

Orientation

Olexandr Nikolaychuk

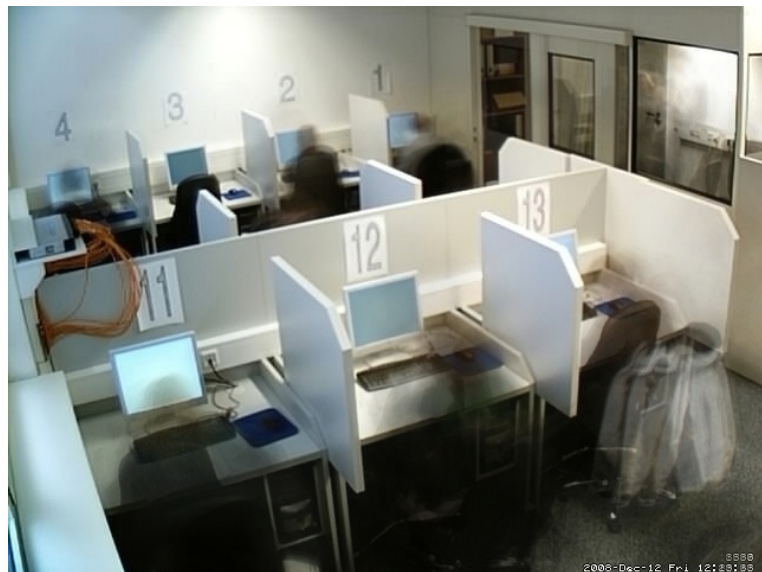
MW24.2 Experimental Economics (SS2022)

Lecture plan

- ▶ What is an experiment?
 - * Participant perspective
 - * Researcher perspective

© Samuelson, L. (2005). Economic theory and experimental economics. *Journal of Economic Literature*, 43 (1), pp. 65–107 [sections 1–3]

Participant perspective



For the following task you will receive a small payoff. However, this payoff is not the same for every participant. You determine your own payoff by rolling your die as soon as you are asked to.

Your roll determines how much you receive. You can see the exact payoff from the following table. It will remain on the screen until you have reported your roll.

Report	1	2	3	4	5	6
Payoff	1	2	3	4	5	6

If you have any questions, please raise your hand.

For the following task you will receive a small payoff. However, this payoff is not the same for every participant. You determine your own payoff by rolling your die *three times* as soon as you are asked to.

Your *first* roll determines how much you receive. You can see the exact payoff from the following table. It will remain on the screen until you have reported your roll.

Report	1	2	3	4	5	6
Payoff	1	2	3	4	5	6

The second and third rolls only serve to make sure that the die is working properly. However, only the first roll counts.

If you have any questions, please raise your hand.

Researcher perspective

Experiment is a systematic and scientific approach to research in which the researcher manipulates one or more variables, and controls and measures any changes in other variables

Do people lie more when justifications can be constructed?

(?) Observing desired counterfactual information modifies ethical perceptions and subsequent behavior

⇒ Manipulate *counterfactual information* available to the participants [treatment variable]

▶ control group: one die roll

▶ treatment group: three die rolls; only the first counts

(!) Measure the effect of the manipulation on the resulting *distribution of reports* [dependent variable]

© Shalvi, S., Eldar, O., Bereby-Meyer, Y., 2012. Honesty requires time (and lack of justifications). *Psychological Science* 23 (10), 1264–1270

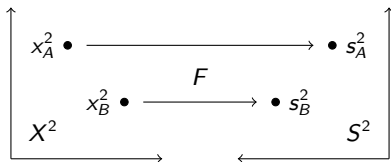
Model of environment

$$F : X^\infty \rightarrow S^\infty \Leftrightarrow F(x^\infty) = s^\infty$$

$x^\infty \in X^\infty$ \sim input (i.e., situation of interest)

$s^\infty \in S^\infty$ \sim output

F \sim incorporates info from element in X^∞ to map it to element in S^∞



(!) Ideally, one would like to know F precisely and then work with it directly but neither is feasible

\Rightarrow Need theory and experiments to be smart about F

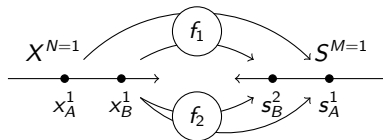
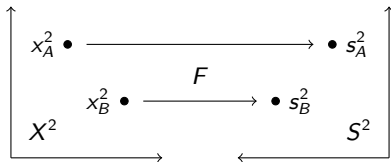
Model of theory

$$f : X^N \rightarrow S^M$$

$$f : X^N \rightarrow \Delta S^M$$

$$f : X^N \rightarrow \Delta\Delta S^M$$

where $\Delta S^M \sim$ set of probability measures over S^M etc.



Model of experiment

$x^N \in X^N \sim$ experimental design, specific realization of $x^\infty \in X^\infty$

\Rightarrow by conducting an experiment, while controlling for N input dimensions and registering M output dimensions, we inadvertently choose some x^∞ and observe $F^M(x^\infty)$ as the result

