Pre-analysis plan: Follow-up experiment for "Learning about one's self"

Yves Le Yaouanq[1]   Peter Schwardmann[2]

1   Introduction

This short document lays out our plan for a follow-up experiment. We will describe the experiment by highlighting differences from the first design. This document should therefore be read in tandem with the design section of the working paper. The purpose of the follow-up experiment is twofold. First, we seek to experimentally rule out that subjects learn about their effort costs in the experimental task and thereby isolate learning about self-control. Second, we seek to investigate whether the non-belief in the propensity to learn extends to a domain where learning can only be about self-control and, if it does, whether the apparent bias is sensitive to how priors are elicited.

The new design follows the old design closely. At dates 1 and 3 we will elicit subjects' commitment preferences and beliefs over all future effort choices. At dates 2 and 4 subjects may have to opportunity to work on the sliders task. The key difference from the original design is that, at dates 2 and 4, subjects make their effort decisions by committing to the amount of effort they want to exert just before the task begins. Their choice is then implemented with 5 percent probability. This means that, at date 2, 95 percent of subjects will have made a decision, but will not have gained experience with the task. We can then study these subjects' updating as we did in the first experiment.

For half of the subjects at date 1, we will once again elicit the complete prior distribution over effort choices as we have done in the first experiment. The other half will first state their beliefs over date 2 effort and then state their beliefs over date 4 effort in an elicitation

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[1]Department of Economics, University of Munich (LMU), Ludwigstr. 28, D-80539 Munich, Germany; email: yves.leyaouanq@econ.lmu.de.

[2]Department of Economics, University of Munich (LMU), Ludwigstr. 28, D-80539 Munich, Germany; email: peter.schwardmann@econ.lmu.de.

that explicitly asks them to condition their choice on different realizations of date 2 effort.

Below we provide a short summary of the experimental design.

2   Experimental design

The experiment will feature a slider task. Subjects can complete up to 40 screens of 40 sliders each. Payment is a function of the number of screens a subject completes, with decreasing marginal benefit. Subjects decide how many screens they complete. The timing of the experiment is as follows.

- t=0 (in the lab)
    - Detailed instructions about the experiment
    - Familiarization with the task, i.e. subjects have to complete 10 screens.
    - Instructions on the Becker-DeGroot-Marschak (BDM) mechanism used to elicit beliefs.

- t=1(online):
    - Commitment choice: subjects decide on action at t=2 and at t=4. Their choice is implemented with 5 percent probability
    - Belief elicitation about joint probability distribution over effort decisions at t=2 and t=4. Treatment varies whether beliefs about date 4 effort are elicited explicitly conditioning on date 2 effort.

- t=2 (online):
    - Previously uncommitted subjects commit to a number of screens they want to complete on the day (implemented with 5 percent probability)

- t=3 (online):
    - Commitment choice: previously non-committed subjects decide on action at t=4 and their choice is implemented with 5 percent probability

2

– Belief elicitation about effort decision at t=4.

- t=4 (online):

    – Previously uncommitted subjects commit to a number of screens they want to complete on the day (implemented with 5 percent probability)

    – Payoff announcement

Belief elicitations at $t = 2$ and $t = 4$ take place two days after the familiarization with and potential completion of the tasks respectively. This is done in order to avoid that tired subjects state beliefs that are affected by projection bias. Beliefs are about the probability of committing to completing more than 20 screens in the task(s).

Incentives in belief elicitation. Suppose a subject states a subjective probability about an event of X percent. Then the BDM mechanism will randomly select an integer Y between 0 and 100. If $X < Y$, then the subject receives a prize (of 3 euros) with probability Y. If $X \geq Y$, then the subject receives a prize if the event occurs.

Show-up fee and incentivization of task A subject receives 25 euros for completing the entire experiment in addition to the payoffs from the belief elicitations and the tasks.

Randomization of dates. Relative to the starting date at $t = 0$, the dates of the task will be randomized at the individual level. This is done to avoid correlated shocks to subject's private information about task completion. $t = 0$ will take place on a Monday or Tuesday, $t = 1$ takes place 2 days after $t = 0$. $t = 2$ takes place the next week on Monday, Tuesday, or Wednesday, with equal probabilities. $t = 3$ will happen two days after the realized $t = 2$. $t = 4$ will happen the week after $t = 2$ on Monday, Tuesday and Wednesday with equal probabilities and independently from the realization of $t = 2$. The exact dates are realized before the experiment begins and communicated to the subjects during the initial session in the lab ($t = 0$).

3 Sample size and analysis

We aim to recruit 240 subjects and our experiments will be run in November of 2019. The statistical analysis will follow that of the working paper.

In order to study learning, it needs to be the case that our subjects exhibit both present bias and naivete with respect to both work dates. If this is not the case, we will not be able to integrate this data collection into the current project.