

Written Exam at the Department of Economics Winter 2017-18

Science of Behaviour Change

Final Exam

December 18, 2017

(2-hour closed book exam)

Suggested answers

NB: If you fall ill during an examination at Peter Bangsvej, you must contact an invigilator in order to be registered as having fallen ill. In this connection, you must complete a form. Then you submit a blank exam paper and leave the examination. When you arrive home, you must contact your GP and submit a medical report to the Faculty of Social Sciences no later than seven (7) days from the date of the exam.

Question 1 aims to assess the following two learning objectives:

- 1. Review the most recent developments and theories of human decision-making from both Economics and Psychology.*
- 2. Analyze the tools of behavioral science and they will compare their effectiveness to change specific behaviors.*

Question 2 aims to assess the following two learning objectives:

- 1. Reflect on how experiments and randomized controlled trials work and why this methodology is critical for making inference about causal relationships.*
- 2. Debate and discuss critically several interventions that have been conducted to change people's behavior in the domain of energy efficiency, health and well-being, dishonesty, charitable giving, education and work performance.*

Question 3 aims to assess the following two learning objectives:

- 1. Examine (real-world) cases where people make decisions that are inconsistent with the assumptions of rational decision-making and they will identify the consequences of this irrational behavior for the society.*
- 2. Design experiments and develop policy intervention aiming at ameliorate societal well-being and improve people's life.*

Answer to Question 1:

- a) An incentive is something that motivates an individual to perform a specific action. An incentive can be monetary (a fine, a tax, a subsidy, etc.) but also non-monetary (a recognition, a trophy or a simple “thank you”).
- b) Monetary incentives have two kinds of effects: the standard direct price effect, which makes the incentivized behavior more attractive, and an indirect psychological effect. In some cases, the psychological effect works in an opposite direction to the price effect and can crowd out the incentivized behavior. We have seen that incentives may unintentionally give an individual “license” to engage in certain behavior. Or, incentives may not be psychologically painful/motivating enough (too little) to produce the desired behavior. In class, we have seen several examples of monetary incentives that failed to induce the desired behavior. For instance:
 - ✓ Gneezy U. & Rustichini A. (2000). A fine is a price.
In this study, run in collaboration with a daycare in Haifa (Israel), the researchers introduced a fine of 10 NIS (= 20 DKK) every time the parents were more than ten minutes late. The authors observed the number of parents who arrived late for 4 weeks. Then, they imposed the fine for 12 weeks. The introduction of the fine doubled the number of parents arriving late. In addition, when the fine was removed, the number of late arrival remains high.
 - ✓ Gneezy and Rustichini (2000) “Pay Enough or Don't Pay at All”
In this study, 180 high school students (16 y-o, in Israel) participated in a door-by-door collection of money for charity. They were randomly divided in three groups according

to the incentive they received to collect more money (a simple motivational speech; speech +1% of money collected; speech +10% of money collected). Results show that paying too little (1%, approx. 2 \$) is worse than not paying at all.

- ✓ Iajya et al. (2013). The effects of information, social and financial incentives on voluntary undirected blood donations

In this study 18.500 individuals (18-65 y-o) received flyers inviting them to donate blood (blood bank in the neighborhood). The flyer they received was accompanied by different incentives (a T-shirt, a mention in the local newspaper, a voucher for supermarket, etc.). However, only higher-valued monetary incentives motivated more donations.

- c) The introduction of a monetary incentive may change how a subject perceives a specific situation. For instance, offering incentives for collecting empty plastic bottles in a public park may signal that people that do that are doing it just for money, not because they care about the environment (*they are doing because they are “cheap”, not because they are good citizens*). Very often, incentives bring with them a “signal” and therefore agents who receive these incentives will update their beliefs about the task, their own type, or their assessment of their action.

Answer to Question 2

- a) In 2009 and 2010, a large national charity conducted a series of randomized direct mail appeals, allowing researchers to measure the impact of priming an individual's identity as either (i) a previous donor to charity or (ii) a member of a local community on the decision to donate and donation amount. In particular, the figure depicted in the question summarizes the result(s) of the manipulation “Identity as a Community Member” (experiment 2). For this experiment, the charity sent (randomly) one of four mailings to 41 104 prospective donors. All letters solicited donations to the charity's general activities and were identical except for the randomly assigned drive title:
 - “Annual Fund Drive”
 - “Winter 2009 Drive”
 - “Winter 2009 State State Drive” (where the state of the recipient's mailing address replaced State)
 - “Winter 2009 City Community Drive”(where the city of the recipient's mailing address replaced City)
- b) Figure 4 shows the probability of donation across all four conditions. The city community drive generated a significantly higher donation rate than each of the other experimental conditions (5.51% for city community drive condition versus 4.12% for state drive condition, 4.01% for annual drive condition, 3.82% for winter drive condition). Meanwhile, the probabilities of donation do not differ significantly in the other three experimental conditions. Therefore, priming a potential donor's identity as part of a city community generated a higher donation rate.
Moreover, this paper reports evidence that priming prospective donors' identity as part of a local community also affects the average donation. The average amount donated per mailing

in the city community drive condition is 4.8% larger than in the other three conditions collected per solicitation.

- c) Priming identity as a local community member was more effective for people in smaller communities, where community may play a larger role in individuals' identities. In fact, survey evidence suggests that people in smaller communities are more likely to treat being a member of a community as a substantive part of their identity. However, the average donation among those who donated in the city community drive was US\$44.79 compared to US\$53.04 in the other drives (a 13% decrease), indicating that the extra donations collected were relatively small.

Answer to Question 3:

This question has not a correct answer a priori. This question gives the student the possibility to show that he/she can use his/her competencies for solving practical problem.

Students should:

- a) define the context in which the intervention is going to happen (when, where and who is the target agent).
- b) briefly think through the behavior change and articulate the specific behavior that he/she wants to change as a result of the intervention (*a specific and measurable behavior*).
- c) map the decision making process: different stages that people go through; various frictions and possible bottlenecks.
- d) make a linkage between that map that he/she has just drawn, the process that he/she has just identified, and some of the concepts that we discussed in this course.
- e) describe the intervention in detail
- f) describe the design of an experiment that can test the intervention and present how to organize the data analysis.