Behavior Change and Nudge theory
Ivo Vlaev
Warwick Business School
University of Warwick
rather than get easy access to evidence-based medical knowledge.

**Challenge 4: The changing nature of disease**

13. The NHS in the 21st century increasingly faces a disease burden determined by the choices people make: to smoke, drink excessively, eat poorly, and not take enough exercise. Today, countless years of healthy life are lost as the result of these known behavioural or lifestyle factors.

14. Wealth and technology have given
Many ways to change behaviour...
Ways of thinking about behaviour change

• Change the person — psychology (e.g. CBT)
• Change the incentives — economics
• Change the situation — nudge theory
Change the person: Decades of research used mostly arguments and advice

### Attitude-Behaviour Relations
- Theory of reasoned action
- Theory of planned behaviour
- Model of interpersonal behaviour
- Elaboration likelihood model

### Models of Health Behaviour
- Protection motivation theory
- Prototype-willingness model
- Health belief model
- Stage models (e.g., Transtheoretical model)
- Health action process approach
- Parallel response model
- Precaution adoption process
- Motivational interviewing
- Cognitive behavioural principles

### Self-Regulation (Goal) Theories
- Control theory
- Theory of goal setting
- Social-cognitive / social learning theory
- Model of action phases
- Implementation intentions theory

More than 600 studies on Condom use, Use of dental tablets, Testicular self-examination, Parent-child communication, Smoking, Skin examination, Course enrollment, Sunscreen use, Visiting an Internet site, Low fat diet, Contraceptive use, Exercise, Indoor tanning, Donating behavior, Sun protective, Sexual behavior, Breast self-examination, Seat belt use, Cycle helmet use, Study behavior, AIDS-risk behavior, Smoking, HIV-preventive behavior, Calcium intake, and others... but only ~15% variance explained...
Changing Minds

Schizophrenia

This leaflet has been designed to make you think again about how you view people who suffer from schizophrenia.

The campaign to increase the understanding of mental health problems and reduce their [stigma] and discrimination.

RESEARCH REPORT

Stigmatization of people with mental illnesses: a follow-up study within the Changing Minds campaign of the Royal College of Psychiatrists

Arthur Crisp¹, Michael Gelder², Eileen Goddard², Howard Meltzer²

¹Royal College of Psychiatrists, 17 Belgrave Square, London SW1X 8PG, UK
²Office for National Statistics, 1 Drummond Gate, London SW1V 2QQ, UK

Anti-stigma training for medical students: the Education Not Discrimination project

Bettina Friedrich, Sara Evans-Lacko, Jillian London, Danielle Rhydderch, Claire Henderson and Graham Thornicroft
Change the incentives: Straightforward incentives have their appeal too…
But which one are you?
Change the situation: Nudging the automatic system

**Reflective System**
- Controlled
- Effortful
- Rule-based
- Slow
- Conscious
- Rational

**Automatic System**
- Uncontrolled
- Effortless
- Associative
- Fast
- Unconscious
- Affective

![THINKING, FAST AND SLOW](image)

*Winner of the Nobel Prize in Economics*
Cognition vs. Context
It turns out that the environmental effects on behaviour are a lot stronger than most people expect.

Daniel Kahneman
Nobel Laureate
Reasons vs. Passions

2 digit #: 58

7 digit #: 4972301

Limited cognitive resources

Shiv & Fedorikhin (1999)
Reasons vs. Passions

Shiv & Fedorikhin (1999)
COM-B (Susan Michie et al UCL)
Nudge: Improving Decisions About Health, Wealth, and Happiness

Dick Thaler
Professor of Economics, Chicago

Behavioural Insight Team, Cabinet Office

Cass Sunstein
Professor of Law, Harvard

Regulatory Czar in Obama Administration
Choice architecture describes the way in which decisions are influenced by how the choices are presented
An amusing but powerful nudge at Schiphol Airport

- Image of black fly etched onto urinals led to ‘spillage’ declining by >80%

- Men apparently like to aim at a target when urinating
• Mindspace report published in March 2010

• Operating framework for applying behavioural insight to public policy

• *Behavioural Insights Team* established in the Prime Minister’s Office
First goal of David Cameron's 'nudge unit' is to encourage healthy living

Behavioural Insight Team set up by prime minister will focus on urging people to 'make better choices for themselves'

Giving
Green Paper

Applying behavioural insight to health
Policy Impact
MINDSPACE EXPLAINED

MESSENGER
We are heavily influenced by who communicates information to us
The weight we give to information depends greatly on the instinctive reactions we have to the source of that information

INCENTIVES
We often respond to incentives using mental shortcuts
Incentives are used as a mechanism to motivate behaviour change but we often respond to them in strange, but predictable ways

NORMS
We tend to do what those around us are already doing
We behave in ways that are influenced by the explicit or implicit behavioural expectations, or rules, of the society or groups we belong to

DEFULTS
We ‘go with the flow’ of pre-set options
Many decisions we take have a default option, whether we recognise it or not. It is seen that we have an in-built bias to accept the default, even if it has significant consequences

SALIENCE
We respond to things that are novel and that we can understand
We subconsciously filter out much of the information we receive. As a consequence our behaviour if greatly influenced by what our attention is drawn to

PRIMING
Our behaviour is often influenced by subconscious cues
We act in ways that can be altered if we are exposed to certain cues beforehand - such as sights, words or sensations

AFFECT
Emotional associations can powerfully shape the way we behave
We are strongly influenced by our feelings and emotions. Emotional responses can be rapid, so that we experience a behavioural reaction before we know what we are reacting to

COMMITMENT
We seek to be consistent with our public promises, and reciprocate acts
We tend to procrastinate and delay taking decisions that are in our best interests. Commitment devices are widely used to counter our will-power weaknesses

EGO
We act in ways that make us feel better about ourselves
We tend to behave in ways that support the impression of a positive and consistent self-image.

WHAT IS MINDSPACE?
Influencing behaviour is central to policymaking. Major advances in understanding what determines our behaviour means that we now have a new set of potentially powerful tools to use in challenging areas such as crime, obesity and recycling activities.

MINDSPACE outlines nine robust influences on human behaviour and change. These principles are underpinned by considerable research from the fields of social psychology and behavioural economics. They are therefore presented as the most robust effects that policy-makers should understand and, if appropriate, use.

MINDSPACE: Influencing Behaviour Through Public Policy
Authors: Paul Dolan, Michael Hallsworth, David Halpern, Dominic King, Ivo Vlaev

Find out more about MINDSPACE at www.instituteforgovernment.org.uk/content/133/mindspace-influencing-behaviour-through-public-policy
Messenger

**Advisor’s Expertise**
- People learn from experience to pay more attention to advisors who have given *good advice in the past*
- Consumers are more influenced by *better advisors*
- Advisors have less influence on more experienced and knowledgeable consumers

**Advisor’s Trustworthiness**
- People take more advice from trusted advisors
- Greater trust in advisors judged to have:
  - Similar values
  - Shared goals
  - Similar intentions
- Being of the *same sex and age* increases the attention paid to an advisor

**Advisor’s Personality**
- Consumers are more influenced by *confident* advisors irrespective of advice quality
- *Dissenting* advisors are discounted unless they are historically better than the consensus
- People are better at taking advice when advisors are more *distinct* from one another
Incentives – healthy diet

- Children’s liking and consumption of a disliked vegetable after 12 days exposure to taste and incentives (Cooke et al. 2011)
Incentives – weight loss

- **Lottery** incentive scheme and a **Deposit Contract** where participants risked losing money if they did not meet targets (Volpp 2008)
Last month you used 35% LESS electricity than your efficient neighbors.

Your energy efficiency for the month was: Great!

You should feel good about your energy efficiency and the savings this means for you. To save even more energy and cost, see the back of this report for some personalized suggestions to help you improve your efficiency even more.

* A 100-Watt bulb burning for 10 hours uses 1 kilowatt-hour (kWh).
Social Norms

A Multisite Randomized Trial of Social Norms Marketing Campaigns to Reduce College Student Drinking

William DeJong, Shari Kessel Schneider, Laura Gomberg Towvim, Melissa J. Murphy, Emily E. Doerr, Neal R. Simonsen, Karen E. Mason, Richard A. Scribner

The Spread of Obesity in a Large Social Network over 32 Years

Nicholas A. Christakis, M.D., Ph.D., M.P.H., and James H. Fowler, Ph.D.

The Collective Dynamics of Smoking in a Large Social Network

Nicholas A. Christakis, M.D., Ph.D., M.P.H., and James H. Fowler, Ph.D.
Defaults

• Opt-in

  [ ] Check the box if you want to participate in the organ donor program

• Opt-out

  [ ] Check the box if you don’t want to participate in the organ donor program
Defaults

Check the box if you want to participate in the organ donor program.

Check the box if you don't want to participate in the organ donor program.
Defaults

Percentage of adults registered as organ donors

Do Defaults Save Lives? Science 21 November 2003  Eric J. Johnson and Daniel Goldstein
Harnessing the Power of Default Options to Improve Health Care

Scott D. Halpern, M.D., Ph.D., Peter A. Ubel, M.D., and David A. Asch, M.D., M.B.A.

When making many types of decisions, people are confronted with default options — the events or conditions that will be set in place if no alternatives are actively chosen. Because default options are implemented even if decision makers do not specifically decline vaccination in writing. The Infectious Diseases Society of America is urging Congress to mandate annual influenza vaccination for all health care workers who do not specifically decline vaccination in writing.

Do Defaults Save Lives?

Eric J. Johnson* and Daniel Goldstein

Since 1995, more than 45,000 people in the United States have died waiting for a suitable donor organ. Although an oft-cited poll (1) showed that 85% of Americans approve of organ donation, less than half had made a decision about donation.
Salience

see Thaler and Sunstein (2008)
Salience – choosing what draws attention

This heat map of eye movements for the Tesco website shows how much importance consumers place on price, without looking for the level of cover the insurance gives.
Priming hand hygiene
INTENSIVE HAND HYGIENE ZONE
HHC improved in presence of aroma and male (but not female) eyes

- Olfactory vs control: p < 0.001
- Male eyes vs control: p = 0.038

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Olfactory</th>
<th>Male eyes</th>
<th>Female eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHC</td>
<td>15</td>
<td>46.9</td>
<td>33</td>
<td>21.6</td>
</tr>
</tbody>
</table>
the trusted way to borrow cash

25 September 2003
Shop 9B, Pinetown Arcade
Hill Street
Pinetown 3600
Tel: 031 717 8990

Congratulations! As a valued client, you are now eligible for a special interest rate on your next cash loan from. This is a limited time offer, so please come in by 31 October 2003.

You can use this cash to buy an appliance, or for anything else you want.

Enjoy low monthly repayments with this offer! For example:

<table>
<thead>
<tr>
<th>Amount</th>
<th>4 Months</th>
<th>6 Months</th>
<th>12 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>R500</td>
<td>R149.95</td>
<td>R108.28</td>
<td>R66.62</td>
</tr>
<tr>
<td>R1000</td>
<td>R299.90</td>
<td>R216.57</td>
<td>R133.23</td>
</tr>
<tr>
<td>R2000</td>
<td>R599.80</td>
<td>R433.13</td>
<td>R286.47</td>
</tr>
<tr>
<td>R4000</td>
<td>R1199.60</td>
<td>R866.27</td>
<td>R532.93</td>
</tr>
</tbody>
</table>

Loans available in other amounts. There are no hidden costs. What you see is what you pay.

If you borrow elsewhere you will pay R280.14 more in total on a R350.00, 4 month loan.

How to apply:

Bring your ID book and latest payslip to your usual branch, by 31 October 2003 and ask for

Names of clients, employees and Lender suppressed to preserve confidentiality.

Customer Consultant

P.S. Unfortunately, if you have already been a late since this letter was issued, you do not qualify for this offer.

Conclusion based on a competitor’s internal risk of 25%.
“1 in 4” is 2 min film in the cinema during World Mental Health Day 2000

Disturbing images challenging preconceptions about mental health (features cocaine addiction, anorexia, depression, dementia)

Reinforces the message that anyone can suffer from mental illness:
"1 in 4 could be your brother, your sister. Could be your wife, your girlfriend... 1 in 4 could be your daughter... 1 in 4 could me... it could be YOU"
Commitment

- African American women signing a behavioural contract, were more likely to reach their exercise goals (Williams et al. 2006).

![Graph showing exercise goal over time for participants who joined and did not join the SMarT plan.](image-url)
As a lifelong member of the Columbia Business School community, I adhere to the principles of TRUTH, INTEGRITY & RESPECT. I will not lie, cheat, steal, or tolerate those who do.
**MINDSPACE CHECKLIST**

<table>
<thead>
<tr>
<th>Have you...</th>
<th>Did you taken into account the following?</th>
</tr>
</thead>
<tbody>
<tr>
<td>got the right <em>Messenger</em>?</td>
<td>• We are more likely to act on information if the messenger has authority and expertise (either formally or through life experience) and if we can associate with them (if they are like us in some way)</td>
</tr>
</tbody>
</table>
| got the *Incentives* right? | • We dislike losses more than we like gains of an equivalent amount  
• We live for today at the expense of tomorrow but tomorrow is not so strongly preferred to the day after  
• We overweight small probabilities, which partly explains the popularity of lotteries |
| tapped into the appropriate *Norms*? | • We are influenced by what those around us are doing or whose behaviour our attention is drawn to |
| thought about the *Default* option? | • We go with the status quo or default option, and will rarely opt out from whatever is the preset option |
| enhanced the *Salience* of the information? | • We respond better to information that grabs our attention and that we can easily understand |
| accounted for *Priming* effects? | • We are influenced by prior exposure to sights, smells and sounds, often outside our conscious awareness |
| tapped into the right *Affect* (feelings)? | • We are influenced by our emotional responses to words, images and events |
| got the right *Commitment* devices? | • We try to be consistent with our commitments and promises, especially when they are made public |
| got the *Ego* effect right? | • We try to act in ways that are consistent with the images we have of ourselves, and when beliefs and behaviour come into conflict, it is often our beliefs that get altered |

**INFLUENCING BEHAVIOUR THROUGH MINDSPACE**

New insights from behavioural sciences could lead to significantly improved outcomes, at lower cost than conventional policy tools.