



Notes

Behavioral Economics: Greatest Hits

Joshua Foster

University of Wisconsin – Oshkosh

Spring 2020



Introduction
●○○
Behavioral Economics

Dynamic Inconsistency
○○○○○

Projection Bias
○○○○

Social Preferences
○○○○○○○○○○

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.



Notes

Introduction
oo
Behavioral Economics

Dynamic Inconsistency
ooooo

Projection Bias
oooo

Social Preferences
oooooooo

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.

Notes



Introduction
oo●

Behavioral Economics

Dynamic Inconsistency
ooooo

Projection Bias
oooo

Social Preferences
oooooooo

Traditional Economic Assumptions

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.



Notes

Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
●ooooo

Projection Bias
ooooo

Social Preferences
oooooooo

Choice Over Time: Introduction

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.



Notes

Introduction
ooo

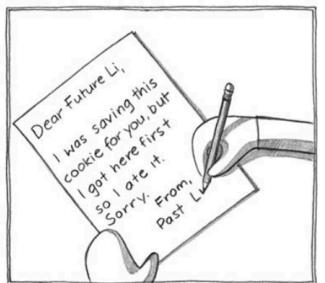
Behavioral Economics

Dynamic Inconsistency
oo•ooo

Projection Bias
ooooo

Social Preferences
oooooooo

Notes



©Li Chen

www.cxocomics.com

UWO
UNIVERSITY OF WISCONSIN
OSHKOSH

Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
ooo•ooo

Projection Bias
ooooo

Social Preferences
oooooooo

Exponential Discounting

Notes

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, δ .

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

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



Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
ooo●oo

Projection Bias
ooooo

Social Preferences
oooooooo

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.



Notes

Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
oooo●o

Projection Bias
oooo

Social Preferences
oooooooo

Conclusions of Dynamic Consistency

Dynamic consistency implies:

- ① People form lifetime consumption plans, and execute them.
- ② People should have no regrets about: being
 - Smokers,
 - Obese,
 - In debt,
 - High school dropouts.
- ③ 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.



Notes



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



Notes

Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
oooooo

Projection Bias
●oooo

Social Preferences
oooooooooo

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



Notes



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.



Notes

Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
oooooo

Projection Bias
oo•oo

Social Preferences
oooooooo

Notes

If I eat before...



If I don't eat before...



Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
oooooo

Projection Bias
oooo●o

Social Preferences
oooooooo

Mis-prediction of Preferences

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.



Notes

Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
oooooo

Projection Bias
oooo●

Social Preferences
oooooooo

Preferences Can Fluctuate Over Time

There are many ways preferences change over time. Examples:

- ① Physical: hunger, addiction, aging, etc.
- ② 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.



Notes

Introduction
ooo

Behavioral Economics

Social Preferences

Dynamic Inconsistency
ooooo

Projection Bias
oooo

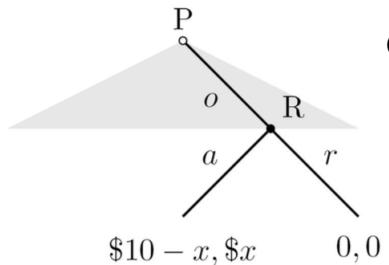
Social Preferences
●oooooooo

Notes



UWO
UNIVERSITY OF WISCONSIN
OSHKOSH

The Ultimatum Game



Guth, Schmittberger and Schwarze (1982)

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

Two players:

- ① Proposer: first mover, makes a take-it-or-leave-it offer.
- ② 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¢)

Notes

Introduction
ooo
Behavioral Economics

Dynamic Inconsistency
oooooo

Projection Bias
ooooo

Social Preferences
ooo•oooooooo

Notes

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.

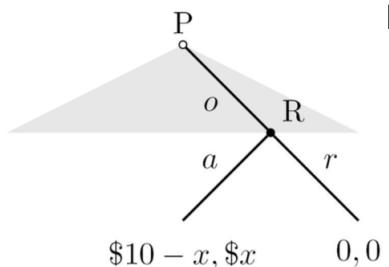
Let's adopt a more reasonable approach:

- Self-interest isn't always the main motive.
- Social preferences dramatically influence economic outcomes.



Back to the Ultimatum Game

Notes



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.

Introduction
ooo
Behavioral Economics

Dynamic Inconsistency
oooooo

Projection Bias
ooooo

Social Preferences
oooo●oooo

Notes

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.



Introduction
ooo

Behavioral Economics

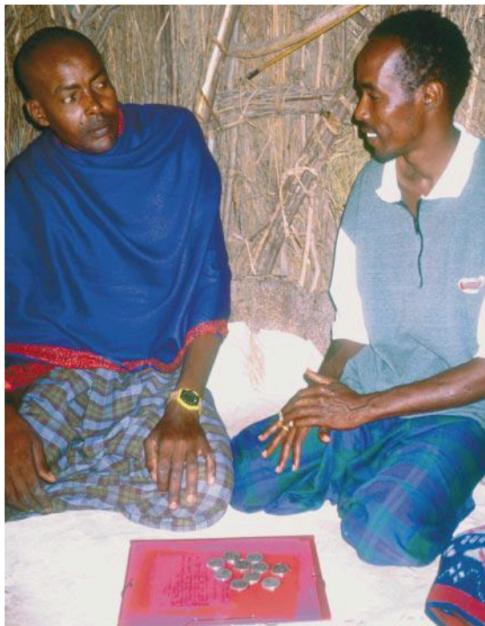
Dynamic Inconsistency
oooooo

Projection Bias
ooooo

Social Preferences
oooooo●oooo

Notes

The Ultimatum Game in Hunter-gatherer Societies



UW
OshKOSH

Introduction
ooo

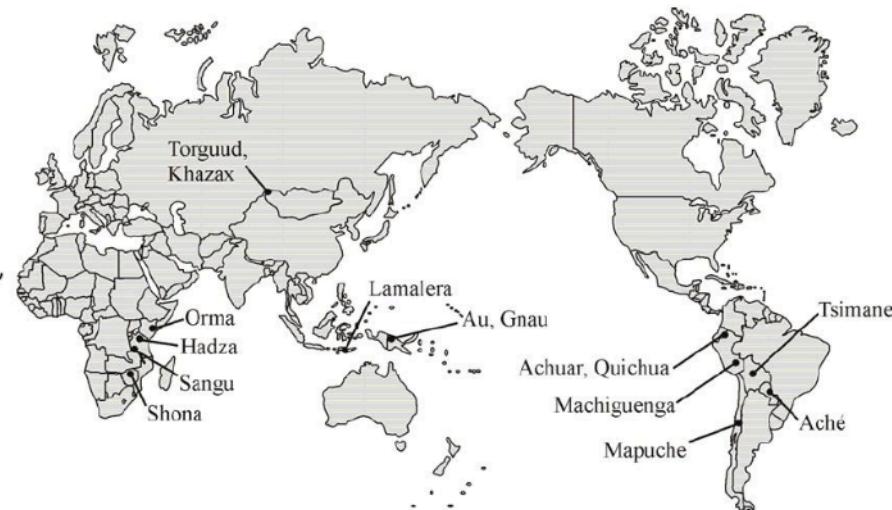
Dynamic Inconsistency
oooooo

Projection Bias
oooooo

Social Preferences
oooooooo●ooo

Behavioral Economics

Notes



Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
oooooo

Projection Bias
oooooo

Social Preferences
oooooooo●oo

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.

Notes



Introduction
ooo

Behavioral Economics

Dynamic Inconsistency
oooooo

Projection Bias
oooooo

Social Preferences
oooooooo●

Notes



WISCONSIN
UNIVERSITY OF
OSHKOSH

**Lamalera:**

- 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.

Group	Mean	Mode (% sample)	Rej	Rej < 20%
Machiguenga	0.26	0.15 (72%)	4.8%	10%
Lamalera	0.57	0.5 (63%)	20%	37%
Mapuche	0.34	0.5 (46%)	67%	20%