Psychology and Economics[1]

14.13 Lecture 1

Frank Schilbach

MIT

February 3, 2020

[1] These and future lecture slides are partially based on notes by David Laibson, Stefano DellaVigna, Dmitry Taubinsky, Matthew Rabin, and especially Botond Kőszegi. I would like to thank them, without implicating them in any way, for sharing their materials with me.

Who are we?

- Frank Schilbach
  - Economics PhD at Harvard (2015)
  - Research at intersection of behavioral and development economics
  - Studying all the important things in life: poverty, sleep, pain, substance abuse, depression, and loneliness
  - Fabulous assistant Krista Moody
- Five fantastic teaching assistants
  - Maddie McKelway
  - Pierre-Luc Vautrey
  - Alex Olssen
  - Will Rafey
  - Aaron Goodman

Overview for today

(1) What is 'Psychology & Economics'?

(2) An example: laptops in class

(3) Course logistics

(4) Questionnaire/quiz

What is 'Psychology & Economics'?

- Also known as Economics & Psychology, Behavioral Economics
- A definition: *Psychology and Economics is a field of academic research that studies the joint influences of psychological and economic factors on behavior.*
- Broader definition might include other fields, e.g. medicine, sociology, anthropology, etc.
- Main goal: use insights from other fields to make economic models more realistic and improve their predictive power.

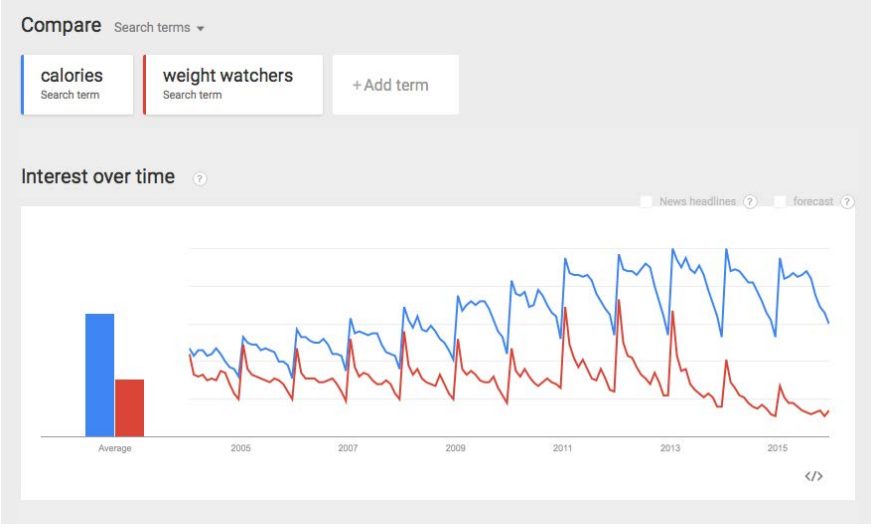
Assumption of standard economics models

- What is 'Homo Economicus' like?
- Some typical assumptions of the standard model (Rabin, 2002):[2]
  - Well-defined and stable preferences
  - Bayesian information processor (process information optimally)
  - Well-defined and stable preferences
  - Maximize expected utility
  - Apply exponential discounting weighting current and future well-being
  - Self-interested (narrowly defined)
  - Have preferences over final outcomes, not changes
  - No "taste" for beliefs or information
  - ...
- Can you come up with real-world counterexamples?

[2] Other excellent overviews include Mullainathan and Thaler (2000) and Rabin (2013).

Limited self-control?

New Year's resolutions: same procedure as every year



Demand for information

Figure: Thirteen and House

Defaults matter: opt-in vs. opt-out

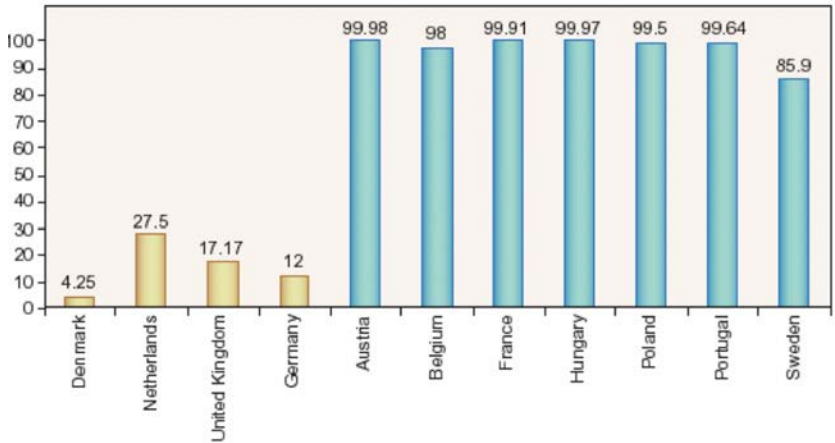


Figure: Fraction of organ donors by country and type of default (Johnson and Goldstein, 2003)

GlowCaps: Reminders can save lives

Charity: people care about others

GiveDirectly

Send money directly to
the extreme poor.

Image by USAID and is in the public domain.

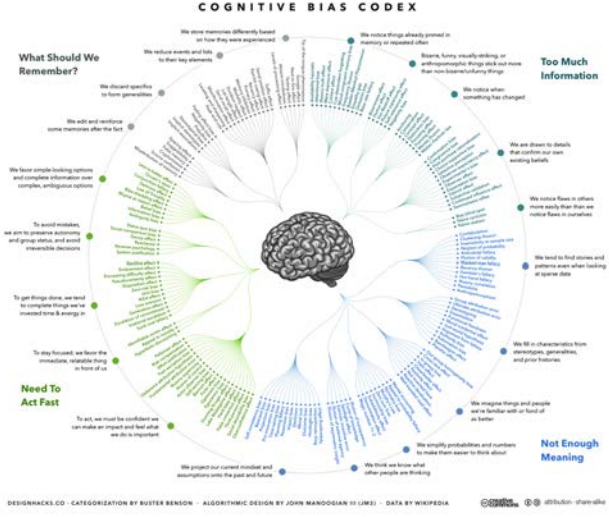
Attention

Watch the famous "Selective Attention Test" from Simons & Chabris (1999)
https://youtu.be/vJG698U2Mvo

Homo Economicus is too extreme.

- Most researchers in *Psychology and Economics* believe that the classical economic model of behavior (Homo Economicus) is too extreme.
  - **Too rational:** People occasionally make mistakes and those mistakes are predictable.
  - **Too selfish:** People do not care only about themselves (or their family).
  - **Too willful:** Good intentions are not always aligned with our subsequent actions.
- In fact, (almost) no economist would argue that the assumptions of the standard model are exactly correct.
  - But do the deviations matter?
  - Which deviations are important?

The world is full of cognitive biases.



What is a model?

- A model is a simplified representation of the world.
- Most models are based on assumptions that are known to be only approximately true (and exactly false).
- For example, consider the most commonly used models of the earth: flat, spherical, ellipsoid, point mass.
- These models do not account for the bumps and grooves.
- A perfect replica of the earth would reproduce every contour, but such a representation would be impractical for most purposes.

Properties of a good model (Gabaix and Laibson, 2008)

(1) Parsimony: is it simple?

(2) Tractability: is it easy to work with?

(3) Conceptual insightfulness: does it illuminate some important idea?

(4) Generalizability: can it be applied to many different settings?

(5) Falsifiability: does it make predictions?

(6) Empirical consistency: is it consistent with known facts?

(7) Predictive precision: does it make sharp predictions?

Are the assumptions of the standard model true for most people?

- No!
- But: One of the key properties of good models is simplicity.
  - Assuming perfect rationality, perfect selfishness, perfect willpower is relatively simple.
  - Making an economic model psychologically more realistic usually means making the model more complex, and harder to analyze.
- Key questions:
  (1) Can we make *some* assumptions of economic models more realistic in a tractable way?
  (2) Can we explain *important* phenomena of the world better?

A good behavioral economist is a good economist.

- **Important:** behavioral economics does NOT seek to replace standard economic theory, but it is rather trying augment it based on evidence from psychology and other disciplines.

- Key principle of 'mainstream' economics continue to apply.
  - Decision-makers are highly sophisticated.
  - Markets and incentives play a key role in shaping behavior.
  - Markets allocate resources well most of the time.

- Key methodological principles still apply.
  - Use observational and experimental data
  - Mathematical models useful for representing knowledge.
  - Models should 'nest' the special case of perfect rationality.

Often prices are the most important aspect of choice.

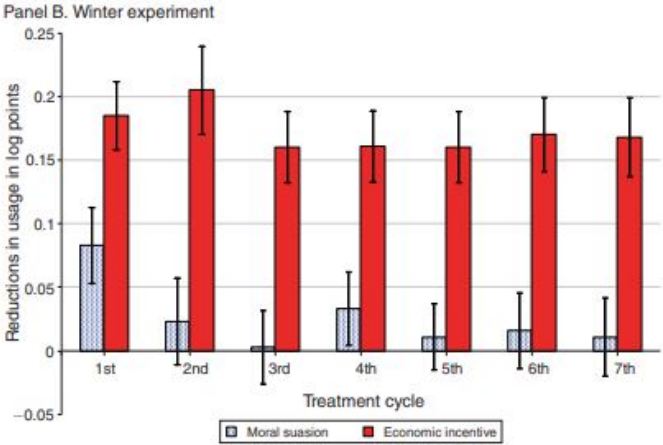


FIGURE 3. TREATMENT EFFECTS BY TREATMENT CYCLES

Source: Ito et al. (2018) Read more on limits of behavioral economics HERE

Broad Approach to Each Topic

(1) Start with intuitive, empirical, and/or experimental examples of how people behave in some situations.

(2) Think about what might be motivating people or how they might think about the situation.

(3) Make the hypotheses precise, identify alternative hypotheses, and consider how to distinguish the hypotheses from each other.

(4) Explore what our hypotheses can explain and what the market, welfare, and other consequences are.

An example: electronic devices in class

- Should electronic devices in class be allowed?
- Economic considerations:
  - Useful technology for note-taking (for some students)
  - Useful technology for non-class activities
- Psychological considerations:
  - Negative externality (distraction) for nearby students (limited attention)
  - People tend to overestimate propensity to successfully parallel process (overconfidence).
  - Web is filled with distractions and temptations that undermine intentions to get the most out of class (temptations, present bias)
  - People usually don't like hard paternalism.

Policy solutions?

(1) Laissez-faire

(2) Educational intervention (coming next!)

(3) Tax laptop use (and redistribute)

(4) Ban laptops (exceptions for students with a medical need)

(5) Make a no-laptop section the default and let students opt into the laptop section

(6) Make a laptop section the default and let students opt out of the laptop section

(7) Set up active choice between the laptop and no-laptop sections

What does the evidence say? Laptops are great but not during a lecture.

Image removed due to copyright restrictions. See article below.

Source: "Laptops are Great. But Not During a Lecture or Meeting." Susan Dynarski *NYT*. Read the full article HERE.

What does the evidence say?

- Randomized-controlled trial at West Point in intro econ course (Carter et al., 2017)
- Allowing computers in class reduced final test scores by 0.18 standard deviations.
- Negative effect in both unconstrained and "flat tablet" treatments.
- Additional evidence and info HERE and HERE.
- This class: 'laptop section' on one side in front of room (more on this in first pset!).

Course logistics I: syllabus and lectures

- Please read the syllabus!
  - It contains a lot of important info. Yes, we will be able to tell whether you read it.
- Lectures: Monday/Wednesday
  - No textbook; reading list; lecture slides meant to be self-contained
  - Will always flag required reading for next lecture(s)
  - The class won't be useful for you without attending lectures regularly.
  - Will post lecture slides ahead of class; will post lecture videos after class

Course logistics II: recitation and grading

- Recitation dates to be announced (by Wednesday)
  - Several recitations, smaller class sizes
  - Covers supplementary materials, often ahead of relevant lectures
  - Attendance not mandatory, but material covered is required material for exams
- Grading policies on syllabus
  - Problem sets
  - Exams: midterm (in class) and cumulative final (finals week)
  - No attendance grade per se but pop quizzes in randomly selected classes

Course logistics III: questions, feedback, and office hours

- Sign up and use online forum (Not available to OCW users)
  - Ask questions
  - Answer other students' questions
  - Learn from other students's answers
  - Discuss issues
- Come to office hours.
- Any kind of feedback is much appreciated!

Broad overview of topics (more details next lecture)

- Introduction and overview (2 lectures)
- Time preferences and self-control (4 lectures); risk preferences and reference-dependent preferences (3 lectures); social preferences (4 lectures)
- Emotions, projection and attribution bias (1 lecture); limited attention (1 lecture); beliefs and learning (2 lectures); mental accounting (1 lecture)
- Malleability and inaccessibility of preferences (1 lecture); happiness (1 lecture); mental health (1 lecture); gender and racial discrimination (1 lecture)
- Frames, defaults, and nudges (1 lecture); policy and paternalism (1 lecture); poverty through the lens of psychology (1 lecture)

Readings for next time

- Please read Rabin (2002): A Perspective on Psychology and Economics (sections 1 and 2).

A questionnaire/survey

- We'll distribute a questionnaire/survey in a second.
  - It asks you about your background, impressions of the world, and how you would behave in certain situations.
  - It is completely anonymous, so no need for name or student ID. We will only use aggregated summaries of your answers.
- Please try to answer as truthfully as possible. Please do not talk to your neighbors.
- Take your time!

References used in this lecture I

Carter, Susan Payne, Kyle Greenberg, and Michael Walker, "The Impact of Computer Usage on Academic Performance: Evidence from a Randomized Trial at the United States Military Academy," *Economic of Education Review*, 2017, *56*, 118–132.

Gabaix, Xavier and David Laibson, "The Seven Properties of a Good Model," *In: Foundations of Positive and Normative Economics: A Handbook*, 2008.

Ito, Koichiro, Takanori Ida, and Mokoto Tanaka, "Moral Suasion and Economic Incentives: Field Experimental Evidence from Energy Demand," *American Economic Journal: Economic Policy*, 2018, *1* (10), 1338–1339.

Johnson, Eric J. and Daniel Goldstein, "Do Defaults Save Lives?," *Science*, 2003, *302* (5649), 1338–1339.

Mullainathan, Sendhil and Richard Thaler, "Behavioral Economics," *NBER Working Paper Number 7948*, 2000.

Rabin, Matthew, "A Perspective on Psychology and Economics," *European Economic Review*, 2002, *46* (4-5), 657–685.

__ , "Incorporating Limited Rationality into Economics," *Journal of Economic Literature*, 2013, *51* (2), 528–543.

References used in this lecture II

Simons, Daniel and Christopher Chabris, "Gorillas in our Midst: Sustained Inattentional Blindness for Dynamic Events," *Perception*, 1999, *28*, 1059–1074.

14.13: Psychology and Economics
Spring 2020