

*Junior Seminar, Econ 980bb*  
*Behavioral Economics of Risk and Learning*  
*Spring 2022*

**Time & location:** Tue 12:45–2:45, Littauer M17

**Section:** TBD

**Prof:** Tomasz Strzalecki, tomasz\_strzalecki@harvard.edu

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*Objective of the course*

Gain some experience doing research and prepare for writing a senior thesis.

*Topic*

We want to get to the research frontier within one semester, so we will be focusing on two connected topics: risk and learning. How much risk are people willing to take and how their beliefs change in response to new data. We will study two important tools of behavioral economics: mathematical models of individual behavior and laboratory experiments. We will begin with the standard model in economics (Expected Utility and Bayes Rule) and then show evidence to the contrary, such as *certainty effect*, *overconfidence*, *confirmation bias*, *belief polarization*, *stereotyping*, etc. We will talk about designing experiments to test various theories. Potentially also about developing new theories (although that is harder).

*Background*

The course will focus on analytical methods and therefore requires knowledge of probability and statistics. Prior knowledge of behavioral economics will be useful but is not required because there will be some introductory lectures.

*Final Project*

Your final project will be either theoretical (a new model or a new result about existing models) or a new experimental design (you will not have enough time to actually run the experiment, but you will describe the experiment and what you are hoping to learn from it and why it matters). You will turn in a paper and make a presentation in class.

## *Prospectus*

Describes what you want to work on in after Spring Break. You will make a short presentation and turn in a 3 page writeup on your central questions and the papers you are building on.

## *Class Discussion*

We will discuss the following two papers in class. Each time there will be a list of questions to guide our in-class discussion:

- Jazayeri, M., & Shadlen, M. N. (2010). Temporal context calibrates interval timing. *Nature neuroscience*, 13(8), 1020-1026.
- Augenblick, N., & Rabin, M. (2021). Belief movement, uncertainty reduction, and rational updating. *Quarterly Journal of Economics*, 136(2), 933-985.

## *Group Presentation*

Each group (of 2 people) will present a paper from the list below. Prepare a slide deck and meet once before presenting to all of us. We can add papers to this list if they are relevant to your projects.

- Benjamin, D. J., Moore, D. A., & Rabin, M. (2017). Biased beliefs about random samples: Evidence from two integrated experiments *National Bureau of Economic Research*, w23927.
- Bordalo, P., Coffman, K., Gennaioli, N., & Shleifer, A. (2019). Beliefs about gender. *American Economic Review*, 109(3), 739-773.
- Che, Y. K., & Mierendorff, K. (2019). Optimal dynamic allocation of attention. *American Economic Review*, 109(8), 2993-3029.
- Chen, D. L., Moskowitz, T. J., & Shue, K. (2016). Decision making under the gambler's fallacy: Evidence from asylum judges, loan officers, and baseball umpires. *Quarterly Journal of Economics*, 131(3), 1181-1242.
- Cohen, A., & Einav, L. (2003). The effects of mandatory seat belt laws on driving behavior and traffic fatalities. *Review of Economics and Statistics*, 85(4), 828-843.
- Gagnon-Bartsch, T., Rabin, M., & Schwartzstein, J. (2018). Channeled attention and stable errors.
- Gennaioli, N., & Shleifer, A. (2010). What comes to mind. *Quarterly Journal of Economics*, 125(4), 1399-1433.

- Ely, J., Gauriot, R., & Page, L. (2017). Do agents maximise? Risk taking on first and second serves in tennis. *Journal of Economic Psychology*, 63, 135-142.
- Lai, L., & Gershman, S. J. (2021). Policy compression: An information bottleneck in action selection. *The Psychology of Learning and Motivation*, 195.
- Mullainathan, S. (2002). Thinking through categories.
- Rabin, M., & Schrag, J. L. (1999). First impressions matter: A model of confirmatory bias. *Quarterly Journal of Economics*, 114(1), 37-82.
- Vul, E., Goodman, N., Griffiths, T. L., & Tenenbaum, J. B. (2014). One and done? Optimal decisions from very few samples. *Cognitive science*, 38(4), 599-637.

## Grading

Psets: 25%. Class Discussion 10%. Prospectus: 10%. Group presentation: 20%. Final Project: 35%.

## Schedule

	<b>Class meetings</b>	<b>Your independent work</b>
Jan 25	Lecture 1: expected utility	start a research journal
Feb 1	Lecture 2: biases in probability perception	
Feb 8	Lecture 3: Bayes rule	problem set 1 due
Feb 15	Lecture 4: biases in probability updating	one-page summary
Feb 22	Lecture 5: attention	develop toy examples
Mar 1	Group Discussion: Paper 1	problem set 2 due
Mar 8	Prospectus Presentations	prospectus due
Mar 15	— Spring Break	
Mar 22	Discussion: Paper 2	
Mar 29	Group Presentations	
April 5	Group Presentations	work on slides
April 12	Group Presentations	
April 19	Final Project Presentations	work on slides
April 26	Final Project Presentations	write up
May 3		<b>final project due</b>