

Psychology and Economics¹

14.13 Lecture 1

Frank Schilbach

MIT

February 3, 2020

¹These and future lecture slides are partially based on notes by David Laibson, Stefano DellaVigna, Dmitry Taubinsky, Matthew Rabin, and especially Botond Köszegi. 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

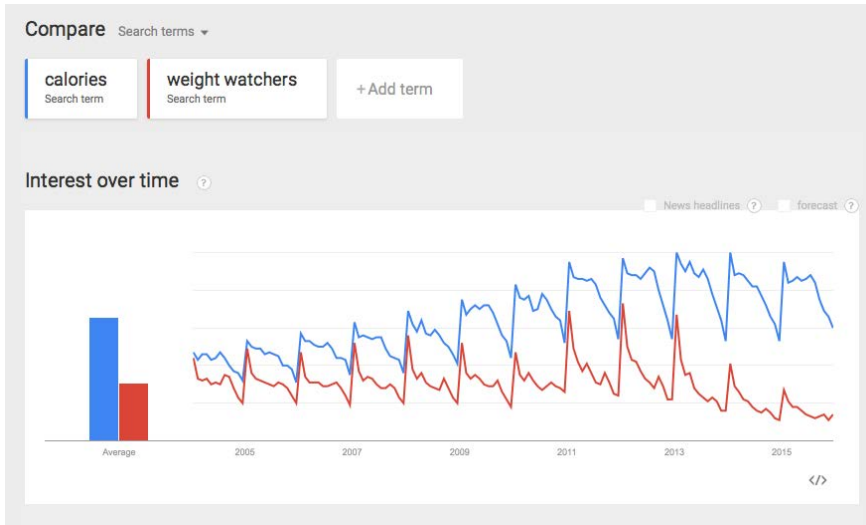
- What is 'Homo Economicus' like?
- Some typical assumptions of the standard model (Rabin, 2002):²
 - Well-defined and stable preferences
 - Bayesian information processor (process information optimally)
 - Well-defined and stable preferences
 - Maximize expected utility
 - Apply exponential discounting 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?

²Other 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

© Fox. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <https://ocw.mit.edu/help/faq-fair-use/>

Defaults matter: opt-in vs. opt-out

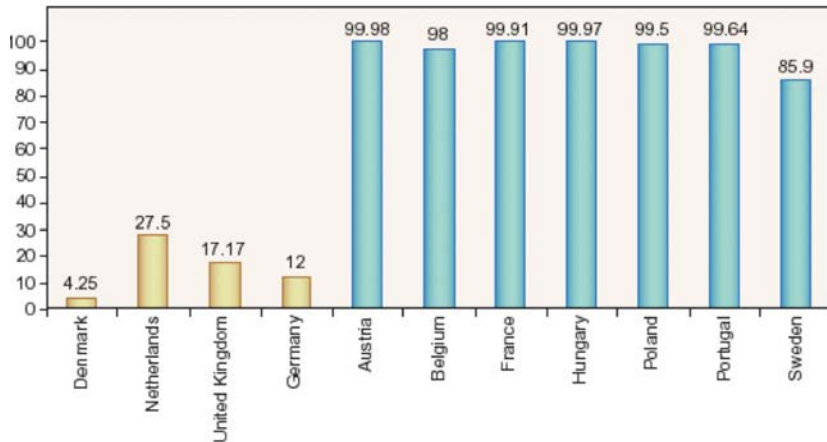


Figure: Fraction of organ donors by country and type of default (Johnson and Goldstein, 2003)

GlowCaps: Reminders can save lives



© Vitality. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <https://ocw.mit.edu/help/faq-fair-use/>

Charity: people care about others

GiveDirectly

Send money directly to
the extreme poor.



Image by USAID and is in the public domain.

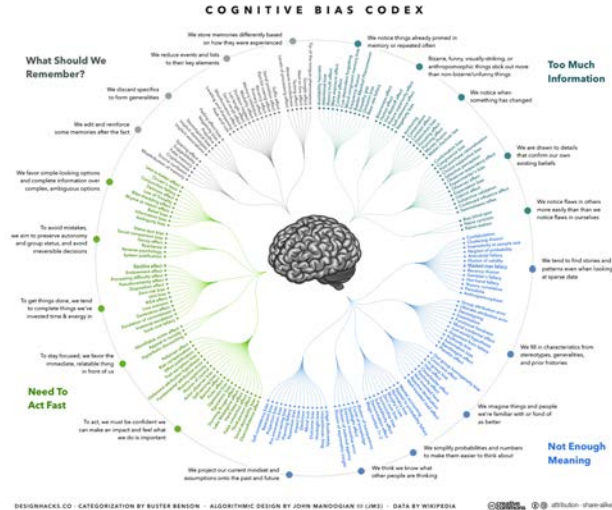
Attention

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.

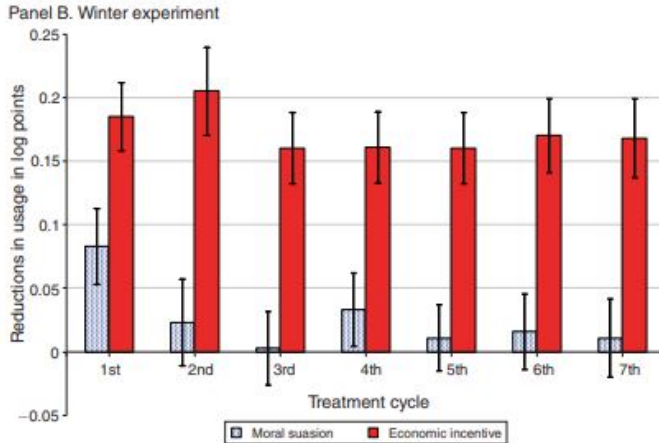


FIGURE 3. TREATMENT EFFECTS BY TREATMENT CYCLES

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.

MIT OpenCourseWare
<https://ocw.mit.edu/>

14.13: Psychology and Economics
Spring 2020

For information about citing these materials or our Terms of Use, visit: <https://ocw.mit.edu/terms>.