Behavioral Economics: Greatest Hits

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What is Behavioral Economics?

A study of the joint influence of psychological and economic factors on behavior.

Behavioral economics is a modification of mainstream economics.
- Mainstream economics is called **Neoclassical** economics.

Like neoclassical economics, behavioral:
- Uses mathematical models to predict choices.
- Assumes that individuals have goals (which provide **utility**).
- Explores how individual behavior varies across economic environments.
- Is concerned with welfare consequences.
Behavioral Economics

What is Behavioral Economics?

How is behavioral economics different from Neoclassical economics?

Unlike neoclassical economics, behavioral:

- Cares a lot about what *actually* motivates people.
- Relies on experiments, surveys, psychology and neurology.
- Emphasizes preferences, beliefs and cognition together.
We will critically examine the following assumptions:

- People are purely self-interested.
- People perfectly understand the laws of probability.
- People have correct beliefs about all relevant information.
- People have preferences over final outcomes.
- People have well-defined and stable preferences.
- People discount tradeoffs over time optimally.

These assumptions describe how people *should* behave.
Most non-trivial economic choices involve tradeoffs over time.

Simple example: investing in education.
- Costly money outlay at the beginning (negative utility)
- Pain and frustration of constantly studying (negative utility)
- Mastery and professional control (positive utility)

Key economic examples: savings/investment, health.

The time component raises a number of unique psychological issues.
Traditional economics uses discounted utility.

**Exponentially Discounted Utility Model:**
Individuals choose the consumption bundle that maximizes their lifetime benefit (i.e. utility) through time. Their willingness to delay gratification (i.e. their patience) is determined by a parameter, $\delta$.

$\delta \leq 1$, and is called the discount factor.

- If $\delta \approx 1$, then people are patient.
- If $\delta$ is much less than 1, then people are not patient.
Dynamic Consistency

Exponential discounting has a truly magnificent property.

**Dynamic Consistency:**
The action a person thinks they should take in the future always coincides with the action that they actually prefer once the time comes.

Examples:
- If today we wish ourselves to work on a problem set tomorrow,
  - Then tomorrow we prefer to work on the problem set.
- If today we prefer to quit smoking tomorrow,
  - Then tomorrow we prefer to quit smoking.
- If today we prefer to diet tomorrow,
  - Then tomorrow we will want to diet.
Conclusions of Dynamic Consistency

Dynamic consistency implies:
- People form lifetime consumption plans, and execute them.
- People should have no regrets about: being
  - Smokers,
  - Obese,
  - In debt,
  - High school dropouts.
- Their decisions optimally weighed the benefits and costs.

Policy implications of dynamic consistency:
- Drug addicts optimally chose their plan for themselves.
  - We should not try and interfere.
  - We will only make them less happy.
In actuality:
- People tend to over-value immediate gratification.
- If so, the time consistency property no longer holds.

Samuelson: the functional form he chose was arbitrary.
- He chose it purely for mathematical convenience.

“It is completely arbitrary to assume that the individual behaves so as to maximize an integral of the form envisaged.”
- Samuelson (1937) A Note on Measurement of Utility
Predicting the Future

“*Heavier-than-air flying machines are impossible.*”
- Baron Kelvin

“*Man will not fly for fifty years.*”
- Wilbur Wright (1901)

“*Everything that can be invented has been invented.*”
- Charles Duell, US Patent Office (1899)

“I will never eat again...”
- America, Thanksgiving Day around 3:00 PM

People have a tough time imagining a future different from today.
Our imaginations are imperfect models of reality.

If we imagine what something could be like:

- We typically see a sketchy image of it in our heads.
- Our brain is activated as though we are actually looking at it.

Our ability to do this is limited, and affected by our current state.

- When you’re disgusted, it’s hard to imagine affection.
- When you’re satiated, it’s hard to imagine hunger.
If I eat before...

If I don't eat before...

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Studies in psychology suggest people exhibit a systematic bias.

**Projection Bias:**

People under-appreciate changes in their preferences, projecting their current preferences onto their future preferences.

Projection bias isn’t just misprediction.

- It is a misprediction with a systematic direction, because
- People don’t believe their preferences are transient, and
- People aren’t able to predict all meaningful factors.
Preferences Can Fluctuate Over Time

There are many ways preferences change over time. Examples:
- Physical: hunger, addiction, aging, etc.
- Environment: friends, weather, etc.

When making decisions in time:
- It is important to understand changes in future preferences.
  - Making summer plans in the winter.
  - Choosing a major and career.
  - Having children.

Traditional economic approach:
- People are very good at predicting their future preferences.
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Social Preferences

Notes

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The Ultimatum Game

Guth, Schmittberger and Schwarze (1982)

- Proposers offer 40% on average.
  - This surprised (only) economists.

Two players:

- Proposer: first mover, makes a take-it-or-leave-it offer.
- Responder: second mover, accepts or rejects offer.

Traditional game theoretic analysis is clear:

- Responder should be willing to accept anything.
- Offer the smallest amount possible (1¢)
Social Preferences:
The degree and nature of how individuals care about others.

Experimental and empirical research is clear:
- Preferences depart from pure self-interest in non-trivial ways.

Let’s adopt a more reasonable approach:
- Self-interest isn’t always the main motive.
- Social preferences dramatically influence economic outcomes.
Meta-analysis of the Ultimatum game:
- Proposers offer 40-50% on average.
- Offer is generally accepted.
- Offers below 20% are mostly rejected.

Many studies since 1982:
- High and low stakes.
- Single shot and repeated games.
- Anonymous and Experimenter blindness.
**Distributional Preferences:**
Preferences that can be represented in terms of the amount of money or material resources people get.

Arguably the simplest form of social preferences.
- An extension of economic thought on individual preferences.
  - Assumption: people care about nominal consumption.
  - Social setting: they care about all nominal consumption.
The Ultimatum Game in Hunter-gatherer Societies
Machiguenga People

Lifestyle:
- Isolated family groups along rivers.
- Slash-and-burn farmers.
  - Cassava, bananas, maize.
- Supplemented by hunting and fishing.
- No names for other people.
  - Only close relatives.
- Extreme social and economic isolation.
  - No ‘sharing’ rooms, for instance.
Bakalar:
- A whale hunting culture.
- Requires very high levels of cooperation.

Mapuche:
- Gift-receiving incurs an obligation.
- Sometimes an insult.
  - ("I'm a better hunter.")
- Must give even more in return.

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<th>Group</th>
<th>Mean</th>
<th>Mode (% sample)</th>
<th>Rej</th>
<th>Rej &lt; 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machiguenga</td>
<td>0.26</td>
<td>0.15 (72%)</td>
<td>4.8%</td>
<td>10%</td>
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<tr>
<td>Lamalera</td>
<td>0.57</td>
<td>0.5 (63%)</td>
<td>20%</td>
<td>37%</td>
</tr>
<tr>
<td>Mapuche</td>
<td>0.34</td>
<td>0.5 (46%)</td>
<td>67%</td>
<td>20%</td>
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