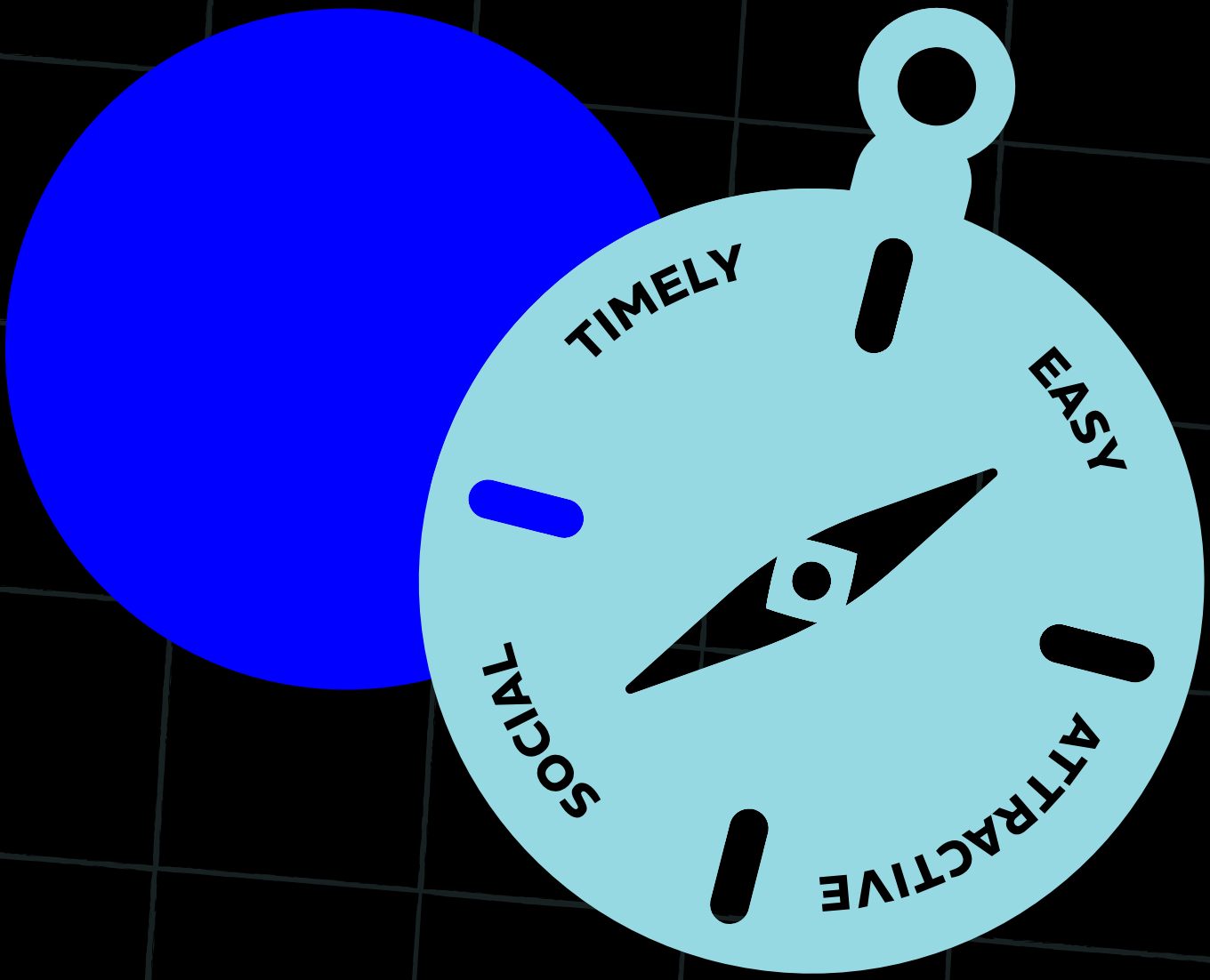
EAST

Four simple ways to apply behavioural insights

Revised and updated edition



BIT

Contents

To return to the contents, click the BIT icon on any page.

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Preface

We released the EAST framework back in 2014, just after the launch of the Behavioural Insights Team as a standalone organisation. Much has changed in the decade since. BIT has grown from a team of 14 to a global organisation of 250 people, with offices in eight countries. Hundreds of units or teams have been created around the world to apply behavioural insights to both the public and private sectors. The field has attracted more Nobel Prizes – but has also faced major challenges like the replication crisis.

Throughout this time, we have been surprised by the enduring appeal of the EAST approach. EAST is a simple, pragmatic framework for practitioners, and that simplicity seems to have been a strength. It continues to be a touchstone for our projects; it has spawned a set of cards, in several languages, that help people generate ideas in new ways; it can communicate the basics of behavioural insights in a few minutes.

The continued popularity of EAST, and the vast amount of new research since 2014, have prompted us to return to the framework and freshen it up. New aspects have been added to the main principles, although we have so far resisted the temptation of our friend and collaborator, Cass Sunstein, to add 'Fun' to make 'FEAST'!

We are particularly excited by the growing diversity of who is using these approaches, and where. Therefore, the range of examples included has been broadened to feature new issues, new geographies and settings, and new types of interventions. And we have noted where studies that we mentioned in the first edition have not held up to scrutiny, since this kind of updating is integral to the scientific process.

As we said back in 2014, this guide will not turn you into an expert on behavioural science; there are more complex frameworks available, and many fascinating findings that are not covered here. But we believe that time has shown that much progress is possible by making policies, products, and services easy, attractive, social and timely.

Since the framework continues to be a work in progress, we welcome suggestions of robust studies that illustrate the concepts well – please contact us at info@bi.team and we may incorporate them into the latest version!

Executive summary

If you want to encourage a behaviour, make it easy, attractive, social and timely (EAST). These four principles, drawn from behavioural science research and real-world applications, offer a practical framework for creating effective interventions.

While they don't capture all the complexities of human behaviour, a decade of experience has shown that this simple, memorable approach helps practitioners apply key behavioural insights successfully.

The EAST principles are:

1. Make it easy

- Harness the power of defaults. People tend to stick with pre-set options, so choose defaults carefully. For example, presenting renewable energy options as the default increased uptake from 3% to 80% among households in Switzerland, an effect that persisted years later.

- Reduce the effort required. Even small barriers can have outsized effects on behaviour. Every extra step or moment of effort required may reduce the likelihood that people will act, so focus on reducing both practical and cognitive obstacles. Simply completing university application forms on behalf of US students increased attendance rates from 28% to 36%.

- Simplify messages. Making a message clearer and easier to understand can increase response rates. Break a complex goal down into simpler, easier actions. For example, simplifying the court summons forms in New York City reduced failure-to-appear rates by 13%, preventing thousands of arrest warrants annually.

2. Make it **attractive**

- Attract attention and frame the behaviour. We are more likely to do something that our attention is drawn towards. Information that is novel and personalised is more likely to be salient; the same idea can produce different effects based on how it is 'framed'. The built environment also directs our attention towards certain actions. For example, adding gold coin stickers to the floor of a Chinese factory reduced the amount of waste left on the floor by more than 20%.

- Design incentives for maximum effect. Behavioural science can be used to enhance the structure and presentation of incentives. Options include deposit contracts, self-image or social image concerns, prosocial incentives, and gamification. For example, savers in the Philippines increased their savings by 82% when they voluntarily restricted their right to withdraw money until a specific month.

3. Make it **social**

- Show that most people perform the desired behaviour. Observing or being told what most people do in a situation can encourage others to do the same. Saying what most people think should be done can also be effective. However, these 'social norms' approaches can backfire if the people doing the behaviour are seen as belonging to a different group, or if someone learns that fewer people than they expected are performing the behaviour.

- Recognise the power of social networks. Behaviours spread between people or organisations who are embedded in networks of relationships. Strategic 'seeding' of behaviours with well-connected individuals or friend groups can create widespread change. In Honduras, asking villagers to nominate friends to promote vitamin use led to higher adoption than random selection. Networks also make it possible for completely new behaviours to emerge and become dominant.

- Create feelings of reciprocity. We are more likely to help someone who has done something for us in the past, a tendency called direct reciprocity. But reciprocity can be indirect as well – we are more likely to aid people who have helped others, even if we didn't benefit, or to help others in general if we've been helped. Both kinds of reciprocity can be nurtured to improve outcomes. For example, using reciprocity in organ donation messaging ('If you needed an organ transplant, would you have one? If so, please help others') generated more than 500,000 new registrations in the UK.

4. Make it timely

- Choose the right moment. Behaviours vary according to the time of day, the time of week, and the time of someone's life. That means that the same offer made at different times can have varying effects. For example, many more people were screened for diabetes in Qatar when the offer was made during Ramadan, when many people were fasting anyway, as the test required. Behaviour may be easier to change when habits or routines are already disrupted, like moving residence or becoming a parent – or simply when people perceive they are making a 'fresh start'.

- Consider the immediate costs and benefits. We are more motivated by costs and benefits that have an impact now rather than later. Where possible, bring forward rewards and push back costs for desired behaviours, and create small immediate costs for undesirable ones. For example, the 'Save More Tomorrow' programme increased retirement savings by letting people commit to future payment increases rather than immediate ones.

- Help people plan their response to events. There is often a gap between our intentions and our behaviour. A proven solution is to prompt people to identify future barriers to action and develop a specific plan to address them. For example, jobseekers in the UK were more successful when they made a plan for the week ahead that included specific actions and times.

EAST does not offer a standalone solution for applying behavioural science. That requires a careful understanding of the context and the sensitive application of concepts, usually coupled with robust evaluation. There are many guides to carrying out this process. BIT itself has produced a framework for applying behavioural science to relatively simple challenges, called TESTS (target, explore, solution, test, scale). You can find out more about this framework in our accompanying TESTS report; we continue to develop new approaches that can deal well with complex challenges.

This is a practical report that gives an overview of current practice, rather than focusing on the future of behavioural science or engaging in the many debates that exist. If you are interested in those questions, please take a look at BIT's Manifesto for applying behavioural science.

Introduction

This paper sets out four simple principles for influencing behaviour – make it easy, simple, attractive and timely (EAST). The EAST framework, originally launched in 2014, is based on BIT's experience applying behavioural science to solve real-world problems globally.

However, EAST is not meant to be comprehensive. Rather, it shows how some of the most relevant behavioural insights can be applied to practical challenges. Many of these insights can and should be combined.

Context remains crucial when applying behavioural insights. Something that works well in one region or policy area may not perform as well in another. Similarly, some behavioural effects can have unintended consequences. For this reason, this paper also contains 'behavioural pitfall' boxes that show how the misapplication of behavioural insights might create perverse effects. Finally, we have added new sections that highlight when ideas that we featured in the 2014 version of EAST have not been replicated since then – for example, the power of 'signing at the top'.

Since it began, BIT has emphasised the importance of exploring the contexts around behaviours. These challenges reinforce that belief. Contextual factors can greatly influence outcomes. We advocate for conducting fieldwork to understand how users experience services, and where possible, co-designing interventions with the people who deliver and use them. We talk about this process more in our Explore report.

Similarly, since interventions do not always produce the expected results, BIT continues to recommend evaluation where possible. We highlight the use of randomised controlled trials, which compare the effects of the intervention against what would have happened in its absence (or if an alternative method had been used). But these are not the only options available.

Finally, these are principles that can be used by anyone. People can use them in their everyday lives to shape their own behaviours. Organisations can – and should – use them to rethink their own processes, as we explore in more detail in our Behavioural Government report.

A critical appraisal of the latest evidence on behaviour; a pragmatic focus on real-world problems; and a commitment to robust evaluation. These elements are the core of BIT's approach. They have become more widely used over the last ten years. We hope this updated guide will help that trend to continue.

1. Make it easy

Most of us have intended to do something, but never quite got around to it. Perhaps it was a relatively small thing like contacting your energy supplier to get a better deal. Maybe it was more significant, like starting a pension plan, making a will, or applying to university.

In these situations, some of the greatest returns on investment will come from making the desired behaviour easier. By this we mean both easier to understand what needs to be done (cognitive effort) and easier to perform the action (practical effort). Even apparently small features that make a task more effortful can have a disproportionately large effect on behaviour. Yet these 'friction costs' are often ignored or discounted when developing a policy, product or service.

Our long-time advisor Richard Thaler says, "If you want people to do something, make it easy." Some ways to 'make it easy' include:

- Harness the power of defaults
- Reduce the effort required
- Simplify messages

1.1 Harness the power of defaults

We have a strong tendency to stick with the 'default' option, which is the outcome that occurs if we do not choose otherwise. Recent studies have confirmed that how we identify and select the default can have a substantial impact on behaviour and create widespread effects throughout a system.[1]

One well-known example is altering the default for UK private pension schemes from an opt-in to an opt-out system. This change meant that, in just eight years, ten million more employees started saving for a UK workplace pension, and private sector coverage increased from 42%-85%.[2] And it's also important to note who benefited most from this change. A recent study shows that the biggest winners were those on lower incomes, who had the lowest participation rates prior to the change in policy.[3]

Another advantage of defaults is that their effects can be relatively long lasting. For example, presenting renewable energy as the default (see Box 1.1) led to changes in consumption that were stable over at least four years. After all, their continued effect simply requires people to do nothing. However, it's worth noting that accepting a default is not the same as choosing no change, since defaults may change over time.[4]

Nevertheless, we still may not fully recognise the power of defaults. For example, education leaders were asked to estimate the take up of a text message service that gave parents updates on student progress. The leaders thought that if parents were signed up by default, enrolment would be 67% because about a third of people would opt out. In fact, enrolment was 95%.[5]

The power of defaults means we should pay more attention to how they are built into most of the products and services we use – often without us realising. Subscription services, like gyms or media services, often incentivise new customers to set up payments that continue indefinitely. Social networking sites have default settings around information sharing and privacy, which most users never read or change. Even institutions are swayed by defaults: 80% of countries accept treaty adjudication by the International Court of Justice when it is the default; only 5% do so when the country must actively choose it.[6]

Two main aspects of defaults need to be clarified. One is how to establish what service users or the public actually prefer, along with determining the best ways to seek their permission when setting defaults. Public engagement was a crucial part of the process of moving to automatic pension enrolment in the UK, for example.[7]

The other priority is identifying when defaults seem to have the largest effects, and when they can backfire. Initial findings suggest that defaults are more effective in consumer domains than in environmental contexts. Researchers have also found that defaults are more effective when they are seen as conveying what the choice architect thinks the decision-maker should do or when they reflect the status quo.[8]

Box 1.1: Presenting renewable energy as the default

Two large-scale studies in Switzerland show that presenting renewable energy packages to household and business sector customers as the standard (rather than the alternative) option is highly effective at encouraging both types of customers to switch and stick with green energy.

Prior to the change in default, one study showed that renewable energy use was low for both households and businesses (~3% of energy). After the introduction of the green default, take up of the renewable energy package increased to around 83% for households and 75% for businesses. After six years, 80% of households and 71% of businesses persisted with renewable energy. Similar green default effects were found in the second study. These large effects ensued despite renewable energy prices being 4%-8% higher for households and 6%-14% higher for businesses.[9]

1.2 Reduce the effort required

Even if it's not possible to change the default so no action is required, it still may be possible to reduce the effort required to perform an action. That reduction alone can be very effective. For example, as an alternative to changing the default for enrolling in a pension, researchers tested the impact of a 'Quick Enrol' option, which still required people to sign up – but they didn't have to sort through as many options. Quick Enrol tripled participation rates among new employees compared with the standard approach.[10]

Daniel Kahneman referred to the 'law of least effort': people tend to take the least demanding route towards a goal. Similarly, we think in terms of 'friction costs': the often neglected, sometimes invisible, yet still unavoidable actions that can act as barriers. Once identified, processes and systems can be redesigned to reduce these burdens for both service users and providers.[11]

For example:

- Placing meat substitutes next to meat products, rather than in a separate vegetarian section, increased sales of meat substitutes by 171% in a Belgian supermarket.[12] This illustrates that a good strategy can be to target low-effort substitutions, rather than dramatic changes in behaviour, like trying to convince people to totally change their diets.

- A programme in Colombia gave households specialised disposal bins, simplified instructions for their use, and a pre-treatment material, all of which made the sorting of organic waste much easier. Sorting rates increased by 72% as a result of the initiative.[13]

- Adherence to directly observed treatment increased by 40 percentage points when TB patients were allowed to take videos of themselves taking their pills at home, rather than requiring them to visit a clinic daily (see Box 1.2).

Of course, if making something easier makes it more likely a person will take an action, making it more difficult does the opposite. Friction costs can be increased intentionally or unintentionally, and can result in good or bad outcomes. Practitioners and academics are still debating how to organise these ideas. We try to give a simplified account that sidesteps those questions.[14]

The terms 'sludge' and 'administrative burden' are often used to describe friction that creates bad outcomes for the actor. These frictions may be introduced by design, as when a media service deliberately makes it harder to cancel a subscription than to sign up. They are widespread in online environments – in a project for the European Commission, BIT found that people were more likely to accept browser cookies if the banner design made rejection more complicated.[15] There is growing interest in finding policy responses to these kinds of manipulative 'dark patterns' online.[16]

In contrast, undesirable frictions may accrue without intent because organisations simply failed to innovate or take up new technologies. Patients may have to fill out health information several times because databases have not been connected, while administrators may have to use fax machines to transmit that information. Policies can advance in a piecemeal way, with temporary fixes (or 'kludges'), meaning that people have to comply with different requirements that don't make sense as a whole.[17]

These frictions tend to harm those who need help the most.[18] Interacting with these services takes up a larger proportion of their time, and vulnerable people usually have fewer resources to deal with the burden. In the US, lower-income people spend six hours a year more waiting for services than higher-income people.[19] Simplifying a notice telling people that they were eligible for the main US anti-poverty benefit was particularly effective at helping parents on low incomes.[20]

The potential gains here are massive. The US federal government maintains a running count of the total paperwork burden it imposes. In October 2024, it stood at 12.2 billion hours.[21] Therefore, governments around the world have started running 'sludge audits' to identify and reduce these burdens. [22]

Of course, increasing frictions can be in a person's best interest. For example, 'cooling off periods' allow a person to reconsider their decision before it is final and 'Are you sure?' checks prompt people to evaluate their choices before committing. In October 2020, Twitter temporarily defaulted its users to Quote Tweet rather than Retweet, which meant that people had to click at least once more in order to reshare information. This change allowed people to reconsider what they were resharing. Twitter found that the overall number of Retweets and Quote Tweets together decreased by 20%, reducing the amount of misleading information shared, by virtue of reducing the amount of information shared.[23]

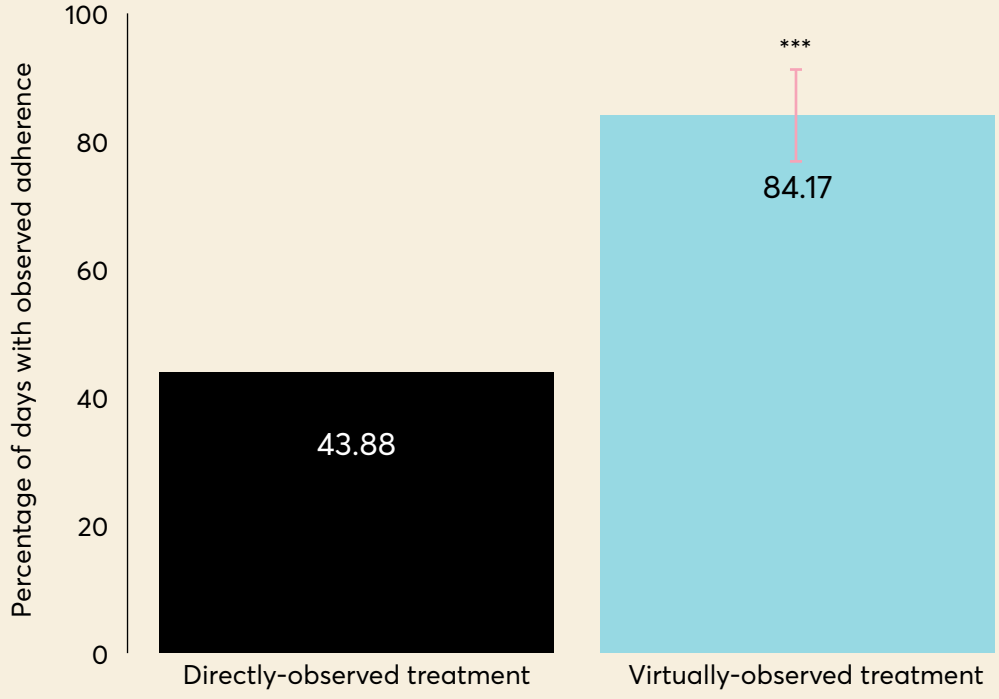
Small variations in effort do not just affect decisions of minor importance. A study found that deaths from painkiller poisoning fell by 43% in the UK after new legislation reduced the maximum size of a packet. This led to 765 fewer deaths between 1998 and 2009.[24] It appears that the extra effort required to assemble a dangerous dose was enough to discourage self-harm attempts.

Box 1.2: Reducing friction to increase TB drug adherence in Moldova

Moldova had some of the highest incidences of drug-resistant TB in the world, in part due to low drug adherence. One of the main barriers was that patients were required to take pills daily in the presence of a medical professional to ensure compliance, which was costly in terms of time and money for both the patient and the healthcare system.

In 2016, BIT ran a randomised trial with United Nations Development Programme Moldova to help solve this problem. We found that allowing patients to record a video of themselves taking their pills, and then submitting it to a medical professional for verification, increased observed drug adherence rates from 44% to 84%. This simple change massively reduced the effort patients needed to make – and now, all TB patients in Moldova benefit. Our results led to the standard drug adherence process being changed to include self-taped video submissions.[25]

Chart 1: Observed patience adherence to TB medication



n = 14,699 (for 178 patients) *** p < 0.01, ** p < 0.05, *** p < 0.1

Box 1.3: Simplifying the university application process

A simplified application process can help under-represented groups attend university, mainly by making it easier for them to apply for financial assistance. For example, one study in the US tested the impact of providing applicants with personal support that included automating and streamlining parts of the process. That support was tested against simply providing information. Applicants who received the support were eight percentage points more likely (28% to 36%) to attend university in the three years following the intervention. Simply providing information did not improve outcomes.[26]

These kinds of process changes can have even larger effects on admissions. Another study simplified the process of determining if someone qualified for financial assistance. Rather than filling out onerous forms, eligibility was determined based on whether a student qualified for subsidised school meals. This reduction in effort required to apply to university increased application rates for low-income students from 26% to 68%, and increased enrolment rates from 12% to 27%.[27] The intervention did not provide any new financial assistance, but allowed clearer confirmation of aid earlier.

1.3 Simplify messages

We are bombarded with messages every day. We often lack the time or motivation to read through everything we receive. Some people even prefer to experience physical pain than exert the cognitive effort required to trundle through messages.[28] Simplifying messages can reduce these cognitive burdens and ensure people notice the information they need.

BIT has conducted dozens of trials aimed at increasing response rates to forms, emails, text messages or letters. Making a request easier to understand often results in a 5% increase in response rates, although obviously this varies by context.[29] Given the scale of information people are exposed to, the potential gains here are massive.

Take Terms and Conditions (T&Cs) for services, something we are exposed to every day. A BIT project showed that providing a simplified summary of T&Cs during purchases increased comprehension by 36%.[30] There are many other examples of the benefits of simplifying communications:

- Redesigning court summons forms in New York City reduced the number of people who failed to appear in court by 13%. The new form made the most relevant information, such as the court date, location and the consequences of not showing up, more obvious. This simplification helps to prevent around 17,000 arrest warrants per year.

- Shortening and simplifying the official letters sent to Belgian residents with tax debts increased payment rates by up to 23% compared to the standard reminder; simpler reminders to file tax returns raised filing rates by 8%.[31]

- Using a 'fast and frugal tree' that reduces the number of factors that clinicians have to consider significantly boosts their accuracy in predicting heart attacks, compared to more complex systems that try to account for many risk factors.[32]

Box 1.4: Designing out prescription errors through simplification

While rapid progress has been made toward electronic prescribing, paper prescriptions still dominate in many countries. But there are concerns that such forms lead to medication errors by hindering clear communication between professionals. For example, it may be impossible to distinguish between milligrams and micrograms when written out by hand in a hurry.

A study by Imperial College London, funded by BIT, sought to reduce these errors by redesigning forms to make them clearer and simpler. As the chart below shows, the microgram/milligram problem was addressed by creating distinct options that simply had to be circled. In simulation testing, the new charts were found to significantly improve correct dose entries, supporting information, and provision of contact information. Improvements like these are likely to lead to reduced medical errors and better patient outcomes for little cost.[33]

BIT has identified five main lessons from its simplification work:

- Make sure that the key message is presented early, ideally in the first sentence or subject line.
- Keep language simple.
- Be specific about recommended actions.
- Provide a single point of contact for responses.
- Remove all information that is not necessary for performing the action. When information has to be included for legal reasons, consider if it can be separated out from the main part of the message.

However, BIT's work has also shown that improvements do not come from simplified language alone. We worked with the Bank of England to test different versions of its Monetary Policy Report, which gives the public information about the UK economy. We were interested in how people's trust and comprehension would vary if they saw a version with simplified language or one which was simplified and 'relatable': it explained how the economic concepts were relevant to people's everyday financial decisions.

We found that the relatable summary produced the highest levels of understanding. But we also did a follow-up study that found that, when the readability scores were kept the same, a summary with the relatable content had comprehension scores 19% higher than one without.[34] The lesson is to make it easy for us to 'encode' messages as mental concepts that we can use. We're more likely to believe something is true if we find it is easy to process.[35]

One way to make desired behaviours easier to encode is to identify how a complex goal can be broken down into simpler, easier actions. Think of the difference between the goal to 'stop smoking' compared to the action 'order a quit kit'. The latter is more likely to be acted upon. This is based on the insight that we learn by using simple 'chunks' of information. Take another example, the goal of eating more healthily has been broken down into the simpler task of 'eating your five a day'.

Not only are such messages easier to understand, but they also appear achievable. Simple, discrete actions can then be fused together to form more complex ones, which in turn become easier to perform – just as, when learning to drive a manual transmission car, the discrete actions of 'ignition', 'clutch', 'handbrake' become 'start the car'. Practitioners need to identify how desired actions can be boiled down to specific, simple steps.

2. Make it attractive

We have all bought things because they were made more attractive to us, whether it is an offer in a supermarket, the way an online retailer makes suggestions based on your recent purchases, or the free gift you receive with a new appliance.

Many ways of making things more attractive are relatively intuitive, such as personalising messages. Others are more sophisticated, such as reframing the way incentives are presented. But fundamentally, making an action attractive is about two things: drawing attention to it, and making the action more appealing.

In other words:

- Attract attention and frame the behaviour
- Design incentives for maximum effect

While we treat these goals separately, they often support one other: the prize in a lottery is both eye-catching and appeals to our tendency to overweight small probabilities, for example.

2.1 Attract attention and frame the behaviour

Behavioural scientists use the term 'salience' to describe the way in which people are more likely to respond to stimuli that are novel, simple and accessible. Given everything competing for our attention, we have learned to filter information out in order to focus on what seems to be important.

There are many ways to attract attention. Some overlap with the techniques in Make it easy, since simplification can direct our attention to the relevant information. Others find new ways of highlighting the consequences of a behaviour, making the costs and benefits salient. But we are also attracted by many other, less direct factors, such as the feelings and associations triggered by how an object or idea is presented.

Examples include:

- Adding emotive stickers to Kenyan buses encouraging people to speak up if the operator was not driving safely reduced the number of insurance claims made by buses 25%-33%. [36]

- Putting a handwritten Post-it note request on envelopes increased response rates to a survey by the Irish Revenue department from 19.2% to 36.0% after 15 working days.

- Adding gold coin stickers to the floor of a Chinese factory reduced the amount of waste left on the floor by more than 20%. Workers felt that the coins were a gift of good luck from the management and therefore did not want to cover them. These stickers had a positive effect when factory rules and monetary incentives had not worked previously.[37]

- Painting a footpath from the toilet to a handwashing station, and introducing visible reminders like stickers, increased handwashing rates by 17.3 percentage points among children in the Philippines.[38]

Personalisation may be an effective way of attracting attention, since personal relevance is one of the strategies we use to filter information. Personalised messages make it easier for the recipient to imagine the costs or benefits of a particular action – in other words, 'what this means for me'. Personalisation is not a new goal, but improved data analytics are making it cheaper and more sophisticated.[39]

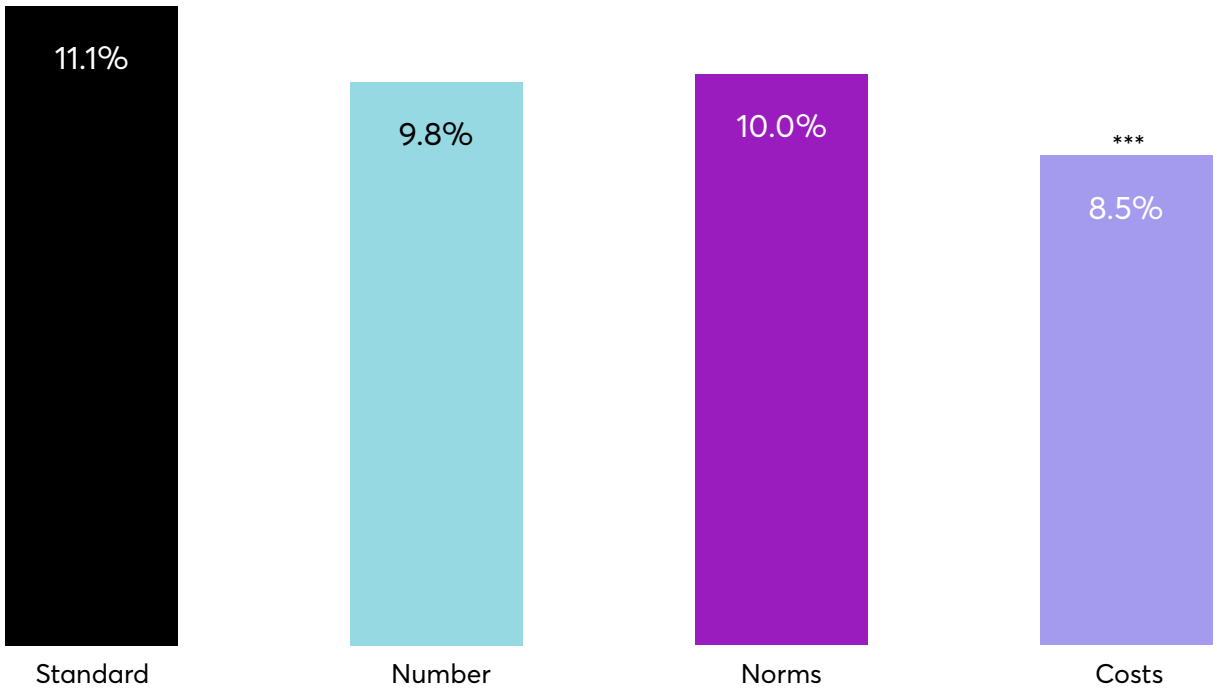
Using names is a simple route to personalisation. As certain names (like our own) take on significance for us, our attention is drawn to them quickly and effortlessly when they occur. For example, when potential donors were emailed about a teacher in need who had the same surname as them, they were much more likely to open the email, click on the link and donate. Even having the same first letter of a surname increased donations.[40] Similarly, BIT found that attendance at a recruitment event increased from 10.5% to 17.4% when jobseekers got a text which included their name and the sender's name compared to a text that just gave event information.[41]

More generally, information that is novel or unexpected can attract attention. In 2014, BIT collaborated with the National Health Service (NHS) in England to find ways of reducing missed hospital appointments. At that time, 1 in 10 hospital appointments were no-shows: people did not turn up or rearrange in advance. We tested

variations on the standard text message reminder sent before the appointment, including social norms, fairness, and reduced friction.

The most effective message stated that a missed appointment cost the NHS £160 on average. This reduced no-shows to 8.5% from 11.1%, a 25% reduction. We believe that the crucial factor is that this message provided novel information, unlike the others. A follow-up study we ran supports this idea. It replicated the results for the £160 message, but we also tested it against a new message that communicated the same idea of 'not showing up wastes NHS money' in general terms. This message was significantly less effective, perhaps because it was more familiar than stating the exact amount.[42]

Chart 2: Percentage of appointments recorded as missed, by type of text message reminder



Total n = 10,111 *** p < 0.01, ** p < 0.05, *** p < 0.1

This example also highlights that attracting attention is not simply about 'getting a response'. We also need to think about what aspects of an idea we should make most prominent, in order to make a behaviour as appealing as possible. This is the idea of 'framing': selecting and highlighting some aspects or features of an offer or decision at the expense of others, just as a painter decides what to put in a frame.[43]

Framing can be powerful. Famously, people prefer medical treatments if they are presented in terms of the chances of survival, as opposed to the chances of dying.[44] But the metaphors we use to frame our world also shape our responses to it. People change their policy preferences depending on whether crime is presented as a virus in society or a wild animal preying on a city.[45] Meat eaters are much more likely to choose a vegetarian option when it is described as a 'field grown breakfast' than a 'meat-free' breakfast, based on studies by the World Resources Institute and BIT.[46]

Attracting attention is not just about messaging. How choices are structured also influences which behaviours are most prominent. For example, ordering matters. Appearing first on the ballot gets you more votes.[47] Replacing Coke with Coke Zero as the first option shown in McDonald's kiosks lowers sales of the latter and boosts those of the former.[48]

Similar principles hold for the built environment. As mentioned in the book Nudge, changing road markings before a road bends can make drivers become conscious of how fast they are going.[49] In 2017, the London Underground introduced green channels, marked on platforms, to show where passengers would exit the train and therefore where people should avoid waiting. Attracting attention to the spaces that should be kept clear reduced train waiting times by up to 6.6% and represented a 6:1 return on investment.[50]

However, attracting attention also brings challenges. While personalisation may be powerful, there is still little data on what kinds of personalisation people find helpful and which they find unsettling.[51] Tailoring messages may also challenge the principles of universality that are integral to the public sector in many places.[52] Attempts also have to contend with information avoidance: people may be strongly motivated not to notice risks or concerns, even if they are highlighted.[53]

Finally, how do you choose what aspects you will direct attention to? For example, some surveys include a progress bar in order to highlight how a respondent is progressing through their task. That would seem to be a sensible choice to boost motivation. Yet, a study of 25,000 surveys shows that including progress bars makes people less likely to complete a survey.[54]

2.2 Design incentives for maximum effect

Incentives matter. Governments often use financial incentives to shift behaviour. These can take the form of taxes or fines to discourage particular activities, such as taxing cigarettes to discourage smoking, and subsidies and grants to encourage behaviours, like installing home insulation. The private sector competes partly on price, often searching for the discounts or offers that will make their products more attractive to consumers.

BIT's work also shows how changes in price affect behaviour. For example, a randomised trial in Australia tested the impact of increasing the price of sugar-sweetened drinks in vending machines by 20%. Over the following six months, sales of those drinks fell by 6.6 percentage points, while sugar-free alternatives rose by 4 percentage points, and sales of water increased by 3 percentage points.[55]

However, behavioural science also shows that the structure and presentation of incentives matter greatly. In other words, evidence of behaviour should be built into the core setup of taxes or programmes.

For example, in 2016 the UK Government announced that a tax on sugared soft drinks would come into effect from 2018. Many similar taxes are structured around volume: the bigger the drink, the more tax paid. They raise revenue, but often have mixed success in shifting consumer purchases.

The UK levy was structured differently (BIT had a hand in its creation). Rather than trying to change the behaviour of consumers, it was aimed at changing the behaviour of producers. The tax was structured so that it increased in levels based on sugar content. That meant producers were incentivised to reduce the sugar levels in their drinks to avoid a price rise. If they did this, consumers would reduce their sugar intake without any change in behaviour.

Producers responded to these incentives – the great majority of global brands reformulated their drinks in advance of the tax coming into effect. The average sugar content of soft drinks fell by 46% between 2015 and 2020.[56] The tax led to 6,600 fewer calories per UK resident being consumed every year, with 80% of the decline coming from reformulation.[57]

Behavioural science suggests several ways of enhancing incentives. They are not guaranteed – they depend on the context and need to be evaluated. And, just like standard economic incentives, they may work for some groups and not others.[58] They include:

Deposit contracts. This is where people voluntarily 'lock away' money that they will lose if they don't perform an action. Deposit contracts are part of the wider category of commitment devices, which increase the cost of not doing something: we raise the stakes to stop ourselves giving up later. Loss-framed incentives are a similar idea (see Box 2.1).

A study in the Philippines allowed some savers to restrict their right to withdraw money until they reached either a specific month or a savings target chosen by the saver. Compared to standard banking, they increased their average savings balance by 81 percentage points over the course of a year.[59] A systematic review shows that deposit contracts are one of the most effective kinds of incentives for healthy behaviours.[60]

But they have one major drawback: it is hard to get people to sign up to them. In a trial for smoking cessation, only 14% of people offered the deposit contract signed up, compared to 90% of people offered straight incentives. Yet smoking cessation was 14 percentage points higher for the people who did sign up for the contracts.[61]

Using self-image or social image as an incentive. The need to feel good about ourselves can be a powerful incentive, which means connecting a behaviour to a desired self-image may be effective. People were more likely to vote for an animal welfare ballot initiative when they were sent evidence that 'good-hearted people tend to be good to animals'.[62] Opera-goers were more likely to donate to a charity if they were forced to click on a button saying 'No thank you' or 'I've already donated' when buying tickets, rather than just being able to click 'Proceed' without donating – and thereby avoid a challenge to their self-image.[63]

Concerns about our reputation also act as incentives. We want to feel good about ourselves, but we want to look good in front of others as well. For example, some businesses run referral schemes, where an existing customer can refer a friend to the service. While there's often a financial incentive for both parties, a study showed that a big part of the incentive for the sender is a reputational benefit. When referrals were made anonymous, participation dropped off – the referrer could no longer get recognition from their friend for sending a benefit their way.[64]

Prosocial incentives. A common way we boost our self-image and reputation is by doing things for others. This suggests a role for prosocial incentives, where the benefits of an action go to someone else. Evidence suggests that providing benefits to others can be highly satisfying and motivating to people.[65] In one study, people worked harder when the benefits went to a charity than to themselves.[66]

Incentives can also combine personal and public rewards. For example, the most popular credit card in South Korea, used by more than half the economically-active population, is the Green Card. This card rewards people with points for ecologically-friendly purchases, which can be converted into cash or charitable donations. The card reduced CO2 emissions by around 2.5 million tonnes between 2011 and 2016.[67] In such cases, emphasising the social benefits may be the most effective strategy, since people usually factor in the personal ones anyway.[68]

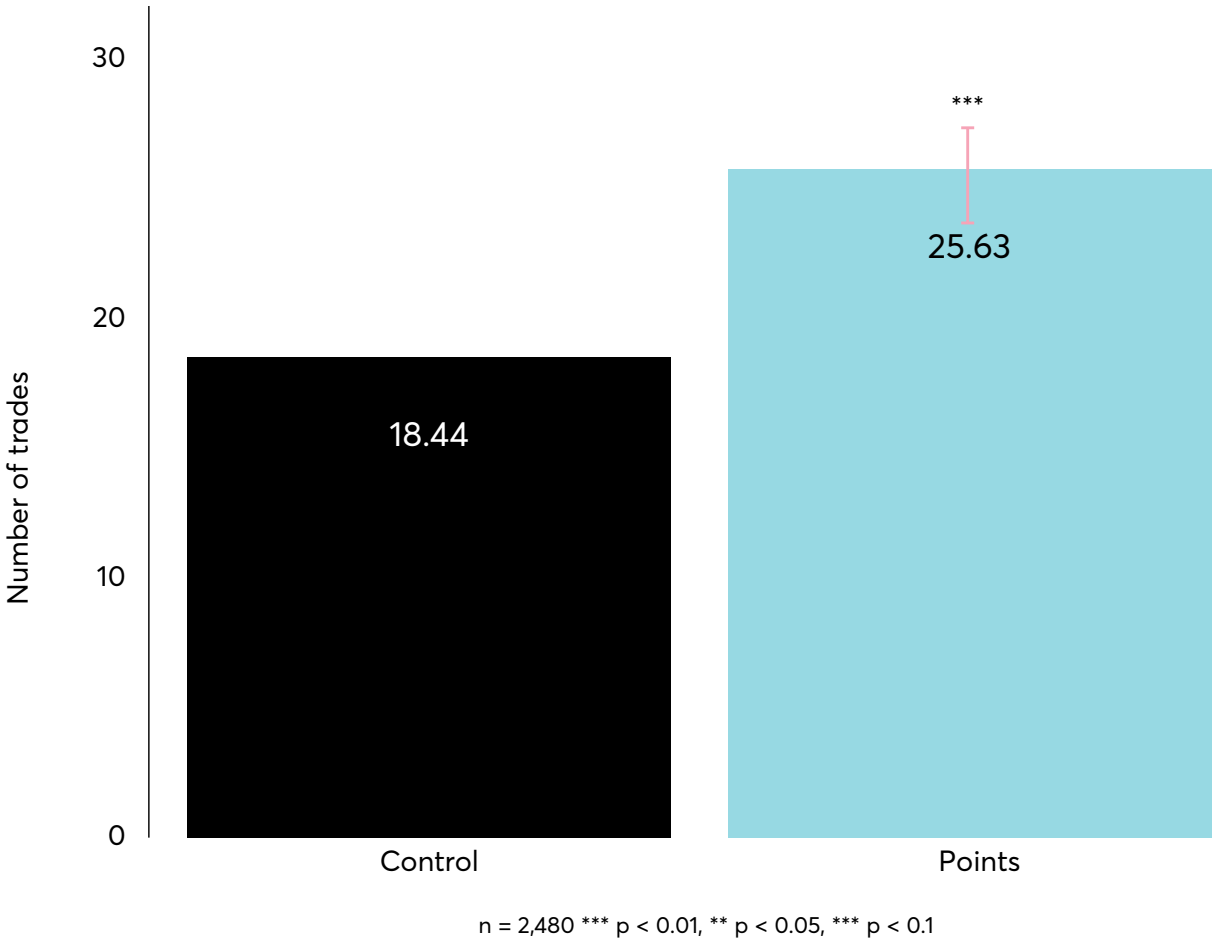
However, prosocial incentives seem to work best when the size of the stakes is relatively small.[69] Moreover, some people avoid them: they work best for those who have already opted in.[70] They may also make you feel good without changing behaviour. Airline pilots who could make charitable contributions for meeting fuel efficiency targets were not more efficient, but reported 6.5% higher job satisfaction.[71]

Gamification. New technologies have prompted a wave of interest in 'gamification' – using the enjoyment of games to engage users in achieving objectives. [72]Games can involve various kinds of incentives. One might be the satisfaction or status that comes from beating others. BIT ran a workplace trial in Australia to boost physical activity. Employees who were shown a leaderboard that displayed how their team's physical activity compared to others increased their number of steps taken by 8.2%, compared to a group who did not get any feedback.[73] Wikipedia editors edited articles at a 13% higher rate, over several months, when they could win purely symbolic status-based awards.[74]

People may also be motivated by the new meanings and narratives that games bring to actions, such as 'exergames' that present your physical activity as a means to complete quests or avoid enemies.[75] Or there may be more tangible rewards, like when people's transport choices win them points that can be exchanged for benefits.[76] For example, the Colombian app, Biko, converts distances cycled into virtual tokens that can be exchanged for discounts at local businesses.[77]

Gamification may not always benefit those playing. BIT's work with the Ontario Securities Commission showed that gamification tactics had a strong impact on inexperienced financial investors. Giving investors nominal 'points' for buying or selling stocks increased trading frequency by 39% in a simulated environment. On average, this is a bad strategy for these investors.[78]

Chart 3: Impact of gamification on number of trades made in simulated environment



n = 2,480 *** p < 0.01, ** p < 0.05, *** p < 0.1

Box 2.1: Enhancing the efficacy of teacher incentives through loss aversion

An experiment in the US tested the impact of two ways of structuring incentives for mathematics teachers.[79] One group received a bonus at the end of the year based on their students' achievement ('gain' group). The other group were given a lump-sum payment at the start of the school year, and told that they would have to return some – or all – of it if their students didn't achieve a certain level of performance ('loss' group). The incentives were set up so that teachers in both groups got the same reward for the same level of student performance.

The principle of loss aversion suggests that the 'loss' incentives could be more motivating to teachers than the 'gain' ones. As predicted, the loss-framed incentives were more effective at improving mathematics scores, although the impact was only seen in the first year the study was run, not the second. The 'loss' incentive also seemed to improve teacher performance over the following five years, while the 'gain' incentive did not.

Behavioural pitfall 1: When financial incentives backfire

Sometimes financial incentives can backfire.[80] Offering money can undermine the other reasons that people may have for acting a certain way. When, for example, residents of a small Swiss town were asked if they would agree to a nuclear waste facility being built nearby, just over half agreed – in spite a third of them believing that at least some residents would die from contamination as a result.[81]

The academics conducting the study then asked the same question, with one difference. They said that the Swiss Parliament would compensate local residents for accepting the facility. Now, when the residents were asked this question, acceptance levels fell from 50.8% to 24.6%. What had previously been seen as a matter of civic duty had been transformed into a simple issue of taking money – and the size of the amount may have signalled that the risks were high.

These concerns can also apply to professionals. In Uganda, paying community healthcare workers to sell diarrhoea medication led to less distribution than if they distributed it for free. The financial incentive may have led the workers to anticipate a social penalty.[82]

Financial incentives should therefore be used with care. They may be most effective when you care about increasing quantity of performance, rather than quality.[83] They may be less appropriate when you care about long-term effects, when they may be seen as controlling or restrictive, when people care about being seen to do things 'for the right reasons', or when norms of cooperation already exist.[84]

3. Make it social

Humans are social beings. We are heavily influenced by what those around us do and say – and what we are told they do and say.[85] We pay a premium for products or services that have been endorsed by other people, which is why online rating systems are so successful.[86] And we want to return favours that are done for us – even if that means 'paying it forward'.

These social influences may go unnoticed. To incorporate them we should:

- Show that most people perform the desired behaviour
- Recognise the power of social networks
- Create feelings of reciprocity

3.1 Show that most people perform the desired behaviour

Social norms are the values, actions and expectations of a society or group. They offer guides, often implicit, to what behaviours are appropriate or acceptable.[87]

'Descriptive' norms are one type of social norm, and they communicate what most other people are doing. We often deduce descriptive norms through observation. For example, seeing solar panels on a property like yours means that you are more likely to get them yourself – and panels that are more visible have stronger effects on behaviour.[88] When children were given coloured bracelets to show that they had completed an immunisation course, this social signal increased vaccination rates by 9 percentage points in Sierra Leone.[89]

However, simply telling people about descriptive norms can shift behaviours such as recycling, energy and water efficiency, and reduce littering. For example, a series of trials run by the energy company, OPower, have shown that comparing household energy use to an efficient neighbour can reduce overall energy usage by 2%-4%.[90] These results have been replicated in places such as Moldova and

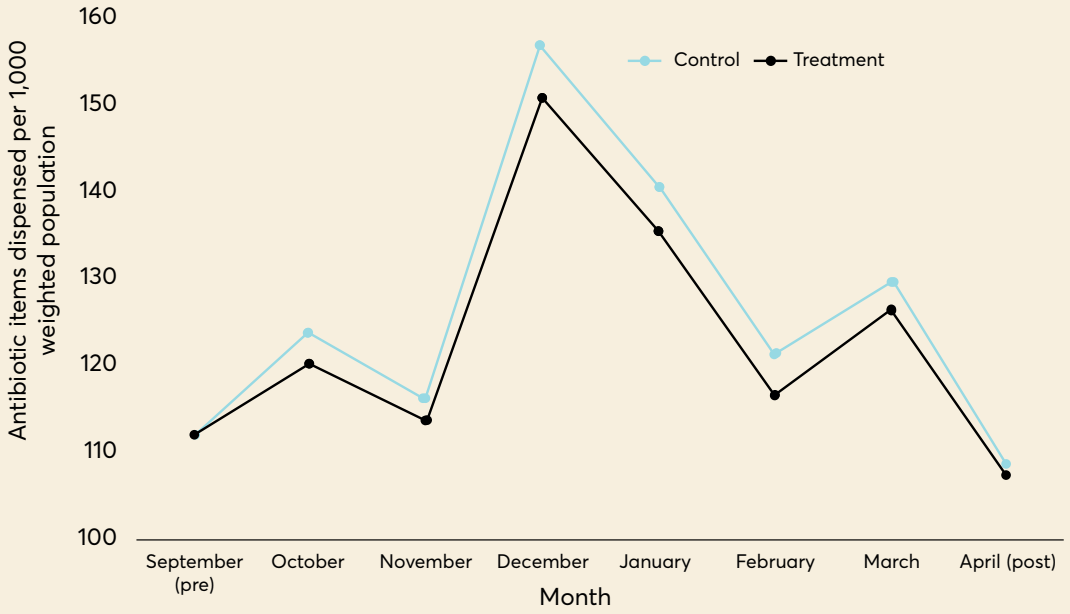
Dubai.[91] Descriptive social norms can also influence professionals and organisations, as shown by the example of antibiotic prescribing (see Box 3.1).

Box 3.1: Social norms to reduce unnecessary antibiotic prescribing

The growth of antimicrobial resistance is one of the major health challenges of our time. In 2021, 4.7 million deaths were associated with bacterial resistance to antibiotics – more than malaria or AIDS. That number could almost double by 2050.[92] One of the main causes of resistance is the use of antibiotics when they are not needed. This is particularly true in primary care, which accounts for the largest volume of antibiotic prescribing, and where some providers prescribe antibiotics much more than others.

BIT ran a randomised controlled trial with Public Health England and England's Chief Medical Officer to test whether primary care doctors reduce their prescribing when they are informed that they are prescribing at a higher rate than their peers. Practices that were told, 'The great majority (80%) of practices in [the recipient's local area] prescribe fewer antibiotics per head than yours,' reduced their antibiotic prescribing rates by 3.3% compared to those who did not receive a letter. The letter led to 73,406 fewer antibiotic prescriptions across England at a cost of 6 pence per prescription saved.

Chart 4: Antibiotic prescriptions per 1,000 population, by group



These findings were replicated in Australia and New Zealand. In New Zealand, the letter also included information about the doctor's prescribing rate for Māori and Pacific patients,[93] who are often under-prescribed antibiotics. This trial found an overall 9.2% reduction in antibiotic prescribing, but did not reduce prescribing for doctors who were under-prescribing for Māori and Pacific patients. There is growing acceptance that social norm feedback is a useful part of national antimicrobial stewardship programmes.

Another approach is to tell people about 'injunctive' social norms. They concern what most other people think about behaviours: what they approve or disapprove of, and what ought to be done. Injunctive norms may be particularly effective when there are misperceptions about what other people actually think (a situation called 'pluralistic ignorance').

For example, BIT found that male bank employees thought their male colleagues were less supportive of men taking Shared Parental Leave than they actually were. Correcting these misperceptions increased employees' intentions to work flexibly to meet parental responsibilities.[94] Similarly, young married men in Saudi Arabia underestimated the widespread support among their peers for women working outside the home. The wives of men who received this information were more likely to have applied for and interviewed for a job in the following months.[95]

There is some evidence that injunctive norm messages may be less powerful than descriptive norms.[96] One reason is that recipients know that people do not always practise what they preach. But perhaps it's most accurate to see injunctive and descriptive norms as interrelated.[97] For example, the effects of the OPower trials seemed to depend on people's beliefs about what others in their community thought about the environment.[98] Several studies find that the greatest impact can come from saying both what people do and what is approved.[99]

What if most people do not do the desired behaviour? Two things become relevant.

The first is people's prior expectations. If people find out that more people are paying their tax on time than they thought, that can change behaviour – even if the behaviour is still in the minority.[100]

The second is 'dynamic' or 'trending' norms, which show that more people are getting on board – even if they remain in the minority for now. Most of these studies have looked at sustainable behaviours, such as eating less meat or using less water, and they seem to work because people think the behaviour will become the majority in the future.[101] However, some studies have not shown any effect, so the jury remains out.[102]

Social norms are not a panacea. There's still a lack of evidence on how long their effects last – although we know they can endure for a long time.[103] Over the last decade, we have learned much more about the factors that determine whether they are effective, and when to be cautious about their use.

Backfires. People who are doing 'worse' than the average may bring their behaviour closer to the norm. But so might people who are doing 'better': those who are using less electricity than average may feel licensed to use more.[104] Some studies have found that these backfires can be limited by changing the comparison to 'best performers' rather than average performers.[105] But others find that this comparison can make people feel discouraged or that the reference group is too distant from them.[106]

Reference groups. Building on the previous point, social norms are most effective if the recipient feels a connection to the group they're being compared with. For example, energy use feedback from smart meters had a bigger impact on residents that identified more strongly with the other households in their neighbourhood.[107] The reverse is true. If the comparison is with a group that the recipient dislikes or rejects, then the message may make the target behaviour less likely.[108]

Emphasising the undesirable norm. Policymakers should be wary of inadvertently reinforcing a negative social norm by emphasising the prevalence of an undesirable behaviour. In their well-intentioned desire to highlight important issues, policymakers can sometimes indicate that the 'problem behaviour' is widespread. This signals to people that, even if we don't like or approve of the behaviour, lots of other people are doing it. The result can be an increase in the problem behaviour.[109] For example, if you think others are carrying illegal weapons, you might get one for self-defence. If you think most people are shoplifting, you may want to take advantage before a possible crackdown. Robert Cialdini, Professor of Psychology and Marketing at Arizona State University, calls this inadvertent signalling the 'big mistake' authorities make.

'Common good' activities. While you should avoid signalling that most people are doing the 'wrong' thing, it does not mean that you should always avoid pointing out that few people are doing the right thing. There are some voluntary behaviours that contribute to a common good – like giving blood – where this can backfire.[110] If you point out that most people have given blood, then people may think they don't need to bother – they can just free ride on others' contributions. For example, Wikipedia has found that their donations increase when they emphasise how few people donate to them, perhaps because that makes people think that the shared resource is under threat.[111]

3.2 Recognise the power of networks

Behaviours spread between people or organisations who are embedded in networks of relationships. The power of networks means we need to move beyond a simple 'A to B' model of influence, like a government programme targeting an individual. The reality is that different actors are influencing others all the time – and being influenced by them in turn. The crucial task is to understand how this transmission happens.

One route is through geographical proximity. For example, a US study found that visiting a house to encourage someone to vote meant they were 10% more likely to do so. This shows the power of influence. However, family members and housemates who also lived in the house, but did not answer the door, were around 6% more likely to vote as well. This shows the power of networks: a significant proportion of the 'influence' was passed on via a social network.[112]

The effect also holds for neighbours. Researchers in Austria found that mailing warnings to people who may not have paid their television licence increased their compliance. But they also found that households who did not receive the mailings were more likely to start complying if their close neighbours had got a letter – presumably, they heard about it from them. These network effects matter. The overall impact of 'hearing it from your neighbours' was the same as the direct effect of the letters themselves![113]

Can you increase the chances of these spillovers, rather than just hoping they occur? Recent experiments have shown this can be done. For example, one study found that encouraging a small set of students to take an anti-bullying stance reduced school conflict levels by 30%. The impact was greater when the group had a higher number of 'social referent' students who were influential in the school network.[114]

Results like these have sparked interest in how to 'seed' behaviours with individuals or small groups in a network so that they spread widely. But a major issue has been how to identify the influential individuals, which can require a slow and expensive process of mapping the whole network.[115] The good news is that simpler and cheaper selection approaches are emerging, including targeting pairs of friends or the friends of randomly-selected people (see Box 3.2).[116]

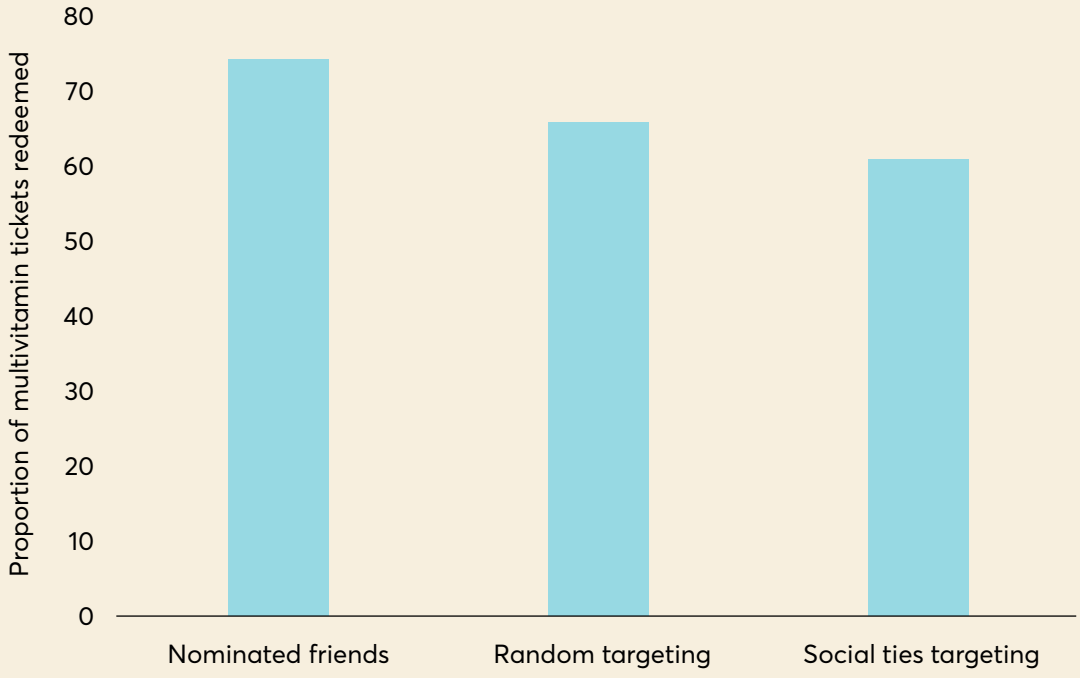
Box 3.2: Social networks to improve the effectiveness of health interventions in Honduras

A study looked at how social connections can be used to increase multivitamin usage in villages in Honduras. Villages were randomised into one of three ways of identifying who to target: randomly-selected villagers; villagers who had been mapped as having the most social ties; or the nominated friends of randomly-selected villagers. The 'nominated friends' group leveraged the 'friendship paradox' of social networks, which suggests that friends of any given individual are more central in a social network than the individuals themselves. Villagers were also given tickets which could be redeemed by contacts for multivitamins.

In the nominated-friends-targeted villages, 74.3% of multivitamin tickets were redeemed, compared to 66.2% in randomly-targeted villages and 61.0% in those where people with the most social ties were given tickets. Targeting the most connected individuals did not improve adoption rates compared to random targeting.[117]

A more recent study in the same region with 24,072 people in 176 villages looked at how to spread health-promoting behaviours for mothers and children. It confirmed that, when measured two years later, the friend-nomination approach was more effective than random targeting.[118] A similar approach has been shown to be effective at increasing vaccination rates in Haryana, India.[119]

Chart 5: Effect of different targeting approaches on spread of multivitamin usage



This field is developing and is still contested. In broad terms, what seems clear is that it's important to consider the kind of network and the type of behaviour being spread. More complex networks are more likely to see non-linear change, for example when a 'tipping point' is reached and a behaviour is suddenly adopted rapidly and widely.[120] Knowledge of how to identify and use tipping points is not yet mature, though.[121] One influential view is that we need to distinguish between simple and complex contagions. Simple contagion is where spread can happen from a single contact, like the transmission of a virus or exposure to an idea. Complex contagion is where someone needs reinforcement from many different contacts for adoption to occur.[122] People need to get prompted repeatedly from people in their network.[123]

In this view, new behaviours are more likely to be complex contagions – and the risk is that policymakers don't realise they need multiple contacts to spread. 'Influencers' may not be effective if people only hear from them once. The second Honduras study backs up this idea: it found that easier-to-adopt outcomes were more likely to spread to people who did not receive the intervention, and knowledge spread more easily than practices.

Networks also make it possible for completely new behaviours to emerge and become dominant.[124] That's very different from the idea of 'using' a network to seed a preselected desired behaviour. Complex systems can disrupt implicit ideas of control – you may be in a position of reacting to trends that have developed quickly and unexpectedly. Understanding how that happens becomes critical.

Behavioural pitfall 2: Assuming which interventions will work

As EAST shows, we can identify some principles about behaviour that often hold true. But behaviour is complex, and we know that context matters greatly. Therefore we can never be entirely certain that a particular intervention is going to work – even if there are good reasons to think it will.

A recent megastudy tested the effects of 54 different four-week digital programmes aiming to encourage exercise.[125] Of these interventions, 45% significantly increased weekly gym visits by 9% to 27% in the trial period. Only 8% of these programmes showed significant changes in behaviour following the four-week intervention period.

The study also gathered predictions of the effects of three of the interventions from people not involved in the project: a general

population sample, a sample of professors from the top 50 schools of public health and a sample of practitioners in companies that specialise in applied behavioural science.

All groups failed to predict which interventions would be most effective, and there was a general tendency to be too optimistic about the impact of the interventions. This result shows the importance of prototyping and testing interventions – and the importance of collecting predictions, so we can learn which results are truly unexpected.

3.3 Create feelings of reciprocity

Reciprocity is a powerful force. We are more likely to help someone who has done something for us in the past, a tendency called direct reciprocity. But reciprocity can be indirect as well – we are more likely to aid people who have helped others, even if we didn't benefit, or to help others in general if we've been helped. Both kinds of reciprocity can be nurtured to improve outcomes.

A simple yet powerful example of indirect reciprocity comes from Australia. A study took place in a shopping car park where drivers had to turn out from one of eight parking rows into a single road to exit. The experimenters placed a car at the last row, waiting to turn out into the road. They found out that, if a car was driving down the exit road towards the waiting car, it would stop to let the car out 15% of the time.

In some cases, the experimenters drove another car down the exit road, past the parking rows. They deliberately stopped to let out cars waiting to get into the exit road. Of the people who were let out by the researchers, 32% stopped to let out the car waiting in the last parking row to exit. In other words, helping out a driver made them more likely to help a stranger in the same situation.[126] They 'paid it forward'.

Indirect reciprocity has wide implications – it creates self-organising cooperation that helps societies work better and minimises intergroup tensions.[127] Therefore, a good option can be to create structures that prompt and support such reciprocity:

- The Japanese system, Fureai Kippeu, is based on reciprocity – people who spend an hour helping an elderly person can 'bank' that hour to get the same amount of help for themselves or pass it on to someone else.[128]

- Indirect reciprocity underpins networks of support and solidarity. For instance, migrants in post-apartheid South Africa, and Andean communities during the Covid-19 pandemic created broad, reciprocity-based networks for support.[129]

- A BIT trial found that highlighting the indirect reciprocity at the heart of organ donation was effective. A trial with one million people found that the most effective message at encouraging people to sign up for the UK organ donor register was 'If you needed an organ transplant, would you have one? If so, please help others.' This message added 529,000 new registrations between 2013 and 2017.[130]

Evoking direct reciprocity can be effective in prompting people to take up an offer. For example:

- In the BIT recruitment event trial mentioned earlier, including the sender's name increased attendance rates. When a reciprocity message was added – 'I've booked you a place. Good luck!' – attendance increased by a further ten percentage points.[131]

- In a megastudy of messages to increase uptake of the flu vaccine, the most effective ones conveyed that a vaccine had been 'reserved for you'.[132]

- A BIT trial aimed to increase uptake of a government support programme aimed at small businesses. Four different email messages were sent by the UK tax authority about the opportunity. The most effective was one that pointed out that the business had been 'chosen' to receive the information because it was likely to be eligible: 9,000 more applications for the programme were submitted as a result.[133]

One particularly relevant type of reciprocity prompt is 'operational transparency'. This is the idea that an organisation should show the work that it is doing on behalf of a user or customer. When people are more aware of the effort that is taking place, they experience less frustration and higher satisfaction and trust.[134]

Take the example of city governments, who we ask to fix our roads or keep our streets clean. In some cities, residents can submit requests for tasks that need doing (like road repairs). When people in Boston received pictures of the city addressing these 'service requests', they submitted 60% more requests than people who did not get

pictures. This change was driven by increased trust in the city, which was created by the impression that the city was making an effort.[135] There are many examples from the private sector, such as ATMs that show your money being counted or bags of potatoes being stored conspicuously near entrances to show that fries are freshly made.[136]

One simple yet under-used approach is to keep people updated on how an organisation is working on their request. This can be particularly effective for public sector processes that can take a long time and where people may drop out. For example, in a trial with people waiting for mental healthcare, BIT found that sending a text message saying, 'We're working to book you an appointment soon', resulted in people being 3.5% more likely to complete their course of treatment.[137]

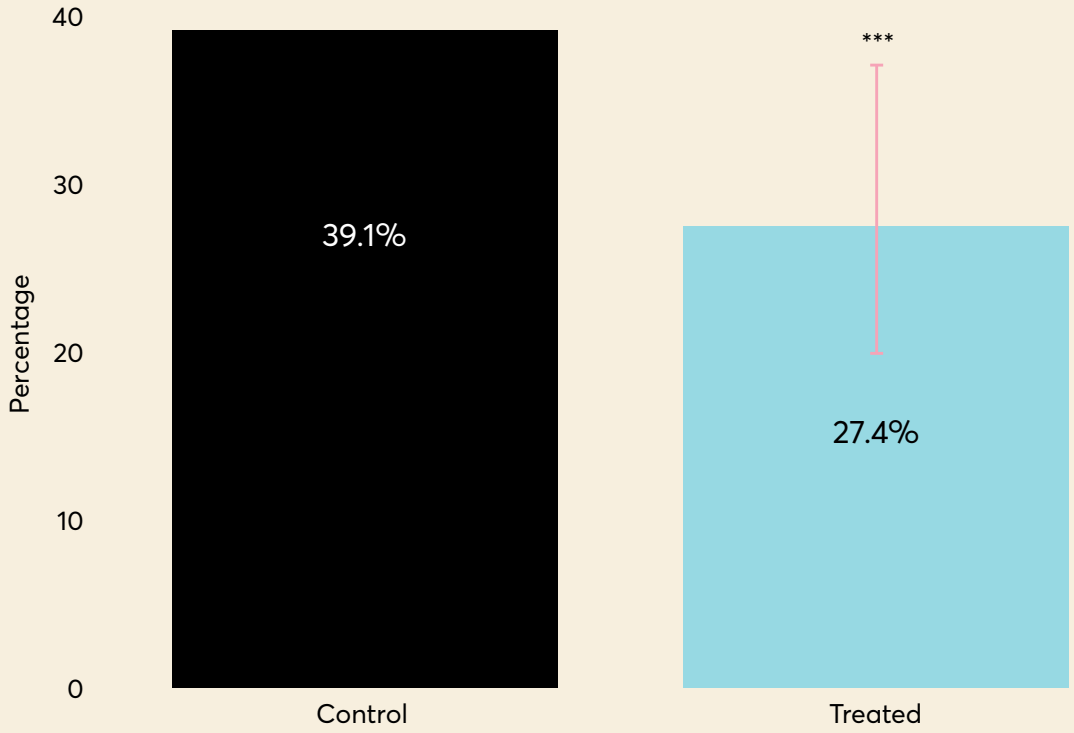
Box 3.3: Operational transparency to reduce victim dropout from criminal proceedings

In 2019, one in four women in Chile experienced intimate partner violence (IPV). Of the few who filed a criminal complaint, a third dropped out before the case concluded. The United Nations Development Programme Chile and the Santiago Prosecutor's Office partnered with BIT to test if light-touch support to victims would reduce dropout rates.

Women filing a complaint either received the standard procedure or received a call and/or text at four key points in the process: after filing the complaint; before each hearing; before the trial; after the verdict. The messages provided clarity about the process and encouragement to proceed.

The evaluation showed these calls and messages reduced the victim dropout rate by about 12 percentage points or 30%. Not only did more women follow through on their cases, we also found that the Prosecutor's Office pressed charges in 16% more cases in the treatment group and the proportion of cases provisionally archived decreased by 43%.[138]

Chart 6: Dropout rate from criminal proceedings for victims of IPV



n = 368, *** p < 0.01, ** p < 0.05, *** p < 0.1
Primary outcome, controlling for covariates

4. Make it timely

We respond differently to prompts depending on when they occur. For example, we are more likely to change our habits during a life transition – after moving, getting married, having a child or losing a loved one.[139] Moreover, our decisions, thoughts and behaviour are often influenced by the ideas, objects and people we experience from moment to moment. For example, people's ratings of their life satisfaction are significantly affected by whether they have just been asked about their health.[140]

Timing is an often-overlooked aspect of the decision-making process. While people know intuitively that timing is important, they rarely consider it a crucial part of policy and product design. We think that it should be. Policies will be more effective if they:

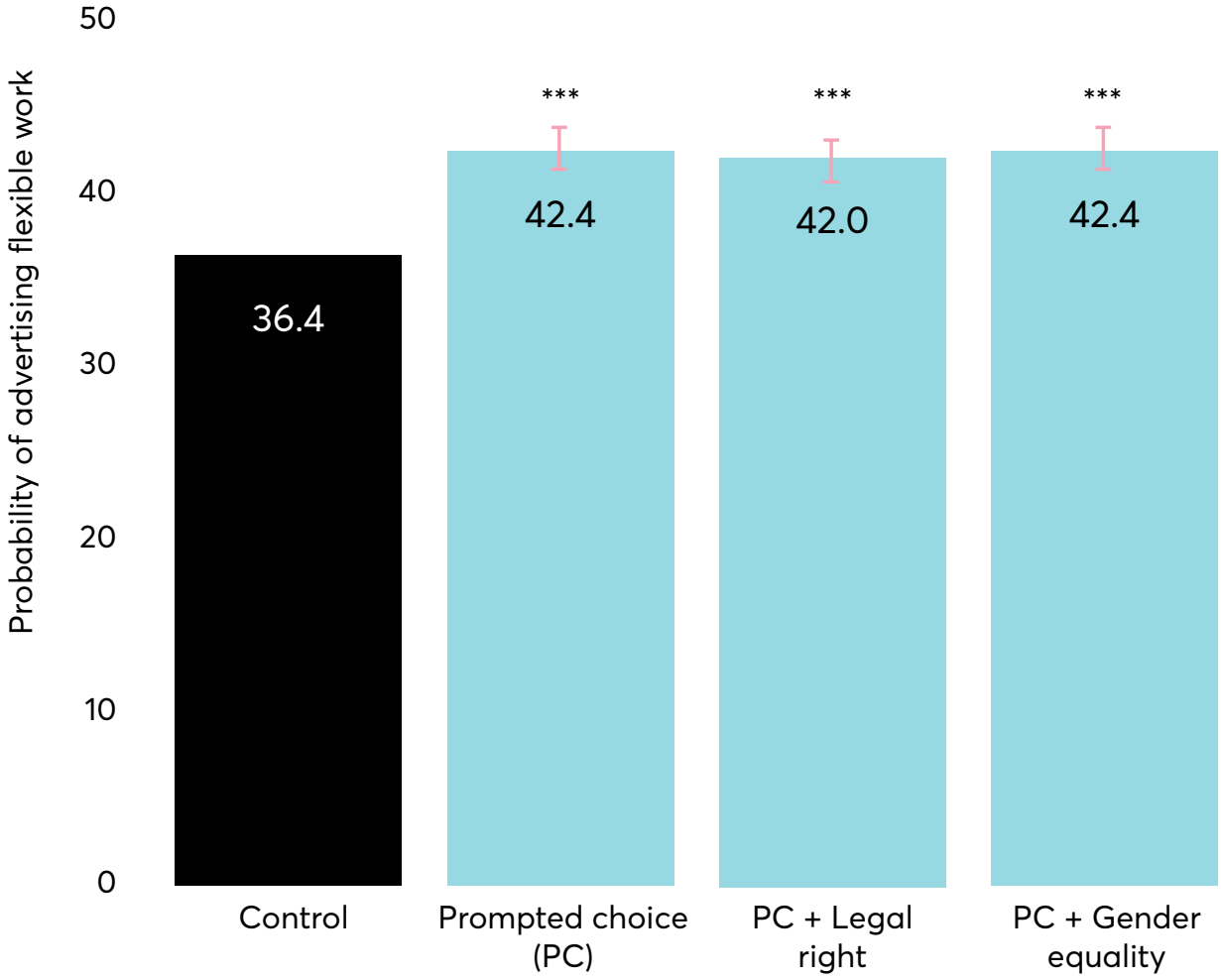
- Choose the right moment
- Consider the immediate costs and benefits
- Help people plan their responses to events

4.1 Choose the right moment

Timing matters. The same offer made at different times can have varying effects. The explanation behavioural science provides is that people's actions can be greatly affected by the context – whether they realise it or not. Here, we consider the impact of the immediate period before an action, the time of day, the time of week, and the time of someone's life.

Many interventions have been based around prompts that are delivered around the moment of decision. Timely prompts can ensure that a certain choice or goal is salient when people are acting or deciding whether to act. For example, BIT introduced prompts for employers to include flexible working options during the process of posting positions on the job site, Indeed. These prompts led to a 20% increase in the number of jobs advertised as flexible – and these jobs attracted up to 30% more applicants.[141]

Chart 7: Effect of timely prompts on probability of including flexible work options in job postings



n = 561,204, *** p < 0.01, ** p < 0.05, *** p < 0.1
primary analysis

In some cases, we can measure how much the effectiveness of a prompt fades as it moves further away from the decision in time. One study found that giving drivers a prompt to wear their seatbelts was effective if it came immediately before driving – but had no impact if it came five minutes beforehand.[142]

Box 4.1: Prompting honesty by asking people to sign 'at the top'

In the first edition of this report, published in 2014, we included a large-scale field experiment which suggested that including signature boxes at the beginning of a form can significantly increase honest reporting in relation to car insurance. However, this study failed to replicate, and has since been retracted after evidence of data manipulation was uncovered.[143]

On a broader scale, this incident highlights how important replication studies are to ensure that recommendations remain robust. It also shows the importance of continuing to test. One of the catalysts that triggered a formal re-examination of this study came from BIT. When we applied the tactic to our real-world studies in analogous settings, we did not find similar results.[144]

We now consider that changing the location of a signature is not a reliable way of increasing honesty. That fits with the evidence that indirect 'priming' has only small or transitory effects. However, this conclusion does not mean that honesty prompts never work. A recent megastudy found that half of the 20 honesty prompts it tested were effective, some substantially – the exact content seems to matter a lot.[145]

We can also see the effect of time at the level of hours, as well as moments. For example, handwashing amongst healthcare professionals dropped by around 8.7 percentage points from the beginning to the end of a 12-hour work shift. Handwashing compliance worsened with higher work intensity, while longer breaks between shifts increased compliance rates.[146] Sometimes these changes are linked to the time of day. Content analysis has shown that financial analysts become more negative on conference calls as the day goes on.[147]

Patterns can be found not just over the course of a day, but also over a week. For example, the likelihood of someone missing a medical appointment is highest on a Monday, and decreases throughout the week.[148] One study indicates that people's tolerance of risk may follow

a weekly cycle: people tend to be most risk-seeking on Fridays and weekends, becoming less risk-seeking between Monday and Thursday.[149]

The implications here are that we can analyse how timing affects behaviour and deliver an intervention when it will have maximum impact. For example, one study used the insight about weekly patterns of missed appointments to shift scheduling later in the week. The hospital's overall no-show rate fell by ten percentage points.[150] When a blood donation campaign in Denmark randomised the timing of their text messages, they found that those sent in the evening raised donations by 6.5%.[151] Data science techniques could be used to identify more nuanced patterns more reliably.

These insights can unlock more creative solutions to challenges as well. One form of diabetes screening requires the person to have fasted beforehand, which can be a practical barrier both for individuals and for running a screening campaign at scale. To address this issue, a team from Hamad Medical Corporation and Action on Diabetes set up screening stations in Qatar's Grand Mosque during the daylight hours of Ramadan – when adult Muslims would be fasting anyway.[152]

Finally, we should consider the moments of change in our lives that disrupt our existing patterns. We might see these changes as a 'fresh start' and be more likely to change our habits and behaviours as a result. These may include having a child, going to school, moving home or experiencing bereavement. For example, BIT ran a study trying to increase signups to a bike sharing platform in the city of Portland, Oregon in the US. We used postcards to target two groups of residents: those who had recently moved to a new address within the city, and those who had not moved, but who lived near a newly added bike station. We found that new movers were almost four times more likely to sign up.[153]

Often, when people experience these periods of change, they need services from the public and private sectors. Therefore, they offer opportunities to promote a change or to prevent a change. For instance, utilities could encourage energy-saving behaviours when people move house or a non-profit could help ensure a recently bereaved elderly person does not become socially isolated. These 'life moments' deserve more attention.

However, fresh starts do not have to be major – they can occur when people perceive a difference in their lives. People tend to be more motivated to make a positive change after special occasions or

calendar events, such as a birthday, the start of a new year, month or even week.[154] A trial in South Africa found that texts sent around the 'fresh start' of two holidays – Youth Day and Mandela Day – were effective at increasing attendance at antiretroviral clinics.[155]

One study aimed to encourage more employees to increase their retirement savings contributions in the near future. They tested a 'fresh start' framing for this future date – listing it as an employee's birthday or the first day of spring – compared to simply stating the number of months until the change would come into effect. The fresh start framing increased take up of the delayed savings opportunity from 2.6% to 3.9% of employees.[156]

4.2 Consider the immediate costs and benefits

We are likely to be more motivated by costs and benefits that have an impact now rather than later. This emphasis on the short term comes about because the present is tangible, while the future is more abstract and hypothetical.[157] When buying a car, we often focus on the upfront costs and neglect the running costs of the vehicle. Focusing on the present is not always a 'bias', but it can mean we lose out overall because we have neglected costs or benefits that take effect further down the line.[158]

Unfortunately, some of the trickiest problems in society impose immediate costs on us and only bring benefits over the longer term – or the other way around. Examples include:

- saving for retirement (costs upfront, benefits long term)
- eating too much unhealthy but tasty food (benefits upfront, costs long term)
- taking actions to reduce carbon emissions (costs upfront, benefits long term).

The last issue is perhaps the most serious and pressing. Technology like heat pumps can be three times more efficient than standard boilers, but the high upfront costs act as a major barrier – not to mention the additional hassle of finding someone willing to install them.

Given that the present exerts so much influence on our choices, policymakers should give it more attention. Will the immediate effect

of the behaviour be seen as a profit or loss? Can resources be used to place some kind of incentive upfront, however small, since it will have an outsized impact? Equally, can an instant cost be introduced, even nominal, to reflect longer-term costs and problems?

One option is to make the long-term costs more salient in the present moment. One route for doing this is to get people to imagine their future selves – to make the future more 'real'. A study in Turkey found that asking schoolchildren to do this led them to make more patient decisions, an effect that persisted over three years.[159] In Kenya, an intervention that asked people to visualise future consequences increased water chlorination by 5 percentage points.[160]

Another route has been to introduce a prompt about the future at the moment of decision. Making the lifetime energy costs of home appliances prominent at the point of purchase can lead people to choose more efficient options.[161] In a trial with the retailer, John Lewis, BIT found a small but robust effect on purchases of the most energy inefficient appliances.[162] However, effects seem to vary by the type of purchase and label: some studies found no effect, including for lifetime fuel costs of cars.[163]

A more robust option may be to change the actual timing of costs and benefits, rather than just presenting them differently. The 'Save More Tomorrow' scheme used this insight to increase savings. The scheme, developed by Richard Thaler and Shlomo Benartzi, encourages individuals to increase payments to their pension plans at some point in the future, rather than today. The immediate costs, which are the main stumbling block, become delayed and therefore less painful (see Box 4.2). From a 'fresh start' perspective, it is interesting to note that most people choose January to start saving.

'Temptation bundling' has been proposed as a way to leverage short-term gratification to bring long-term rewards. This involves bundling an immediate reward with something less fun, but which benefits you in the longer term. You can only unlock the fun if you do the hard work at the same time. For example, one study created a situation where people could only access an 'addictive' audiobook when they were at the gym. Doing this increased the likelihood of a weekly gym visit by 10%-14% and the average number of weekly gym visits by 10%-12%, compared to just giving people access to the audiobook. These effects lasted for up to 17 weeks after a four-week intervention period.[164]

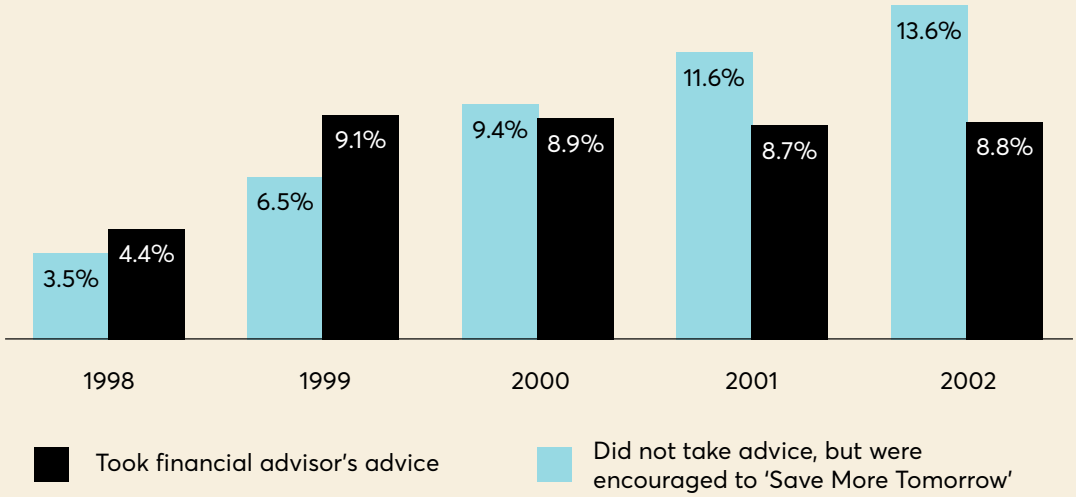
Box 4.2: How asking people to 'save more tomorrow' can be more effective than asking people to 'save more today'

The 'Save More Tomorrow' scheme shows how going with the grain of people's instincts can help them to save more in the long term.[165] Every employee who saved least within a company was urged by a financial advisor to increase their contributions straight away. Some took this advice, and are represented by the black bars in the graph below. Others did not, mainly because they felt, at the time, that they could not afford to do so. They are represented by the blue bars.

As an alternative, the researchers then asked this second group to increase their payments next year, and the year after that by a specified percentage ('Save More Tomorrow'). After two years this group had already overtaken those that took the financial advisors' advice right away. Notice that, for the black group, the increased payments have become the new 'default' (see Make it easy), while a constant increase in savings has become the default for the Save More Tomorrow group.

As always, the implementation details matter. Offering the two options together may lead people to reduce their retirement savings, since they infer that the behaviour is not urgently recommended. The best arrangement is to offer the immediate saving option first, and then the pre-commitment option later for those who decline.[166]

Chart 8: Impact of 'Save More Tomorrow' on savings rates



4.3 Help people plan their responses to events

The final aspect of 'make it timely' concerns how people think about the future themselves – more specifically, how they try to fulfil their goals and intentions.

We know that having people make a plan makes them more likely to achieve a future goal.[167] For example, developing and discussing a clear self-care plan with patients during hospital discharge reduced readmission rates by 30% over the following month, compared to usual discharge procedures. This approach has been shown to work in both acute care and nursing homes.[168]

Not all plans are equally effective though. Making plans more definite and specific means they are more likely to succeed. Even the act of writing them down can help. For example, encouraging employees due for vaccinations to write down the time and the date of the appointment increased vaccination rates by 4.2 percentage points in the USA.[169]

Technology can provide more sophisticated support for making plans. BIT created a WhatsApp chatbot that helped people make a plan to get a Covid-19 vaccine booster. A trial in Chaco province, Argentina, showed that the chatbot doubled vaccination rates compared to a single static message, and tripled them compared with no message.[170]

Another tactic is to break down a complex goal into manageable actions. Over the years, BIT has run many projects to help people return to work. One change we made to the process in the UK was for a jobseeker to make a plan with their advisor for the week ahead. The plan broke down the overall goal of getting a job into simpler actions, and specified where and when those actions would happen. The jobseekers who were asked to do this were significantly more likely not to be receiving government support after 13 weeks compared to those who did not receive any intervention.[171]

An even better approach is to identify any barriers you are likely to encounter, and then plan how to overcome them. For example, if someone's goal is to lose weight, they may identify the desserts in their workplace's cafeteria as a barrier. A simple, specific plan might be: 'When in the cafeteria, I will always go to the checkout next to the pieces of fruit'.[172]

This 'implementation intentions' approach is successful because it is timely: it recognises the power of the situation to lead us astray from our goals.

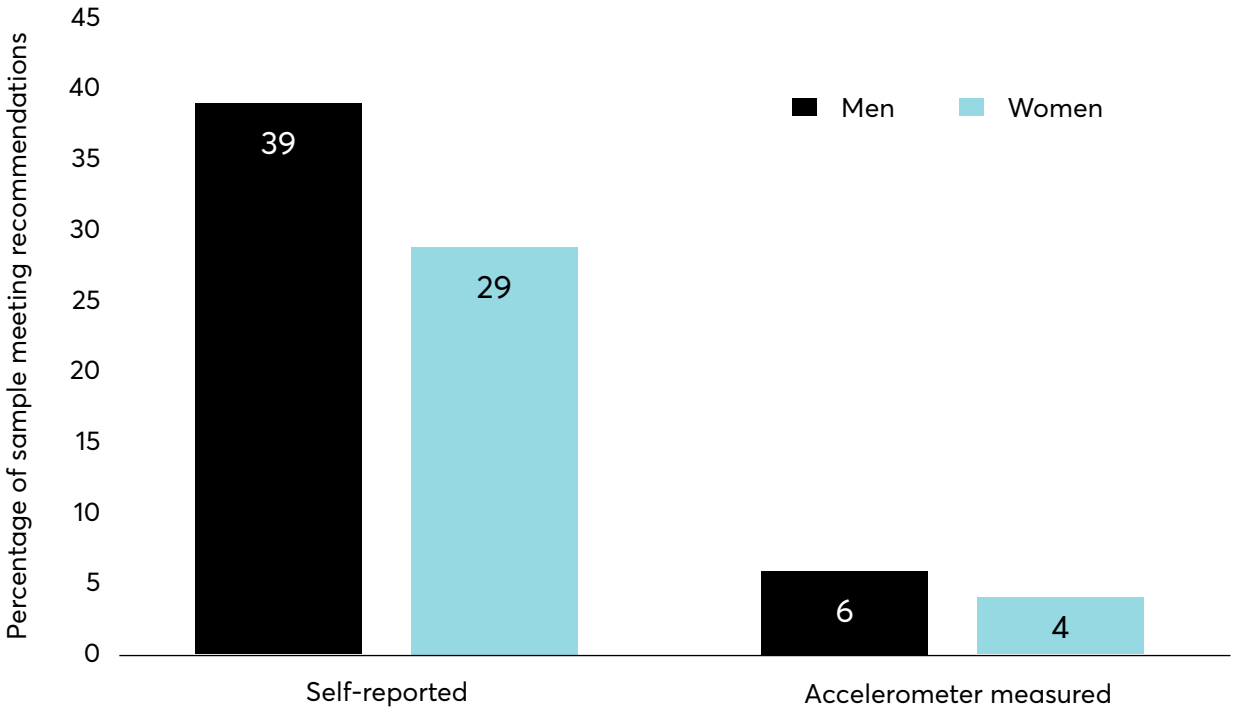
Advance planning helps people respond in the moment in a way that moves them closer to their goal, rather than away from it.

To implement these ideas, policymakers could: identify points when people are likely to set particular goals; highlight common barriers to achieving them; and show the plans others have used to overcome these barriers. This approach will be particularly effective for goals which require repeated actions to achieve a future payoff, like saving and eating healthily.

Behavioural pitfall 3: Why behaviour is different from intentions, beliefs or attitudes

Changing behaviour is different from changing people's intentions, beliefs or attitudes. The latter often shape our behaviours, but not necessarily directly or in ways that we might expect. When asked to report their past behaviour, people can make errors. In 2008, the UK's Physical Activity and Fitness Survey both asked people how much they exercise and measured how much they actually did.[173] As the chart below shows, there was a considerable gap between the two.

Chart 9: Gap between physical activity levels measured by self-reports and accelerometers



At the same time, people often state an intention to do something that they do not follow through on, a tendency called the 'intention-action gap'. A large proportion of people who respond positively when asked if they intend to exercise fail to actually do so.[174]

There is an ongoing debate about the value of self-reports – they may be a good option in some cases.[175] As a general rule, though, it's important to be aware of the gap that can emerge between different measures and to assess the assumptions you've made about the ones you've chosen.

5. Conclusion

Since we published the original version of EAST, the use of applied behavioural science has only accelerated. More than 630 bodies are estimated to be engaged in 'behavioural public policy' as of 2024.[176] In terms of research, many of the gaps we saw a decade ago have been filled by a vast range of studies. But new questions have also been raised about what insights hold true, when, and for whom.

Back in 2014, we identified three main issues that applied behavioural science needed to deal with: replication, segmentation and complexity. A lot of progress has been made in those areas, but they remain a good basic guide for what more needs to be done:

- **Replication**. We should not assume that the first result we obtain will necessarily hold true in the future. It's good practice to confirm whether an intervention produces similar results in different settings. There has been progress on this front. Researchers have acted on the call to diversify the populations they include in studies and there are growing collaborations between researchers in the Global South and Global North. Moreover, the replication crisis has improved research practices and made it easier to assess which results are likely to replicate. Increasingly, we have new meta-analyses and multi-site studies that help us to identify the most reliable findings.

- **Segmentation**. In 2024, we are even more aware of the heterogeneity of behaviour. Reactions to an intervention vary by groups, contexts and timing. Many of the results here are headline figures showing average effects, but those are not always the most useful measures. Improved data science techniques have made it increasingly easy to analyse the variation in responses, and tailor interventions accordingly. Increasingly, the most pressing question will be not can interventions be targeted, but should they be? What do people think is acceptable? What is supportive and what is exploitative?

- **Complexity**. As we hoped, applied behavioural science has begun moving away from focusing on relatively simple 'one-off' behaviours towards more complex challenges. But there is much unfulfilled potential here: behavioural scientists are still more likely to be found optimising choices related to design features than shaping

the overall structure of policies. One exciting way forward is to fuse behavioural science with complex adaptive systems thinking to find practical ways of sparking widespread change.

We explore all these issues in our Manifesto for applying behavioural science.

Despite the changes of the last decade, we think that EAST remains a valuable guide. Its simplicity is its strength, bolstered by the depth and nuance we have added to reflect the more advanced state of the field today. We continue to position these principles not as absolute rules, but rather as a guide for navigating practical challenges. Given the complexity of behaviour, we also urge practitioners to get the advice of experts and academics on what has the best chance of success – and how success can best be measured.

Acknowledgements

The framework is a true product of the collective work of BIT. The original version of the EAST report was authored by Owain Service, Michael Hallsworth, David Halpern, Felicity Algate, Rory Gallagher, Sam Nguyen, Simon Ruda, and Michael Sanders, with Marcos Pelenur, Alex Gyani, Hugo Harper, Joanne Reinhard and Elspeth Kirkman.

This update was overseen by Michael Hallsworth, with support from Jordan Whitwell-Mak and Jonathan Vayness. Joseph S. Reiff generously provided an external review and suggest additional examples. Chaning Jang and Mary MacLennan were kind enough to provide a range of new examples. Deelan Maru helped to collect updated examples from BIT's work. Benji Howell made several helpful comments during editing.

BIT would like to thank all the partners, researchers and practitioners who carried out the work presented in this report.

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