Written Exam for the M.Sc. in Psychology summer 2015

The Psychology of Choice
-
Experimental Theory and Methods

Final Exam/ Elective Course/ Master's Course

May 26, 2015

(2-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title that was followed by "eksamen på dansk" in brackets, you must write your exam paper in Danish.

This exam question consists of 3 pages in total including this page.

(1) Anchoring and Heuristics

Often we have to take decisions involving considerable uncertainty. Examples are: (i) going for a picnic (depending on the likelihood of rain); (ii) amount of food we bring to the picnic (depending on the amount of friends that might show up); (iii) buying a particular flat (depending on the likelihood with which prices on housing market rise) etc. All these decisions implicitly involve judgments about the likelihoods of uncertain values.

In the course we discussed that these judgments are often influenced by anchoring.

a. Please explain the concept of 'coherent arbitrariness' developed by Ariely *et al.* in the article: Ariely, D., Loewenstein, G. and Prelec, D. (2003), "Coherent Arbitrariness: Stable Demand Curves without Stable Preferences", The Quarterly Journal of Economics, 118(1), 73-105. Furthermore, discuss possible implications of this idea.

   Points that should be included in the answer:
   See definition in section 2 (page 77) of article "Ariely, D., Loewenstein, G. and Prelec, D. (2003), "Coherent Arbitrariness: Stable Demand Curves without Stable Preferences", The Quarterly Journal of Economics, 118(1), 73-105."

b. Describe one of the experiments that Ariely *et al.* conducted and explain why they did this experiment in the context of their study of the idea of coherent arbitrariness.

   Points that should be included in the answer:
   Depending on the experiment that is described. All of them are in the article. Most will probably stick to the first experiment which is described on page 75 of article "Ariely, D., Loewenstein, G. and Prelec, D. (2003), "Coherent Arbitrariness: Stable Demand Curves without Stable Preferences", The Quarterly Journal of Economics, 118(1), 73-105."

(2) Ref. Dependence, Framing and Loss Aversion

The economic theory of the consumer is a combination of positive and normative theories. Since it is based on a rational maximizing model it describes how consumers *should* choose, but it is alleged to also describe how they *do* choose. Thaler, R. (1980), "Toward a Positive Theory of Consumer Choice", *Journal of Economic Behavior and Organization*, 1(1), 39-60, identifies certain well-defined situations where this is not so.

a. One example that Thaler gives of this is the *endowment effect*: "Mr. R bought a case of good wine in the late 50s for about $5 a bottle. A few years later his wine merchant offered to buy the wine back for $100 a bottle. He refused, although he has never paid more than $35 for a bottle of wine."

   Describe how prospect theory can explain this prediction. Describe how the rational maximizing model also can explain this prediction. Discuss the two explanations with a specific focus on why prospect theory may offer a more parsimonious explanation.

Points that should be included in the answer:

- Prospect theory explains the prediction in two ways. First, as just mentioned, giving up the wine will induce a loss while purchasing the same bottle would create a (less highly weighted) gain. Second, the money paid for a bottle purchased might be viewed as a loss while the money received for the sale would be viewed as a gain.
- The rational maximization model explains the endowment effect by the use of income effects or transactions costs.
- In classical economics all costs are (in some sense) opportunity costs. Therefore opportunity costs should be treated as equivalent to out-of-pocket costs. Prospect theory on the other hand implies that out-of-pocket costs are viewed as losses and opportunity costs are viewed as foregone gains. Prospect is more parsimonious in the sense that it accounts for observed data with a relatively simpler explanation.

b. Another example that Thaler gives of this is the *sunk cost effect*: "A man joins a tennis club and pays a $300 yearly membership fee. After two weeks of playing he develops a tennis elbow. He continues to play (in pain) saying 'I don't want to waste the $300!"

   Describe how prospect theory can explain this prediction. Describe what the rational maximizing model will predict. Discuss the two explanations with a specific focus on experienced and anticipated consumption.

   Points that should be included in the answer:

   - Prospect theory suggests that no loss or gain is experienced when the membership fee of $300 is paid, except perhaps in anticipation of playing. Then when we start to play he feels net gain. The tennis elbow, however, creates a problem. If he doesn't play the gain from playing is zero and he will feel a net loss. Assuming his aversion towards losses is large enough, he will keep playing.
   - The rational maximizing model implies that only incremental costs and benefits should affect decisions. Historical costs should be irrelevant.
   - Prospect theory can explain the prediction, while the rational maximizing cannot. Important for prospect theory's explanation of the sunk cost effect is concepts of experienced and anticipated consumption. Experienced utility refers to the hedonic or pleasurable experience produced by consumption. Anticipated consumption refers to the expectation of future consumption.

(3) Choice Architecture

Choice architecture reflects the fact that there are many ways to present a choice to the decision-maker, and that what is chosen often depends upon how the choice is presented. Choice architects can influence choice in many ways: by varying the presentation order of choice alternatives, the order attributes and their ease of use, and the selection of defaults, to name just a few of the design options available.

a. Please describe the use of a default options in organ donation studied in the article: Johnson, E.J. and Goldstein D. (2003), "Do Defaults Save Lives?", Science Magazine, 302, 1338-1339. Furthermore, discuss why the default is so strong in organ donation and describe a choice situation where the default option may not matter so much.

   Points that should be included in the answer:

   - In the case of organ donation, European countries have one of two default policies. In presumed-consent states, people are organ donors unless they register not to be, and in explicit-consent countries, nobody is an organ donor without registering to be one.
   - Points that could be discussed: First, decision-makers might believe that defaults are suggestions by the policymaker, which imply a recommended action. Second, making a decision often involves effort, whereas accepting the default is effortless. Many people would rather avoid making an active decision about donation, because it can be unpleasant and stressful. Third, defaults often represent the existing state or status quo, and change usually involves a trade-off.
   - Any situation where the three points above are not important for the choice can be described.

b. As convincingly demonstrated by Eddy, D. M. (1982), "Probabilistic Reasoning in Clinical Medicine: Problems and Opportunities" In Kahneman, Daniel, Paul Slovic, and Amos Tversky (ed.): Judgment under uncertainty: Heuristics and biases, Cambridge: Cambridge University Press, even doctors' judgments about likelihoods in the cases of life and death are prone to errors. Please describe Eddy's experiment and discuss ways in which such judgments errors can be mitigated by a choice architect.

   Points that should be included in the answer:

   - Eddy study how physicians process information about the results of a mammogram, an X-ray test used to diagnose breast cancer. The evidence presented shows that physicians do not manage uncertainty very well, that many physicians make major errors in probabilistic reasoning, and that these errors threaten the quality of medical care.
   - A choice architect could, e.g., mitigate such judgment errors by using natural frequencies, truth tables, Euler diagrams, etc.