# Behavioral Economics

## Lecture 1: Introduction

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# Who am I?

- **Name**: Daniel Martin
- **Fields**: Behavioral economics, cognitive economics, experimental economics
- **Topics**: Attention/perception, information disclosure, human and AI interaction
- **Expat**: NYU $\rightarrow$ PSE in 2013
- **Ex-expat**: PSE $\rightarrow$ MEDS in 2015
- **Tenure**: MEDS $\rightarrow$ UCSB in 2022
- **Before**: Co-founded an IT service company back in 2001!
- **Hometown**: Atlanta, GA
- **Hobbies***: Poker, cycling, yoga

# My path

- Started by working on a topic my advisor (Andrew Caplin) was excited about
  - Worked with him to develop theories of attention and perception
  - Learned how to solve those kinds of models
  - Learned how to experimentally test + make inferences based on those models
- Along the way, started thinking of applications for these theories
  - Inattention to **quality** in **strategic pricing games**
  - Inattention to **messages** in **disclosure games**
  - Inattention to **prices** in **consumer theory**
  - Inattention to **game form** when **valuing goods**
  - Inattention to **tasks** when getting **AI advice**
- *Potential* takeaways
  - Can be easier to produce impactful research after learning something in detail
  - Can be easier to get ideas for new projects when working on something else

# Who are you?

- 2nd year PhD students
- **You**:
  - Name
  - Year
  - Research interests
  - Hometown

# This class: evaluation

- You will be evaluated on three elements:
  1. Engagement: Quality of participation in class
  2. Brainstorming: Several short "thought exercises" throughout class
  3. Deliverable: Presentation or referee report on assigned paper or research proposal on a class topic
- Goal: Build a toolkit for producing impactful research

# This class: key topics

1. Belief updating biases
2. Beliefs with imprecise information
3. Overconfidence/miscalibration

# This class: key applications

1. Working with AI
2. Discrimination
3. Deception

# Semantics

- What is Behavioral Economics?
  - Studies psychological and economic factors that jointly influence economic behavior
  - Goal: Make assumptions more realistic, so predictions more accurate
  - But aren't all economists studying behavior?
- Other names you'll hear:
  - Bounded rationality
  - Psychology and economics
  - Psychological economics

# "The Canon"

- **Time Preferences:** Hyperbolic Discounting, Naivete
- **Risk Preferences:** Prospect Theory, Endowment Effect
- **Social Preferences:** Fairness, Norms
- **Framing Effects:** Nudges, Menu Dependence
- **Failures of Strategic Thinking:** Level-k, QRE, Cursed Equilibrium

# Distinct from...

- Experimental economics
- Psychology
- Evolutionary psychology
- Evolutionary economics (BE takes preferences/cognition as primitives)
- Sociology and economics
- "Economics sucks" economics

# The starting point

- Start from standard paradigm of individual decision-making
  - Should be very familiar to y'all!
- At time $t = 0$, individual $i$ facing probability distribution $p(s)$ over states of the world $s \in S$, maximizes expected utility

$$\max_{x_i \in X_i} \sum_{t=0}^{\infty} \delta^t \sum_{s \in S} p(s)\, U(x_i^t, s)$$

- Pluses: Mathematically tractable, normatively appealing

# Tweaking the paradigm...

- Relax $U(x_i, s)$ and $\delta^t$
  - Behavioral preferences: Reference dependence, non-EU risk preferences, social considerations, temptation, narrow bracketing, emotions
- Relax $p(s)$
  - Biased beliefs or belief-based decision distortion: Probability weighting, law of small numbers, correlation neglect, optimism, wishful thinking, overconfidence
- Relax $\max_{x_i \in X_i}$
  - Bounds to rationality: Satisficing, limited cognitive ability, limited strategic thinking, limited attention

# Tweaking the paradigm...

- **These tweaks are interesting, but are they useful for doing economics?**

# Integrate into markets

- Can put behavioral agents into markets...
  - And see how the predictions change
- So many possibilities!
  1. Firms
  2. Customers
  3. Managers
  4. Employees
  5. Investors
  6. Traders
  7. Politicians
  8. Voters
  9. ...

# Integrate into markets

- **Public**: Present-bias (addiction, sin taxes, retirement savings), social preferences (charitable contributions), limited attention (incidence of taxes)
- **Environmental**: Reference dependence (WTA/WTP), complexity (carbon taxes)
- **Labor**: Reference dependence (labor supply, wage setting), social preferences (wage setting)
- **Development**: Present-bias (commitment devices in savings, choice of crops), social preferences (group savings, trust)

# Integrate into markets

- **Political Economy**: Market reactions (manipulation of hatred or inattention), biased information (choice of media)
- **Finance**: Overconfidence (overtrading, investment, mergers, options), limited attention (footnotes in accounting, demographics, large events)
- **Macro**: Present-bias (low saving + mostly illiquid wealth), reference dependence (nominal wage rigidity), limited attention (info overload)

# Is Behavioral Economics a field?

- **No**:
  - Already integrated into many standard fields
  - Few "pure" behavioral economics jobs
  - No clear flagship field journal?
- **Yes**:
  - Published regularly in AER, QJE, MS, JEBO, GEB, EER, etc.
  - Some courses and seminars
  - Many, many conferences
  - Secondary field?

# History - 1950s and 1970s

- Satisficing (Simon 1955)
  - Agents do not maximize, they do "good enough"
  - Wasn't a precise theory so not adopted by economists
  - Caplin, Dean & Martin (2011) make it precise and test it!
- 1974: Heuristics and Biases (Tversky & Kahneman 1974)
  - Representativeness, availability, anchoring
- 1979: Prospect Theory (Kahneman & Tversky 1979)
  - Probability weighting function
  - Risk-seeking in the loss domain
  - Risk-averse in the gain domain
  - Loss aversion

# History - 1980s

- Endowment effect (Knetsch 1989)
  - Mugs and market implications
- Many other experiments!
- Anomalies column in JEP (Thaler and co-authors)
- Not much formal modeling

# History - 1990s

- Formalization:
  - Fairness, reciprocity, and social preferences
  - Intertemporal choice
  - Learning
  - Behavioral game theory
  - JDM biases: Self-serving bias, confirmation bias, overconfidence
- Early field evidence (List & Shogren 1998)
- Behavioral finance (Odean 1999)
- Acceptance of behavioral economics in the profession

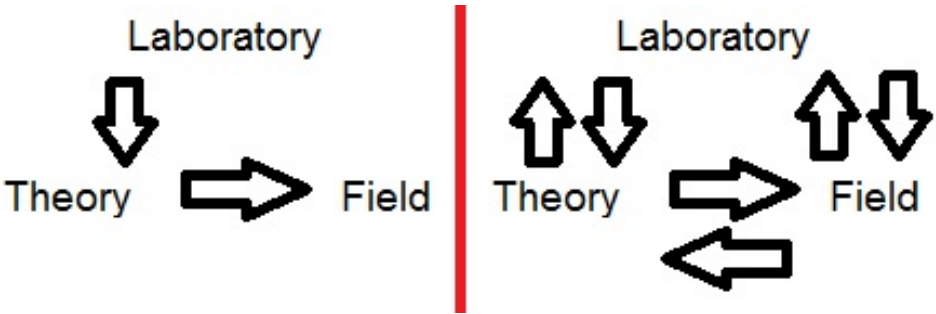
# History - 2000s

- Clark Medal: Matthew Rabin
- Nobel Prizes: Daniel Kahneman, George Akerlof (?)
- Interventions and policy

# History - 2010s

- Field experiments/natural experiments
- Structural estimation of behavioral models
- Behavioral theory expands
- Nobel Prize: Richard Thaler

# History - 2010s... competing visions



# Now - 2020s

- **A winning brand**: more likely to see departures from rationality used in standard fields, especially applied ones (often used to rationalize observed data)
- **But also a brand in crisis**: proliferation of effects, less funding, replication crisis, underperforming nudge units
- Reboot with "Behavioral 3.0" and focus on cognition?
- Research frontier: beliefs (focus here), perception/attention (next class), complexity, information transmission, discrimination

# Judging a behavioral economics idea

- Ask of yourself and others...
  - Is this a real force in the world?
  - Is it real but minor (economically speaking)?
  - Does it produce non-obvious implications?
  - Could the methodology become a workhorse for other economists?
  - Stigler's principles for theory: Predictive accuracy, generality, tractability
- For yourself...
  - Think big but aim small!
  - That is, choose an important question, but narrow the scope of that question to something answerable

# References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