Nudging for Good
Behavioral Insights for State Government Agencies
October 17th, 2017
Introductions

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GovLab Monitor Deloitte

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Deloitte Consulting
Behavioral Insights for State Government

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What is Behavioral Insights?
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Behavioral Insights (BI) uses principles from psychology, neuroscience, and behavioral economics to understand how individuals absorb, process, and react to information and applies this to design practical policies, interventions, and messaging with human behavior in mind.
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Understand → Design
What is Behavioral Insights

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Behavioral Insights is used to influence behavior

Save More Tomorrow:

Many **401k plans** use an **automatic option** to allow employees to increase their contribution during annual salary increases – **maximizing savings over time**

How does this example relate to **how individuals absorb, process, and react to information?**

How is this an example of **a practical intervention with human behavior in mind?**
Insight: Humans v. Econs

— Richard Thaler
Insight: Humans v. Econs

Econs

Economists assume that the people they study, so called homo economicus, or what I call Econs, are really smart. They know as much economics as the best economist. They make perfect forecasts, have no self-control problems and are complete jerks. They’ll steal your money if they can and get away with it.

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Humans
Insight: Humans v. Econs

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**Humans**

Most of the people I meet don’t have any of those qualities.

They have **trouble balancing their checkbook** without a spreadsheet.

They **eat too much and save too little**...

They’ll leave a tip at a restaurant even if they don’t plan to go back.

— Richard Thaler
Insight: Humans v. Econs
The three bounds

**Bounded rationality:** we are terrible natural statisticians. We need help from data science.
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**Bounded rationality:** we are terrible natural statisticians. We need help from data science.

**Bounded selfishness:** we are driven by fairness, and social norms – not just economic benefits.

**Bounded self-control:** we make short-term decisions at odds with our long-term goals.
Daniel Kahneman: there are two types of mental operations.

- System 1: automatic, effortless, **associatively** coherent.
- System 2: controlled, effortful, **logically** coherent.

Most of our mental operations are “System 1” in nature.

*And “System 1” has a lot of trouble with statistics.*

— Daniel Kahneman
Think about this person:

Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.
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Which is more likely?

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b) Linda is a bank teller active in the feminist movement
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There’s something about Linda

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Behavioral Insights and Public Policy
Why is this important today?
Traditional policy levers such as taxation, subsidies and regulations have their limitations

- Losing effectiveness
- Costly to enforce
- Difficult to justify

“Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation... It must identify and use the best, most innovative, and least burdensome tools for achieving regulatory ends.”

- Executive Order from President Obama

We can achieve better results at a fraction of the price
Behavioral Insights can enable more efficient achievement of desirable outcomes and behaviors

**Tax Repayment**

- **British tax officials increased tax repayment rate** from an average of 50 percent to 85 percent by using the power of social norms to update tax notices to say “9 out of 10 people in your town pay their taxes on time.”

**Compliance**

- **New Mexico** increased **self reported earnings for unemployment claims** by 35% by using well-timed pop-up messages and behavioral segmentation.

**Litter Reduction**

- The **State of Texas** reduced littering by 29% in one year, and 72% within 10 years with the “Don’t Mess with Texas” campaign focused on state pride (identity).
Defining the outcome to find out point of entry

Starting with the outcome helps us get identify where innovative approaches, such as the application of behavioural insights can help us move the needle on some of our stickiest public policy challenges.
Opportunities

How do we select the appropriate intervention and go about deploying that intervention to solve our problems?

- Is the outcome sought driven largely by personal choice that individuals do not consider harmful to others?

- Do the choices you wish to influence occur frequently?

- Do the choices that drive the outcome occur regularly over a long period of time?

- Do you want to influence a large or diverse number of people?

- Is the outcome sought in the distant future, but driven by choices that occur now?
Behavioral Insights Framework
Behavioral Insights Framework

- Individual Factors
- Social Factors
- Environmental and Design Factors

BEHAVIORAL INFLUENCES
People are faced with more decisions and information than we can consciously process.

Research from the cognitive sciences explains that our brains process information in two ways: 1) using deliberate, logical thought; or 2) in an automatic fashion, without a lot of conscious thought. Most of our behavior is fast and automatic, relying on a myriad of cognitive shortcuts to reserve our deliberate processing for the most salient, non-routine, or novel situations.

Much of our behavior is unconscious and in response to our surroundings.

Because we rely so heavily on our automatic processing system, our actions and decisions are often conditioned by our environment—both our physical surroundings and things like advertising or elements of a task at hand, such as a form we must complete.

Humans are social beings who care what others think and do.

We go to lengths to match our behavior to those around us, and we act in ways to help present a positive self-image, especially when we believe others are watching.
Individual Factor: Fast vs Slow Processing

Refers to the neurological description of the two ways that our brains are thought to process information:

System 1 = Autopilot
- Fast
- Unconscious
- Automatic
- Everyday Decisions
- Error Prone

System 2 = Pilot
- Slow
- Conscious
- Effortful
- Complex Decisions
- Reliable

System 2 is *energy intensive and limited in quantity*, so we seek to conserve it once it begins being depleted.
Individual Factor: Fast vs Slow Processing

System 2 can be depleted by:

- Emotion regulation
- Making active choices
- Sorting through information
- Switching tasks
- Solving complex problems
Individual Factor: Fast vs Slow Processing

When depleted, we usually switch to autopilot (System 1) processing, which can lead to sub-optimal decision making.
Individual Factor: Fast vs Slow Processing

How can understanding Cognitive Load help?

Prevent people from depleting their cognitive resources

Make sure that people don’t use fast processing for tasks that would best be made using slow processing
Amazon’s 1-click checkout lets you instantly purchase your item and bypass the multi-step process of writing out the shipping address, the credit card information, and desired delivery date. Because you do not have to think about each step, you are more likely to purchase the item.
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Environmental Factor: Choice Architecture

Choice architecture is aimed at minimizing the impact of the most common and predictable biases that lead to sub-optimal results.

**Basic tools:**

- Defaults
- Expecting error
- Understanding mappings
- Feedback
- Structuring complex choices
- Creating incentives
Opt-Out Organ Donation

Organ Donation Wales
Make time to talk about your decision

Register or amend your decision

After 1 December 2015, if you have not recorded an organ donation decision (opt in or opt out), you will be treated as having no objection to donating any of your organs.

Making organ donation the default option has proven to be a significant driver of number of people registered as organ donors. Donation rates typically exceed 90% in opt-out countries and fail to reach even 15% in opt-in countries.
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Social norms are the **values, actions, and expectations of a society or culture** and offer both implicit and explicit guides to behavior.

Norms are often identified as **descriptive norms** (observation of what others do, providing information about what is “normal”) and **injunctive norms** (perceived behavior of what most people approve of, providing information on what one “should” do).

### Social Norms in Action

**Compare a person’s behavior to that of their peers**
Utility companies compare a household’s consumption to that of their more efficient neighbors to reduce water and energy consumption.

**State that others either approve or disapprove of a person’s behavior**
The National Park Service used injunctive norms by showing an image of one person stealing (rather than a group) to decrease theft by 7.92% vs. 1.67%.
All we need is a little encouragement

Case Study: Opower

- Comparing households to their neighbors has increased energy savings of 2 to 4%, saving millions of kilowatt hours
Social Norms and Self-Image

- The way people view and define themselves is a powerful driver.
- The attributes (e.g., honest, smart, good) that define our self-image differs greatly from person to person and are influenced by culture.
- Each person’s identity has multiple facets (e.g., mother, lawyer, New Yorker)
- Someone may act differently based on which aspect of their identity is most active at the time.
Understanding the choices we have – and their consequences

Case Study: UK Department of Transportation

▪ Drivers weren’t convinced that 40mph was more dangerous than 30mph

▪ Difference between 80% chance of death versus 80% chance of survival

▪ Advertisement reduced child deaths and serious injuries by 59%
Resource: IRS Behavioral Insights Toolkit

IRS has published a toolkit on the web for practitioners applying behavioral insights

Available at: https://www.irs.gov/pub/irs-utl/17rpirsbehavioralinsights.pdf
Analytics + Behavioral Insights
Two forces reshaping the world

Data
“The term itself is vague, but it is getting at something that is real... Big Data is a tagline for a process that has the potential to transform everything.”
— Jon Kleinberg, Cornell University

Digital Technology
“Digital is the technological enabler of this century... The lifeblood of organizations that have embraced it, and a death sentence for those that haven’t.”
— Mike Bracken, Founder - UK Govt Digital Service
The emergence of data science
Data science is entering public policy

Predictive models can be used to:

- Hire more effectively and reduce bias in hiring (Moneyball)
- Underwrite, price insurance risks
- Predict claim durations for injured workers
- Predict recidivism
- Identify episodes of waste, fraud, abuse
- Identify unsafe workplaces
- Identify physicians at highest risk of being sued for malpractice
- Identify police officers at risk of using excessive force
- Identify divorced parents most likely to lapse on child support payments
- Predict healthcare utilization
- Predict lifestyle disease states (diabetes, obesity, hypertension)
- Predict success at university
- Identify kids at risk of dropping out of school
- …

*The Economist, August 20th 2016*
But there is a challenge...

Prediction
But there is a challenge...
The City of New York does data science

Big Data in the Big Apple

How New York’s first “director of analytics” revolutionized the city’s building inspections.

By Viktor Schönberger and Kenneth Cukier

A new way to figure out which old buildings are most at risk
Push the worst, nudge the rest

**Data science**
The city of New York built predictive models to deploy building inspectors to the highest-risk buildings.

**Behavioral science**
Behavioral nudge tactics could be employed to ameliorate lesser risks that don’t merit immediate physical inspections.

… similarly with health / safety inspections, tax / premium audits …
Supporting child support

**Data science**
Models can identify non-custodial parents most likely to fall behind on child support payments.

**Behavioral science**
Nudge tactics like reminders, pre-commitment, social proof, “mental accounting”, ...
Case study: Nudging New Mexico
Issue: Overpayments in unemployment insurance

Nearly 1 dollar out of 8 distributed by states in the U.S. went to someone who was ineligible for unemployment benefits.
Issue: Overpayments in unemployment insurance

The State of New Mexico asked Deloitte Analytics to identify improper unemployment insurance (UI) cases, which cost the state millions of dollars.

Cause of overpayment

- Work Search: claimant not performing required search for work (34%)
- Benefit Year Earnings: claimant doesn’t properly report earned income while on benefits (33%)
- Separation: claimant was not eligible due to reason for separation (e.g., terminated for cause) (19%)
- Able & Available (5%)
- Base Period Wages (4%)
- Other (including identity theft) (5%)

Behavioral Insights applied

NUDGING NEW MEXICO
Kindling Compliance Among Unemployment Claimants

DU Press - Nudging New Mexico
Behavioral Insights applied

Video removed
New Mexico’s Improper Payment Prevention Initiative (IPPI)
The nudge: delivering a personalized message in real-time

1. Did you work during the reporting period listed above?
   This includes Full-Time®, Part-Time®, Temporary Work®, Self Employment®, or Military Employment®.

2. During this reporting period:
   Were you offered employment?
   Did you quit a job?
   Were you discharged from a job?
   Were you laid off due to lack of work?

3. For the week shown above did you receive a pension payment that you have not previously reported to us?

4. During this reporting period:
   Were you physically able or available to work 3 or more days of your regular work week if a job was available?
   Did you meet work search requirements®?

5. Are you attending school full-time® (If you are a full time student and are on a scheduled break®, then answer 'Yes')?
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3. For the week shown above, did you receive unemployment benefits?

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   - Did you meet work search requirements?

5. Are you attending school full-time? (If you are a full time student and are on a scheduled break, then answer 'Yes')?
Test and Learn

Treatments are assigned randomly to similar claimants, enabling rapid assessment of results by comparing differences post treatment.

- **Customized**: multiple “arms” in the experiment.
- **Flexible**: can adjust for continual improvement.
- **Real-time**: results evident after only a few days.
## Impact on the bottom line

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http://www.dol.gov/dol/maps/xls/2015-12-MonthData.xls
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Net overpayments down 75%
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**Fraud Rate**  
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Fraud down 50%

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Questions?
Further reading: Behavioral Insights on Deloitte University Press

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