invests €7,000, Z invests €4,000. If the profits are €4,800, how much less does X receive than if the profits were divided in proportion to the amount invested?
12. Assume the first two statements are true. Is the final one: true, false or not certain?  
Ben greeted Elke. Elke greeted Bruno. Ben did not greet Bruno.
13. A boy is 16 years old and his sister is twice as old. When the boy is 22 years old, what will be the age of his sister?

14. One of the numbered figures in the following drawing is most different from the others.  
What is the number in that figure?



15. The hours of daylight and darkness in SEPTEMBER are nearest equal to the hours of daylight and darkness in:

June, March, May, November

16. Complete the following sequence of numbers:

32, 31, 29, 26, 22, ?

17. Which of the following numbers does not fit to the group?

9	17	211
10	45	63
19	3	1025
23	189	3017

18. Which letter is missing?

E	B	J
A	A	A
F	C	R
B	B	D
C	A	C
D	B	?

19. Which of the following months has the most snow in a typical city of the southern hemisphere? January, February, December, April, August, November

20. The words flammable and Inflammable have the i) same meaning, ii) opposite meaning iii) are unrelated.