

Behavioral Science and Public Policy: An Overview

Why behavioral economics or, more broadly, behavioral science?

- The hyper-rational *homo economicus* is thought to be too unrealistic
- Leads to models with poor predictive power
 - In labs and field experiments, people frequently don't behave the way standard theory predicts
 - Global financial crisis

Standard model

- Constrained optimization
 - Rational agents optimize subject to limited budget
- Basic assumptions
 - Stable and internally-consistent preferences
 - Perfect or very good information on alternatives
 - Excellent computational skills
- *But* observation and experiments show:
 - People have bounded rationality
 - People make systematic mistakes

Biases and Heuristics

- System one and system two thinking
 - System one – intuitive, automatic, associative
 - System two – logical, deliberate, systematic
- System one relies on heuristics which can result in systematic errors
 - Availability, anchoring, representativeness, etc.
- Failures of rationality
 - Loss aversion
 - Time-inconsistent choices

Availability heuristic

- Do more words begin with “r” or have “r” as the third letter?

Representativeness heuristic

Imagine a woman named Linda, 31 years old, single, outspoken, and very bright. In college she majored in philosophy. While a student she was deeply concerned with discrimination and social justice and participated in antinuclear demonstrations.

Rank the following statements on a scale of 1 to 3 according to their probability, with 1 representing the most probable and 3 the least probable.

- Linda is active in the feminist movement.
- Linda is a bank teller and is active in the feminist movement.
- Linda is a bank teller

Anchoring heuristic

Is the population of the Federated States of Micronesia greater or fewer than one million?

Give a guess as to how many people you think live in the Federated States of Micronesia.

Loss aversion/framing

People dislike losing more than they like winning.

The framing of a transaction matters: people will choose differently depending on whether a transaction is framed as a gain or a loss.

- Problem 1: Which do you choose?
- Get \$900 for sure OR 90% chance to get \$1,000

- Problem 2: Which do you choose?
- Lose \$900 for sure OR 90% chance to lose \$1,000

Time inconsistent choices

People make reasonable choices when planning ahead of time but not when costs or benefits are immediate.

- Diet
- Gym membership

Alternatives to Standard Economic Theory under the Umbrella of Behavioral Economics

- Prospect Theory (Kahneman and Tversky)
 - 2-step choice process: editing and evaluation
 - Transform outcomes into gains and losses, using a neutral reference point.
 - Evaluate simplified prospects and choose highest-valued prospect.
- Hyperbolic Discounting (David Laibson)
 - A person with time-inconsistent hyperbolic discounting will wish prospectively that in the future he would take farsighted actions, but when the future arrives he will behave against his earlier wishes.

Can the findings of behavioral science be used to improve policy?

- Policies designed for humans rather than highly idealized agents.
- E.g.
 - 401(k) retirement savings account in US
 - attractive but still 30% fail to sign up (inertia and status quo bias)
 - Change default from non-enrollment to enrollment but employees can still easily opt out
 - Save More Tomorrow
 - employees tend to stick with the low default contribution rate
 - Increase contribution rates by timing it so as to coincide with pay raises

Can the findings of behavioral science be used to improve policy?

- E.g.
 - Organ donations
 - Change default to opt-out
 - Prompted choice (UK)
 - Insert short phrases into an existing webpage that provide a link to the organ donor register, and which appeared after a user had finished obtaining their vehicle tax
 - Best performing message: *If you needed an organ transplant, would you have one? If so, please help others.*
 - Increasing student learning by children through increased parental involvement in literacy activities
 - Regular texts from school containing tips to parents to help children learn reading and writing skills

Behavioral science applied in other countries

UK

- Behavioural Insights Team

US

- White House Social and Behavioral Sciences Team
- Obama issued Executive Order on 18 September 2015 on Using Behavioral Science Insights to Better Serve the American People

UK's Behavioral Insight Team

From their website (<http://www.behaviouralinsights.co.uk>):

- 1st government institution dedicated to the application of behavioural sciences. Redesigns public services drawing on ideas from the behavioral science literature.
- Objectives:
 - making public services more cost-effective and easier for citizens to use;
 - improving outcomes by introducing a more realistic model of human behaviour to policy; and wherever possible,
 - enabling people to make 'better choices for themselves'

UK's Behavioral Insight Team

Examples of claimed achievements from 2013-2015

- Increasing the payment rates by the top 1 percent of tax-debtors by 43 percent without further prompts, by highlighting the negative impact on public services of non-payment.
- Reducing the drop-out rate from Further Education course by a third, by sending encouraging texts such as at the end of half-term breaks.
- Doubling the completed application rates to join the Army Reserve by sending an email from a serving officer talking about their experience.

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

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EXECUTIVE ORDER

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USING BEHAVIORAL SCIENCE INSIGHTS TO
BETTER SERVE THE AMERICAN PEOPLE

BARACK OBAMA

THE WHITE HOUSE,
September 15, 2015.

Section 1. Behavioral Science Insights Policy Directive.

(a) Executive departments and agencies (agencies) are encouraged to:

(i) identify policies, programs, and operations where applying behavioral science insights may yield substantial improvements in public welfare, program outcomes, and program cost effectiveness;

(ii) develop strategies for applying behavioral science insights to programs and, where possible, rigorously test and evaluate the impact of these insights;

(iii) recruit behavioral science experts to join the Federal Government as necessary to achieve the goals of this directive; and

(iv) strengthen agency relationships with the research community to better use empirical findings from the behavioral sciences.

Sec. 2. Implementation of the Behavioral Science Insights Policy Directive. (a) The Social and Behavioral Sciences Team (SBST), under the National Science and Technology Council (NSTC) and chaired by the Assistant to the President for Science and Technology, shall provide agencies with advice and policy guidance to help them execute the policy objectives outlined in section 1 of this order, as appropriate.

(b) The NSTC shall release a yearly report summarizing agency implementation of section 1 of this order each year until 2019. Member agencies of the SBST are expected to contribute to this report.

(c) To help execute the policy directive set forth in section 1 of this order, the Chair of the SBST shall, within 45 days of the date of this order and thereafter as necessary, issue guidance to assist agencies in implementing this order.