Deloitte.

Using the Nudge in Tax Compliance
Leveraging Behavioral Insights to Boost Tax Revenues

Deloitte Consulting LLP

Agenda

1 Introduction to Behavioral Economics & Nudges

2 Pilot Overview

3 Q&A

Nudge objectives

Define target audience:
Analyze internal processes to gauge which pool of tax payers will be targeted to change behavior

Design communications:
Create messages and letters tailored to the target audience with a different set of wording for testing effectiveness

**Outline implementation strategy and measure results:**
Once the messaging activities have been created, a definition on the process to implement the treatments, and measure its effectiveness, will be conducted

Introduction to Behavioral Economics ("Nudges")

Playing Moneyball – Avoiding System one errors

Human judges are not merely worse than optimal regression equations;

they are worse than almost any regression equation.

- Richard Nisbett and Lee Ross
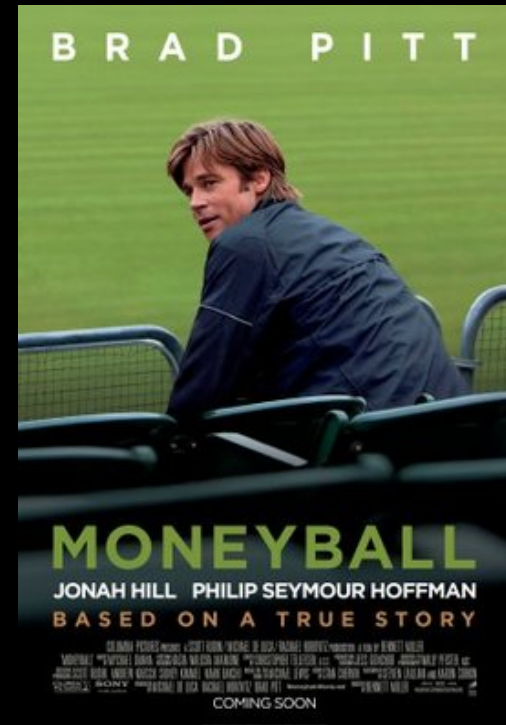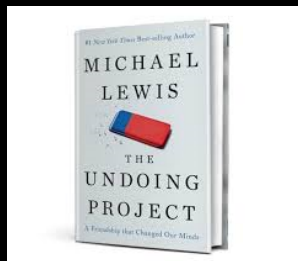
A good human-centered design presupposes understanding *Humans*, not *Econs*

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.
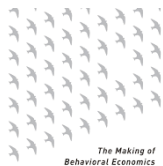
The Making of Behavioral Economics
MISBEHAVING
Richard H. Thaler
Best-selling coauthor of *Nudge*

— Richard Thaler

Humans

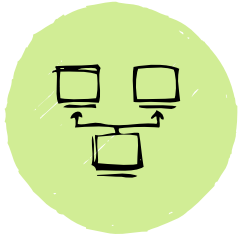Most of the people I meet don't have any of those qualities.

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

# The key foundational principles of behavioral economics

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

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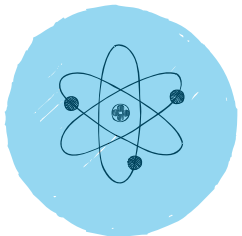
Much of our behavior is unconscious and in response to our surroundings.

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.

7

Practical tools of behavioral insights

Considered together, these Behavioral Insights offer the perspective that **much decision-making is influenced by a combination of individual, environmental, and social factors**. The perspective offered by Behavioral Insights isn't merely explanatory, but offers practical tools that can be applied to help influence behaviors by allowing us to work with, rather than against, human nature. For example:

Individual

Understanding that people are faced with more information than they can process underscores the importance of simplifying complex tasks, processes, and policies

Environmental and Design

Drawing on the fact that much of behavior is shaped by our surroundings, prompts and cues can be built into websites and forms to guide behavior so that the desired choice is the easy choice.
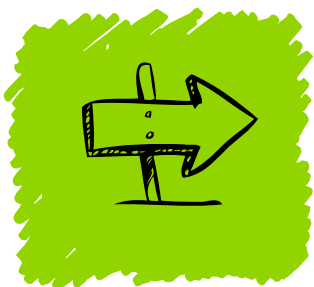
BEHAVIORAL INFLUENCES

Social

Recognizing the importance we place on our connection to others, we can motivate people to behave better by comparing their behavior to the behavior of others.

Behavioral nudging overview

Its a concept from behavioral science and economics that **steers people in particular direction** but that also allow them to preserve their freedom of choice and does not impose any significant material incentives.

Examples of Nudges

A **reminder** **is a** nudge
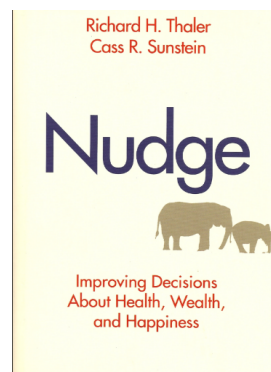
Also a **warning**

Examples of NOT Nudges

A **subsidy** in **not** a nudge

Nor is a **fine/jail** sentence

Application of Nudges

Richard H. Thaler
Cass R. Sunstein

Nudge

Improving Decisions
About Health, Wealth,
and Happiness

"Putting fruit at eye level counts as a nudge.
Banning junk food does not."

Impact of Nudges:

"Nudges specifically promise a "middle way": they influence choices without coercing choice."

Nudging is Design Thinking

Richard Thaler and Cass Sunstein, after reading "The Design of Everyday Things", came up with the idea of designing policies for humans the same way Don Norman writes of designing things for humans

Design *things* for humans

Design *policies* for humans
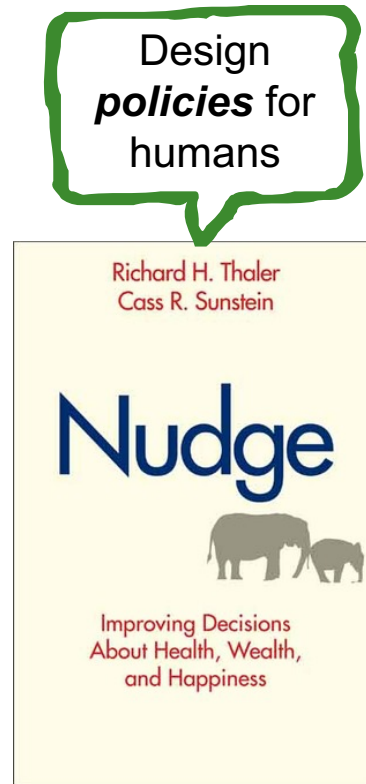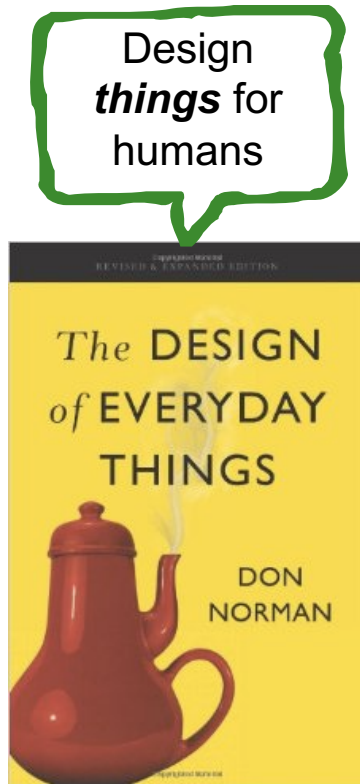
Design considerations

- Present bias
- Loss aversion
- Social proof
- Social physics
- Framing effects
- Status quo bias
- Mental accounting
- Cognitive load
- Pre-commitment
- Lotteries (overweighing small probabilities)
- Unit bias ("mindless eating")

Nudges can have surprisingly large impacts to drive behavior

A color changing hand wash that drastically increased compliance among kids

- The unique **hand wash changes color** from white to green in just 10 sec the time it takes for Lifebuoy to deliver 99.9% germ protection.
- The **campaign hinged** on a series of specially-choreographed hand wash routines; **a sequence of 'secret' moves for kids** to pound & smash away bacteria and dirt.
- So far films have collected over 3 million views (exceeding the initial target of 500 thousand views)

Design considerations impacted

Time Distortion

Social Physics

And nudges can also be implemented to impact community

Copenhagen decreased litter by 46% through nudging

Design considerations impacted

Salience

Social Physics

- In Copenhagen it is estimated that 1 in 3 individuals will occasionally litter.
- To resolve this problem, a research team placed green footprints that led to various garbage bins in the city and handed out caramels to pedestrians.
- There was a **46% decrease in caramel wrappers littering the streets when the footprints were in use.**

Tax Compliance: Recent Nudging success stories

Singapore increased voluntary payments by 3-5 percentage points by nudging businesses with a more eye catching notification

In 2013, the Ministry of Manpower in Singapore improved its reminder letters by:

1. Simplifying the language used
2. Including a social norm message saying "96% of employers pay their levy on time".
3. Printing the bills on pink paper typically used for debt collection.

These interventions were tested on those who did not pay their taxes on time.

Design considerations impacted

Simplification

Salience

Social Norms

There was an improvement of **3 to 5 percentage points** of employers who paid their foreign domestic worker taxes on time, when they received the pink letter, compared to those who received the regular letter

https://www.challenge.gov.sg/print/cover-story/a-tip-for-policy-making-nudge-not-shove

Tax Compliance: Recent Nudging success stories

In the UK, HMRS lifted voluntary payments with a single sentence added to a notification

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STAFFORD COURT
STAFFORD PARK
TELFORD
TF3 3BD

GOV.UK

Debt Management & Banking

Mr R Harding
HMRC London South
2nd Floor Southern House
Wellesley Grove

Dear Sir/Madam

Please pay £999999999999.99

Our records show that your Self Assessment tax payment is overdue.

It is easy to pay. Please call the phone number above to pay by debit card, credit card, or Direct Debit.

You can also pay using internet and telephone banking. For more information on when and how to pay, go to www.hmrc.gov.uk/payinghmrc

If you don't believe that this payment is overdue, please contact us on the number above.

If you have already paid, thank you. If not, please act now.

Tax Compliance: Recent Nudging success stories

Adding the sentence "9 out of 10 people in <your town>" boosted voluntary payments

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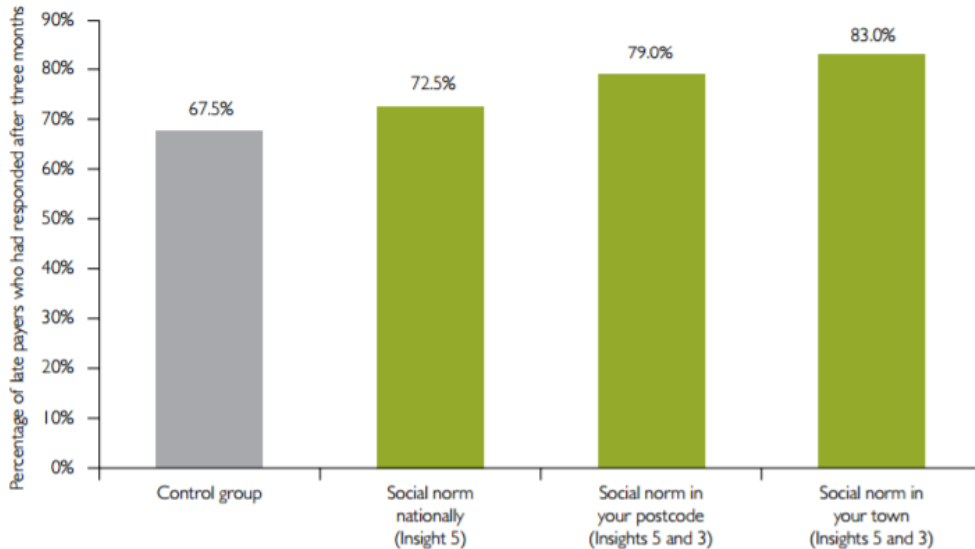
Design considerations impacted

Simplification

Salience

Social Norms

Tax Compliance: Recent Nudging success stories

£210 million of unpaid tax recovered by the British Government in one year by using social norm framing

Results of the tax compliance experiment

Trial 1a: Using social norms to increase tax debt payments

Advantages:

$ **Easy to implement and low cost**

📅 **No extra burden on collections**

⌃ **Wide acceptability and Implementation***

No of cities have been replicating these techniques in various scenarios such as parking ticket, water sewer bill & property tax collections.

- This social nudge has increased tax compliance from **68 percent to 83 percent** and bought in over £210 million to the UK government in a year.

- Seeing this success the British government has further undertaken other advanced nudging projects incorporation **text messaging,** attracting **the attention of a specific group** and **changing the default web-links**.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/60539/BIT_FraudErrorDebt_accessible.pdf

Governments are using Nudges for Tax Collection

Insight: Low-cost tweaks to communications can lead to higher compliance and voluntary payment rates.

Behavioral economics research shows that ***deploying key messages*** at the right moment ***improve compliance***.

Encouraging Compliance: *Using lessons from behavioral science to increase compliance and reduce the tax gap*

- Research has shown that up to 15% of the tax gap is due to procrastinators – tax payers who can afford the tax bill but delay paying more than 30 days

- Pioneering studies by multiple government agencies suggest actionable insights that collections departments can employ to improve compliance:

Specific Wording: phrasing tailored to nudge procrastinators can improve payment rates by 15%

Messaging: descriptive vs. injunctive messages

**Moral Cost Emphasis:** social norms and public good appeals

Specificity: norms framed around a specific population or group

No-Cost Benefits: *Immediate impact with virtually no marginal cost to policymakers*

- Minor adjustments to existing processes can lead to 10-15% higher payments
- No additional impact to staff – tax debtors voluntarily improve self-reporting

Effect of Reminder Letters on Late Tax-Payers
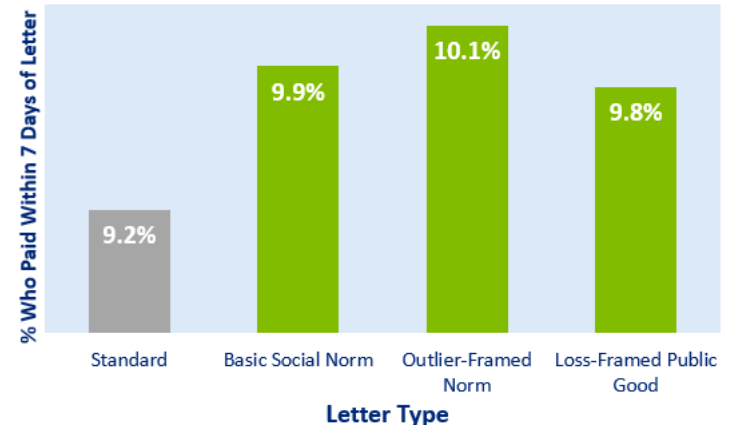
By leveraging behavioral insights, we can develop a ***more refined understanding of human behavior*** that will help design both ***lasting and cost-effective*** interventions to ***tackle tax compliance.***

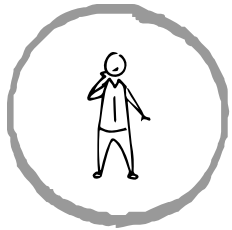# Pilot Project Overview

Overview of the Nudge Pilot

Goal:
Improve voluntary collections (or online payment agreements, or reduced burden of phone calls/visits, reduce cost of collections?)

How:
Design variations on correspondence to delinquent tax payers to drive better outcomes

Who:
Segmentation?

Test & Learn:
Randomly select some delinquent taxpayers to receive the existing letters and test out the new letters to assess the most effective letter – and implement changes

Potential Sample Nudges

Social norms and Identity: "Join the majority of Argonauts in paying your taxes". References to local town/county to boost effectiveness. Or "You are in the small minority of Huskers who have not yet paid their taxes"
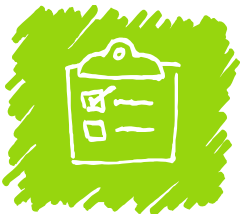
Loss aversion: Highlight penalties

Online payment agreements: Stress lower monthly cost. "With a payment agreement your cost could be as low as $xxx.xx" rather than the full amount.
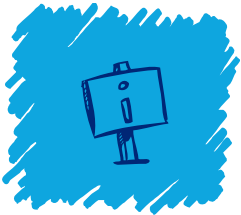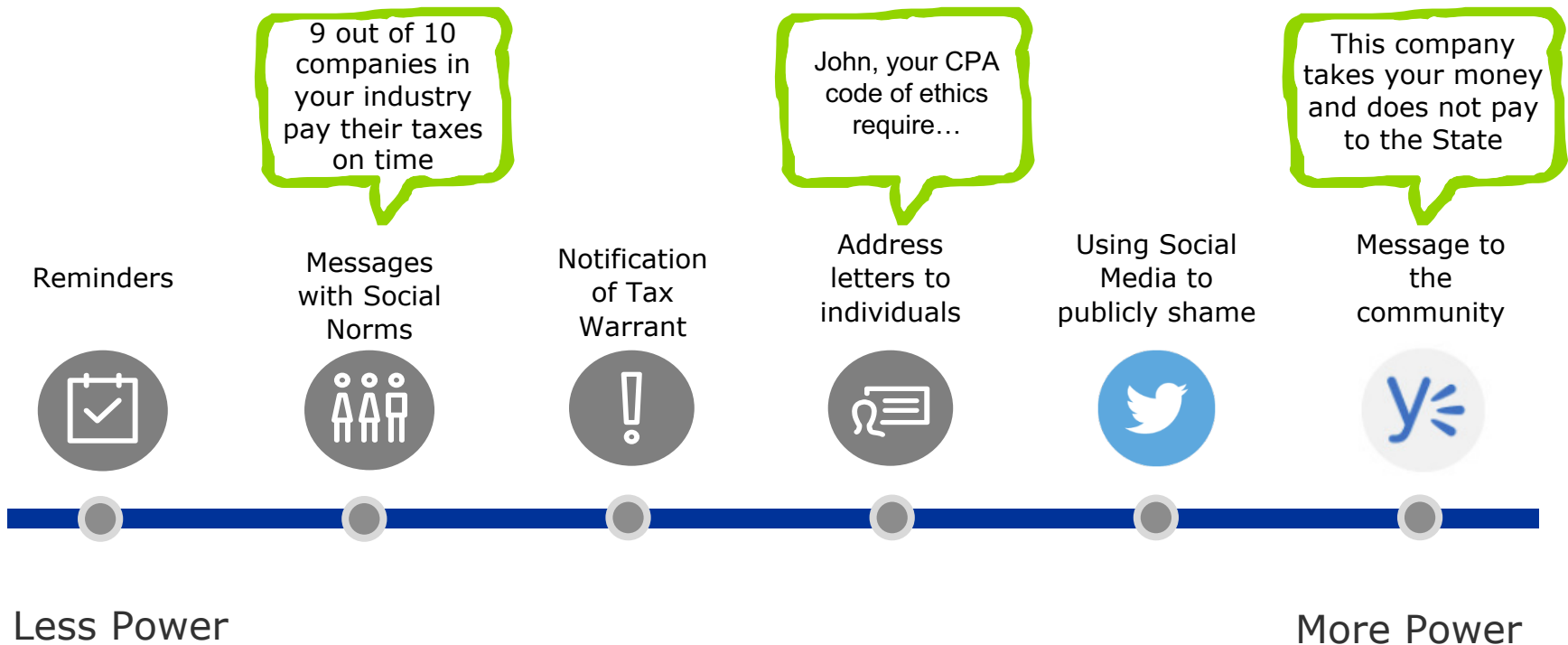
Loss-framed public good:
"Most of your tax dollars in <State> go to pay for education in schools – losing this funding can hurt kids here in <State>".

Simplification:
What is being asked / what is the next step to take. Use layout and formatting to highlight the next step (go online, call this number, make a payment here).

Degrees of Nudge Power

Nudges can go from actions considered "less powerful" or more educational – appealing to a partnership style of language - where reminders or positive reinforcement messages are part of the mix. On the other hand, "More powerful" type of nudges involve the community by exposing the non-compliant tax detractors through social media or publicizing.

9 out of 10 companies in your industry pay their taxes on time

John, your CPA code of ethics require…

This company takes your money and does not pay to the State

Reminders

Messages with Social Norms

Notification of Tax Warrant

Address letters to individuals

Using Social Media to publicly shame

Message to the community

Less Power

More Power

Experiment: Who, When and How to Influence

A successful pilot will identify a sizable tax paying population and use the best possible levers to make a measurable impact

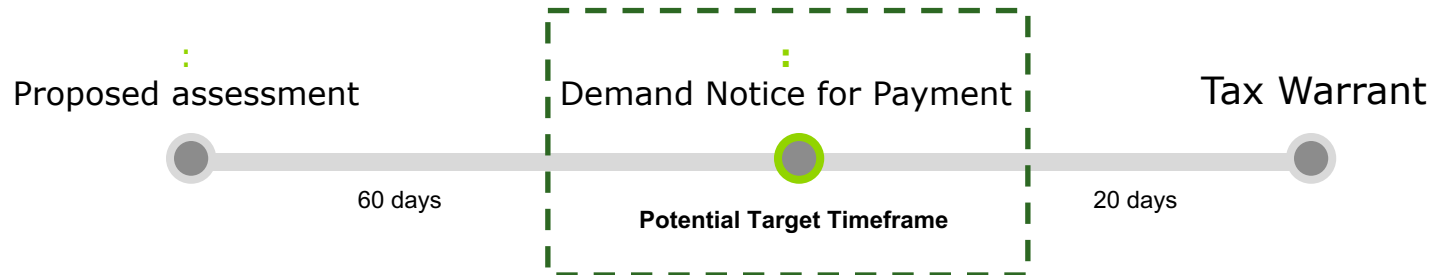| *Who are we trying to influence?*	*How do we influence behavior?*	*How do we measure impact?*
• **Corporate sales tax and payroll tax withholding late payers** • Repeat offenders • Small vs Large business • In vs out of State	• Simplifying the complex verbiage in communication • Social Norm Framing (e.g., bold, "boxed") • Use other techniques such as choice architecture, moral duty framing to increase compliance • Vary the timing and number of correspondence messages	• Percentage of entities that paid any part/all of overdue taxes • Amount and percentage of overdue taxes collected after correspondence • Average time from first correspondence to any response from entity (payment, appeal, etc.) • Tax compliance rates for treated entities in future tax cycles

This pilot will focus on updating the process before unpaid taxes get escalated to tax warrant or 3rd party collections:
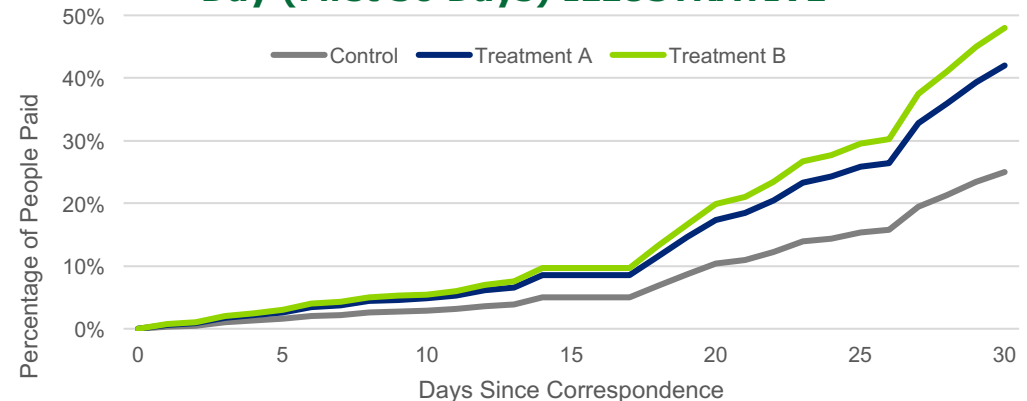
Proposed assessment   Demand Notice for Payment   Tax Warrant

60 days   **Potential Target Timeframe**   20 days

Test and Learn: Measuring the Impact

Effectiveness of different nudges can be scientifically measured through Randomized Control Trials (RCTs)

Pool of Late Payers

Random Assignment

Control Group

Treatment Group A

Treatment Group B
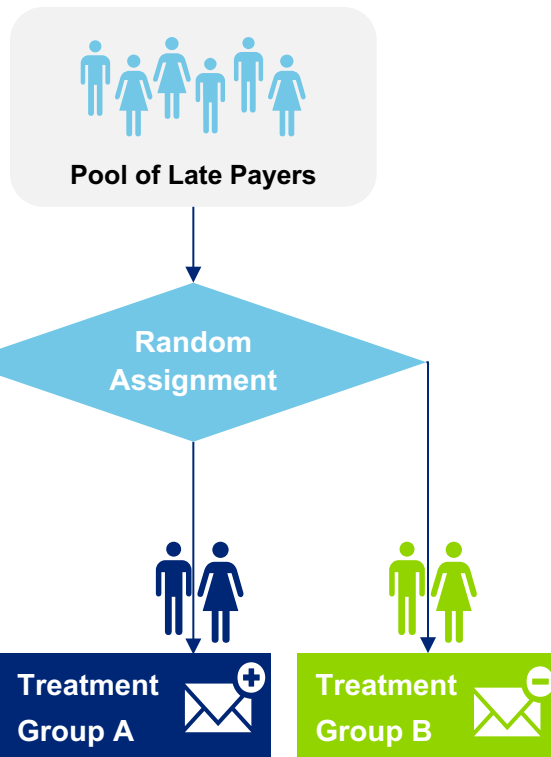
Potential Outcome Metrics

- Percentage of entities that paid any part of overdue taxes
- Percentage of entities that paid all overdue taxes
- Percentage of entities that paid all overdue taxes and additional penalties
- Amount and percentage of overdue taxes collected after correspondence
- Average time from first correspondence to any response from entity (payment, appeal, etc.)
- Tax compliance rates for treated entities in future tax cycles

Cumulative Percentage of Entities Paying by Day (First 30 Days) ILLUSTRATIVE

Control — Treatment A — Treatment B

Percentage of People Paid

Days Since Correspondence

Appendix

References:

- http://theconversation.com/the-potential-of-behavioural-economics-beyond-the-nudge-43535

- http://www.economist.com/blogs/freeexchange/2015/07/behavioural-economics

- https://behavioralpolicy.org/what-is-nudging/

- Applying behavioural insights to reduce fraud, error and debt"

  by Behavioural Insights Team,UK Cabinet Office

- http://apollonsky.me/what-is-nudging-influence-actions/#So_What_Is_A_Nudge

- https://en.wikipedia.org/wiki/Behavioural_Insights_Team

- http://www.mof.gov.sg/news-reader/articleid/1506/parentid/59/year/2015?category=Speech

- https://beyondmusing.wordpress.com/2013/07/you-are-being-manipulated-have-you-noticed/

- http://inudgeyou.com/archives/4860

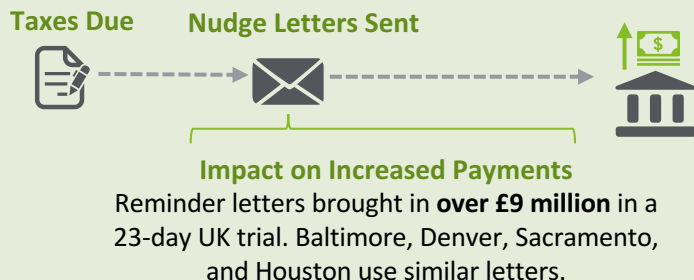# Analytics for Improving Tax Compliance

Innovative Ways to Reduce Fraud, Error, and Debt for Tax Agencies

Deloitte.

What We Do:

Improve Collections

Research has shown that up to 15% of the **tax gap is due to procrastinators** – taxpayers who can afford the tax bill but **delay payment by more than 30 days.**

Even minor adjustments to current processes can lead to **over 15% higher payments, for businesses and individuals:**

Taxes Due   **Nudge Letters Sent**

Impact on Increased Payments

Reminder letters brought in **over £9 million** in a 23-day UK trial. Baltimore, Denver, Sacramento, and Houston use similar letters.

Sources: National Bureau of Economic Research (NBER), Pew Charitable Trusts

Case Selection

How can we better allocate **scarce resources**? Analytics not only empowers us to know where to look for error, but enables us to **do more with less**. We can **organize work queues** by prioritizing which cases to audit for delinquency and fraud, as well as **develop tools to help case workers** conduct their jobs more effectively.

Risk Assessment

Risk: High
Action: Investigate case

Risk: Low
Action: Automate process

Case Study

According to the USDOL, improper payments cost more than **$3.2 billion** in Unemployment Insurance (UI) funds in 2013. Deloitte enabled New Mexico to **increase voluntary self-reporting** of earnings using analytics and insights from behavioral economics. The state ultimately **reduced fraud by 40%** – protecting eligible claimants while preventing erroneous payments and **strengthening program integrity**.

How We Do It:

Advanced Analytics

Anomaly Detection
flags suspicious activity by finding outliers in taxpayer behavior

Risk Scoring
identifies taxpayers with the highest risk of fraud or non-compliance

Cluster Analysis
uses demographic and geographic data to understand taxpayer behavior

Behavioral Nudges

Behavioral Correspondence
raised compliance rates by 4 times in a UK study conducted by the NBER

Social Norm Framing
increased payment rates by 4.7% in a UK group with a 33% compliance rate

Public Goods
and moral duty appeals brought £3 million in tax revenue in a UK study

Experiments & Measurements

A/B Testing
tests variations of behavioral nudges to better understand non-compliance

Uplift Modeling
directly determines the financial impact of a treatment on taxes

Random Control Trials
tests the effectiveness of different treatment streams without bias

Potential Future Opportunities for Nudging in Tax Compliance

Increased nudging effectiveness can be achieved by continuously evolving the nudges & using multiple and more effective channels

Incorporating New Channels

- Text Messaging
- Calls and Automated Voicemails
- Emails

⊕ Potential Benefits:

- In other implementations, text message based reminders have shown to boost response by 4-20%
- Email and especially text messaging are a very personalized form of communication and therefore much more effective than regular mail at getting the attention of the recipient
- The response and tracking features of messaging will help us open up a dialogue with the individual

Using existing channels more effectively

- Changing current nudges based on changes in population segments/feedback from previous iterations.
- Combining multiple single nudges to create a more powerful overall nudge

⊕ Potential Benefits:

- Combining multiple forms of communication to create a multistep strategy can lead to a higher compliance
- Understanding what's working and what's not would go a long way to help

Practical Tools of Behavioral Insights

Considered together, these Behavioral Insights offer the perspective that much decision-making is influenced by a combination of individual, environmental, and social factors. The perspective offered by Behavioral Insights isn't merely explanatory, but offers practical tools that can be applied to help influence behaviors by allowing us to work with, rather than against, human nature. For example:

Individual Factors: Understanding that people are faced with more information than they can process underscores the importance of simplifying complex tasks, processes, and policies

Environmental and Design Factors: Drawing on the fact that much of behavior is shaped by our surroundings, prompts and cues can be built into websites and forms to guide behavior so that the desired choice is the easy choice.

Social Factors: Recognizing the importance we place on our connection to others, we can motivate people to behave better by comparing their behavior to the behavior of others.

Individual

Environmental and Design

BEHAVIORAL INFLUENCES

Social
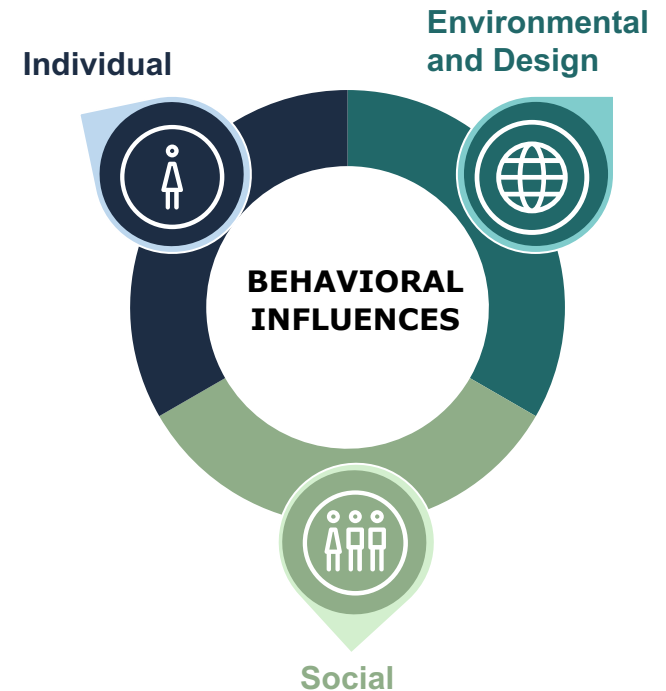
These practical tools can be applied in several ways:

- **Application:** Viewing current challenges and issues through a behavioral lens to identify the key factors at play and intervene on them
- **Research**: Conducting new research to contribute to the body of knowledge about "what works"

Transparency: Where's my pizza?

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Push the worse, 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 …

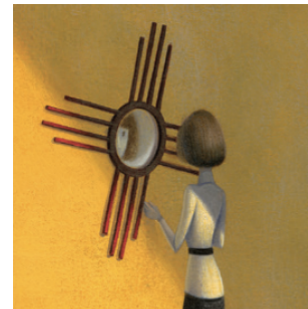# Keeping ourselves honest

Data science

Statistical fraud detection methods   (problem: many false positives!)

Behavioral science

Behavioral nudge tactics premised on the psychology of (dis)honest behavior

DAN ARIELY THE (HONEST) TRUTH ABOUT DISHONESTY

Nudging New Mexico
Kindling honesty among unemployment claimants

BY JOY FOREHAND AND MICHAEL GREENE