# Nudge Database v1.2

This is a list of empirical 'nudges' and interesting behavioral change interventions, primarily drawn from the Behavioural Economics literature. It is for internal use at Stirling Behavioural Science Centre.

It is organized by the relevant areas of application (health, education, charitable giving) rather than by the nature of the intervention (defaults, salience, framing).

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#### **Nudge Definitions**

1. "A nudge is any aspect of the choice architecture that alters behavior 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'

2. "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'



### UNIVERSITY OF STIRLING

#### 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)





32.0%

31.0%

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

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** 

% Picking up HIV results 90% 80% 70 70% 60% 50%

\$0.3-\$0.5 \$0.5-\$1

\$1-\$1.5

34%

**\$**0

40%

30%

20%

10% 0%



Completion rates by condition & median split of household income





#### Not taking medicine correctly

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

14. This paper examines **loss aversion** in healthcare. It posits that people do not treat foregone gains the same way as equivalent losses. In this case authors note that patients are reluctant to take chloramphenicol (one in 25,000 risk of death) but are also reluctant to get hepatitis vaccinations (one in 10,000 chance of preventing death).

Redelmeier et al. (1993), *Understanding patients' decisions*. *Cognitive and emotional perspectives*, Journal of the American Medical Association.

15. This paper looks at framing effects in healthcare. When patients are told that 90% of those who have a certain operation are alive after five years, they are more likely to have the operation than when they are told that after five years, 10% of patients are dead.

McNeil et al. (1982), On the elicitation of preferences for alternative therapies, New England Journal of Medicine

16. This paper examines the efficacy of **normative messages** to encourage people to take the stairs. The results suggest posters using a norm-framework were more effective than generic-information posters. While the context is small, the paper notes that prior to this there was scant available research on the effectiveness of normative appeals on health behavior.

Slaunwhite, J. (2008), *Using normative messages to increase healthy behaviours*, International Journal of Workplace Health Management.

17. This paper examines the strength of **defaults** in a healthcare context by randomly assigning 132 seriously ill patients to complete one of three conditions of advance directive. Two conditions had end-of-life care options already checked - these were the defaults. Group 1 favored comfortoriented care as a default and Group 2 favored life-extending care. Group 3 was a standard advance directive with no options checked. The authors found that while most patients wanted comfort-oriented care, the default options had a significant effect on the patients' choices.

Group 1 (comfort-oriented) - 77% of patients in the comfort-oriented group kept that choice.

Group 2 (life-extending) - 43% of patients in the life-extending group rejected the default and selected comfort-oriented care instead.

Group 3 (no default) - 61% of patients selected comfort-oriented care.

The authors findings suggest that patients may not hold deep-seated preferences regarding end-of-life care.

Halpern et al (2013), Default Options In Advance Directives Influence How Patients Set Goals For End-Of-Life Care, Health Affairs

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 surgey 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.

19. The authors conducted a Safety Attitudes Questionnaire (SAQ) in eight hospitals participating in a trial of a WHO surgical safety checklist. Clinicians (n=281) in the preintervention phase had a mean SAQ score of 3.91 (1-5 scale where 5 represents better safety attitude) while the postintervention group (n=257) had a statistically significantly different mean of 4.01. Improvements in postoperative outcomes were associated with improved perception of teamwork and safety climate among respondents, suggesting that changes in these may be partially responsible for the





With Checklists Without Checklists

effect of the checklist. Clinicians held the checklist in high regard and 93.4% would want it used if they were undergoing surgery themselves.

Haynes et al. (2011), *Changes in safety attitude and relationship to decreased postoperative morbidity and mortality following implementation of a checklist-based surgical safety intervention*, Quality Safety Health Care.

20. This study looked at probability **framings on preferences for cancer treatment** alternatives in which tradeoffs between quantity and quality of life are made. 129 healthy volunteers and 154 cancer patients indicated their preferences for a toxic or non-toxic treatment at varying survival probabilities. They were randomly assigned into 3 treatments: (1) a positive frame in which the probability of survival was given; (2) a negative frame in which the probability of dying was given; and (3) a mixed frame in which the probability of surviving and dying were both given.

The cancer patients' preferences for the more effective toxic treatment was significantly stronger than the healthy volunteers. Both groups were significantly influenced by the level of probability that was presented. Preferences for the toxic treatment were weaker when the chance of survival dropped below 50%. This weakening preference below 50% survival was enhanced for subjects who responded in the negative frame. A negative frame or probability level below 0.5 seems to stimulate a "dying mode" type of value system in which quality, not quantity, of life becomes more salient in decision making.

O'Connor (1988), *Effects of Framing and Level of Probability on Patients' Preferences for Cancer Chemotherapy*, Journal of Clinical Epidemiology.

21. The author compared the effectiveness of a conventional **informational poster intervention** designed to increase condom use among gay men to a '**selfjustification' intervention** designed to bridge the hot-cold behavioral gap between acting in the throes of passion and later cool objectivity. Subjects in the latter group were sent a questionnaire which instructed them to recall as vividly as possible an unsafe (in terms of protection) sexual encounter they had previously engaged in and were asked to indicate which of a given list of possible selfjustifications for having unsafe sex had been in their mind at the moment they decided not to use a condom. They were then how reasonable those justifications seemed now and to briefly justify those new responses.





Gold (1994), Why we need to rethink Aids education for gay men, AIDS Care

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



23. Wood et al. examined whether perceptions of other people's **alcohol consumption** influenced one's own perception of the riskiness of their drinking. The authors found that how a person ranked their drinking in the context of others' predicted perceptions of developing alcohol disorders.

Wood et al. (2012), Social norm influences on evaluations of the risks associated with alcohol consumption: applying the rank-based decision by sampling model to health judgments, Alcohol and Alcoholism

24. The authors examine whether completing a household survey changed the later behaviour of the participants. This paper describes five field studies, two concerned with microlending and three with health. Subjects in the treatment groups were randomly assigned to receive a survey about household finances and the authors later followed up to check their subsequent use of a related product.

In the health studies the authors find that being surveyed increases the use of water treatment products and increases take-up of medical insurance. In the micro-lending studies however, and in contrast to the paper above, they found no effect of surveys on borrowing behavior.

Zwane et al. (2011), Being surveyed can change later behavior and related parameter estimates, PNAS

#### **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 by18% 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

29. This paper reviewed 7 recent studies on calorie labeling (of which 2 were considered good quality, 5 considered

fair). Only two of the seven studies reported a statistically significant reduction in calories purchased among consumers using calorie-labeled menus. The current body of evidence suggests that calorie labeling does not have the intended effect of decreasing calorie purchasing or consumption.

Swartz et al (2011), *Calorie menu labeling on quick-service restaurant menus: an updated systematic review of the literature*, International Journal of Behavioral Nutrition and Physical Activity

30. The authors examined whether manipulating the positon 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

tems placed at n the same *ce food orders*, Coffee w/Alcohol Soft drinks Desserts Total n England & Wales to test the efficacy of (n=664). Children's consumption patterns were

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31. The authors conducted a field experiment in 31 primary schools in England & Wales to test the efficacy of different incentives to encourage **healthy eating by schoolchildren** (n=664). Children's consumption patterns were

monitored for 6 weeks and an intervention was carried out in 2/3rds of the schools for 4 weeks. Children who ate a portion of fruit & veg were rewarded with stickers and small gifts. At the end of the week the stickers could be exchanged for stationery or small toys. There were two incentive programs; (i) piece rate incentives where kids got an extra reward for choosing more than 4 pieces of fruit & veg and (ii) competitive incentives where kids got an extra reward if they received more stickers than their peers.

The authors monitored consumption one week before the 4 week intervention, during the intervention itself, one week after and 6 months later.

There were two main results. First, the incentives have heterogenous effects, particularly by age and gender. Younger kids and girls are more responsive to competitive incentives, which are more effective overall. Piece rate incentives worked adversely on younger kids. Secondly, most of the effects were short-lived and did not persist once the incentives are removed. An important exception is that those kids from lower SES backgrounds do benefit from long-term effects, remaining 16% more likely to try fruit & veg after 6 months.

Belot et al. (2013), Changing Eating Habits: A Field Experiment in Primary Schools, Working Paper.



Mean % of choices made when an item was at the top/bottom vs the middle of its food category

Extremes Middle 32. The authors examine the efficacy of shifting consumers towards zero calorie beverages. Three sites in the U.S. received 5 interventions in the period Oct 2009-May 2010; (1) a 10% discount on zero-calorie beverages, (2) the 10% discount + discount messaging, (3) messaging comparing calorie information of sugar beverages with zero-calorie alternatives, (4) messaging comparing exercise equivalent information and (5) messaging comparing both calorie and exercise equivalent information. The main outcome measure was daily sales of zero-cal and sugared beverages.

Results failed to demonstrate a consistent effect across interventions. Treatments (2) and (3) had statistically significant effects: the former saw an increase in purchases of zero-cal beverages, the latter saw an increase in sugar-beverage sales

Jue et al. (2012), *The impact of price discounts and calorie messaging on beverage consumption: a multi-site field study*, Preventative Medicine.

33. The Nutrition Labeling and Education Act (NLEA) required most food products to include a nutrition label. Prior to the NLEA labeling was voluntary. This study uses nutrition label information and supermarket scanner data pre and post-NLEA to examine the impact of moving from a voluntary to mandatory labeling regime on consumer product choice.



Prior to the NLEA all low-fat salad dressings had a nutrition label, while the

majority of the higher fat dressings did not. However, there remained large variation in fat content among dressings that did not voluntarily label. Those with the highest fat levels experienced a significant decline in sales after they were required to disclose. The results indicate that even in markets with credible, low-cost mechanisms to disclose, mandatory labeling can have an impact on consumer behavior and health.

Mathios (2000), *The Impact of Mandatory Disclosure Laws on Product Choices: An analysis of the Salad Dressing Market*, Journal of Laws and Economics

#### Savings & Financial Decisions

34. This **default** savings program automatically enrolled employees into a 401(k) plan, finding that the default was incredibly sticky both in terms of how many people did not opt out of it & how many people stuck with the automatic savings rate. The latter issue, potentially problematic if people did not save enough, was later tackled by 'Save More Tomorrow'.

Madrian & Shea (2001), *The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior*, The Quarterly Journal of Economics



35. The 'Save More Tomorrow' (SMarT) program used **defaults** to increase employees' **savings rates** by automatically increasing the percentage of their wage devoted to saving. Average saving rates for SMarT program participants increased from 3.5% to 13.6% over the course of 40 months while savings rates remained stagnant in the other two conditions. This is one of the most famous nudges.

Benartzi & Thaler (2004), Save More Tomorrow, Journal of Political Economy



36. Employees were given the option to make a Quick Enrollment <sup>TM</sup> decision to enroll in their 401(k) plan at predetermined contribution rates and asset allocations. At one company Quick Enrollment tripled 401(k) participation rates among new employees 3 months after hire. In keeping with the other works on pensions, simplification of the decision-making process is a major factor in influencing consumer choice.

Choi et al (2006), *Reducing the Complexity Costs of 401(k) Participation Through Quick Enrollment*, NBER Working Paper

37. The authors study the effect of incorporating heterogeneity into default rules by examining the choice between retirement plans at a firm which transitioned from a defined benefit (DB) to a defined contribution (DC) plan. The default plan for existing employees varied discontinuously depending on their age. Employing regression discontinuity techniques, they find that the **default** increased the probability of enrollment in the default plan by 60 percentage points.

Goda & Manchester (2010), *Incorporating employee heterogeneity into default rules for retirement plan selection*, NBER Working Paper

38. A direct mail field experiment in South Africa randomized advertising content concerning bank loans to measure the effects of different **framing** on demand. The results showed that including a photo of a pretty girl increased loan demand by as much as if interest rate had been reduced by 25%.

Behavioral Manipulation	Reduction in Interest Rate Required for Same Effect on Take-up
Reducing number of loan options from 4 to 1	2.3 percentage points
Using female picture for male applicants	3.2 percentage points

Bertrand et al. (2010), *What's Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment*, The Quarterly Journal of Economics

39. The authors, reasoning that people may fail to sufficiently identify with their future selves to encourage them to save enough for retirement, showed participants (n=50) realistic **age-progressed renderings** of themselves to make the **need to save** more salient. Participants could decide how much they wanted to save on a

slider: if they indicated a low amount, they saw a age-progressed rendering of themselves frowning. If they indicated a high amount, they saw the same figure smiling. Results showed those who saw the age-progressed renderings allocated on average more than twice as much (\$172 v \$80) as those who saw non-age-progressed renderings in a hypothetical account.

Hershfield et al. (2011), *Increasing Savings Behavior Through Age-Progressed Renderings of the Future Self*, Journal of Marketing Research

40. The authors studied the UK Winter Fuel Payment (WFP), a cash transfer to households aged over 60. The WFP can range from  $\pounds 100-\pounds 300$  and is usually given in November / December. Standard economic theory implies that the labelling of cash transfers or cash-equivalents (e.g. child benefits, food stamps) should have no effect on spending patterns but this is not the case here. Exploiting sharp eligibility criteria in a regression discontinuity design, the authors found evidence of a behavioural effect of the labelling. If households were given an unconditional, neutrally-named cash transfer of £100, they would be expected to spend £3 of it on fuel. If it is called Winter Fuel Payment, they spend an average of £41 on fuel.

Beatty et al. (2011), *Cash by any other name? Evidence on labelling from the UK winter fuel payment*, Institute for Fiscal Studies Working Paper

41. The authors sought to help Kenyan farmers to match their actions with their intentions regarding their use of fertilizer by mitigating their **present-bias & procrastination** tendencies. In their intervention, treatment groups received a visit from an NGO officer offering them vouchers to buy fertilizer in the future and offers to deliver it for free, though this would be prohibitively expensive to do on a large scale. This proved to be effective at increasing fertilizer use.

Duflo et al. (2010), *Nudging Farmers to Use Fertilizer : Theory and Experimental Evidence from Kenya*, American Economic Review

42. The authors conducted a field experiment in Uganda testing various incentives on **loan repayment behaviour**; (1) a cash reward upon completing payments (equivalent to a 25% interest rate reduction on the loan), (2) a 25% interest rate reduction on the next loan taken from the bank and (3) a monthly text message reminder before the loan payment is due.

The results suggest that the text messages are as effective (especially for younger customers) as the 25% rate reduction in terms of repayments.

Cadena & Schoar (2011), *Remembering to Pay: Reminders vs.Financial Incentives for Loan Payments*, NBER Working Paper









43. The authors conducted three field experiments looking at increasing **savings** with **text message** reminders.

They found that goal-specific reminders were considerably more effective than generic ones.

Karlan et al. (2010), *Getting to the Top of Mind: How Reminders Increase Saving*, NBER Working Paper



44. The authors use a survey and an experiment with participants in Mexico's privatized social security system to examine (1) how financial literacy impacts workers' choices and (2) how simplifying information on management fees may increase measures of price elasticity sensitivity among the financially illiterate.

They find that when presenting fees in pesos instead of annual percentage rates, financially illiterate workers focus much more on fees when choosing between investment funds and select funds with lower average fees. Even though changes in information have small impacts on the fees of the selected fund, the changes in choice behavior imply a substantial increase in price sensitivity. Hence, the way in which information is presented to workers can have a substantial impact on optimal fees that firms can charge in the marketplace.

Hastings & Tejeda-Ashton (2008), *Financial literacy, information, and demand elasticity: survey and experimental evidence from Mexico*, NBER Working Paper

45. A field experiment conducted in stores in California tested whether purchasing behavior was affected when **prices** for some goods were raised at the till or on the price-tag. The authors found that tax-inclusive price tags reduced demand by 8%, likely due to them being much more **salient** whereas being charged later at the till had no significant effect on purchase behaviour.

Chetty et al. (2009), Salience and Taxation: Theory and Evidence, NBER Working Paper.

46. The authors examined whether **commitment** devices could encourage savings amongst Malawian farmers. To this end they created two conditions offering 'ordinary' and 'ordinary & commitment' savings accounts to the farmers. Commitment accounts allowed savers to restrict access *to their own money*\_until a designated date. The Control group was not offered any special account. Only the commitment accounts had significant impacts on savings, later allowing those farmers to purchase 26% more agricultural inputs than the Control.



Brune et al. (2011), *Commitments to Save: A Field Experiment in Rural Malawi*, World Bank Policy Research Working Paper

47. The authors used 45 million observations from Denmark to see whether retirement savings policies – such as tax subsidies or employer-provided pension plans – increase total saving for retirement or simply induce shifting across accounts. They find that automatic contributions are more effective at increasing savings rates than price subsidies for three reasons: (1) subsidies induce relatively few individuals to respond, (2) they generate substantial crowd-out conditional on response, and (3) they do not influence the savings behavior of passive individuals, who are least prepared for retirement.

Chetty et al. (2012), Active vs. Passive Decisions and Crowdout in Retirement Savings Accounts: Evidence from Denmark, NBER Working Paper

48. The authors examine the \$35 billion bank overdraft market. Specifically the authors are concerned with whether overdraft fees are sufficiently **salient** for most people. They issued 21 surveys about overdraft fees between 2004-2008 to over 7,000 participants.

They find that when people take the surveys, they are less likely to incur a fee in the following month. When they take several surveys, the likelihood of paying overdraft fees is significantly reduced for up to 2 years. This reduction comes not from increasing balances but from making fewer debit transactions and cancelling automatic recurring withdrawals. This indicates that the act of taking the survey *is itself* a kind of treatment, one that is effective at changing overdraft-related behaviour.

Stango & Zinman (2011), Limited and Varying Consumer Attention: Evidence from Shocks to the Salience of Bank Overdraft Fees, NBER Working Paper

49. The authors conducted a field experiment at a national chain of payday stores to examine the effectiveness of **mandated disclosure** with the goal of helping payday-loans borrowers overcome cognitive biases or limitations. Chief among these is a common failure to appreciate the true annualized interest rate of the loans, which run in several thousand percent. The disclosure information they provide includes annualized rates of interest, credit-card comparisons and peer usage statistics.

PAYDAY LENDER (assuming fee is \$15 per \$100 loan) If you repay in:		CREDIT CARD (assuming a 20% APR) If you repay in:	
2 weeks	\$45	2 weeks	\$2.50
1 month	\$90	1 month	\$5
2 months	\$180	2 months	\$10
3 months	\$270	3 months	\$15

They find that information that showing the adding-up effect of loan fees over several pay-cycles helps people think less narrowly about finance costs and results in 11% less borrowing in the subsequent 4 months.

Bertrand & Morse (2011), Information disclosure, cognitive biases, and payday borrowing, Journal of Finance

#### **Tax Compliance**

50. The Behavioral Insights Team in the U.K. used **social normative messages** ("9 out of 10 people do X") in letters to groups in tax arrears in order to encourage increased **tax compliance**. They had several conditions.

The control group received standard tax letters reminding the recipients to pay the amount they owed in arrears. The treatment groups received the same letters but with an added social normative message in the form "9 out of 10 people in your \_\_\_\_ pay their tax on time". The results indicated that all these treatments were effective at encouraging compliance. In particular the difference in compliance rates between the control and the most effective treatment group was 15 percentage points.

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51. A field experiment in Switzerland looked at the effects of **moral suasion messages** in letters (i.e. "Paying your taxes is the right thing to do") sent to taxpayers. In line with other experiments using moral suasion, it found that moral suasion implorations had essentially no effect on **tax compliance** behavior.

Torgler (2004), *Moral Suasion: An alternative tax policy strategy? Evidence from a controlled field experiment in Switzerland*, Economics of Governance.



52. The author conducted an RCT using **social normative messages** to increase the rate of **publican license renewals** in Ireland. Similar to the work of the BIT, the control group received a standard renewal letter. The treatment group received a simplified letter which included a social normative message. After 1 year the treatment group had 35.5% renewal rates, the control had 29.4%.



Unpublished work, courtesy of Keith Walsh in Irish Revenue.

53. The authors ran a large scale field experiment in Austria to tested the varying effectiveness of **normative messages** in letters sent to potential evaders of **TV license-fees**. There were three treatment conditions: (1) Threat: "If you do not respond to this letter, we will contact you personally", (2) Moral Appeal: "Those who do not conscientiously register their not only violate the law, but also harm all honest households. Hence, registering is also a matter of fairness" and (3) Social normative appeal: "Do you actually know that almost all citizens comply with this legal duty? In fact, 94 percent have registered."

The mailings in general proved effective at raising compliance with the 'threat' treatment being the most effective. In this context social normative messages and moral suasion proved ineffective at changing behavior.

Fellner et al. (2011), *Testing Enforcement Strategies in the Field - Threat, Moral Appeal and Social Information*, Journal of the European Economic Association.

54. The authors tested differ letter **framings** on the tax reported behaviour of over 7,300 sole proprietors in the U.K. The different treatments were offers of assistance with tax forms, rational argument and threats of audit. By and large the treatments proved effective at encouraging taxpayers to declare more, with the threat messages being the most effective.

Hasseldine et al. (2007), *Persuasive Communications: Tax Compliance Enforcement Strategies for Sole Proprietors*, Contempory Accounting Research

55. The authors ran a field experiment in Minnesota in 1994 tested the efficacy of **normative messages** in letters to **taxpayers**. There were 3 conditions in total; 2 treatments and a control, each consisting of 20,000 people.

The first treatment group received the standard tax letter plus a rational appeal for paying their taxes ("your taxes fund local services such as X, Y, Z"). The second treatment received the standard letter plus a social normative message ("People who file tax reports report correctly and pay voluntarily 93% of the income taxes they owe. Although some taxpayers owe money because of minor errors, a small number of taxpayers who cheat owe the bulk of unpaid taxes").

The results found no significant effect of the normative messages on tax declarations.

Blumenthal et al. (2001), *Do Normative Appeals Affect Tax Compliance? Evidence from a Controlled Experiment in Minnesota*, National Tax Journal

56. The author argues that the low volitional and collective nature of tax-funded benefits are primary causes of low satisfaction with tax payment. Three studies suggest that providing people with the opportunity to allocate some of their tax payment (here, 10%) across budgets provided by the billing party introduces (i) volition into the payment process and (ii) increases the perceived benefit associated with tax payment. The authors find that as a result, taxpayers are significantly more satisfied with paying taxes, despite the fact that their payment amount remains completely unchanged.

In addition to enhancing taxpayer satisfaction, an allocation program, if well-implemented, could also provide some hope for correcting existing lack of voice, address disconnects between spending and taxpayers' priorities, and increase civic engagement in general.

Lamberton (2013), A Spoonful of Choice: How Allocation Increases Satisfaction with Tax Payments, Journal of Public Policy and Marketing

57. The authors conducted a field experiment with the IRS to examine why people fail to collect benefits they are eligible for. They sent letters to 35,050 California taxpayers who filed their taxes but didn't claim their 2009 Earned Income Tax Credit (EITC) despite being eligible for it. They varied the text of the mailings to create 3 different conditions: (1) The **Control** group received a standard letter, (2) there was a **Simplification** treatment and (3) a **Display of benefit** treatment .

The results show that all the mailings substantially increase the likelihood of subsequent year take-up, with the two treatments being more effective than the control. The authors project that applying the tested interventions to all filing non-claimants could reduce incomplete take-up among filers from 10% to 7%.

Bhargava & Manoli (forthcoming), Why are Benefits Left on the Table? Assessing the Role of Information, Complexity, and Stigma on Take-up with an IRS Field Experiment, American Economic Review

58. The Behavioral Insights Team tested whether using **personalized text messages** for **collecting fines** results in increased compliance. The most effective treatment included using the person's name and specifying how much they owed. A second larger trial (N = 3,633) found that people were more likely to make a payment on their overdue fine if they received a text message containing their name and the average value of fine repayments went up by over 30%.

Behavioral Insights Team, Test, Learn, Adapt



#### Education

59. The author uses RCTs to look at the efficacy of text message reminders and peer mentor outreach at increasing college entry among low-income students. The results show that an automated and personalized text messaging campaign to remind students of required college tasks increased college enrollment by 4-7%, with effects concentrated among students who resided in communities with low levels of educational attainment.

A peer mentor intervention increased four-year college enrollment by 4.5%, with effects largest for males and students with less-defined college plans. Given the meagre costs - \$7 per participant for the text message campaign and \$80 per participant for the peer mentor campaign - both strategies are impressively cost-effective.

Castleman (2013), Summer Nudging: Can Text Messages and Peer Mentor Outreach Increase College-Going Among Low-Income High School Graduates?

60. This paper examined the issue of low awareness and take-up rates for government support programs, specifically for college financial aid. The authors used 2 treatment groups to test (1) the efficacy of **simplifying** the application forms for college financial aid for low & middle-income families applying and (2) the efficacy of having a tax professional provide guidance on completing the application form. The authors found that those who received assistance with their application were significantly more likely to submit the application, enroll in college and receive further financial aid. These benefits were not seen for those given the simplified form but not the professional assistance. This speaks to the importance of channel factors; in this case sitting down with a professional for an hour to complete the application.

Bettinger et al. (2009), *The Role of Simplification and Information in College Decisions: Results from the H&R Block FAFSA Experiment*, NBER Working Paper

#### **Energy Efficiency**

61. The American electricity company Opower use **social normative messages** comparing a person's electricity usage to that of their neighbours to **reduce electricity consumption**. This is an area with interesting diversity of findings. Schultz et al (2007) found the use of normative messages with injunctive emoticons effective at reducing consumption. Allcott (2011) estimates this program reduces consumption by around 2% for Opower's customers.

Interestingly, Costa & Kahn [2010] found this kind of normative nudge may backfire with political conservatives, who may actually increase their electricity consumption in reactance to it.

Schultz et al (2007), *The Constructive, Destructive and Reconstructive Power of Social Norms*, Psychological ScienceCosta & Kahn (2010), *Energy Conservation "Nudges" and Environmentalist Ideology*, NBER Working Paper



62. This paper looks at the efficacy of using **financial incentives** to encourage **prosocial behavior** by levying a 5 cent tax on plastic bags in Washington D.C.

Despite the trivial fee, it had a significant effect on disposable bag use. A similar policy that offered a 5 cent bonus had no significant effect on behavior. In the graph note the before/after effects in Montgomery County of introducing the tax.

Homonoff (2012), Can Small Incentives Have Large Effects? The Impact of Taxes versus Bonuses on Disposable Bag Use, Job Market Paper

63. The author conducted field experiments to determine the effectiveness of **normative messages** designed to promote towel re-use in hotel rooms. The control received the message "This hotel has initiated a conservation program." An example of a treatment message was "Nearly 75% of hotel guests choose to reuse their towels each day. To support our guests who want to conserve, this hotel has initiated a conservation program". The authors find some evidence of behavior change in the treatment groups but note the overlapping confidence intervals.

Schultz et al (2007), Using normative social influence to promote conservation among hotel guests, Social Influence

64. The authors analyze data from two large-scale, random-assignment field experiments conducted by utility companies providing electricity (the Sacramento Municipal Utility District) and natural gas (Puget Sound Energy) in partnership with the private company Opower. These companies Opowers policy of providing peer feedback reports which introduce a **social norm component** to energy usage. The authors find reductions in average energy consumption of 1.2% to 2.1%, with the decrease sustained over time.

Ayres et al. (2012), Evidence from Two Large Field Experiments that Peer Comparison Feedback Can Reduce Residential Energy Usage, Journal of Law and Economic Organization

65. The authors hypothesize that people use the kind of electricity that is offered to them (i.e. the **default**). They use 2 natural studies and 2 experiments to support this, finding that making 'green utility' the default increased take-up of it.

Pichert & Katsikopoulos (2008), Green Defaults: Information Presentation and Pro-Environmental Behaviour, Journal of Environmental Psychology

66. The authors ran a RCT where residential electricity customers saw price increases, with households in the treatment group receiving high-frequency information displays that gave information about usage and prices. This lowering of information acquisition costs allowed identification of the marginal information effect. Households only experiencing price increases reduced demand by 0-7% whereas those also exposed to information feedback reduced by 8-22%, depending on the amount of advance notice.







Jessoe & Rapson (2012), *Knowledge is (Less) Power: Experimental Evidence from Residential Energy Use*, NBERWorking Paper.

67. This paper looks at the efficacy of many different kinds of **energy efficiency** labelling (3 examples included) on preferences for household appliances. Using a choice experiment with many labeling treatments, the authors find that simple information on the economic value of saving energy was the most important element guiding more cost-efficient investments in appliance energy efficiency, with information on physical energy use and carbon dioxide emissions having additional but lesser importance.

The authors note that the degree to which the current EnergyGuide label guided cost efficient decisions depends importantly on the discount rate assumed appropriate for the analysis. Using individual discount rates elicited in their study, they find that the current EnergyGuide label came very close to guiding cost-efficient decisions, on average. However, using a uniform five percent rate for discounting—which was much lower than the average individual elicited rate—the EnergyGuide label labe

Labels that not only nudged people with dispassionate monetary or physical information, but also endorsed a model (Energy Star) or gave a suggestive grade to a model (A-G), had a substantial impact in encouraging the choice of appliances with higher energy efficiency.

Newell & Siikamäki (2013), Nudging Energy Efficiency Behavior: The Role of Information Labels, Discussion Paper

68. The authors conducted a natural field experiment in Norway working with a household appliances retailer to encourage more energy-efficient purchases. An information treatment condition provided labels showing the cost of the products' lifetime energy consumption. A training treatment provided training to sales staff. Neither treatment had any effect on the purchase of fridge freezers but they resulted in more energy efficient tumbler driers sold by 4.9% and 3.4% respectively.

Kallbekken et al. (2012), *Bridging the Energy Efficiency Gap: A Field Experiment on Lifetime Energy Costs and Household Appliances*, Journal of Consumer Policy

69. The authors conducted an RCT where the **default** settings on **office thermostats** in an OECD office building were manipulated during the winter heating season. Employees' chosen thermostat settings were observed over a 6 week period. They find that (i) a 1°C decrease in the default caused a reduction in the chosen setting by 0.38°C on average and (ii) office occupants who are more apt to adjust their thermostats prior to the intervention were less susceptible to the default.

Brown et al. (2013), Testing the effect of defaults on the thermostat settings of OECD employees, Energy Economics

70. The author describes a psychological model that seeks to explain what kind of feedback about **energy-efficient** goods will lead to reduced consumption. The author tentatively posits that the most successful feedback combines these features; (1) it's given frequently and over a long time, (2) it provides an appliance-specific breakdown, (3) it's presented in a clear and appealing way and (4) it uses computerized, interactive tools.

Fischer (2008), Feedback on household electricity consumption: A tool for saving energy?, Energy Efficiency





#### **Employment & Work Performance**

71. The Behavioural Insights Team ran a 6 month RCT (n=2000) with Jobcentre Plus in Essex to test the impact of several changes to the way the centre operates, specifically through **commitment** devices & emphasis on building psychological resilence. They found job seekers in the treatment group were 15-20% more likely to be off benefits 13 weeks after signing on. There's no paper at the moment but the BIT say they'll have one out soon.

Google "BIT trial helping people back to work" to read more.



72. The authors test the power of **loss aversion** to improve **teacher performance**. During the 2010-11 Chicago school year teachers were randomly asked to participate in a pay-for-performance program with "gain" and "loss" treatments. The "gain" group received traditional financial incentives at the end of the year in the form of bonuses linked to student achievement. Those teachers in the "loss" group were paid a lump-sum in advance and asked to give back the money if their students did not meet performance targets. Teachers in both conditions received the same monetary bonus if they reached the same performance targets.

This approach resulted in increases in math test scores for the **loss** condition by an equivalent of increasing teacher quality by more than one standard deviation. The **gain** treatment yields smaller and statistically insignificant results. The authors attribute the significant difference between the loss and gain condition to the loss aversion framing.

Fryer et al. (2012), Enhancing the Efficacy of Teacher Incentives through Loss Aversion: A Field Experiment, NBER Working Paper

73. The authors use **framing** manipulations to increase factory worker productivity in a field experiment. They find conditional incentives framed as both "losses" and "gains" increase productivity for both individuals and teams. In addition, teams more acutely respond to bonuses posed as losses than as comparable bonuses posed as gains. The magnitude of the effect is roughly 1%: that is, total team productivity is enhanced by 1% purely due to the framing manipulation.

Hossain & List (2009), The Behavioralist Visits the Factory: Increasing Productivity Using Simple Framing Manipulations, NBER Working Paper

#### **Voting Behaviour**

74. The authors conducted a field experiment (N = 287,228) to test efficacy of eliciting **implementation intentions** when calling **potential voters** before the 2008 U.S. Presidential election. They found that helping voters elucidate a specific voting plan (what time they would vote, where they would be coming from, and what they would be doing beforehand) increased turnout by 4.1% points among those contacted, but a standard encouragement call and self-prediction of voting behaviour have no effect on eventual turnout. Among single-eligible-voter households, the formation of a voting plan increased turnout among persons contacted by 9.1 percentage points, whereas those in multiple-eligible voter households were unaffected by all scripts. An important paper in terms of rigorous analysis of what motivates voter turnout.

Nickerson & Rogers (2010), Do You Have a Voting Plan?, Psychological Science.

75. The authors ran a trial on Facebook using **social proof** to encourage people to **vote** during the 2010 U.S. Congressional Elections. Treatment Group 1 contained 60 million people who saw a neutral 'get out the vote' ad along with a clickable "I voted" button. Treatment group 2 contained 600,000 people who saw an ad (pictured) embedded with a social proof element showing which of their friends had voted. The Control group contained 600,000 people who received no imploration to vote.



The results showed that users who received the social message were more likely to have clicked "I voted". While Treatment Group 1 and the Control group had the same turnout rates, Treatment group 2, which implemented the social proof mechanism, had significantly more turnout rates. The researchers estimate that the direct effect of the Facebook social message on users who saw it generated an additional 60,000 votes and the effects of the social network – of social contagion among friends – yielded another 280,000 more, for a total of 340,000. In other words the social network yielded an additional four voters for every one voter that was directly mobilized. To verify whether the participants really did vote rather than just claim they the authors compared turnout rates among their treatment & control groups and found 4% of those who said they voted had not.

Bond et al. (2012), A 61-million-person experiment in social influence and political mobilization, Nature

76. In 2 get-out-the-vote experiments, the authors find that messages emphasizing high expected turnout is more effective at motivating voters than messages emphasising low turnout. Important to note that this only measured voters' stated willingness to vote, not whether they actually did so.

Gerber & Rogers (2009), *Descriptive Social Norms and Motivation to Vote: Everybody's Voting and so Should You*, The Journal of Politics

#### **Charitable Giving**

77. The authors examined the effects of **framing** on **life-saving interventions** and found interesting divergences. Participants were asked about whether equipment should be bought for use in airport safety procedures. In one condition participants were told the equipment has a chance saving 150 lives. In other conditions participants were told it had a x% chance of saving 150 lives.

The authors predicted that the participants would interpret saving 150 lives as diffusely good, whereas saving 98% of 150 people is something clearly very good. The results confirmed this hypothesis, as is evident in the graph. Interestingly even the chance to save 85% of 150 (that is 127.5 people) attracted more support than the chance to save 150 outright.



This has interesting implications for, for example, how charities might best appeal to people to elicit donations.

Slovic et al. (2002), *Risk as Analysis and Risk as Feelings: Some Thoughts about Affect, Reason, Risk, and Rationality*, Risk Analysis

78. This paper examined the average donations received when participants (n=159) were presented with an identifiable victim (a girl named Rokia) versus a dry statistical overview of the problem. The greatest amount of donations were elicited by Rokia alone, even more so than a combination of statistics and a picture of Rokia.

\$2.50 \$2.00 \$2.00 \$1.00 \$1.00 \$1.00 \$0.50 \$0.00 \$tatistical Identifiable Identifiable victim Victim Victim + statistics

Small et al. (2007), *Sympathy and callousness: The impact of deliberative thought on donations to identifiable and statistical victims*, Organizational Behavior and Human Decision Processes.

79. The authors looked at willingness to donate when victims were presented alone or in a group. Their study used a 2x2 design of (single victim vs group) x (identified provided victim vs unidentified) and examined peoples' Willingness to Contribute, feelings of distress and empathy towards the victims.

Results showed people donated more to the individual victim rather than the group of 8 when both were identified (i.e. name, age and picture provided) but donated more to the group when both were unidentified.

This is with the proviso that standard deviations were quite large for monetary donations. Of the 4 conditions, participants felt the most distress and empathy for the identified single victim.

Kogut & Ritov (2005), *The "Identified Victim" Effect: An Identified Group, or just a Single Individual*?, Journal of Behavioural Decision Making

\$3.00

80. The B.I.T. looked at the area of Legacy Giving, that is leaving money to charity through a will, working with the organizations Co-Operative Legal Services and Remember a Charity. Although 35% of those surveyed indicated they wanted to leave money to charity in their will, only 7% of wills contain such bequests. When customers rang to book a will-writing appointment, they were randomly assigned to a will-writer who would write them will with them over the phone.

There were two treatment groups with over 1,000 individuals in each. The treatments were as follows:

(1) The will-writers asked "Would you like to leave any money to charity in your will?" **[Plain ask]** 

(2) The will-writers asked "Many of our customers like to leave money to charity in their will. Are there any causes you're passionate about?"[Social Norm]

The results showed 10.8% of customers in the 'plain ask' group included a donation and 15.4% in the 'social norm' group. This compares to 4.9% in the baseline which was a period before the trial began.

Behavioural Insights Team (2013), Applying behavioural insights to charitable giving





81. The B.I.T. worked with Deutsche Bank to encourage employees to donate a day's salary to charity. The control group received an impersonal email from the CEO ("Dear colleague). Treatment groups were targeted with one (or more) of several interventions; some sweets as they entered the building, a personalized email from the CEO ("Dear Joe") or a combination of sweets and personalized email.

The Deutsche Bank staff gave  $\pounds 500,000$  overall on the day. The B.I.T. suggest that if the effects of the most effective treatment had been replicated across all donors, over  $\pounds 1$  million would have been raised.

Behavioural Insights Team (2013), *Applying behavioural insights to charitable giving* 

82. The B.I.T. worked with a HMRC office (n=1,500) to see whether using **social proof** could increase **charitable giving** among employees. In December 2012 employees of the office received e-cards from HMRC employees who currently donated to charity. The control group received an e-card from an existing donor simply explaining why that person donates and asking the recipient to join them. The treatment group received the same card but with an attached picture of the existing donor. This addition of a picture increased the number of new donors from 2.9% to 6.4%.

Behavioural Insights Team (2013), Applying behavioural insights to charitable giving

83. The BIT worked with Home Retail Group (50,000 staff & 1,079 stores in the U.K.) and Charities Trust to raise charitable giving through a payroll giving scheme. They have an automatic escalation program called Xtra Factor which increases donations by 3% per year. However, only 10% of new donors were taking it up.

By changing the **default** for the Xtra Factor to opt-out for new donors, the proportion of new donors using it jumped from 6% to 49%.

Behavioural Insights Team (2013), Applying behavioural insights to charitable giving

84. Similar to the Save More Tomorrow program which encouraging increasing amounts of wage savings, the B.I.T. worked with Zurich Community Trust to encourage their 702 donors to sign up to annual increases in their charitable giving rather than just one-off increases.

They conducted three trials on this group of donors; (1) asking for a one-off payment each month from 2013 (2) asking for increasing amounts donated each month from 2013 with future annual increases of either  $\pm 1/\pm 2/\pm 3/\pm 5/\pm 10$  and (3) the same as (2) but with future increases of either  $\pm 2/\pm 4/\pm 6/\pm 8/\pm 10$ .

Those in group 3 (the high increases) donated more and if extrapolated over their lifetime would donate considerably more than the other 2 groups.

Behavioural Insights Team (2013), *Applying behavioural insights to charitable giving* 









85. The author conducted a natural field experiment on conditional cooperation where cross-country skiers in two Swedish ski resorts were faced with the decision of whether or not to contribute to ski track funding. Ski-tracks in Sweden are public goods and it is not legal to charge for access to such facilities.

The results indicate those who a higher share of the treatment group contribute (25%) than the control (21%) the share of subjects contributing to be significantly greater in the group receiving information about others' behavior than in the group that does not

Heldt (2005), Conditional cooperation in the field: Cross-country skiers' behavior in Sweden, Working Paper

86. The authors ran a door-to-door field experiment in Ohio to test the efficacy of an anchor on charitable donations. Of the 640 people asked for donations, 20% gave money. Of these 128, those told of the \$20 anchor donated significantly more than the control.

They also found that adding the phrase "even a penny would help" more than doubled the compliance rate from 15% in the control group to 34%.

Fraser, Hite & Sauer (1988), Increasing Contributions in Solicitation Campaigns: The Use of Large and Small Anchorpoints, Journal of Consumer Research

87. The authors conducted a field experiment looking at the effect of matching contribution offer in conjunction with legitimization of paltry contributions ("even a penny would help") in a door-to-door (n=320) charitable solicitation context.

Results indicated that the matching funds offer, paired with legitimization of paltry donations, increased both compliance rates and donation sizes and generated greater revenues than either tactic used singly.

Fraser & Hite (2006), The Effect of Matching Contribution Offers and Legitimization of Paltry Contributions on Compliance, Journal of Applied Social Psychology

88. The authors ran a fund-raising field experiment to see the effect of providing social information on contribution rates (n=225). There were three conditions; (i) Donors were told information about another donor's contribution which was **above** the original donor's contribution last year, (ii) donors told information about another donor's contribution below the original donor's previous one and (iii) donors told information about another donor's contribution which matched their own previous one. The messages were in the form "We had another member, they contributed \$X. How much would you like to pledge today?"

They find that respondents change their contribution in the direction of the social information; increasing their contribution when the social information is above their previous contribution, and decreasing their contribution when the social information is below.

Croson & Shang (2008), The impact of downward social information on contribution decisions, Experimental **Economics** 

Control \$20 anchor

Average \$ donated

\$11.61









0

1.2

89. This paper conducted two field experiments to test **inter-temporal** choices in **charitable giving** by varying the timing of commitment and payment. Monthly donors were asked to increase their contributions (1) immediately, (2) in one month, (3) in two months.

The results are consistent between the two field experiments. Firstly, mean increases in donations are significantly higher when donors are asked to commit to future donations. Secondly, follow-up data shows that the treatment effect is persistent, making the strategy highly profitable to the charity. Finally, there is evidence of heterogeneity in the response to different timelags, indicating differences in inter-temporal choices among donors.

Breman (2011), *Give more tomorrow: two field experiments on altruism and intertemporal choice*, Journal of Public Economics

#### Law Abiding Behaviour

90. When nudges go wrong. In an attempt to reduce the theft of wood from Arizona's Petrified Forest National Park the authors put up a sign with the descriptive **social normative message** "Many past visitors have removed petrified wood from the Park, changing the natural state of the Petrified Forest". This led to a near 8% increase in wood theft, as people interpreted the salient message to be "theft is common" rather than "theft is bad".

Cialdini (2003), *Crafting Normative Messages to Protect the Environment*, Current Directions in Psychological Science



#### Other

91. This classic study used a series of framing experiments to demonstrate preference reversals. For example, "Imagine that the U.S. is preparing for the outbreak of a disease, which is expected to kill 600 people. Two programs to combat the disease have been proposed. Assume that the exact scientific consequences of the program are as follows:

If Program A is adopted, 200 people will be saved. If Program B is adopted, there's a 1/3 probability that 600 people will be saved and 2/3 probability that no people will be saved." In expected utility terms the choice is (200\*1 = 200 live or 600\*0.33 = 200 live).

In this case 72% of people chose A.

The authors then presented the same issue with the following formulation:

"If Program C is adopted 400 people will die. If Program D is adopted there is 1/3 probability that nobody will die and 2/3 probability that 600 people will die." In expected utility terms the choice is (400\*1 = 400 die or 600\*0.33 = 400 die)

Despite the identical expected values as the previous programs, here 78% chose D.

Kahneman & Tversky (1981), The framing of decisions and the psychology of choice, Science.



92. This paper delineates the **diminishing sensitivity in valuing lifesaving interventions** when there is an increasing number of lives at risk. The authors call this tendency "psychophysical numbing", represented in later research by the "collapse of compassion" model.

For illustrative purposes, the top image to the right represents a normative model of how we should value human lives, the bottom image represents the collapse model that this research investigates.

This paper has 3 studies illustrating psychophysical numbing in different contexts. In one study subjects had to decide which medical institution to award \$10 million to - A, B or C. Subjects had to indicate how many lives would have to be saved by the treatment to merit receiving the award.

A-Would save 15,000 lives.

B – Would save 160,000.

C – Would save 290,000.

65% of participants gave estimates that increased as the size of the population at risk increased (indicating something like the collapse model is at work). Only 28% gave required that the same number be saved, regardless of population size (indicating a normative model).

Slovic et al. (1997), *Insensitivity to the Value of Human Life: A Study of Psychophysical Numbing*, Journal of Risk and Uncertainty.

93. The authors developed a model of limited attention in intertemporal choice, predicting that **reminders** may **increase saving** and that they will be more effective when they increase the salience of a specific expenditure.

Karlan et al. (2010), Getting to the Top of Mind: How Reminders Increase Saving, NBER Working Paper

94. This experiment (n=150) tested the impact of various notes on the likelihood of a person completing a survey. For those who received only the survey and cover page the completion rate was 36%, compared to 48% for those with a handwritten message on the front-page and 76% when the survey was accompanied by a handwritten post-it note.

Garner (2005), *Post-It*® *note persuasion: a sticky influence*, Journal of Consumer Psychology

95. The authors elicit subjects' beliefs about the likelihood that they will redeem a mail-in form. Expected redemption rates exceed actual redemption rates by 49 percentage points, meaning that subjects are overoptimistic about their likelihood of redemption. The authors conduct three treatments to reduce overoptimism; (1) informing subjects about a previous cohort's redemption rates, (2) reminding subjects about the redemption deadline and (3) reducing transaction costs (i.e. making it easier). Only the third nudge had any effect and it reduced overoptimism by one half. The third nudge increased redemption but had no effect on beliefs suggesting that weak cost-salience is the mechanism for overoptimism.

## Value of Life Saving





#### Response rate to survey



#### HOW WE VALUE HUMAN LIFE: NORMATIVE MODEL

Letzler & Tasoff (2013), *Everyone Believes in Redemption: Nudges and Overoptimism in Costly Task Completion*, Working Paper.

96. This paper looks at risk preferences. An interesting example is the premium that people are willing to pay for **zero-risk** through the following hypothetical: "Consider a \$10 pesticide that produces a toxic reaction 15 times for every 10,000 times used. How much is an equally effective pesticide worth if it reduces the risk to 10 /5/0 incidences per 10,000 uses?"

Results showed people would pay \$1.04 extra for the reduction from 15 to 10 reactions and \$2.41 extra for the reduction from 5 to 0. People valued absolute elimination of risk disproportionately more than mere reduction in probability of harm.

Viscusi et al. (1987), An Investigation of the Rationality of Consumer Valuations of Multiple Health Risks, RAND Journal of Economics.

97. An older, reasonably famous paper about the use of **priming** in a wine shop. By playing French or German music in the background, sales of French and German wine seemed to be significantly affected.

North (1997), Instore Music Affects Product Choice, Nature

98. The Behavioural Insights Team looked at reducing the problem of 'did not attends' (DNAs) for NHS appointments. Trials have suggested DNAs can be drastically reduced through a combination of behavioral approaches; for example prompting patients to verbally repeat their appointment time to staff and using normative messages indicating how many patients usually turned up on time for their appointments.

Martin et al (2012), *Commitments, norms and custard creams–a* social influence approach to reducing did not attends, Journal of Royal Society of Medicine

Reported in Behavioural Insights Team Annual Update 2010-11



Impact of different behavioural interventions on DNAs over six months



99. A nice, short document that identifies the **behavioral biases** of consumers, insurers, regulators & politicians in an American insurance context and recommends strategies to overcome them. Google the title to see the full pdf.

**Consumers:** Focus on recent past experience.

Insurers: Correlated losses pose challenges.

**Regulators** and **politicians**: Concerned with re-election as well as fairness and equity.

- Example: Many homeowners do not buy flood insurance because they misperceive the risk of damage as being extremely low. They are likely to buy insurance after a flood, and then several years later, cancel their policy.
- Example: Prior to 9/11, insurers viewed losses from terrorism as so improbable that the risk was not explicitly mentioned or priced in any standard policy despite the attempted bombing of the World Trade Center in 1993. After 9/11, most insurers refused to offer terrorism insurance rather than calculating a premium reflecting their best estimate of the risk.
- Example: Insurance regulators aided Florida homeowners in hurricaneprone areas by setting up a state insurer – the Citizens Property Insurance Corporation – that offered coverage at prices lower than insurers would have charged at premiums reflecting risk.

Kunreuther et al. (2012), Insurance and Behavioral Economics : Improving Decisions in the Most Misunderstood Industry

100. This is not a nudge but instead fascinating evidence of behavior that seems targetable by one.

This paper looked at the parole decisions made by Israeli judges, finding the % of favorable rulings dropping gradually from around 65% to nearly 0% just prior to the judges' break. It then returns to 65% after the break.

Danziger (2011), *Extraneous Factors in Judicial Decisions*, PNAS



101. The authors conducted a field experiment using experimental economists as subjects. They sent letters to economists who submitted papers to the Economic Science Association 2006 meeting in Nottingham. One sentence was varied in the letter to vary between (1) discount- and (2) penalty-**framings**.

"We take this opportunity to remind you that [(1) the discounted conference fee for early registration is available until /(2) the conference fee will include a penalty for late registration after] 10 July 2006."

They find that while the behaviour of junior experimental economists is affected by the framing, the senior members of the subject pool are unaffected.

Gächter et al. (2009), Are experimental economists prone to framing effects? A natural field experiment, Journal of Economic Behavior & Organization