Affecting Choices: The Power of Online Nudges
Nudge – Dictionary Definitions

To push slightly or gently, to get someone's attention, prod someone into action

To seek the attention of by a push of the elbow, prod lightly, urge into action
Consider two cafeterias that want to encourage students choose healthier options and eat less junk-food.

• School 1 puts a ‘tax’ on unhealthy food, and removes extremely high caloric foods from their menus

• School 2 puts healthy food at eye-level, within arms reach at the checkout counter. Junk food is placed on higher or lower, harder to reach shelves
Spot the Nudge…

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School 2 – The Nudge

- Sales of healthier food increased 18%
- Junk food consumed decreased by 28%
What counts as a nudge?

• “A nudge is any aspect of the choice architecture that alters peoples behaviour in a predictable way without forbidding any options or significantly changing their economic consequences. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting fruit at eye level counts as a nudge. Banning junk food does not.”

• Choice architecture is the design of different ways in which choices can be presented to consumers, and the impact of that presentation on consumer decision-making.
Nudging 101

• The aim is to motivate/help people to choose better
  • As judged by their reflective selves

• Findings from behavioural economics, psychology and marketing are used to change the choice architecture
  • Boils down to changing the way a choice is presented in order to alter behaviour
  • Attempts to correct for common errors in judgement
  • More of an ‘art’ than a science
Nudges do/are not:
- Forbid, mandate, impose any options
  - Regulate or ban options
- Involve overt campaigns of information and/or persuasion
  - Coercive
- Significantly alter economic incentives
- Cost a lot
- Present great difficulty

Nudges do/are:
- Liberty preserving
- Informed by the findings of behavioural economics
- Able to easily ‘opt out’
Choice at the Root of Nudging

• Designing choices to help people make choices
  • Small design changes can have large effects
• It’s all about choice, helping people make them (often by limiting choice)
• Assumes that people have limited time and cognitive resources to make decisions.

• The Paradox of Choice
The Paradox of Choice

- Choice increases autonomy, control and liberation **BUT** increased choice can become overwhelming and paralyzing

- Distinction between “freedom from” and “freedom to”

- Increased market choices contribute little to the type of freedom that counts.
  - In fact, it impairs freedom because it takes away time and energy

- People choose to either:
  - not choose (stay with default)
  - The extra effort involved with choosing, and ‘loss’ of alternative options decreases the enjoyment of choice
Current Choice
Preferable Choice
The Paradox of Choice

- Regret
  - Anticipated and Post-decision both raise the stakes (responsible for the near miss and sunk-cost)
  - The more options, the more ‘if only…’s you’ll be able to generate
  - The sum total of regret over all ‘lost’ options may outweigh any joy from making any one choice!

- As the stakes and numbers of decisions rise, we feel a need to justify them
  - Especially true if we feel decisions are revealing something significant about ourselves
  - We become overly invested in our choices
  - We want our decisions to have a rational veneer
    - The automatic system registers physiological response, but can’t always figure out what’s causing them
The Paradox of Choice

- As the number of choices increases, we rely on heuristics to simply our choices (mistakes are more likely)
  - We rely on second-hand information
  - We compare options against each other
  - We pay less attention to the details
  - We value what we already have
  - We focus in on anything that can help us make a decision quickly and easily
Behaviour Economics

• People are susceptible to irrelevant influences from their environment (context effects), irrelevant emotions, short-sightedness and other forms of irrationality.

• The good news is that these mistakes also provide opportunities for improvement!
  • Develop strategies, tools and methods to help people make better decisions and ultimately improve their overall well-being.
  • Libertarian Paternalism
Libertarian Paternalism

- Libertarian
  - Free to choose
- Paternalism
  - Try to influence people to choose such that they make their lives longer, healthier and better (as judged by themselves)

- Individuals make pretty bad decision, one which they would not have made if they had paid full attention and possessed complete information, unlimited cognitive abilities and complete self-control.

- A relatively weak, soft, and nonintrusive type of paternalism.
  - Choices are not blocked, fenced off, or significantly burdened
**2x2 Types of Nudges**

**Mindful nudges** guide people to a more controlled state such as eating healthier, stop smoking, exercising and saving more money.

**Mindless nudges** use emotion or framing to sway decisions that people make.

**Encouraging nudges** facilitate the implementation or continuation of a particular behavior.

**Discouraging nudges** hinder or prevent behavior that is believed to be undesirable.
Mindful Nudges

• Ways of changing human behavior by making a person more conscious of the choice they are making
  • Make people “step back” and re-evaluate exactly what type of choice they want to make.

• Boundaries
• Alerts
• Earmarking & Mental Accounting
• Partitioning
• Virtual Progress
Mindful Nudges – Boundaries

• Boundaries
  • The more steps it takes to make a choice, the harder that choice is to commit to. Effective in curbing bad habits.
  • Boundaries make it increasingly more difficult to continue making those choices.

• Example: putting a lock on your fridge.
  • So when you want to snack, you first have to get the key from downstairs to unlock the fridge.
• Even better: don’t have snacks in the house.
  • So when you want to snack, you have to first drive to the grocery store!
Mindful Nudges – Boundaries Example
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Mindful Nudges – Boundaries Example

START YOUR DAY OFF RIGHT
Boundaries & Gambling

• How might we be able to use this for online RG?
Boundaries & Gambling

• How might we be able to use this for online RG?

• In order to gamble online, you need to enter your credit card every single time?
  • Answer a skill testing question, or solve a puzzle (will also make sure you aren’t drunk)

• In order to go past your limit, you need to take some extra steps.

• We DO NOT want to create boundaries for online RG tools!
Mindful Nudges – Alerts/Feedback

• Alerts
  • Setting an alert (phone or computer) can help make us more conscious of our daily choices.
  • For example, if you have trouble focusing at work or getting distracted, then you may want to set an alert on your computer every 2-3 hours. Whenever an alert goes off, you are forced to re-evaluate what you are doing in the present moment and make a decision to continue doing it or start something else.

• Feedback
  • A warning that something is going wrong, or is going to go wrong
  • Careful not to add too many warnings (as to be ignored)
Mindful Nudges – Alerts/Feedback

- Text Reminders Cut Binge Drinking in At-Risk Recipients
Mindful Nudges – Alerts/Feedback

- Alerts/Feedback has been shown to be effective with gambling!
- Building it better: Applying human–computer interaction and persuasive system design principles to a monetary limit tool improves responsible gambling
Mindful Nudges – Earmarking/Partitioning

• Earmarking & Mental Accounting
  • Separate money into different categories, like “Groceries,” “College,” “Leisure,” or “Savings.”
  • When we assign money to a particular category, our minds are more committed to that money’s designated purpose.
  • Encourages self-control

• Partitioning
  • Similar to earmarking, but instead focuses on separating other forms of consumption: such as food, drinking, TV, or internet
  • People are likely to eat less junk food (such as cookies or popcorn) if it is sealed in multiple smaller containers rather than one large container
Earmarking/Partitioning & Gambling

• How might earmarking/partitioning be used to facilitate RG online?
Earmarking/Partitioning & Gambling

• How might earmarking/partitioning be used to facilitate RG online?

• Using online bank accounts for ‘gambling money’
  • Financial Literacy?
• Partitioning gambling sessions into smaller chunks (time limits?)
• Partitioning gambling sites by expenditure so smaller amounts are wagered
Virtual Progress

To keep committed to a decision, it helps to see the progress made toward a goal.

Without a feeling of progress, people are more likely to ditch the decision and walk away.

Creating “progress points” – such as estimated times or signposts – people can physically see that progress is being made. This is used in surveys and loyalty programs.

Very popular in gamification.
Virtual Progress & Gambling

- How might virtual progress be used to facilitate RG online?
Virtual Progress & Gambling

• How might virtual progress be used to facilitate RG online?

• Part of an incentive structure for RG tool use.
• As a ‘progress away from PG’ meter?
Mindless Nudges

- Ways of changing behavior without the person being conscious of it.
  - Often includes subtle changes in how a choice is presented

- Default/Opt-In
- Framing
- Anchoring
- Social Influence
- Environment
• Default/Opt-In
  • When people use a new product, service, or website, they are much more likely to keep the default settings rather than change them.
  • Status Quo Bias
    • An individual's preference to maintain their current state even if a change in their circumstance would be beneficial
    • The ‘yeah, whatever’ heuristics
  • People often find choice a nuisance, especially when the choice is complicated and difficult
    • Much prefer a good default. Random default assignment is a horrible idea.

• The combination of loss aversion with mindless choosing implies that defaults will attract large market share
Default/Opt-In Example – Organ Donation

Default/Opt-In Example – Payroll Giving

![Graph showing % new donors using Xtra Factor for Opt-in vs. Opt-out]

- **Opt-in**
  - 6%
- **Opt-out**
  - 49%
Default/Opt-In Example – Savings Program
Default/Opt-In & Gambling

- How might defaults/opt-in’s be used to encourage online RG?
Default/Opt-In & Gambling

- How might defaults/opt-in’s be used to encourage online RG?
- Default enrollment in RG tools.
- Automatic opt-in to receive text warnings/alerts
Framing

• Present the same situation from a different perspective.
• Given loss aversion, presenting a situation in terms of what someone will *lose* or “miss out” on is often better at changing behavior than focusing on what they will *gain*.

• Examples:
  • 95% fat free OR 5% fat
  • 2% charge for credit OR 2% cash discount
  • Spend $600 for annual membership OR $12 a week
Mindless Nudges - Anchoring

• Anchoring
  • A common tendency for us to rely too heavily on the first piece of information offered when making decisions.
  • Businesses and stores sometimes make use of this “anchoring effect” by exposing consumers to higher priced products before offering a much lower priced products. This small effect can make products seem like a better deal at an unconscious level.
  • Infomercials
    • $300 value!!! Only $29.99! Or three easy payments of $9.99
  • The decoy effect
    • A $1000 vacuum? Who would buy that? The $600 seems much more reasonable.

• Combines with framing!
  • Use manipulation of the reference point
Framing, Anchoring & Gambling

- How might framing and anchoring be used to encourage online RG?
Framing, Anchoring & Gambling

• How might framing and anchoring be used to encourage online RG?

• Anchor precommitment values low
• Highlight losses, and frame wins as losses (compared to all money spent)?
• Frame not using RG tools as a ‘loss’
Mindless Nudges – Social Influence

• Social Influence
  • When we see other people behave a certain way, we tend to mimic their decisions.
  • Conveys information and peer pressure
    • If people are all saying one thing, there must be information in it (maybe I’m missing something)
• Social Default Bias and Social Proof
  • By telling your end users what other people have done in the past (most popular option), you're more likely to convince new visitors to pick that option
  • 92% of Fortune 500 Companies use X company

• People are more likely to conform when they know others will see what they have to say
  • Unanimous groups provide the strongest nudges
Mindless Nudges – Social Influence

• Social Influence
  • Tradition or “that’s just the way we do it” is hard to break
    • “pleuritic ignorance” → We assume that most other people must like it

• The Spotlight Effect
  • Reason why people spend so much time conforming
  • Can use this to our advantage

• The Band Wagon Effect
  • Inform people about what other people are doing
  • Importance of normative feedback
Social Influence - Example

PEOPLE POWER

USING SOCIAL NORMS TO REDUCE POWER CONSUMPTION
Social Influence – Energy Consumption

Last Month Neighborhood Comparison

<table>
<thead>
<tr>
<th>YOU</th>
<th>504 kwh</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFFICIENT NEIGHBORS</td>
<td>596</td>
</tr>
<tr>
<td>ALL NEIGHBORS</td>
<td>1,092</td>
</tr>
</tbody>
</table>

Last month you used 15% LESS electricity than your efficient neighbors.

YOUR EFFICIENCY STANDING:

- GREAT 😊😊
- GOOD 😊
- BELOW AVERAGE
Social Influence – Tax Compliance

![Bar chart showing compliance percentages](chart.png)

"9 out of 10 people in your ____ pay their tax on time"
Social Influence – Charitable Giving
Social Influence & Gambling

- How might we use social influence to encourage online RG?
Social Influence & Gambling

• How might we use social influence to encourage online RG?

• Provide normative feedback (low-risk gambling guidelines)
• Inform them that most people choose to use RG tools
Mindless Nudges – Environment

• Environment
  • Anything in our environment can be a potential influence on our thoughts and behaviors.
  
  • Picture of eyes on a wall can influence people to act more ethically and donate more to a charity (the “feeling of being watched” can be a powerful influencer on human behavior).
Environment - Example

You're probably not expecting a child to run into traffic.

preventable.ca
Environment - Make it FUN!
Environment – Use Visual Cues
Environment & Usability

• Bad usability violates ‘stimulus response compatibility’
  • The signal you receive (the stimulus) should be consistent with the desired action

• Want to make sure the automatic system doesn’t get confused
Usability – Norman Doors
We should design policies that help the least sophisticated people in society while imposing the smallest possible costs on the most sophisticated.

- Cooling-off periods
  - Aware that people might act in a way they will regret, regulators do not block choices, but ensure a period of sober reflection
    - Some people do this with purchases already
    - Imposed when people make the relevant decisions infrequently (and therefore lack experience) and when emotions are likely to be running high

- Decisions made in ‘cold state’
  - Precommitment
  - Help to limit our choices in the future
Considerations

• Too much nudging (even if it’s unconscious) can cause reactance
  • In the El Paso grocery store trials:
    • Green arrows on the floor to guide people to the produce section was successful
    • Glossy placards that hung inside beockets with information on social norms was successful
    • However, using BOTH caused produce sales to drop!

• Research suggests its best to build up nudges over time

• When we don’t understand others perceptions and expectations of choice, we risk imposing meaningless choices or depriving them of choices they see as important/essential
  • Need to be open about learning how others ‘speak choice’ and incorporate choice into the narrative of their lives
The Importance of Measurement

- Arizona's Petrified Forest National Park
  - Wanted to use a social normative message to reduce people removing the petrified wood
- Led to an 8% increase in wood theft!
  - Why?

Nudge Database v.1.2
The Importance of Measurement

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  • Wanted to use a social normative message to reduce people removing the petrified wood

• Led to a 8% increase in wood theft!
  • Why?

• People interpreted the sign as:

  “theft is common”
  NOT
  “theft is bad”
The Nudging Game

• Purpose it to help you think more deeply about nudges.

• This is to be a free-flowing brainstorming session!
  • There are no right or wrong answers.

• You have:
  • Behavioural cards (the mistakes people make when choosing)
  • Strategy cards (ways to correct for these mistakes)
Sources and Resources


• Nudge toolkit and examples: http://designincubationcentre.com/nudge/
Sources and Resources


Creating a Nudge

1. Audit the decision making process of the end-user.
   1. Analysis of context
   2. Determine how people make decisions and in what circumstances
   3. Identify the key heuristics and influences that may affect the outcome

2. Select the nudge. Ask:
   1. Is the individual aware of what they need to do but are unable to accomplish it, or does a desired behaviour/action need to be activated?
   2. Are they motivated enough to impose a nudge on themselves?
   3. Is the action more likely to be taken with increased cognition, or are individuals currently hampered by cognitive overload?
   4. Is the desired action not being accomplished because of a competing action, or due to inertia? Should we aim to discourage the competing action or encourage the target action?
Mere-measurement Effect

- When people are asked what they intend to do, they are more likely to act in accordance with their answers
  - When will you acquire your next vehicle?

- Can be accentuated by asking them when and how they plan to do it!
  - In one experiment, asking people to plan how, when and where to recycle reduced the amount of paper and plastic cups that ended up in the normal waste by 80%!
  - Another study found that helping votes produce a specific voting plan lead to a 4.1% points
  - Another experiment asked about intentions to get the flu vaccine:
Lottery Schemes

- Many studies have used lottery schemes successfully as incentive-based nudges.
Naming Conventions

• Speak-Easy Effect
  • Words that are easier to say, are most trustworthy and valuable

• Aspirational Naming
  • The ‘excellence package’

• Name for RG?
  • Positive Play
  • Player Optimization Tools
  • Play Smart
Personalization

![Bar chart showing percentage of recipients making a payment across different conditions: Control, Standard text, and Standard text & name. The chart indicates that Standard text & name has the highest percentage at 33%, followed by Standard text at 23.2%, and Control at 5.2%.]
Option Order Presentation

- Center-stage Effect
  - Face with options horizontally, we prefer ones positioned in the middle

- When faced with multiple priced options, we prefer the 2\textsuperscript{nd} most expensive.

- Primacy and regency effect
  - First name on ballots gain a nine-and-a-half point advantage

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{chart.png}
\caption{Mean % of choices made when an item was at the top/bottom vs the middle of its food category}
\end{figure}

\textit{Nudge Database v.1.2}
Completion Errors

- Post-completion Error
  - When you have finished your main task, you tend to forget things relating to previous steps
  - People were leaving their gas caps behind at petrol stations
    - Small piece of plastic helped
  - People leaving their card in ATM
    - ATMs will beep at you
  - Checklists!!!

- Forcing Function
  - In order to get what you want, you have to do something else first
    - To get your cash, you have to take your card out of the ATM first

Nudge Database v.1.2
Choice Presentation – Charitable Giving

- Statistical Victim: $1.14
- Identifiable Victim: $2.38
- Identifiable victim + statistics: $1.43

$ Average Willingness to Pay
- Identified
- Unidentified

Nudge Database v.1.2
Zero-Risk Bias (Free Effect)

• Source of irrational excitement
  • How many have bought an inferior product b/c it came with “2 free extra..”? 
• Most choices have an upside and a downside (regret), but FREE nullifies the downside to that choice 
• People will actually pay MORE to reduce risk’s to Zero (called the zero risk bias).
Behavioural Influences

- Overconfidence and Optimism
  - We all think we’re above average drivers
  - This bias lead to a propensity to take risks

- Overestimation
  - We tend to overestimate the duration of our feelings
    - Even winning the lottery doesn’t effect people long-term happiness
    - We also judge potential negative events more harshly than in reality

- Endowment Effect
  - The inclination to value and pay more for an item that is already in possession

- Confirmation Bias
  - A predisposition to accepting info that confirms to ones opinions or conclusions
Behavioural Influences

• Hyperbolic Discounting
  • We value benefits that are reaped now more than those in the future.
  • Costs in the future are not felt as deeply as costs paid immediately (so make them more salient for gambling?)

• Trivialization Effect
  • We prefer a ‘thank you’ over a small monetary reward (incentives for RG?)

• Motivating-Uncertainty Effect
  • More motivated to reach a goal with an uncertain reward

• Choice Closure
  • We are more satisfied with choices when we engage in physical acts of closure

• Availability heuristic
  • Information in our memory affects what we pay attention to and consider important
  • We have better memory for things that excite our sense or appeal to our emotions (we also neglect to remember duration, and instead focus on peaks)
Behavioural Influences

- Fresh Start Effect
  - People are more likely to achieve goals set at the start of a new time period

- Entourage Effect
  - Our status is elevated when we’re able to share our VIP treatment (with others)
  - People prefer to be part of a group that is specialized enough to separate themselves from the masses, but is still definable
    - Loyalty Programs

- Reciprocity Effect
  - We are likely to reciprocate when someone does something nice for us

- Vividness and Tangibility of the consequences of a choice
  - People spend more on credit card (called the cashless effect)

The Paradox of Choice

- Experts can simplify their own choices, and take full advantage by opportunities provided by choice. But novices are reliant on heuristics to reduce the number of choices.

- Don’t overwhelm your user!
  - Offer categorization (helps novices ignore irrelevant options)
  - Build them up slowly (adding more options over time)
  - Offer ‘expert advice’ and/or personalized recommendations (see Netflix)

- Caveat
  - Once you have choice, best not to remove it (reactance)
  - One thing to not have a choice. Completely different to have a choice removed