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Behavioural Economics and Healthcare: A Match Made in Heaven

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PRESENTATION OUTLINE

1. Introduction: Five Reasons Why Healthcare Needs Behavioural Sciences
2. Behavioural Economics Principles with Healthcare Applications
3. Case Studies in Healthcare using Behavioural Economics to Drive Change
4. What to be aware of when using behavioural economics in healthcare
5. Conclusion: Five Areas to Watch out for for Behavioural Economics in Healthcare



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I. Introduction: Five Reasons Why Healthcare Needs Behavioural Sciences



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1. UNHEALTHY BEHAVIOURS ARE PARADOXICAL DECISIONS



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2. NOT ALL POPULATIONS UNDERSTAND THE HEALTH RISKS OF THEIR BEHAVIOURS



3. SOME HEALTHCARE PATIENT-RELATED DECISIONS INVOLVE DIFFICULT CHOICES



4. SOME HEALTHCARE MATTERS QUESTIONS REQUIRE CONSISTENT BEHAVIOURS



5. BEHAVIOURAL SCIENCES ADDRESS LIMITATIONS OF CURRENT HEALTHCARE PRACTICES

- Limitations of traditional approaches to healthcare:
 - E.g. rational prevention campaigns
 - E.g. shock advertising
- Healthcare is facing a double challenge:
 - More efficient policies
 - Reducing costs
- Behavioural economics:
 - **Tackles both cost and efficiency issues**
 - Is **evidence driven**, with a focus on observable & measurable outputs

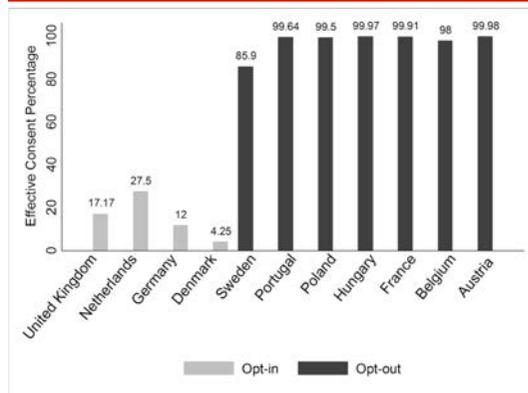
II. Behavioural Economics Principles with Healthcare Applications

Based and adapted from Sunstein's (2014) top 10 Behavioural Economics principles

DEFAULT RULES

- **What are they:** making a choice for individuals or giving a default guideline to follow
- **Why this works:**
 - Simplifies decision making; people choices made for them
 - People do not like to make the costly effort to change a default option
 - People don't like to disagree
- **How this can be used in healthcare:**
 - E.g. **5-a-day**
 - E.g. **Registering individuals by default on the organ donation register** (people have to opt out if they do not wish to be a donor), could significantly increase organ donations.
 - E.g. Governments have also encouraged (and in some cases required) companies to **sign up employees to health insurance schemes by default** in order to increase pension savings.

DEFAULT RULES



Source: Johnson and Goldstein (2003)

SOCIAL NORMS

- **What are they:** social norms refer to commonly accepted and appropriate behaviours and signal what is expected from individuals
- **Why this works:**
 - If everyone does it, it 'must' be right
 - Individuals do not want to stand out
 - Simplifies decision making
- **How they can be used in healthcare:**
 - **Messages that incorporate social norms** can help to reduce the number of missed appointments among patients:
 - e.g. "nine out of ten people arrive at their GP appointments in time."
 - Martin, Bassi, Dunbar-Rees (2012): 32% reduction of non-compliance.
 - Share users' **recommendations** (e.g. reviews) to have a consensus emerge

EASE & CONVENIENCE

- **What** is this: make the desired behaviour **easier to engage** with than the non-desired behaviour
- **Why** this works:
 - Simplifies decision making and action (cognitive and behavioural economy)
 - Affordances: individuals will naturally engage with the easiest option
 - Behaviours are adopted if they are easy to adopt
- **How** they can be used in healthcare:
 - E.g. **Making healthy food more visible or accessible.**
 - E.g. **Making it easy to change appointments** should enhance appointment compliance, while eliciting implementation intentions (e.g. "Will you please call us if you won't be able to keep your appointment?") is known to increase compliance (Cialdini, 2008).



EASE & CONVENIENCE

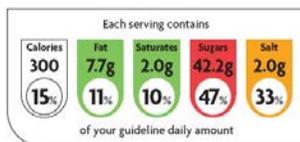
Push a button if you're happy

Download an app and fill in forms if not



WARNINGS

- **What** are they: visual elements calling for immediate attention
- **Why** this works:
 - Evolutionary based, fight or flight decisions
 - Used as a heuristic / shortcut in the decision making process
 - Simplifies the decision making process
- **How** they can be used in healthcare



GIVING FEEDBACK

- **What** are they: personalised quantitative and qualitative information on an individual's performance
- **Why** this works:
 - Individuals are motivated by **doing well**
 - Individuals are motivated by **consistency / dislike change**
 - Individuals **can adjust their behaviour** if they know where they stand in comparison with a treatment, a cohort, etc
 - Individuals **struggle to naturally monitor their performance**
 - Feedback **makes consequences** (of a treatment or bad behaviour) **more salient**
- **How** they can be used in healthcare:
 - Convince patients to quit smoking, by giving them feedback on the 'age' of their lungs, compared with a cohort of non-smoking individuals (Parkes, Greenhalgh, Griffin, & Dent, 2008).

GIVING FEEDBACK

Armellino and colleagues (2011) showed that **using real-time video monitoring and feedback of hand sanitising** in a critical-care unit could increase usage by **more than 800%**.



III. Case Studies in Healthcare using Behavioural Economics to Drive Change

Adapted from a 2010 discussion paper from the Behavioural Insights Team, Cabinet Office, UK

ALCOHOL CONSUMPTION

- Alcohol-related illness costs the NHS around £2.7 billion a year (2010 figure)
- Question: how to tackle the binge drinking culture in a University context?
 - Traditional Answer: **prevention campaign** using **guidelines**
 - BE Answer: change **social norms** & giving **feedback**
- In 1994, the University of Arizona set out to **correct the false perception** of how much students' peers drank:
 - Using posters, flyers and word of mouth
 - Revealing the **real levels of drinking among students** and as a result reduced the pressure to drink.
 - A study conducted between 1995 and 1998 showed that the **campus experienced significant decreases in the rate of heavy drinking** among undergraduate students.

SMOKING

- More than a quarter of all deaths are smoking related (Peto R, Lopez AD, Boreham J and Thun M (2006))
- Question: how to nudge patients to quit smoking?
 - Traditional Answer: **rational campaigns, shock advertising**
 - BE Answer: use **loss aversion** and **commitment devices**
- Behavioural Insight Teams and Boots UK initiative:
 - Quitters are asked to sign a contract where **they lose or keep rewards** based on whether they **pass regular smoking tests** that prove they have not smoked.
 - Rewards should not be too frequent to make it more likely to be successful.

DIET & WEIGHT

- Six out of ten adults are overweight, costing the UK economy around £7 billion a year (2010 figures)
- Question: how to encourage individuals to eat more healthily?
 - Traditional Answer: **rationale campaigns**
 - BE Answer: make it **easier to shop for healthy items**, set **defaults**, create **visual reminders**
- New Mexico State University study on using visual prompts:
 - Redesigned trolleys including a yellow line and sign in the trolley for fruits and vegetables
 - Including an appealing picture of fresh fruit and vegetables in the trolley to further reinforce the effect
 - Large increase in the amount of fruit and vegetables purchased / no decrease in profitability for the retailer
- Use **1st person perspective & pleasure** (rather than health) to make fruits more appealing (fMRI study, Basso, Voyer, Petit, Le Goff, Ouiller, under review)

DIET & WEIGHT



Basso, Voyer, Petit, Le Goff, Ouiller, under review

Eating fruits is pleasant

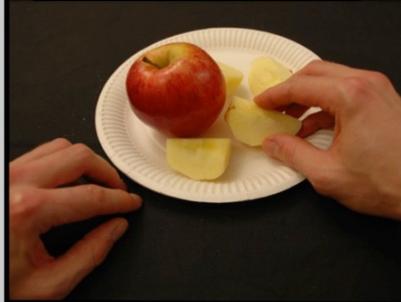


Basso, Voyer, Petit, Le Goff, Ouiller, under review

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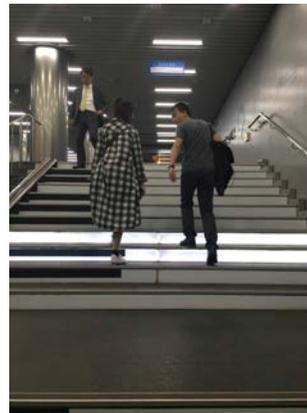
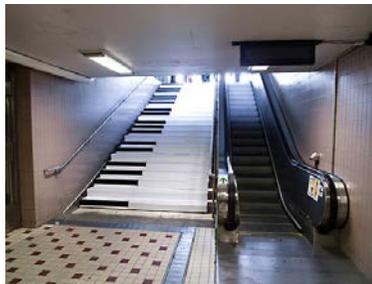
Eating fruits is pleasant



PHYSICAL ACTIVITY

- Question: how to improve physical fitness by tackling inactive lifestyles?
 - Traditional Answer: **rational campaigns, compulsory PE classes at school**
 - BE Answer: make individuals exercise **without them realising** and in a **fun way**
- Most people are aware of the health benefits of taking the stairs instead of the escalator...
 - But when faced with the choice, they usually take the easy option – particularly when others are doing the same.
 - The piano stairs was one of the most popular ideas

PHYSICAL ACTIVITY



TEEN & TODDLERS

- Britain has the highest rate of teenage pregnancy in Western Europe
- Question: how to lower the teenage pregnancy rate in Great Britain?
 - Traditional Answer: **safe-sex campaigns, testimonials to discourage pupils**
 - BE Answer: make teenagers **experience first hand** what living with a toddler is about
- Teens & Toddlers UK charity initiative:
 - A 20-week programme where teens mentors toddlers
 - Once a week, supervising and playing with a toddler at a nursery, experiencing first hand the demands and responsibilities of parenthood.
 - Followed by sessions run by trained support workers who teach them about child development, parenting skills, sexuality and relationships
- Results: pregnancy rate of those who had participated in the programme was **2.7 per cent**, in contrast to the national teenage average of **4.1 per cent**

IV. What to be aware of when using behavioural economics in healthcare

Limitations and challenges of using BE in healthcare

BEHAVIOURAL ECONOMICS IS NOT ALWAYS A MAGICAL ANSWER TO EVERY PROBLEM

1. Application of BE principles does **not always guarantee results**...
2. ... And even when it works, **effects can be small**
3. **Other incentives** can work equally well (e.g. taxation or financial rewards).
4. Effects achieved by behavioural interventions may **wear off over time** (behavioural resistance...)
5. **Combining BE principles** with other forms of interventions can help maximising effects

V. CONCLUSION: FIVE AREAS TO WATCH OUT FOR

CONCLUSION: FIVE AREAS TO WATCH OUT FOR BEHAVIOURAL ECONOMICS APPLICATIONS IN HEALTHCARE

1. **Big data analytics**: to identify new biases in decision making
2. **Wearable devices**: to provide always more comprehensive feedback
3. **Gamification**: designing sophisticated games to change patients behaviours in the long run
4. **Virtual / augmented reality**: to study choices made in hypothetical scenarios (VR) or provide instant warning or messages (AR)
5. **Chatbots** and other artificial intelligence platforms can be programmed to nudge automatically

4. QUESTIONS & ANSWERS

Q / A