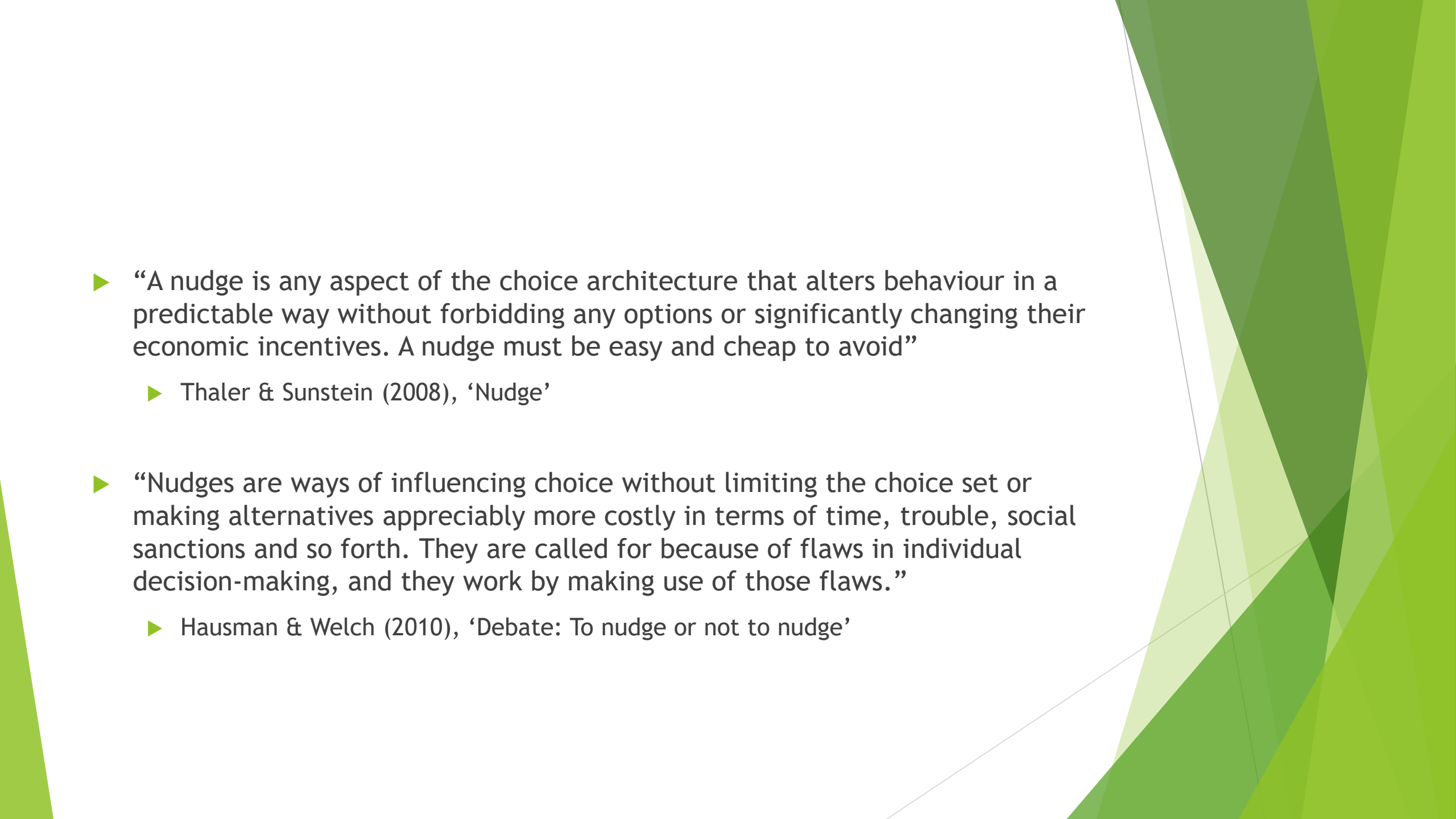


Behavioural Economics and Nudge Theory

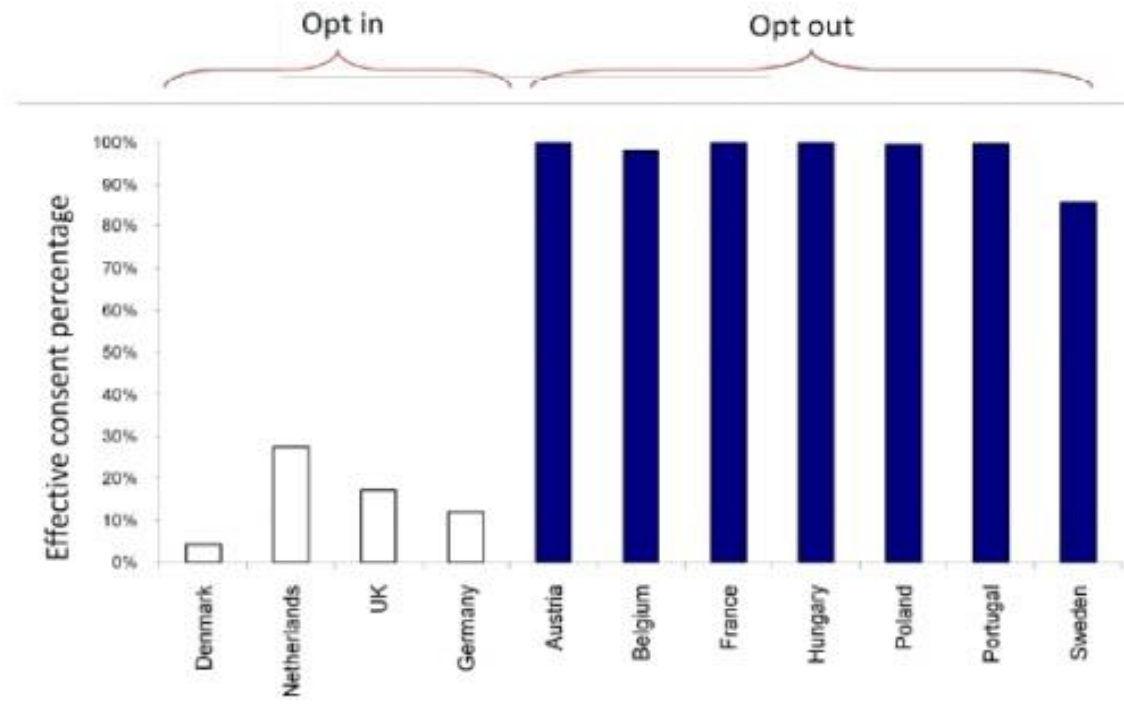
MSc Applied Social and Health Psychology
Applying Social Psychology

- 
- The background of the slide features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect.
- ▶ “A nudge is any aspect of the choice architecture that alters behaviour in a predictable way without forbidding any options or significantly changing their economic incentives. A nudge must be easy and cheap to avoid”
 - ▶ Thaler & Sunstein (2008), ‘Nudge’
 - ▶ “Nudges are ways of influencing choice without limiting the choice set or making alternatives appreciably more costly in terms of time, trouble, social sanctions and so forth. They are called for because of flaws in individual decision-making, and they work by making use of those flaws.”
 - ▶ Hausman & Welch (2010), ‘Debate: To nudge or not to nudge’

Health & Well-being

1. A famous paper demonstrating the massive effect **default choices** have on **organ donation** compliance rates. Those countries where people are required to opt-out of organ donation report significantly higher consent than those with an opt-in policy.

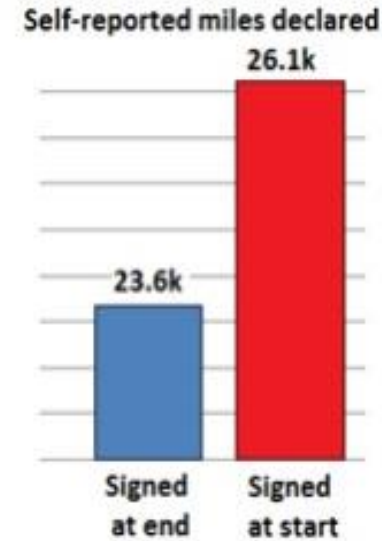
Johnson & Goldstein (2003), *Do Defaults Save Lives?*, Science, Vol. 302



2. The authors sought to **prime honesty** by asking people to sign at the start of a form rather than the end when reporting how many miles they had driven on their car for insurance purposes.

In this case there was a financial incentive to report less miles driven since reporting more would mean you would pay more (i.e. a higher number in the graph implies more honesty). The results indicated the treatment to be effective at inducing more honest declarations.

Shu et al. (2012), *Signing at the beginning makes ethics salient and decreases dishonest self-reports in comparison to signing at the end*, PNAS vol. 109.



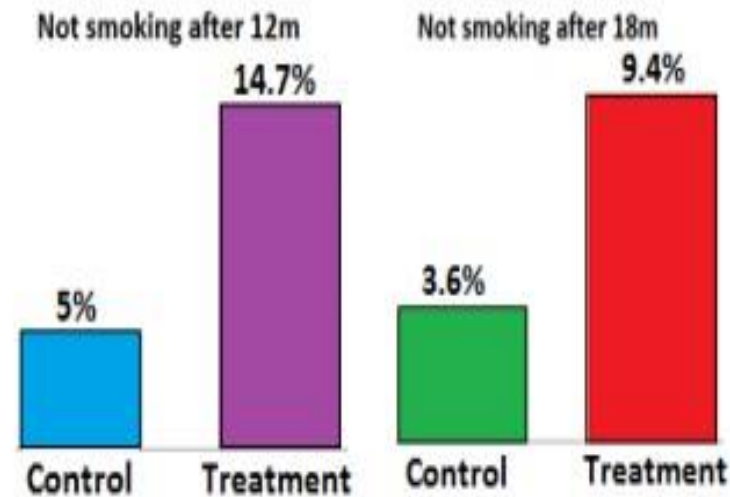
3. CARES was a voluntary commitment product to help people quit **smoking**. Smokers got a savings account in which they put their money for 6 months, after which they take a urine test. If they pass, their money is returned *without interest*. If they fail, the money goes to charity. The authors found those offered CARES were more likely to 3% points more likely quit smoking after 6 months.

Giné et al. (2008), *Put Your Money Where Your Butt Is: A Commitment Contract for Smoking Cessation*,
American Economic Journal: Applied Economics

4. General Electric wanted its employees to stop **smoking**. The authors ran a RCT where the treatment group received **cash incentives** to quit. The control group received no incentives. Quitting for 6 months earned you \$250, quitting for 12 months \$400.

The treatment group had 3 times the success rate of the control, an effect which persisted even after financial incentives were discontinued after 12 months. On the strength of this finding, GE now does this for their 152,000 employees.

Volpp et al. (2009), *A randomized, controlled trial of financial incentives for smoking cessation*, New England Journal of Medicine.



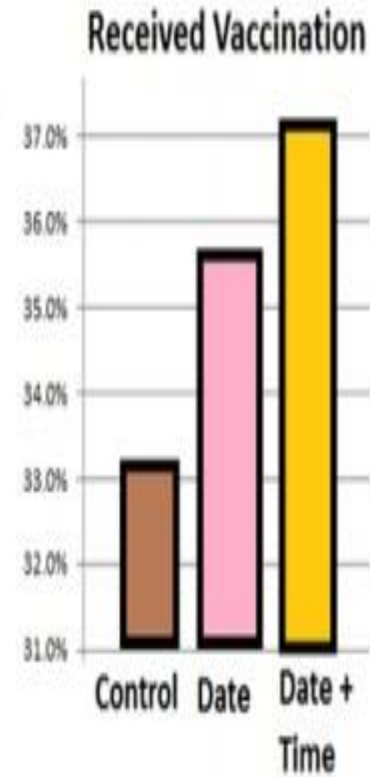
5. The authors used **financial incentives** to encourage **healthy lifestyles** in a workplace (n=406) in Northern Ireland over a 12 week period, with a follow-up check after 6 months. The participants were put either into a Incentive group (Treatment, n=199) or No-incentive (Control, n=207). Those in the Incentive group had to monitor their physical activity levels and used a loyalty card to collect points and earn rewards. The control group used their loyalty cards to monitor their activity level but could not earn points or rewards.

The results found no significant difference between the groups in terms of minutes of physical activity recorded either after 12 weeks or after 6 months.

Hunter et al. (2013), *Physical activity loyalty cards for behavior change: a quasi-experimental study*, American Journal of Preventative Medicine

6. A field experiment prompted people to form **implementation intentions** about **influenza vaccination**. Those who received the prompt to write down just a date had a vaccination rate 1.5 percentage points higher than the control group, which was statistically insignificant. Those who received the more specific prompt to write down both a date and a time had a 4.2 percentage point higher vaccination rate, a difference that is both statistically significant and of meaningful magnitude.

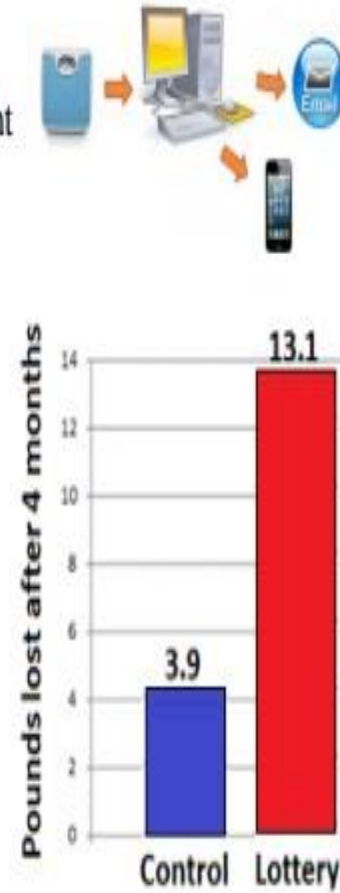
Milkman et al. (2011), *Using implementation intentions prompts to enhance influenza vaccination rates*, Proceedings of the National Academy of Sciences (PNAS)



7. The authors ran a RCT that used **lotteries** to encourage **weight loss**.

In the treatment group, a person steps on the scales in the morning. The subject's weight is calculated & sent to a server comparing it to his weight-loss goals. The subject receives an email about his weight and a text message regarding the daily lottery. Success in meeting weight-goals enters the subject into a daily lottery with a 20% chance of winning \$10 & a 1% chance of \$100. If a person doesn't meet their goal, they are still entered in the lottery. But if they win, they are notified by text *what they could have won*, a use of regret aversion as a motivational tool. Those in the treatment group lost 13.1lbs on average compared to 3.9lbs in the control after 4 months.

Volpp et al. (2008), *Financial Incentive-Based Approaches for Weight Loss: A Randomized Trial*, Journal of the American Medical Association

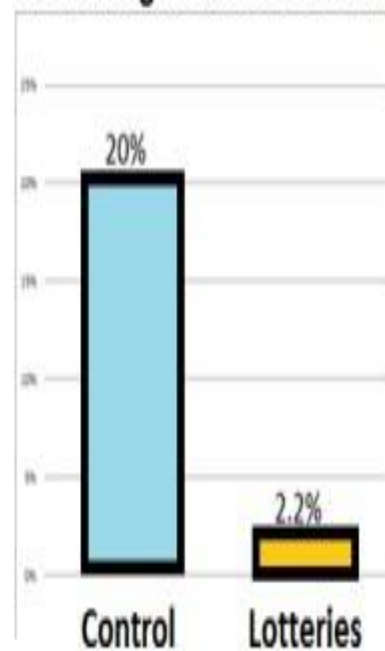


8. The authors encouraged **stroke victims** to take their warfarin pills via **lotteries**, designed in reactance to the serious issue of patients not taking their medicine correctly. The treatment group had a 1% chance of winning \$100 contingent upon taking their pills correctly. The control group did not have any incentives to take their pills correctly beyond the threat of dying.

Adherence in the treatment group was almost 100% compared to 80% in the control (though with the caveat that the sample size is very small, N=20).

Volpp et al. (2008), *A test of financial incentives to improve warfarin adherence*, BMC Health Services Research

Not taking medicine correctly



9. The authors ran a RCT focusing on encouraging to improve warfarin adherence via **lotteries**. The RCT placed 100 patients into a treatment group of daily **lottery**-based incentives or a control group with no such incentives. In contrast to the above paper, the results did not show significant differences in adherence between the control and treatment groups.

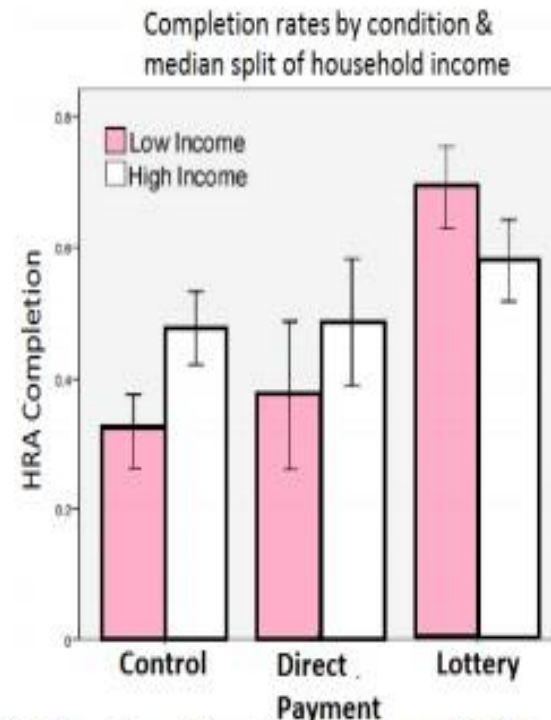
Kimmel et al (2012), *Randomized trial of lottery-based incentives to improve warfarin adherence*, American Heart Journal

10. The authors looked at different ways to encourage employees (N=1299, 81% female, mean age 41) at a health care management and IT consulting company to complete Health Risk Assessments (HRAs); specifically examining whether a lottery is more effective than a direct payment of equivalent monetary value (i.e. a gift certificate). There was a control group in addition to these two treatment arms.

The authors cite inspiration from the Dutch postal code lottery for their design, which incorporates regret aversion. In their lottery, employees were divided into teams of 4-8 and one team was randomly selected as the winner each week. Each member of the winning team who had completed the HRA prior to the time of the drawing would win \$100. If at least 80% of the members of the team completed the HRA, the prize would increase to \$125.

Results showed significantly higher HRA completion for the lottery group (64%) than the gift certificate group (44%) and the control (40%). Effects were larger for lower-income employees.

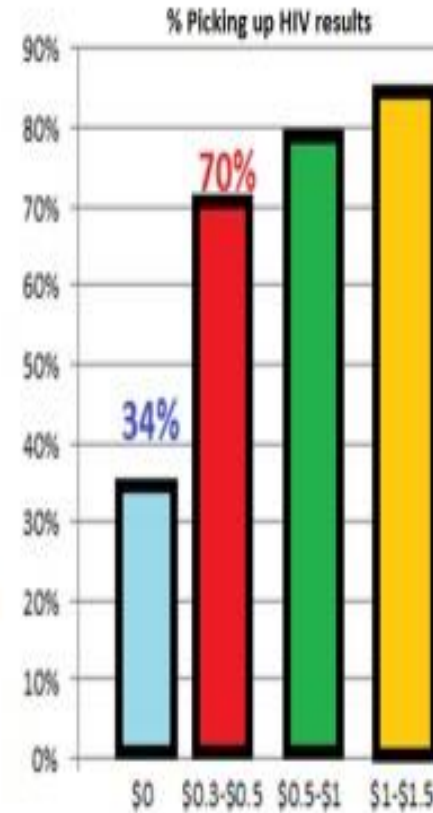
Haisley et al. (2012), *The impact of alternative incentive schemes on completion of health risk assessments*, American Journal of Health Promotion



11. RCT in Malawi where treatment groups received **financial incentives to pick up their HIV results**.

Even a tiny incentive of \$0.30-\$0.50 doubled the percentage of people coming to collect their results compared to the control, before tapering off quickly as the incentive increased.

Thorton (2008), *The Demand for, and Impact of, Learning HIV Status*, The American Economic Review



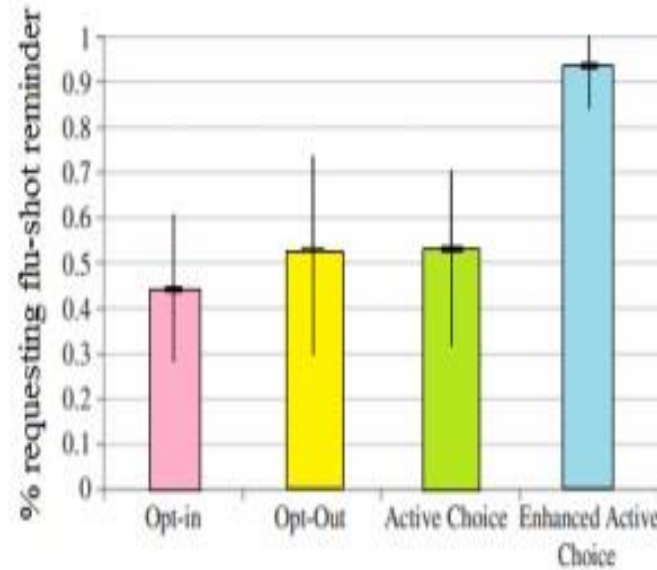
12. The authors used a randomized field experiment to test the efficacy of **personalized information** in letters sent to seniors for Medicare Part D prescription drug plans in the U.S. The control group was given the address of the Medicare Plan Finder website. The treatment group received a letter with personalized cost information; information which was readily available for free and widely advertised.

This additional step—providing the information rather than having consumers actively access it—had an impact. Plan switching was 28% in the intervention group, versus 17% in the control group, and the intervention caused an average decline in predicted consumer cost of about \$100 a year among letter recipients—roughly 5% of the cost in the comparison group.

Kling et al. (2012), *Comparison Friction: Experimental Evidence from Medicare Drug Plans*, Quarterly Journal of Economics.

13. This paper contains several studies looking at active choice in a medicinal adherence context. The authors test opt-in, opt-out, active choice (forcing a choice with no default) and **enhanced active choice**, where one alternative is favored by highlighting the losses entailed by the non-preferred option.

They tested this method by asking employees from an educational institution (n=110) if they wanted to be reminded about receiving a future flu-shot.



The results showed that enhanced active choice was by far the most effective method at inducing compliance.

Keller et al. (2011), *Enhanced active choice: A new method to motivate behavior change*, Journal of Consumer Psychology

18. These two papers look at the efficacy of **checklists** in **surgery** for reducing patient complications. These checklists describe standard several critical processes of care that many operating rooms typically implement from memory. The Haynes paper examined checklists in eight hospitals in eight cities. They found the rate of death for patients undergoing surgery fell from 1.6% to 0.8% following the introduction of checklists. Inpatient complications also fell from 11% to 7%.

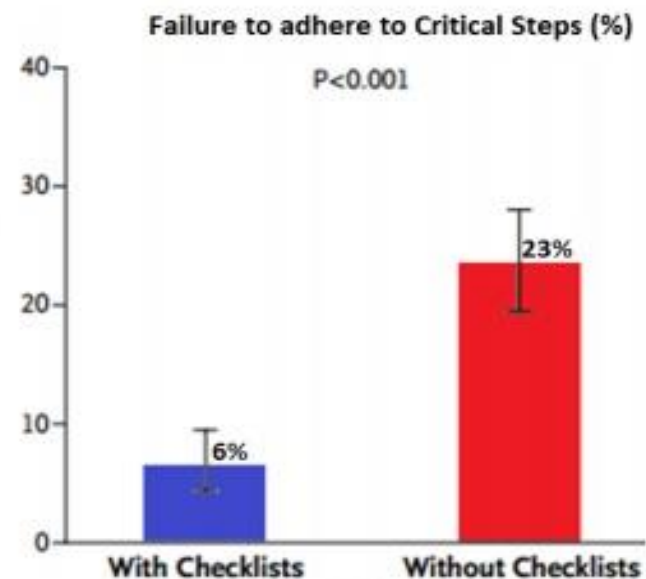
The Arriaga paper had 17 operating-room teams participate in 106 simulated surgical-crisis scenarios. Each team was randomly assigned to work with or without a checklist and instructed to implement the critical processes of care.

The results were striking; checklist availability reduced missed steps on the processes of care from 23% to 6% (See graph, CI bars indicate 95% confidence). Every team performed better when checklists were available. Remarkably, *“97% of the participants reported that if one of these crises occurred while they were undergoing an operation, they would want the checklist used.”*

Both of these papers have Atul Gawande, author of ‘The Checklist Manifesto’, as a co-author,.

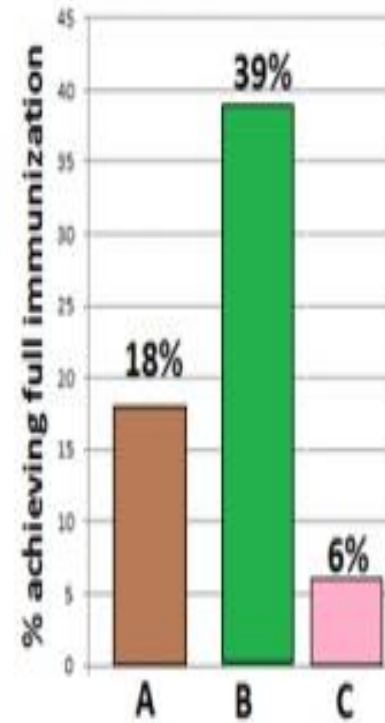
Haynes et al (2009), *A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population*, New England Journal of Medicine

Arriaga et al. (2013), *Simulation-Based Trial of Surgical-Crisis Checklists*, New England Journal of Medicine.



22. This paper looked at improving **child immunization** rates in India with small incentives. 134 villages in India were randomised into 3 groups; (A) A monthly immunisation camp, (B) A monthly immunisation camp with incentives (raw lentils & metal plates for completed immunisation) and (C) the Control (no intervention). Group B outperformed A in achieving full immunization by a factor of two despite the only notable difference between the addition of a small reward.

Banerjee et al. (2010), *Improving immunisation coverage in rural India: clustered randomised controlled evaluation of immunisation campaigns with and without incentives*, British Medical Journal



Eating Behaviour

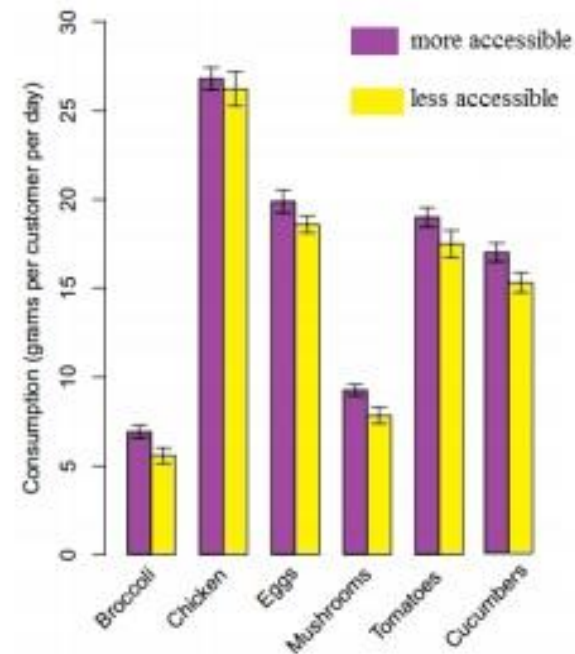
Eating Behaviour

25. Hanks et al. looked at encouraging **healthier eating** in school lunchrooms through strategic placement of certain foods. One of two lunch lines was arranged so as to display healthier foods. In the healthier line, sales of healthier food increased by 18% and grams of less healthy food consumed decreased by 28%.

Rozin et al. did something similar and found making a food harder to reach or changing the serving utensil at a salad bar from a spoon to tongs reduced intake of unhealthy food by 8-16%. The graph concerns this paper.

Hanks et al. (2012), *Healthy Convenience: Nudging Students Toward Healthier Choices in the Lunchroom*, Journal of Public Health.

Rozin et al. (2011), *Nudge to nobesity I: Minor changes in accessibility decrease food intake*, Judgment and Decision Making.



26. The authors conducted a experiment and found that people who ate from self-refilling bowls ate 73% more soup than those eating from normal bowls. Despite this, the participants didn't believe they had consumed more, nor did they perceived themselves as more satiated, than those in the control group.

Wansink et al. (2005), *Bottomless Bowls: Why Visual Cues of Portion Size May Influence Intake*, Obesity Research

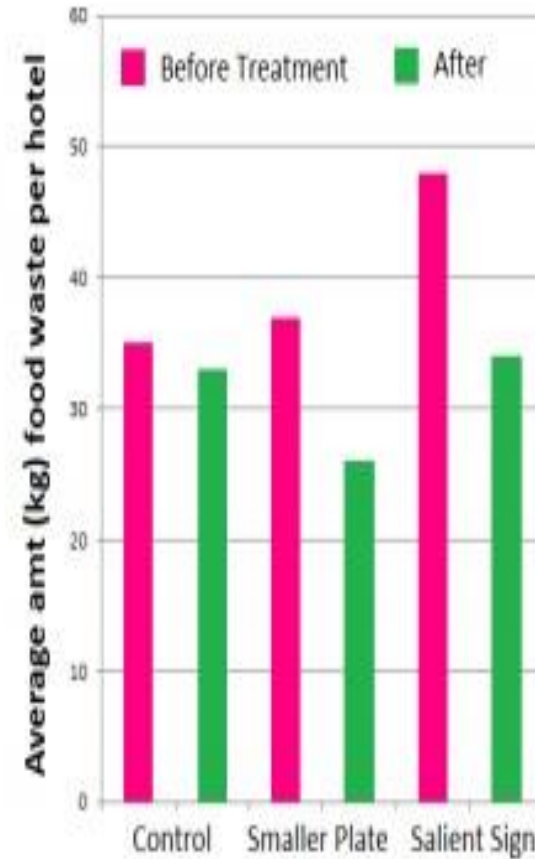
27. In contrast to McDonald's old policy of asking whether you want to super-size your order, these three field experiments asked customers in a chinese restaurant if they wanted to down-size their portions of side dishes. The 14-33% of customers who did so did not compensate by ordering more in other areas and ate 200 less calories on average.

Schwartz et al. (2012), *Inviting Consumers To Downsize Fast-Food Portions Significantly Reduces Calorie Consumption*, Health Affairs

28. This paper looked at the effects of **reducing plate size** and providing **social cues** on food consumption on food waste in hotel restaurants. An example of the latter is a salient sign saying “*Welcome back! Again! And again! Visit our buffet many times. That’s better than taking a lot once*”.

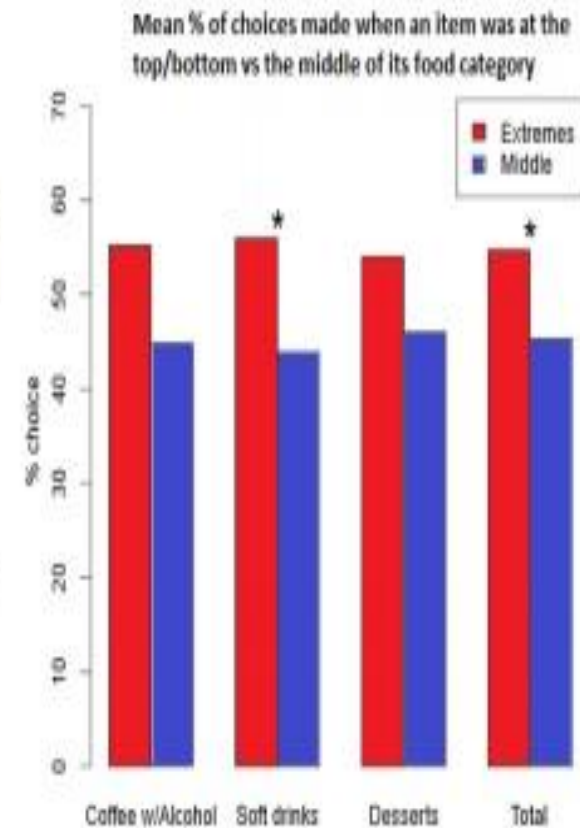
Both treatments proved to be effective at changing eating behavior, reducing food waste by 20%.

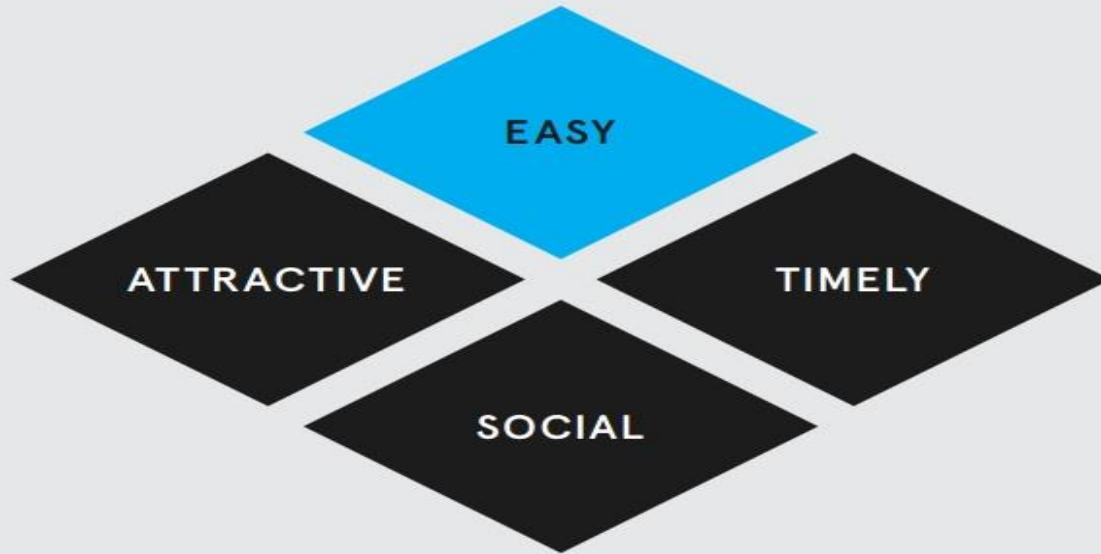
Kalbekken (2011), ‘*Nudging*’ hotel guests to reduce food waste as a win–win environmental measure, Economics Letters



30. The authors examined whether manipulating the position of **food** on a restaurant **menu** would have any effect on consumer choices. They found that items placed at the beginning or end of the menu were up to twice as popular as when the same items were placed in the centre of the menu.

Dayan & Hillel (2011), *Nudge to nobesity II: Menu positions influence food orders*,
Judgment and Decision Making





EAST

Four simple ways to apply behavioural insights

Owain Service, Michael Hallsworth, David Halpern,
Felicity Algate, Rory Gallagher, Sam Nguyen, Simon Ruda, Michael Sanders
with Marcos Pelenur, Alex Gyani, Hugo Harper, Joanne Reinhard & Elspeth Kirkman.

IN PARTNERSHIP WITH  Cabinet Office 

Your Task...

1. Select a behaviour that you would like to improve
2. Use the EAST model
3. Design a strategy that would improve that behaviour
4. Identify how you would measure the change in behaviour