Problems for the second seminar: Behavioral Economics

ECON4260 Behavioral Economics – Fall semester 2017.

Solutions to the problems will be presented at the second seminars. Please direct any question to Kjell Arne Brekke (Room ES1243, Tel 228 41169, E-mail: k.a.brekke@econ.uio.no)

Problem 1 *(Plott and Zeiler)*

Plott and Zeiler (2005) find that there are no endowment effect when sufficient controls for "misconceptions" are introduced. The four controls they invoke are

1. Incentive compatibility
2. Training
3. Paid practice
4. Anonymity

Explain what is meant by each of these controls and why they may influence the outcome of the experiment. Was paid practice important for the conclusion in their study?

Problem 2 *(Rabins theorem)*

An expected utility maximizer is indifferent, for any level of wealth, between accepting or declining a lottery that gives -100 Kroner with 40% probability and +100 kroner with 60% probability. We normalize the utility function to

$$u(W_0) = 0 \text{ and } u(W_0 - 100) = -1.$$

a) Compute $u(W_0 - 200)$, $u(W_0 + 100)$, and $u(W_0 + 200)$.

b) Use the number in a) to show that the person is also indifferent between accepting or declining the lottery played twice.

c) Show that $u(W) < 2$ for all W. (Difficult. You may use the equation $\sum_{t=1}^{\infty} a^t = a/(1-a)$.)

d) Use the result in c) (even if you do not solve c) to find the highest value of p such that a person will decline the following lottery no matter how large X is: Get -100 with probability p and win X with probability $1 - p$.

Now consider a person choosing acording to prospect theory with value function

$$v(x) = \begin{cases} x & \text{for} \quad x \geq 0 \\ 2.5x & \text{for} \quad x \leq 0 \end{cases}$$

e) Will the person decline or accept the lottery

f) Will the person decline or accept the lottery played twice, not watching.

g) Will the person decline or accept the lottery played twice, watching. What do you assume about the reference point in your answer?

Problem 3: (*Endowment)*

Papers by List and by Engelmann and Hollard find that experience with trade reduces the endowment effect.

a) Explain shortly the main result of each of these two papers.

b) Közegi and Rabin argues that the reference point is determined by expectations. Can this explain the results discussed in a), and if so, how?

Problem 4: (*Liberal paternalism)*

Thaler and Sunstein argues for the use of choice aritechture to make subjects choose what is good for them (paternalism) without coersion (liberalism). One example is default options, where liberalism is ensured as it is easy to opt out.

a) Java was for a long time an essential software on computers, required e.g. by bank services on the net. The program was also a sequrity risk so frequent updates were essential. Every time the program was updated there was a default option to also install an "Ask taskbar" to the web-browser. Many user installed the taskbar due to this default; they would not have actively chosen it. Is this default an example of liberal paternalism? In particular: 1) Is it liberal? 2) Is it paternalistic?

a) In many airlines it is possible to buy CO_2 compensation when you purchase a ticket. Usually the default option is not to choose the compensation, and consumers have to opt in. Would it be an example of liberal paternalism to change the default option to be the choice of compensation, and have customers to opt out if they do not want to buy compensation? In particular: 1) Is it liberal? 2) Is it paternalistic?

b) Each airline may choose the default. Do you think that the government should regulate this and make it mandatory to have compensation as the default?

Problem 5 *(Doing it now or later)*

Will not be discussed at the semianar, but in class. Please direct any questions concerning this problem to Geir B. Asheim
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You must perform an activity exactly once, and there are 4 periods in which to perform it. If you reach a period and has not yet performed the activity, then you must choose between "do it" or "wait". You cannot commit your future self in a given future period to perform the activity then. If you wait until period 4, then you must do it then.

If the activity is done in period t, then you incur cost $c_t \geq 0$ and receive reward $v_t \geq 0$.

$$\text{Reward schedule:} \quad \mathbf{v} = (v_1, v_2, v_3, v_4)$$
$$\text{Cost schedule:} \quad \mathbf{c} = (c_1, c_2, c_3, c_4)$$

Differentiate between two cases:

- *Immediate costs*: incur cost when you do it, receive reward after some delay.

- *Immediate rewards*: receive reward when you do it, incur cost after some delay.

Assume that you, in any period, put half weight on reward received or cost incurred in any future period, compared to if the reward is received or the cost is incurred in the current period, but the same (half) weight on reward received or cost incurred in different future periods. Hence, in period t your utility for "do it" in period $\tau \geq t$ is given as follows.

For immediate costs:

$$U^t = \begin{cases} \frac{1}{2}v_\tau - c_\tau & \text{if } \tau = t\,, \\ \frac{1}{2}v_\tau - \frac{1}{2}c_\tau & \text{if } \tau > t\,, \end{cases}$$

For immediate rewards:

$$U^t = \begin{cases} v_\tau - \frac{1}{2}c_\tau & \text{if } \tau = t\,, \\ \frac{1}{2}v_\tau - \frac{1}{2}c_\tau & \text{if } \tau > t\,, \end{cases}$$

Example with immediate costs. Suppose that you have to do an assignment one of the following four Saturdays. The assignment has to be done by the forth Saturday. The cost of doing the assignment is that you will not be able to see a movie being shown that Saturday. A mediocre movie is shown the first Saturday, a good movie is shown the second Saturday, a great movie is shown the third Saturday, and (best of all) a movie with your favorite actor/actress is shown the fourth Saturday. Hence, the reward and cost schedules are as follows:

$$\text{Reward schedule:} \quad \mathbf{v} = (0, 0, 0, 0)$$
$$\text{Cost schedule:} \quad \mathbf{c} = (3, 5, 8, 13)$$

Example with immediate rewards. Assume now instead that you have a coupon to see one movie for free one of the next four Saturdays, and that you cannot afford to pay for a second movie. The movies being shown are as in the previous example. Hence, the reward and cost schedules are as follows:

$$\text{Reward schedule:} \quad \mathbf{v} = (3, 5, 8, 13)$$
$$\text{Cost schedule:} \quad \mathbf{c} = (0, 0, 0, 0)$$

Problems. For each of these two examples, answer the following questions:

(1) At the first Saturday, when do you want to do the activity?

(2) *Naivete.* If you can change your mind every Saturday, but you are fully unaware of the future self-control problems that this leads to (and therefore expect to behave in the future exactly as you currently would like your future selves to behave), when will you actually do the activity?

(2) *Sophistication.* If you can change your mind every Saturday, and you are fully aware of the future self-control problems that this leads to, when will you actually do the activity?