



Behavioural Government

Using behavioural science
to improve how governments
make decisions

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About this report

This report builds on the Behavioural Insights Team's past work on applying behavioural insights to policymaking and the Institute for Government's previous projects on better policymaking. It can be seen as a sequel to the 2010 *MINDSPACE* report, a joint Cabinet Office and Institute for Government publication that helped to make the case for creating the Behavioural Insights Team.

This project was funded by the Behavioural Insights Team. If you would like to follow up any of the ideas, opinions or proposals in this report, please email info@bi.team.

Since most of our knowledge and experience concerns the UK government, many of our examples and recommendations concern the UK. However, we have tried to choose ideas and proposals with wide resonance and potential application. Much of what we suggest could be applied to many countries, regions or localities, and we are happy to have conversations along those lines.

The Behavioural Insights Team (BIT) is a social purpose company that is jointly owned by the UK Government, Nesta (the innovation charity) and BIT's employees. BIT was created in 10 Downing Street in 2010 as the world's first government institution dedicated to the application of behavioural sciences to policy.

BIT tries to improve policies and public services by drawing on ideas from behavioural science. BIT usually tests and trials these ideas before they are scaled up, in order to understand what works and (importantly) what does not work.

The Institute for Government is the leading UK think tank working to make government more effective. It provides rigorous research and analysis, topical commentary and public events to explore the key challenges facing government. It offers a space for discussion and fresh thinking to help senior politicians and civil servants think differently and bring about change.

Foreword

Sir Jeremy Heywood

Cabinet Secretary and Head
of the Civil Service



Improving how government works requires action on many fronts. We often focus on the need to ensure that our public servants have the skills, resources and ambition to excel. But there is also a pressing need to reflect on the way they think and act. Anyone who has worked in government for even a short time will be aware that its structures and processes powerfully shape behaviour – perhaps without us realising.

That is why I am delighted that the Behavioural Insights Team is now trying to address these questions using the latest findings emerging from behavioural science. Over the past decade we have seen how behavioural insights can offer governments new options for addressing policy problems, often at low cost. This report now sets out a series of practical ways that can improve the way governments themselves work.

In my view, the following pages are essential reading for anyone who cares about how well governments serve their people. In the UK, we are already working to incorporate these lessons into the way we make policy and train our future leaders. However, I am sure that these findings hold true for governments all around the world – and I look forward to exchanging examples of how they have been applied in diverse contexts.

Public servants should hold themselves to the highest standards. Projects like this one create new ways of making that happen. I welcome its findings and strongly support their translation into practice.

Sir Jeremy Heywood

Acknowledgements

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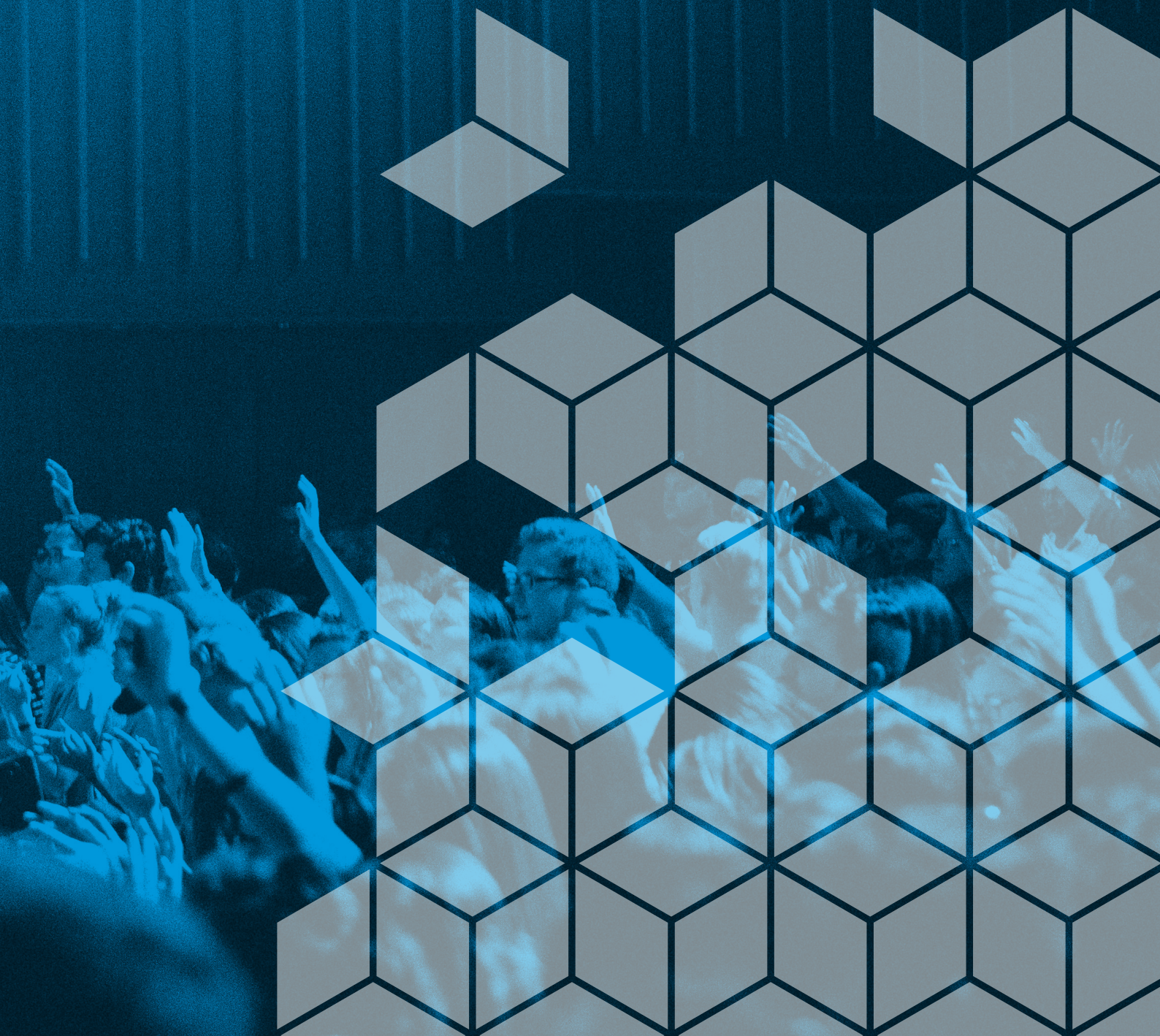
Thanks to Nicholas Jones for his help accessing Cabinet papers regarding the 1992 coal pit closures.

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Finally, we would like to thank our colleagues at the Behavioural Insights Team (BIT) for many conversations on this topic over the years, and for funding this project through BIT's Impact Opportunity Fund.



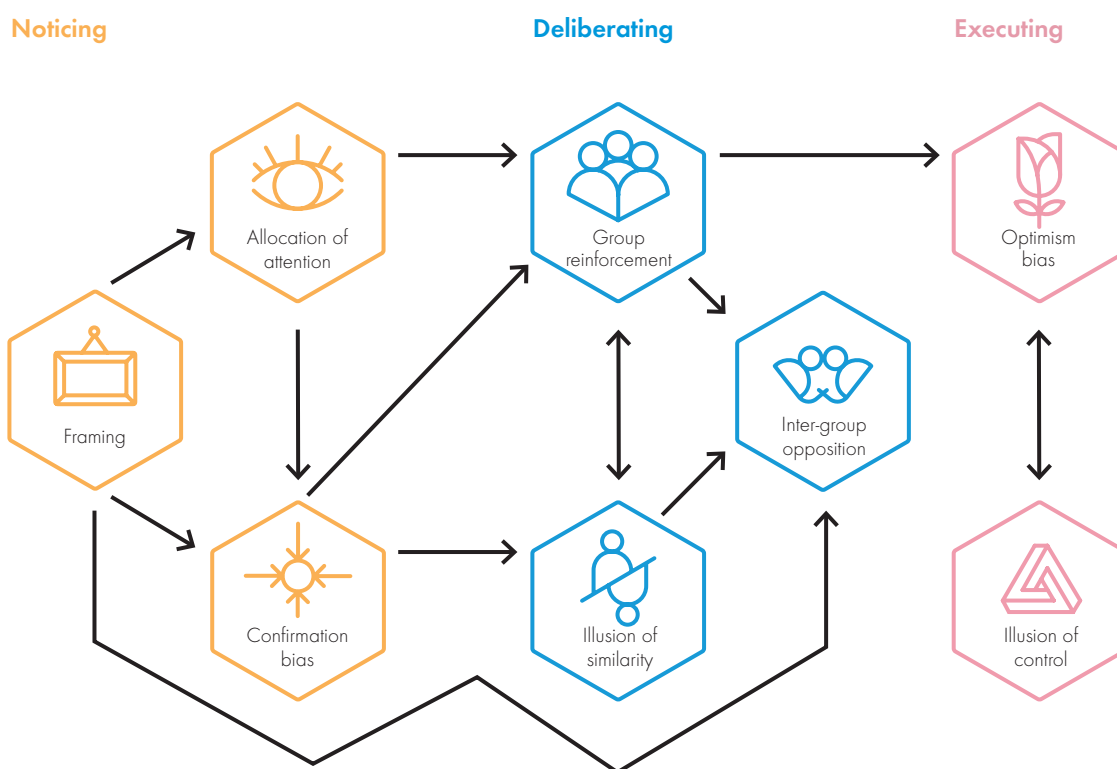
Executive summary



Executive summary

Governments are increasingly using behavioural insights to design, enhance and reassess their policies and services. Applying these insights means governments adopt a more realistic view of human behaviour than they have done in the past - and may achieve better outcomes as a result.

However, elected and unelected government officials are themselves influenced by the same heuristics and biases that they try to address in others. This report explores how this happens - and how these biases can be addressed or mitigated. To do this, we focus on three core activities of policymaking: noticing, deliberating and executing.



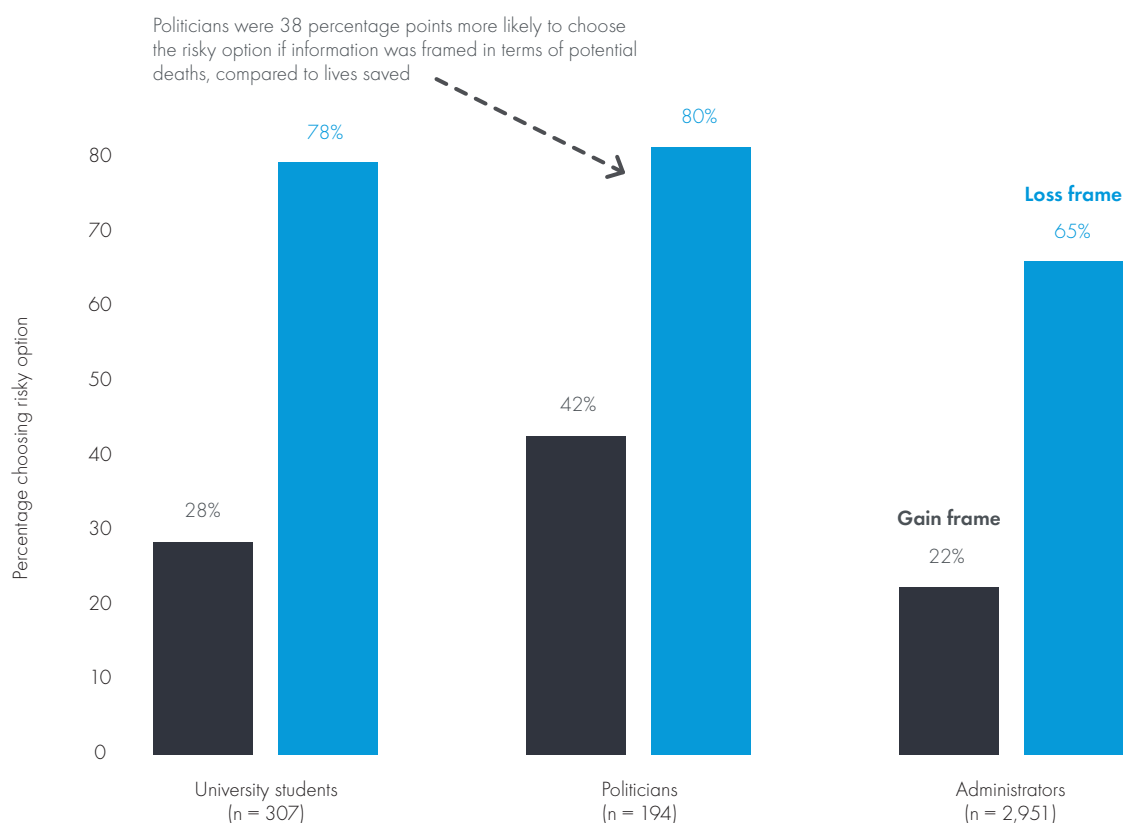
1 Noticing

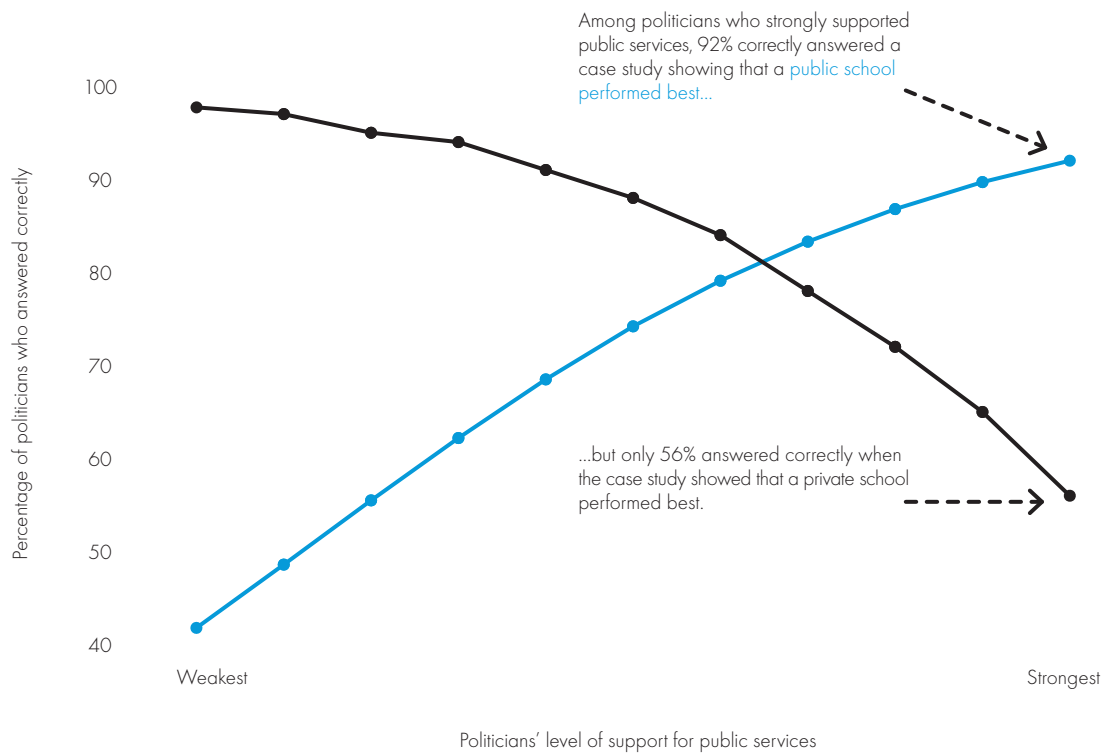
Noticing is about how information and ideas enter the agenda for policymakers.

Framing effects refer to how the presentation of an issue, not its substantive content, can determine whether it is noticed and how it is interpreted. For example, the figure below shows that politicians and civil servants were more likely to choose a risky policy option when it was presented in terms of how many deaths it might prevent (rather than how many lives it might save).

The way governments **allocate attention** means that certain issues and solutions are more likely to be salient to policy actors, regardless of whether they are the most urgent or important. This can mean that government 'overreacts' as attention on issues cascades rapidly, perhaps reaching for whatever solutions come to mind easily, even as slow-developing problems go unnoticed.

Confirmation bias is the tendency to seek out or interpret evidence in line with your existing views. A concerning effect of this bias is that it can make people less able to critically analyse information that conflicts with their beliefs. For example, politicians in Denmark were much less likely to correctly identify whether a public or private school was performing better when the answer clashed with their ideological preferences.



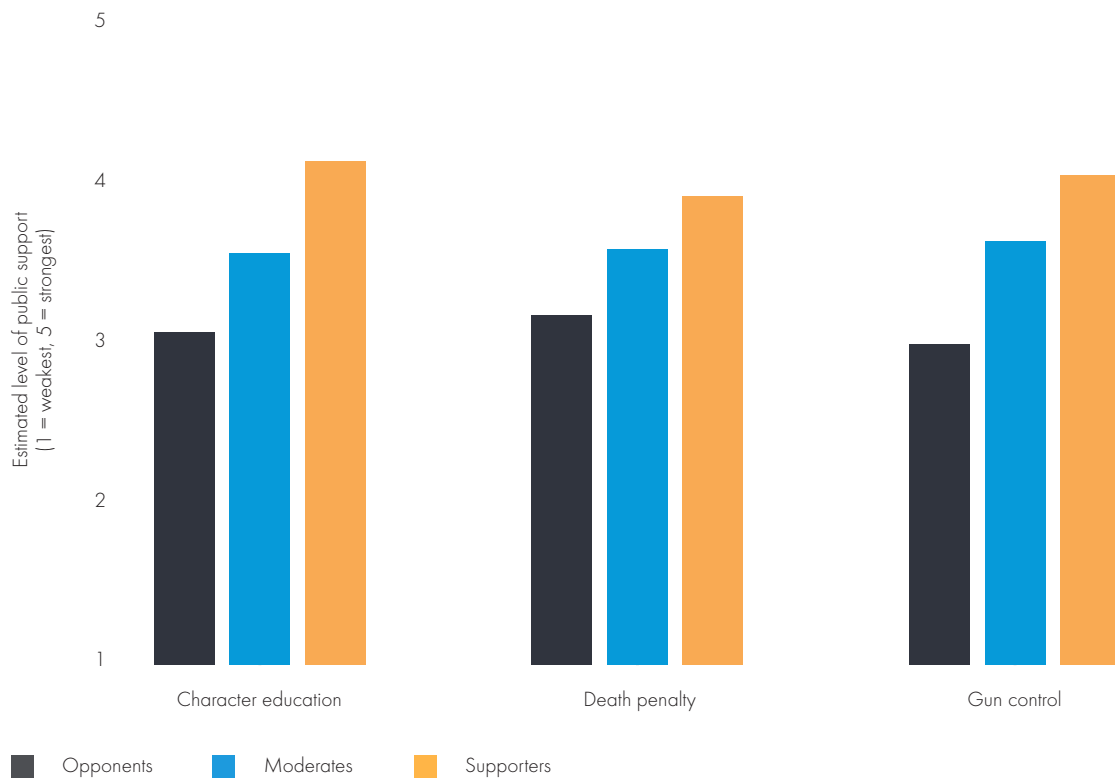


2 Deliberating

Deliberating concerns how policy ideas are discussed and developed by governments. Group discussions are central to policymaking, but the evidence shows that they can actually make some decision biases worse.

Group reinforcement is when people self-censor and conform to the group majority view (even when they privately think it is not correct). For example, the Chilcot Inquiry found that the policymaking groups that discussed the UK's deployment of military force in Iraq did not subject their proposals to enough challenge, which led to poor decision-making. Group discussion can also lead to extreme positions being adopted, as members reinforce (rather than challenge) each other.

The **illusion of similarity** plays out in two main ways. First, policymakers may think that more people share their own opinions or attitudes to an issue than is actually the case. Data from a representative sample of the US population shows that the more someone is in favour of a policy, the more they think others are as well. In other words, people assume that others have similar views.



Second, policymakers may overestimate how much people will understand or embrace the policy in question. Their own deep involvement in the policy may make them assume that people will be paying attention, will see what the policy is trying to do, and go along with it - none of which may be true. For example, a recent study showed that policymakers greatly overestimated how many parents would make even a small amount of effort to sign their children up to a new educational intervention.

Inter-group opposition is when the pull towards group identity (and conformity) makes members reject the arguments of other groups, even if they are good ones. There can be a strong tendency to believe that the other group holds its opinions because it is biased or dishonest in some way. This perception can even take hold between government officials in different government departments, perhaps without them realising.

3 Executing

Executing is about how policy intentions are translated into actions. The common theme here is that people tend to be overconfident in their judgements.

Optimism bias is a person's tendency to overestimate their abilities, the quality of their plans and the likelihood of future success. A recent study of US climate change officials found that they tended to be overconfident in their knowledge and abilities, particularly when they had more years of experience. Moreover, this overconfidence also meant they were more likely to take risky decisions (which is a problem if this risk-taking is based on false assumptions).

Illusion of control is the tendency to overestimate how much control one has over events. This can be a particular problem because policy often deals with complex systems where the link between cause and effect is not direct or obvious. By solving a problem in one area, policymakers may create unintended consequences in another part of the system. They may then keep trying to correct them with new actions, not realising that the system is not responding as they intend.

Proposals

Below we give a selection of the strategies we have developed to mitigate these issues.

Issue	Strategy
Framing	<p>Use re-framing techniques. Re-framing strategies can help actors change the presentation or substance of their position in order to find common ground and break policy deadlocks. Understanding how others frame an issue differently can lead to changes in emphasis that make a proposal mutually acceptable, or highlight actions that cost little to one side but are symbolically important to the other. We propose four main strategies for doing so: frame incorporation, frame reconnection, frame accommodation and frame synthesis.</p>
Allocation of attention	<p>Invest for windows of opportunity. One option is to incentivise longer-term investment in understanding policy areas that currently attract little attention but may attract more later. Governments will then be able to respond to sudden pressure for action with well-considered plans, rather than relying on whatever solutions come to mind quickly. A particularly useful strategy is to help officials to build strong external networks into academia and other sources of expertise, which will allow them to access advice and insight rapidly.</p>
Confirmation bias	<p>Build in opportunities to change course and revisit assumptions. Confirmation bias can mean that even weak proposals quickly become difficult to discard. There is scope for pre-planned 'break points', similar to those used in surgery, to allow current plans to be reappraised. Concerns about 'U-turns' can be mitigated if the process is more open, if options are floated without a strong commitment and if feedback is taken on early.</p> <p>Require transparency about the evidence base used to make policy decisions. Policymakers may be incentivised to provide a better evidence review if they know it will be released externally. In addition, the quality of the evidence review may be improved by outside expert input. But this external scrutiny needs to come while the evidence base is still a work in progress. If the evidence base is seen as a finished product, confirmation bias may kick in and even useful contributions may be dismissed to defend the existing evidence review and its conclusions.</p> <p>Consider the opposite. When assessing evidence, one effective de-biasing strategy is to 'consider the opposite'. This involves asking 'would you have made the same judgement if exactly the same study had produced results on the other side of the issue?' This strategy leads to a more objective assessment of the quality of evidence.</p>

Group reinforcement	<p>Create routes for diverse views to be fed in before, during and after group discussions. Pressure to conform is easier to resist when people are not face to face. Therefore, policy teams could introduce questions anonymously through an online form before and after policy discussions, giving a chance for divergent views to be captured (and acted on with minimum loss of face). There is also value in equipping policymakers to design and facilitate more open workshop discussions, since conventional chaired meetings can close down debate in order to complete a fixed agenda.</p> <p>Assemble teams that are cognitively diverse. Teams whose members approach problems in different ways often do better – particularly at tasks requiring creativity. Therefore, managers should be helped to identify how team members differ in their problem-solving approaches and look for a variety of these approaches when composing teams, wherever possible.</p>
Illusion of similarity	<p>Consider ‘zero interest’ scenarios. If policymakers overestimate the public’s interest in a policy, we think this can be addressed by a simple thought experiment: ‘what happens if there is zero interest or enthusiasm for what we are offering?’ Asking this question should improve contingency plans and make unreasonable assumptions less likely.</p> <p>Get political involvement throughout the decision-making process. Politicians spend much time talking to varied groups in society, and arguably have been elected because they understand how others think and feel. However, elected officials often reflect that they feel their officials involve them in policymaking too little, too late or in formats that are too tightly structured.</p>
Inter-group opposition	<p>Use collaborative red teaming. In the military arena, use is often made of ‘red teams’, which are groups that are tasked with finding weaknesses in a proposal or system. While there is evidence in favour of these teams, involving outsiders in this way means that their findings are more likely to be dismissed defensively. Instead, evidence shows that people are more likely to accept criticism from someone who is part of their own group or who identifies with it. Therefore, we propose that part of a policy team splits off to create a ‘collaborative red team’ when problems are still being defined or plans still being developed.</p>
Optimism bias	<p>Conduct ‘pre-mortems’. In a pre-mortem, decision makers imagine the future failure of their project and then work back to identify why things went wrong. This process encourages people to explore doubts, thereby highlighting weaknesses that can then be addressed. There is emerging evidence that pre-mortems can be successful in real-world settings, but they are still not widely used in policymaking – we think they should be.</p> <p>Apply and extend reference class forecasting corrections for optimism bias. Reference class forecasting involves adjusting estimates by taking into account evidence from similar projects in the past. The use of these corrections could be expanded from infrastructure projects to social programmes in general – recognising the complexities in doing so. In the absence of reference data, an even simpler process would require a standard optimism correction to all projections of costs or results as standard.</p> <p>Keep two estimates. There is evidence that judgement is improved simply by making two estimates rather than one. Therefore, policymakers should retain both their central estimate and their high-cost, low-impact estimate as policies are developed.</p> <p>Build trials and variations into policy execution wherever possible. Optimism bias strengthens the case for rapid and continual experimentation, which should provide early feedback on whether plans are realistic. If these experiments are well constructed, they will be more difficult to dismiss, even if people are motivated to do so.</p>

Illusion of control

Incorporate mechanisms for feedback and adaptation in implementation plans. Policies should include effective mechanisms to find out how they are being realised in practice – with clear responsibilities for who should try to steer the relevant system if results are not turning out as planned. These should also include early warning indicators of emerging trade-offs that may require a policy or administrative response.

These strategies need to be integrated into a wider process of change that includes:

- 1. Raising awareness.** Policymakers should be made aware of the biases above and motivated to address them. However, simply raising awareness is unlikely to be sufficient to change behaviour. People find it difficult to notice and correct their own biases, particularly if the context continues to prompt them. In fact, simply highlighting the existence of biases and directing people to be less biased can backfire and create more bias.
- 2. Adopting strategies to mitigate biases.** Given these concerns, we have developed the strategies above. The hope is that they offer practical options that can stop these biases operating automatically. Training on how to adopt these strategies could bring benefits – but only if it focuses on a specific context and behaviour, and gives practical ways to help someone develop new reactions to this context. While there is value in trying to develop debiasing training for policymakers, it will require rigorous testing to make sure it is effective.
- 3. Helping governments to develop structural changes that reduce the impact of biases.** Reforms cannot focus on individuals in isolation – they also need to consider how systems, processes and institutions create behaviours. Some of these drivers may be too large and complex to change (e.g. the role of the media), but others can be amended or re-thought in the light of our proposals. Since these structural changes should be tailored to the department or government in question, we recommend that behavioural scientists work with interested policymakers to develop proposals for change in their particular institutions. The Behavioural Insights Team (BIT) welcomes these discussions.

We recognise that this is a complex area; this Executive Summary has focused on the report's core argument and proposals only. None of this is intended to underplay the essential role politics and political leadership have in achieving important policy outcomes. Moreover, we want to stress that all of the issues set out in this report apply to the authors and BIT as well. We have made flawed policy decisions in the past, and we are not claiming to be judging from a position of perfect knowledge or ability.

Our intention is to provide practical strategies for policymakers to mitigate biases that may distort policy decisions. Those strategies are just a starting point; we are keen to develop our thinking further and welcome reactions and further contributions.



1 / Why we should care about 'behavioural government'

1.1 Behavioural insights are increasingly used in public policymaking...

Governments are increasingly using behavioural insights to design, enhance and reassess their policies and services. Dedicated teams have been set up in the national governments of the UK, the US, Germany and Australia, with many others adopting less formal arrangements.¹ The Organisation for Economic Co-operation and Development has published 150 case studies of behavioural insights applied to public policy,² and the European Commission and World Bank have also started to focus on this area.³

Applying these insights to create 'behavioural public policy' means governments adopt a more realistic view of human behaviour than they have done in the past. Previously, many policies have been developed and executed with an expectation that people would respond to them after carefully weighing up the relevant pros and cons (see box). In contrast, a behavioural insights perspective draws on research from psychology, economics and other disciplines showing that our decisions are strongly influenced by heuristics (mental shortcuts) and habitual, often automatic, responses to our immediate environment.⁴

While these heuristics and habits often serve us well, in some contexts they can create 'biases' where people make decisions which they later regret - or which create problems for others or society in general.⁷ For example, 'optimism bias' is the common tendency for an individual to think that they are less likely to experience a negative event (e.g. divorce, disease) than other people.⁸

This perception can lead people to underestimate future costs or inflict harm on themselves by accident. Most attention has focused on using these insights to proactively influence behaviour to achieve policy goals. The idea is that government can design policy to account for people's heuristics and biases, and thereby achieve better outcomes.⁹

In the UK, one of the most successful attempts to do this has been automatic enrolment for private pensions. Legislation passed in 2008 which required workers to opt out of (rather than opt into) their employer's pension plan was motivated by empirical evidence showing that 'status quo bias' was a significant barrier preventing people from participating in pension schemes.¹⁰

People may not respond in the way policymakers predict

Many models used for policymaking assume that people will quickly recognise and respond to a change in their financial incentives in the way that the policymaker intends. In reality, this may not happen. Tax policy provides some good examples, such as the very low take-up of the transferable marriage allowance in the UK.⁵ This policy applies to couples where one partner does not have enough income to use their tax allowance in full. Starting in 2015-2016, that person could transfer 10% of their allowance to their partner, as long as that partner was not a higher rate taxpayer. But the UK tax authority revealed in September 2017 that only half the four million eligible couples had decided to apply - so two million people effectively missed out on more than £200.⁶

To date, this seemingly superficial change has led to nine million additional workers enrolling in a pension scheme, while preserving freedom of choice.¹¹ Behavioural insights have also led to robustly evaluated improvements in many other policy areas.¹²

Behavioural insights can bring other kinds of benefits, aside from developing new interventions. Viewing policy through a behavioural lens may help policymakers to discover that an existing policy has unintended consequences, which may lead them to modify or stop it. Or they may see that a policy goal requires unrealistically large changes in behaviour by citizens, and instead decide to shape policy around the behaviour rather than waste effort trying to stop it.¹³ Seeing behavioural insights as a lens for understanding government, rather than just a tool for policy, is the starting point for this report.

1.2 ...and the time has come to apply these insights to government itself

Despite this growth and success, behavioural public policy has been criticised on several fronts.¹⁴ One common objection is that elected and unelected government officials are themselves influenced by the same heuristics and biases that they try to address in others.¹⁵

We agree that this is likely to be true. Take the optimism bias mentioned above. The UK National Audit Office has often criticised the 'endemic over-optimism which characterizes decisions to commit to [government] projects and the subsequent management of them'.¹⁶ Many other studies have come to the same view, as we explain later.¹⁷

This conclusion is also, in some ways, not very surprising. How could we reasonably expect public officials to be exempt from these biases? It is now seventy years since Herbert Simon's seminal work on 'bounded rationality' in organisational behaviour.¹⁸ Recent work from the field of behavioural public choice emphasises how psychological biases may lead to policy errors,¹⁹ and political science offers various theories of policymaking that stress the importance of framing, narrative, heuristics and post-rationalisations.²⁰ Indeed, two recent studies suggest that we are at a 'turning point' where we will move to studying 'behavioural public administration'.²¹

With that said, we should not think of biases in black-and-white terms, since they may just be useful mental shortcuts 'in the wrong place'.²² Many problems emerge because of the way our thinking interacts with our context, not because of the way we think on its own. Optimism bias can have positive effects for individuals, since it makes people feel good about their situation and outlook (indeed, people suffering from depression do not exhibit this bias).²³ For individuals, it may only produce harm in a few instances and, for governments, it could mean that a politician pushes elected officials to achieve more than they initially think is possible.

We stress this point because it has real practical implications. Rather than just thinking about biased decision-making in government in isolation, we need to make sure any solutions account for the contexts, systems and institutions in which those decisions are made.²⁴ So, when we use the term 'bias' in this report, it should be understood with the points above in mind, rather than as a blanket criticism.

1.3 The two goals of this report

While we agree with critics that government actors exhibit biases, we disagree that this automatically implies anything about the size of the public sector or the scope of government action.²⁵ Nor do we think government should stop using behavioural insights on the basis that, since behavioural insights show that people can make flawed decisions, any decisions on how to apply behavioural insights by people in government will also be flawed.²⁶

Our view is that the existence of behavioural biases in government means behavioural insights are needed more, not less. This report tries to address this need in two ways:

1. **Raise awareness.** This report highlights how biases can influence decision-making in government. We try to present these findings in ways that practitioners will find easy to use. Our hope is that this will enable policymakers to identify and address these biases more easily. However, increasing awareness is not enough on its own. Government actors may not be able to register when these factors are at play – and, even if they are, they may not be able or willing to do anything about them.²⁷
2. **Propose improvements.** We think that more could be done to use behavioural science to create new ways of *improving* the way governments make decisions. But these solutions cannot simply focus on the psychology of individuals in isolation. The behaviour of public officials is shaped by the institutions and systems in which they act (and vice versa). This, we think, offers a source of hope: while public officials are just as vulnerable to biases as anyone else, they act within institutions which can be modified to mitigate or eliminate those biases.²⁸

2 / How behavioural insights can improve policymaking

2.1 What do we mean by 'better' policies?

Throughout this report, we argue that reducing bias among policymakers will help government make better policy more often. We want to be clear about what we mean by 'better'.

The question of when, and on what basis, to judge a policy is complex and contested.²⁹ One useful distinction is between 'programmatic' and 'political' evaluation:

- **Programmatic** evaluation means looking at observable costs and benefits to society, and comparing the policymaker's original intention with the eventual outcome.
- **Political** evaluation involves looking at 'the world of impressions: lived experiences, stories, frames, counter-frames, heroes and villains ... the way policies are being perceived and debated among their stakeholders'.³⁰

A policy can be successful in one domain but not the other.³¹ A policymaker may have their career ended for a policy that turns out to be the right call; another's career may flourish after leading a policy that misses all of its programmatic objectives but that was seen to be symbolically important or well-intentioned.³²

Our focus in this report is on helping to ensure policies work better at a programmatic level. This implies that the successful policies are those that meet their programmatic goals, rather than purely political objectives – although they need to command enough political backing to ensure their implementation.³³

2.2 Should we expect government decision-making to be free from bias?

There are many studies showing that people often use mental shortcuts that can lead to biased decision-making, but most of these studies have relied on samples of students or people from the general population, rather than people in government specifically.³⁴ This matters, because there are reasons to think that policymakers might be less prone to such behavioural biases, at least in some government systems.³⁵

For example, the presence of institutional checks and balances, and a pluralistic distribution of political power, could provide extra scrutiny that corrects biases.³⁶ Moreover, government officials are usually explicitly required to provide expertise – both technical and practical – to help elected officials to make policy decisions that produce benefits for society.

On the other hand, we can point towards observational studies that look at past government actions and judge whether they seem biased or poorly justified. One study, for example, found that 80% of countries accepted treaty adjudication by the International Court of Justice when it was the default option, compared to only 5% when the country had to actively choose it.³⁷ We discuss more of these studies in the following sections, along with new studies that attempt to directly measure these biases in elected and unelected officials.³⁸

We can also look at studies showing the existence of bias in professions similar to some government roles (in so far as they both feature highly educated groups making high-stakes decisions).³⁹ These include:

- A review of the decision-making of 7,000 physicians that identified anchoring (being influenced by information you have been exposed to previously, even if is unrelated to the current decision) and availability bias (overvaluing information which easily comes to mind) as important predictors of medical errors and mismanagement.⁴⁰
- Studies showing that judges tend to give more lenient sentences if it is the defendant's birthday,⁴¹ but harsher ones when their local football team has recently lost a match.⁴²
- A review of 28,000 predictions made by 284 experts about geopolitical events which found that, on average, their predictions were only slightly more accurate than chance, and that this poor performance was partly explained by biases such as overconfidence.⁴³

A McKinsey survey of 772 company directors found that they rated 'reducing decision biases' as their most important strategic goal for improving business performance.⁴⁴ There has been no similar study of top government officials, but the evidence suggests that government decisions are not immune from biases – and that therefore there is room for improvement.⁴⁵

2.3 Will reducing biases mean better policy?

But will reducing biases actually achieve better policy (as we define it above)? We think this is a fair assumption, with caveats. Obviously, not all biases lead to policy failures, and not all policy failures are caused by biases. This means that reducing biases will have no effect on outcomes in some instances. Here we briefly explain two main reasons why.

An entirely 'rational' and bias-free process may still result in failure

What we have in mind here is when policymakers identify an objective, break this objective down logically into subordinate actions, and produce a plan that is compelling, coherent – and wrong. Many accounts of the UK's 'poll tax' point out that (in the words of a member of the review team itself) those involved were 'seduced by the beautifully crafted, conceptually elegant papers that were produced'.⁴⁶ The elegance of the papers did not prevent the policy from becoming a notorious failure.

Of course, a major cause of this failure was political: ministers misjudged the acceptability of the tax and made the call to introduce it without the planned transition period. But the policy also illustrates how following standard UK policy processes (e.g. Cabinet Committees, Green and White Papers), which deal 'rationally' with issues on their own terms, cannot guarantee that crucial political and logistical considerations are addressed and disasters averted.⁴⁷ The result in this case was an impractical policy that crumbled on contact with reality and had to be reversed at considerable reputational and financial cost.

The danger of this happening increases with the complexity of the issues or systems involved. A good example comes from forest management.⁴⁸ In the 18th century, officials in German states adopted a new 'scientific' approach that involved organising forests according to regular geometrical patterns, in order to maximise production and ease maintenance. This approach appeared to be wildly successful – until the second generation of trees showed disastrously poor growth. The scheme for improving the forest had failed to appreciate that a complex ecosystem had been creating nutrients for the trees, until the rational pursuit of efficiency had destroyed it.

The lesson here is to avoid an approach that rests on a version of rationality that is too narrow and technocratic for the issue or system involved.

What may appear to be biased or misguided may actually be the result of calculation

We also need to be careful that focusing on programmatic outcomes does not mislead us. For example, a policy that seems biased, misguided or ineffective from a technocratic perspective may have been chosen in order to shore up political support in the immediate term – perhaps so that a bigger, more beneficial policy can be implemented later. A policymaker may be making a reasoned trade-off between programmatic and political benefits.

An example might be class sizes in schools. In 1997, the Labour Party made legally limiting school class sizes to 30 one of its core policies; indeed, this was the first issue listed on the party's well-known 'pledge card'.⁴⁹ In doing so, the party was reflecting widespread parental concern: a 2001 survey found that smaller class sizes was the main reason parents gave for choosing an independent school over a state one.⁵⁰ The ensuing 1998 School Standards and Framework Act was successful in its aim of reducing class sizes.⁵¹ However, from a technocratic perspective, it was known at the time that the evidence that reducing class sizes will increase attainment was (and is) mixed: it is 'not the best option in terms of value for money'.⁵² It would be possible to try to explain this policy in terms of cognitive biases, but the potential political gain on offer seems a more convincing explanation.⁵³

If we want to limit how often social outcomes are traded off against political ones like this, we may have to look at the influences and incentives produced by wider institutions and incentives. But this is not a case of correcting a cognitive 'bias' as such. It is not for behavioural scientists to seek to remove the politics from policymaking.⁵⁴

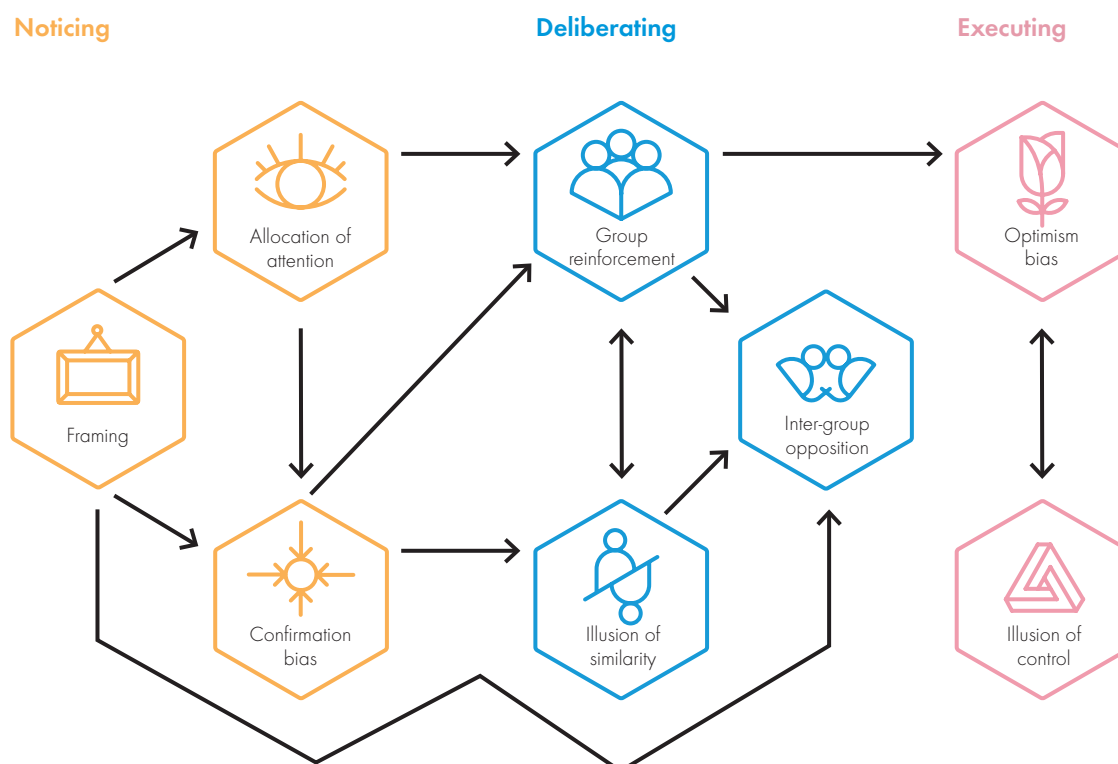
2.4 Improving three core activities of policymaking

Bearing all this in mind, we focus on a set of issues which make it more likely that policies do not get wide enough input or challenge, leading to a closed, conformist and complacent policy process. This has been highlighted as a major driver of poor policymaking by academics and by the UK Civil Service itself.⁵⁵

Figure 1 shows how these issues relate to the three core activities of policymaking.

Figure 1:

The issues affecting policymaking that are considered in this report.



- Deliberating** concerns the way policy concepts and ideas are assessed and debated by policymakers. The ways in which team members interact with each other can breed biases. In particular, the culture and incentives within groups can create 'group reinforcement', where people self-censor and conform to the majority view, regardless of its merits. Groups also strengthen the tendency of policymakers to overestimate a) how far other people share the views they hold and b) how much people will understand or embrace the policy in question (we call this the 'illusion of similarity'). Finally, 'inter-group opposition' is where the pull towards in-group identity makes policymakers reject arguments coming from other groups, even if they are good ones.
- Executing** is about the way that these decisions are planned and realised as actions. These activities are often affected by optimism bias (the tendency to have unrealistically positive views about future outcomes) and the illusion of control (the tendency to overestimate how much influence we have over events, particularly when dealing with complex systems).

In spring 2018, we conducted an online survey to estimate the relative importance of the eight issues highlighted in Figure 1. The survey was disseminated among members of the UK Civil Service's Policy Profession; 64 current civil servants responded, with a median of 12 years' experience of working in government. We asked respondents to rate how often each of the issues occurred, in their judgement.⁵⁶

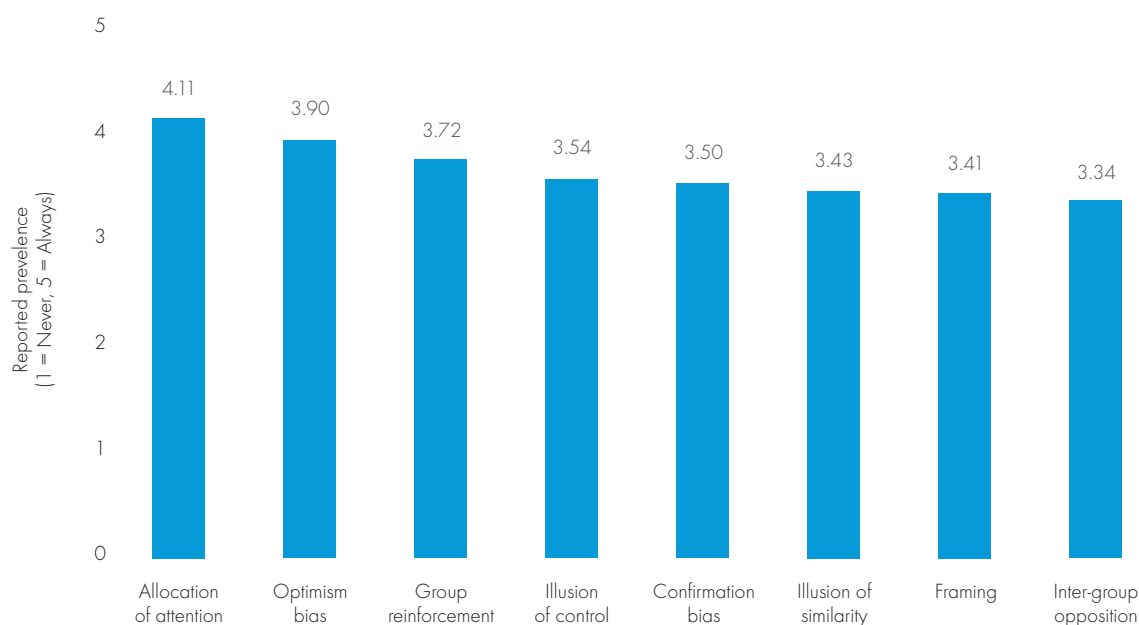
At this point we need to include several caveats. This was a relatively small convenience sample - there is likely to have been a strong selection bias, and this could have distorted the findings. We also had to include examples of the biases in the survey; these examples could have varied in their salience. And, fundamentally, some biases are likely to be easier to notice than others.

With these caveats in mind, Figure 2 shows the relative ratings for each issue: respondents most often reported having observed allocation of attention, optimism bias and group reinforcement. Perhaps the most striking finding was that, on average, 92% of the responses indicated that the relevant issue had been observed sometimes, often or always.

Finally, as the authors of this report, we fully acknowledge that we are - and have been - vulnerable to these biases when making policy. We do not consider ourselves to be sitting in judgement; rather, we are trying to explore why things often go wrong, for ourselves and others, to try to put them right in the future.

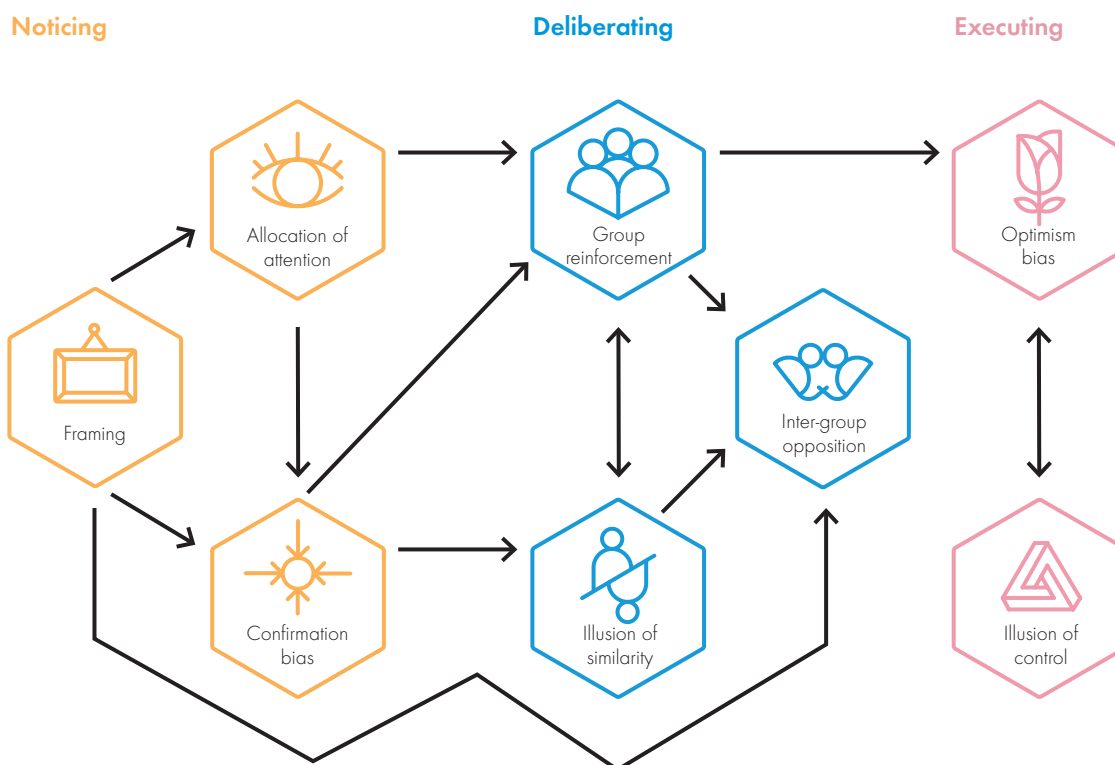
Figure 2:

Relative prevalence of each of the issues, as rated by policy professionals.



We now explain the Noticing, Deliberating and Executing activities in turn. We also propose strategies (some of which are already in use) which can help to address the biases that affect these activities.

3 / Noticing



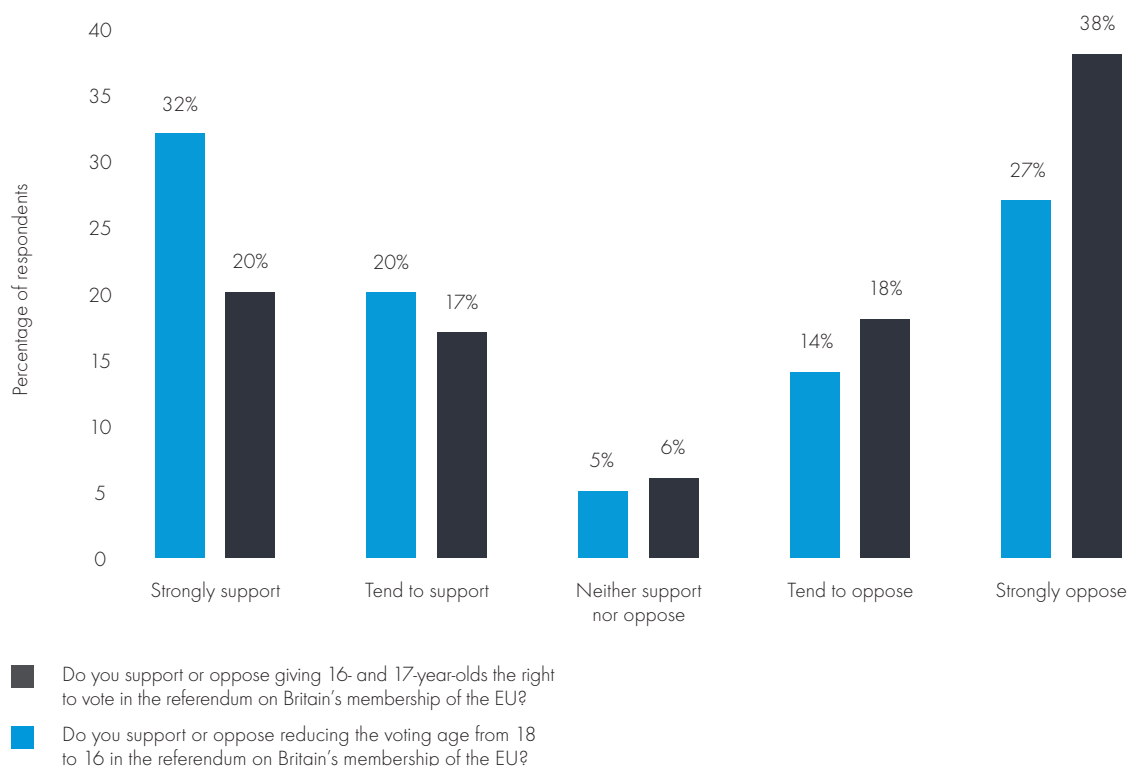
3.1 Framing

Framing is the process of selecting and highlighting some aspects or features of a situation at the expense of others.⁵⁷

Adopting different 'frames' can have powerful effects on how people perceive a problem and what they consider to be relevant facts (or 'facts' at all). For example, a 2015 survey by Ipsos MORI asked two groups of adults about lowering the UK voting age. They found that the majority verdict flipped depending on whether people were asked if they supported 'reducing the voting age from 18 to 16' (37% for, 56% against) or 'giving 16 and 17 olds the right to vote' (52% for, 41% against).⁵⁸

The first question frames the issue as one of liberalisation and potential risk (possibly implying a loss of the status quo); the second frames it as one of recognising rights. The shift in responses emphasises the importance of considering frames when designing forms of direct democracy or anticipating how controversial policy choices will be interpreted. See Figure 3 for further details.

Figure 3:
Evidence of framing effects on public support for votes at 16.



Politicians and government officials also choose differently with different frames. For example, identical policies can be framed in terms of gains or losses. Even small changes along these lines can tap into deep feelings of 'loss aversion', the tendency to more strongly prefer to avoid losses than to acquire gains. A simple example of loss aversion is feeling more upset at losing £20 than feeling pleased at gaining £20. One consistent finding associated with this tendency is that when people are facing losses, they become more willing to tolerate risk.⁵⁹ An example is a gambler who, after losing money, begins taking bigger risks in an effort to recoup their losses.

A recent experiment tested the effects of loss framing among 154 politicians across three national parliaments: the Belgian Federal Parliament, the Canadian House of Commons and the Israeli Knesset.⁶⁰ These politicians were asked to 'imagine that [your country] is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people'. They then had to choose a 'riskless' or 'risky' way to combat the disease. These options were framed to emphasise either the gains (the number of lives that would be saved) or the losses (the number of people expected to die) that would result from their choice. However, in both cases the underlying statistics describing the expected outcome were identical (e.g. saying '200 people will be saved' or '400 people will die').

Loss aversion and public acceptability

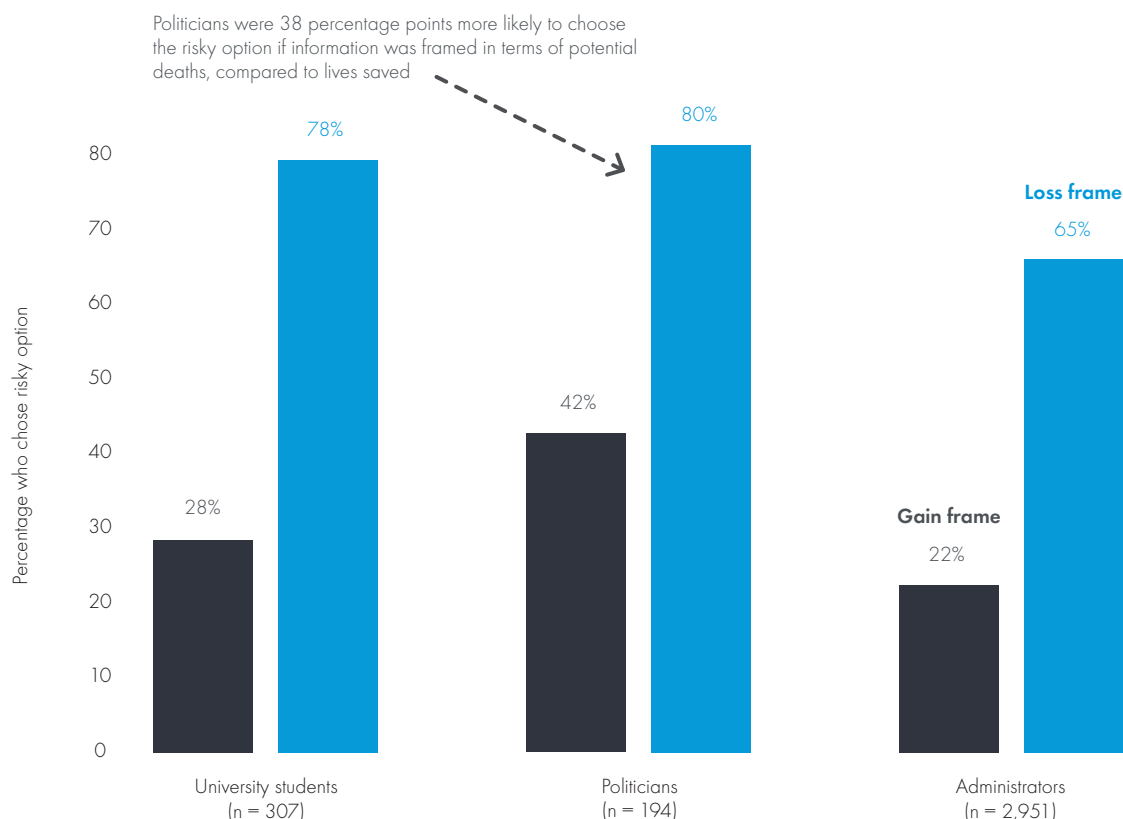
In March 2017 the UK Chancellor of the Exchequer announced that National Insurance contributions paid by the self-employed would increase to narrow the gap between them and the higher payments made by employees. Although the proposed increase was small, it provoked an outcry, and the Chancellor dropped the measure.

Part of the outcry may have been the result of framing. The year before, the self-employed had been given additional state pension benefits; later in 2017, the Government would release a report on measures to improve their employment status. Framing the National Insurance contribution increase as part of a package with either better benefits or more employment rights could have meant the policy was perceived differently. However, the measure as introduced in March 2017 was perceived in isolation as a higher tax demand, and therefore a loss.

That study found that, when the disease was described in terms of losses (how many people would die), 80% of the politicians selected the risky option. When the disease was described in terms of gains (how many people would live), only 42% did so. Similar results were found in a study of 2,591 staff from the World Bank and UK Department for International

Development, as well as in a separate study of 600 Italian public sector employees.⁶¹ Figure 4 shows these results, along with those from the original study, which involved university students. It seems that loss framing affects decisions consistently across both government actors and the public.

Figure 4:
Evidence of loss aversion among students, politicians and administrators.



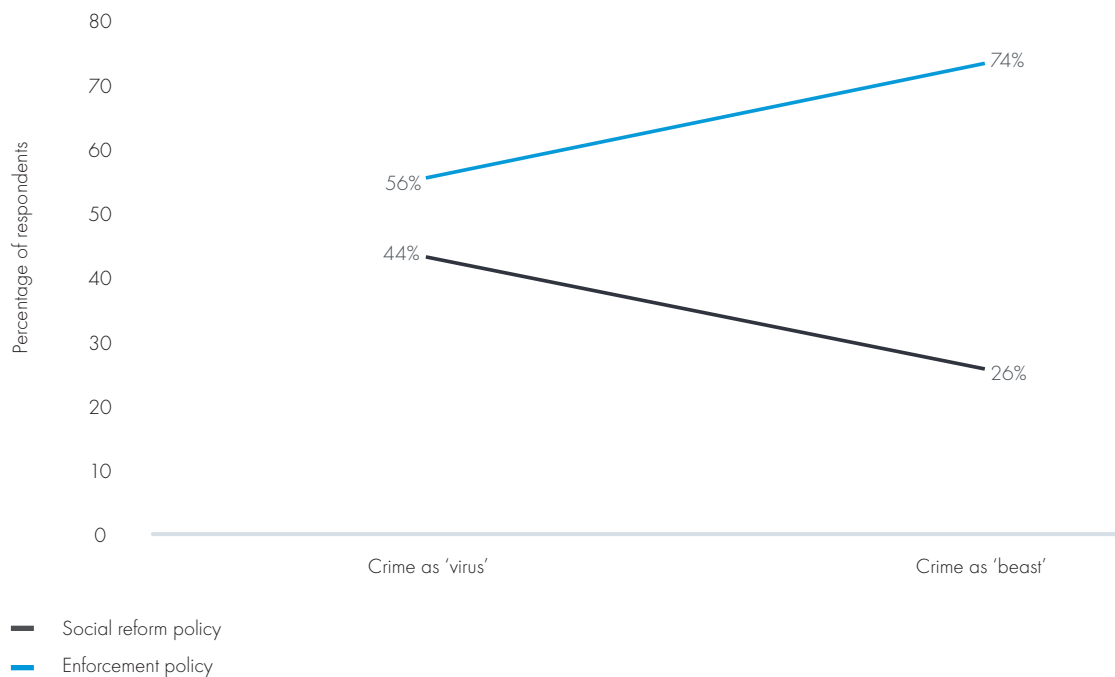
Finally, there is another dimension to framing that has a profound effect on policymaking. This is where framing does not just highlight aspects of an issue but also binds them together into 'a coherent and comprehensible pattern'.⁶² In other words, a frame can offer a compelling whole that forms an underlying framework of belief, perception and value.⁶³

Often the frame does this by providing a powerful governing image or metaphor. For example, a recent study investigated whether the metaphor used to represent crime affected people's preferred policies for preventing it.⁶⁴ Two groups of students were presented with a report on crime rates in a fictional city. One report described crime as a beast 'preying on' the city, whereas the other framed it as a virus 'infecting' the city. Each report was accompanied by identical statistics about crime rates, and at the end people were asked what they thought the city needed to do to reduce crime.

Figure 5 shows the results. People were almost twice as likely (44% vs 26%) to recommend identifying root causes and carrying out social reform to 'inoculate' the community when crime was framed as a virus. Conversely, people were more likely to recommend an enforcement-based approach involving harsher penalties when crime was described as a beast (74% did so compared to 56% when crime was described as a virus). The same pattern of results was found in a German-language replication of this experiment.⁶⁵ The same frames and policy recommendations appear in real-life political speeches (see footnote for an extended example).⁶⁶

Figure 5:

How people's policy preferences vary depending on whether crime is framed as a 'beast' or a 'virus'.



These kinds of frames have two aspects that can cause problems. One is that the metaphor seems to bring with it a 'natural' obvious solution (e.g. to stop a virus, you need to create a clean local environment). The other is that we often use or experience these kinds of frames outside our conscious attention and reasoning.

This can mean that people who are using opposing frames not only disagree strongly about what should be done, but also find it very difficult to engage and compromise with each other (the other side 'just won't listen'). The result can be intense policy conflict and deadlock.

Proposals

Use re-framing techniques. Re-framing can help actors to change the presentation or substance of their position in order to find common ground and break deadlocks.⁶⁸ Understanding how others frame an issue differently can lead to changes in emphasis that make a proposal mutually acceptable, or highlight actions that cost little to one side but are symbolically important to the other.

There are four main strategies for this kind of re-framing.⁶⁹ To illustrate them, imagine that a public agency is proposing to develop an area of woodland near a town that has suffered low economic growth. The woodland is seen as an area of natural beauty. The public agency's main frame is one of economic stimulus: by improving amenities, they may attract more people to the town, creating a multiplier effect. On the other side is a national environmental charity that has a strong presence in the region. Their frame is environmental: they want the development to protect the quality of the

woodland against pollution and decay, so residents can continue to enjoy it for longer. They are concerned that privileging economic growth will harm the local environment. The two frames are in conflict and are leading to dispute that seems intractable.

The first strategy is **frame incorporation**. This is where one side incorporates a challenging element into their own frame by creating a 'watered down' version of it. An important part of the environmental frame is the charity's concern that this will set a precedent for future developments in the region: concern for economic growth, not the environment, would become the guiding principle. If the public agency began to understand this concern, it could emphasise the fact that this development is just a pilot that will be evaluated for its impact (including on the environment). That move would allow the charity to incorporate into its framing the idea that the development would target economic growth, but only in a provisional way.

The second strategy is **frame reconnection**. This is where both frames are respected and preserved, but a new link is created between them, so they appear to be complementary rather than incompatible. In the example above, this would mean that one side would continue to see the policy through an economic frame, and the other an environmental frame. But economic development could be re-framed as a *means of improving the local environment* – for example, by making it easier for local people to invest in sustainable technologies. If the public agency needed to go further, they could promise that some form of ‘tourist tax’ was created and funnelled to a fund for this purpose.

The third strategy is **frame accommodation**. This is where one side changes their framing to accommodate aspects of the opposing frame. The difference from frame incorporation is that the new element is not watered down; instead, the existing frame is substantially changed as a result of the frame accommodation. In the above scenario, this could happen if the charity succeeded in re-framing the idea of economic development to include wider concepts of value. For example, the charity could make the case that people would have better mental health and social capital if they had better access to the environment. They could point out that quality of life already forms part of economic assessments in healthcare (as in ‘quality-adjusted life years’). The public agency might then re-frame its idea of what ‘economic development’ means.

Policymakers might try to go further and explore how far they can achieve **frame synthesis**. This is where they not only try to accommodate alternative frames, but also try to design policy in a way that delivers multiple outcomes. Early explicit recognition of different frames can enable policymakers to ask themselves how a policy might need to be developed in a way that, for example, delivers both economic and environmental outcomes. So, in the example above, it might be possible to capture the development gain from developing part of the wood, use it to enhance the biodiversity of the remaining wood, and improve access for local residents so they can enjoy the benefits more – which would deliver greater social benefit than the initial proposal. But this synthesis requires policymakers to identify potential frames upfront and iterate the policy to address them, rather than seeing any changes as mitigations or add-ons late in the process.

These strategies show that actors may reach mutually acceptable outcomes by changing elements of their proposals. The re-framing is not simply about one party trying to persuade another to accept their frame; the greatest benefits may come from a mutual process of making sense of the policy issue.

3.2 Allocation of attention

Attention is integral to politics and policy. The attention of the public can suddenly be directed to particular issues that it sees as needing a policy response. Behavioural science refers to these shifts as ‘attention cascades’.⁷⁰ Attention cascades can be prompted by events – an obvious one being terrorism and airline safety before and after 11 September 2001. Cascades can be intensified and sustained by the amplifying effect of other people’s attention: ‘other people are focusing on it, so it must be important’.

Of course, we recognise that the fact that people care about an issue *is itself* important in democracies, particularly to elected politicians. These ebbs and flows are an essential part of politics, which aims to create alignment for action in societies with competing interests. Since politics is a dynamic forming and re-forming of alignments, it naturally produces sharp movements in the relevance of issues.

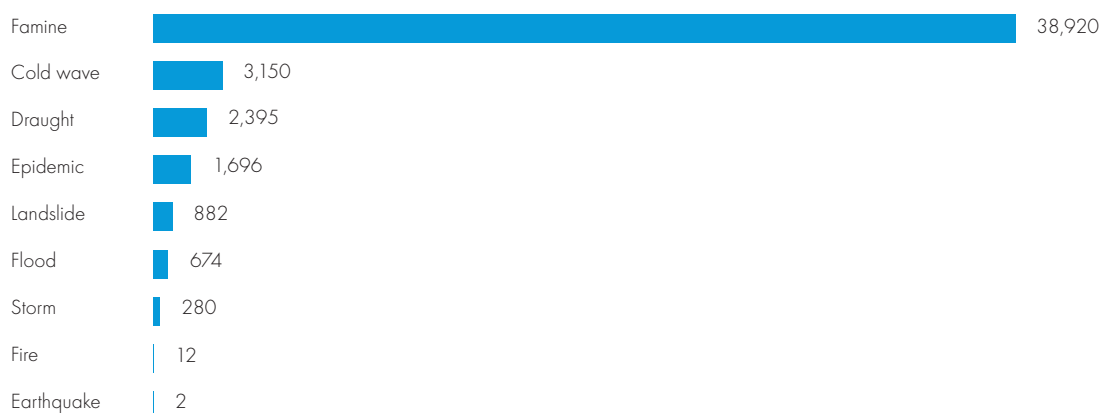
The problem is that the issues that are powerful and salient may not be the most urgent or important (in a non-political sense). Here we can point to the ‘availability bias’: the tendency to think an issue

is important because it comes to mind easily. An example is a person who thinks that plane journeys, but not car trips, are dangerous because they have seen aeroplane crashes in the news – whereas car crashes are so routine that they rarely attract media coverage, and so examples of them do not come to mind as quickly.⁷¹ Indeed, the number of additional Americans who died in road accidents by switching from flying to driving after 11 September 2001 exceeded the number who had died in the attacks after just three months.⁷²

The availability bias drives media attention too, as shown by a study examining the amount of television news coverage given to 5,000 natural disasters between 1968 and 2002. It found that famines and droughts (gradual, centred on absence) required thousands of times more deaths than volcanoes and earthquakes (sudden, spectacular) to receive the same level of coverage (see Figure 6).⁷³ From a programmatic policy viewpoint, all these deaths arguably deserve equal attention. Therefore, availability bias may mean that public and media attention does not focus on the areas where most good could be done.⁷⁴

Figure 6:

Number of deaths needed to receive as much media attention as 1 death from a volcano.



Adapted from Table 8 in Eisensee, T., & Stromberg, D. (2007). News droughts, news floods, and U.S. disaster relief. *Quarterly Journal of Economics*, 122(2), 693-728.

How do policymakers respond to attention cascades? The first thing to say is that their attention is guided by heuristics, just like everyone else's.⁷⁵ Organisations and individuals can only process a limited amount of information at any one time, and therefore cannot engage in endless inquiry – they need simple ways to filter, prioritise, and create agendas.⁷⁶

For example, a study of 14 senior ministers and party leaders from Belgium showed that they 'employ a number of rules of thumb to decide quickly about what matters and what does not'; an example is the 'wait and see' rule (where they do not act on information immediately, but see what others do and whether the issue resolves itself).⁷⁷ Another obvious rule of thumb is whether an issue is attracting media attention (i.e. 'I should pay attention if everyone else is').⁷⁸

If policymakers are also guided by heuristics and attention cascades, what are the implications? The concern is that the availability bias may make them 'overreact' when an issue suddenly attracts attention.⁷⁹ This is where disproportionate resources are allocated to an issue, so that the costs outweigh the benefits.⁸⁰ These kinds of policies are often referred to informally as 'knee-jerk' responses to a perceived need to act. To continue the theme above, laws concerning the prevention of terrorism, passed in the aftermath of an attack, are often cited as examples of overreactions (although opinions may vary on whether a change is disproportionate or not).⁸¹

The flip side of overreaction is that issues that do not attract attention may experience 'policy underreaction', where harm is incurred through insufficient action.

Indeed, some see this as a common cycle: government overlooks an issue, problems build up, and then suddenly attention dramatically shifts, and the system scrambles to react – often overreacting because of availability bias.⁸² This underpins the apocryphal US saying that 'Congress does two things well: nothing and overreacting'.

Again, we recognise that these under- and overreactions may be good strategic and political decisions. Policymakers may react disproportionately in order to signal leadership or change the terms of debate in their favour. For example, Germany took drastic action to shut down its nuclear power stations in response to the 2011 Fukushima disaster. Arguably this was an overreaction, since the fundamental risks had not changed. But part of the motive was political: taking dramatic action to try to 'get ahead of the debate' and stem the political damage seen in recent state election results.⁸³ Our main focus is on how to maximise the 'programmatic' success of a policy, however.

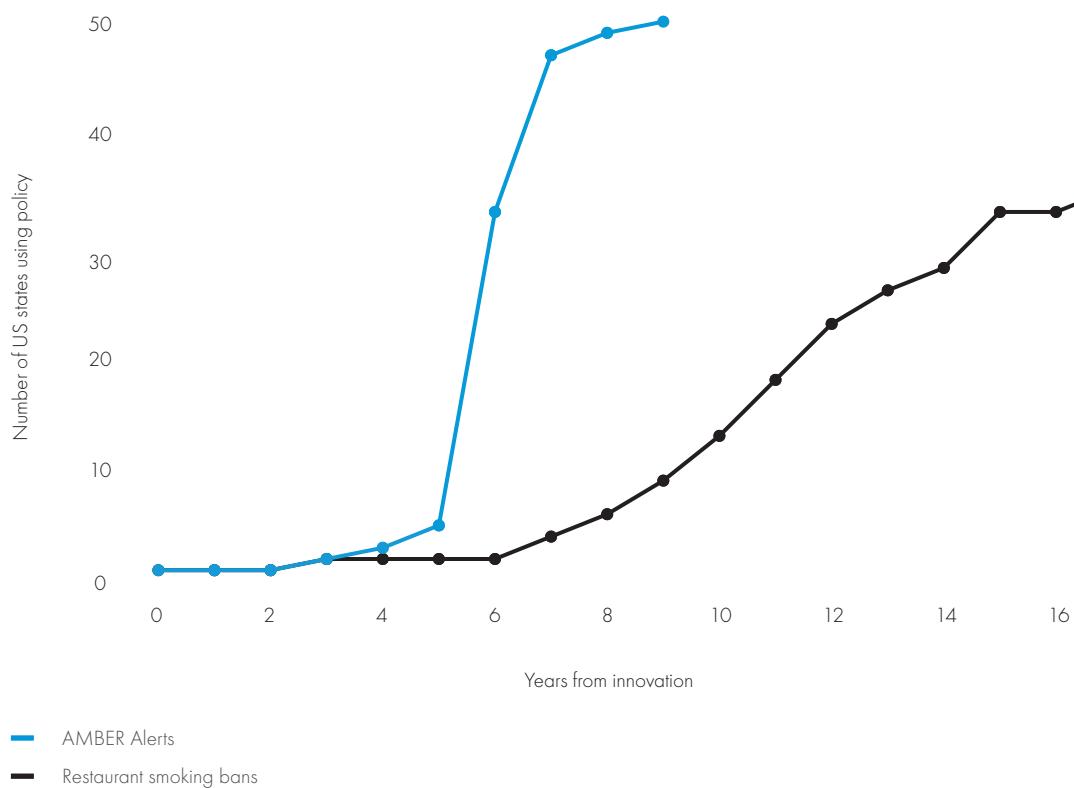
If availability bias makes policymakers overreact in response to shifts in attention, it may also affect what policy options they choose.⁸⁴ In other words, policymakers may select a solution simply because it comes to mind easily. This can be because it is familiar ('what we always do') or because it is currently popular ('what everyone else is doing').⁸⁵ Indeed, work in the US has shown how state-level policymakers may be vulnerable to 'policy outbreaks', where they rapidly copy an initiative just because they have noticed their neighbours doing it.⁸⁶

This work cites as an example the sudden adoption of the AMBER Alert policy, which allows law enforcement agencies to use regional emergency broadcasting systems to broadcast missing children alerts.⁸⁷ In 1999 no states were using this system; by 2003 all but two had adopted it – an astonishing rate of uptake. The study claims that this was driven by an attention cascade among policymakers, in contrast

to the way that some policies (such as restaurant smoking bans) have spread gradually over many years (see Figure 7).⁸⁸ To be clear, we are not saying that the AMBER Alert policy itself was misguided; we are saying that policy outbreaks can increase the risk that ideas are adopted without considering how to ensure they are successful – or whether they are the best choice in the particular context.⁸⁹

Figure 7:

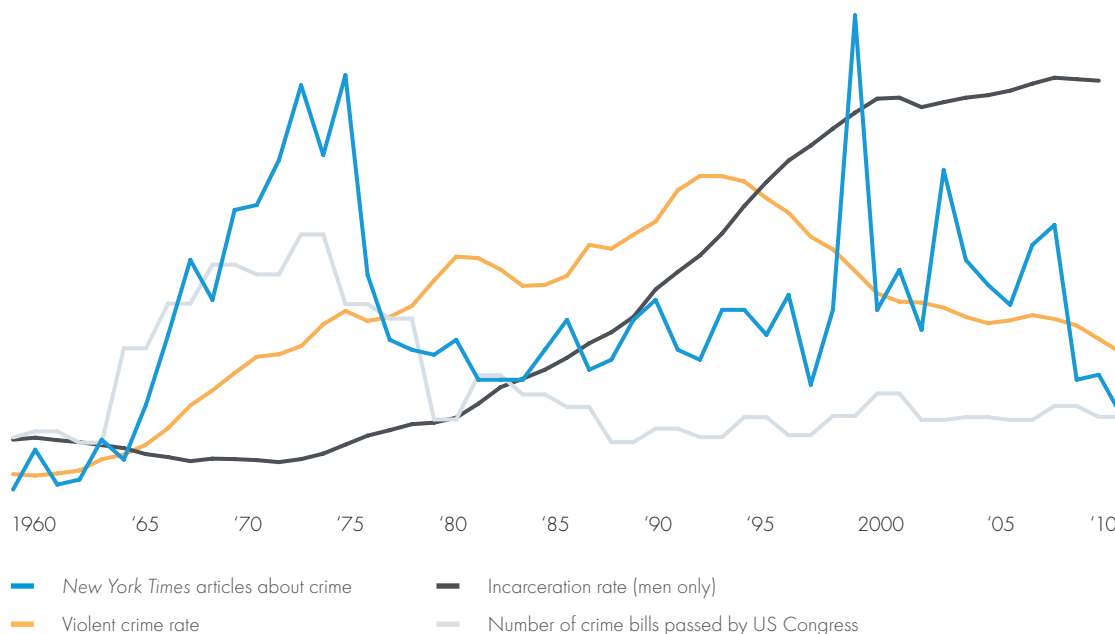
Speed of adoption of AMBER Alerts and restaurant smoking bans by US states.



One final aspect of attention can be that a 'policy bubble' emerges.⁹⁰ This is where policymakers notice an issue and overreact to it, but this overreaction continues for a long period – much like an asset bubble. Public attention may then move on to other topics, but the policy keeps running. In other words, policymakers can get carried away with enthusiasm

for a particular policy idea, leading to it taking on 'a life of its own' and becoming decoupled from the original problem. Some have pointed to crime policy in the US, suggesting that incarceration now constitutes a policy bubble, since the government has continued to invest in it even though crime rates are low and falling (see Figure 8).⁹¹

Figure 8:
US incarceration policy: a possible 'policy bubble'.



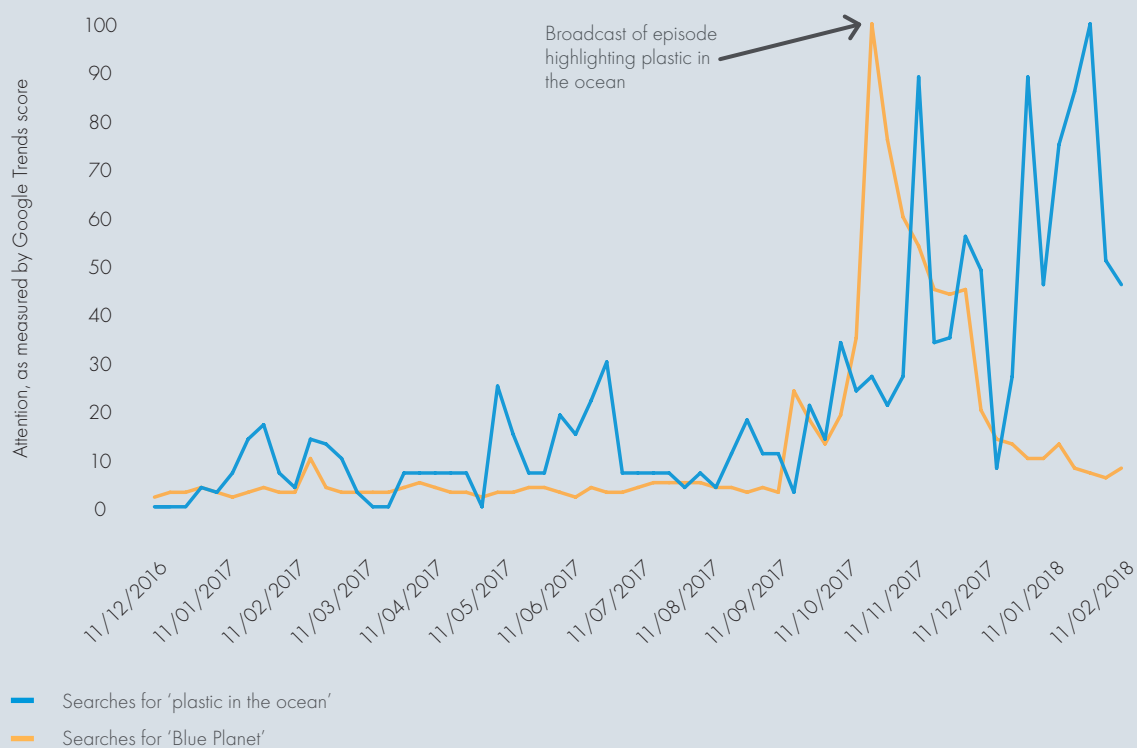
Adapted from Jones, B. D., Thomas, H. F., & Wolfe, M. (2014). Policy bubbles. *Policy Studies Journal*, 42(1), 146-171.

Proposals

Invest for windows of opportunity. Some aspects of the cycle of policy under- and overreaction are very difficult to change (e.g. the way the media work). An easier course is to ensure longer-term investment in understanding policy areas that currently attract little attention, but may attract more later. Take the example of plastic in the ocean. Back in 2016, the UK's Government Office of Science identified 'the future of the sea' as a priority area for future study (after discussions with experts). An in-depth project was then

conducted as part of the Foresight horizon-scanning function.⁹² Importantly, a cross-departmental group on the issue was created – this meant that project leads could get structured input from various departments, and it helped the departments themselves to see how the issue was relevant to their particular agendas. The result of this work was that, when the issue of plastic in the ocean exploded in late 2017 as a result of the BBC television series *Blue Planet II* (see the Google Trends data in Figure 9), the government was ready with robust and considered responses.

Figure 9:
Google Trends data showing an availability cascade related to ocean pollution.



Governments worldwide have tried various setups to support in-depth analysis of issues that may become pressing later. They include a standing group of expert advisors; annual reports by independent officials, such as Chief Medical Officers; standalone government units; and so on. But the key challenge is giving officials the awareness and incentives to access the existing work when under pressure.

This links to wider issues of knowledge management in government. Part of building capacity to deal with rapidly emerging policy challenges is to ensure that governments build strong external networks with academia and other sources of external expertise.⁹³ For example, in 2016 the UK Cabinet Office set up its Open Innovation Team, which is 'dedicated to deepening collaboration between officials and academics'.⁹⁴ These networks should enable officials to access advice and insight rapidly as an issue rises up the policy agenda. We recognise that one of the main challenges is to maintain these links when officials move position.

Exploit attention cascades to raise the profile of long-term problems.

Attention cascades can be created if an issue is presented in a powerful and salient way. A good recent UK example is the

forementioned problem of plastic waste in the oceans and the rising interest as a result of *Blue Planet II*. The Prime Minister explicitly referred to the 'vivid highlighting' of marine plastic in the television series when she launched a 25-year environment plan a month later, and a plastic bottle deposit scheme was announced two months after that.

These movements suggests that important 'sleepers' issues can suddenly attract attention – if they are presented in a salient way. The powerful images from the *Blue Planet* series catalysed action in ways that had escaped previous attempts to highlight the issue.⁹⁶ The obvious implication is to find ways of presenting issues so they trigger attention cascades.

One objection might be that this is an obvious strategy, and one that many pressure groups already attempt to implement. But these groups may not be drawing on the existing scientific studies that show the most effective ways of making policy issues salient (let us assume that the issues they are promoting do indeed deserve greater attention).⁹⁷ There is also a pressing need to better understand the heuristics that policymakers are using to filter information, including the ways that government actors decide what is important.

3.3 Confirmation bias

Confirmation bias is the tendency to seek out, interpret, judge and remember information in a way which supports one's pre-existing views and ideas.⁹⁸ This creates three main problems.

First, people may practice 'selective exposure': choosing and focusing on information that confirms their positions, and ignoring or withdrawing from that which rejects them. A classic study asked people to listen to tape-recorded messages that were partially obscured by static, with the ability to temporarily remove the static by pressing a button. The study found that people decided to remove the static for sections of the tape that confirmed their opinion – for example, smokers were more likely to remove static from a message disputing the link between smoking and lung cancer.⁹⁹ Fifty years later, another study found that selective exposure was driving news consumption patterns on Facebook.¹⁰⁰ An overall review of the evidence confirms that people prefer to be exposed to information that supports their views – and this preference strengthens the more firmly we hold an opinion.¹⁰¹ The obvious problem is that important facts may never even be registered.

Second, people may actively reject information that conflicts with their prior position, which can make it difficult for others to shift their views by presenting them with evidence and reasoned arguments. Indeed, studies show that people's positions may become more extreme and entrenched after reading opposing arguments.¹⁰² A famous study from the 1970s presented students with two scientific studies: one that seemed to support capital punishment, and another that opposed it. The students denigrated whichever study went against their pre-existing opinion, and left the lab embracing their original position even more passionately.¹⁰³ A new study has shown that assigning Twitter users to follow a computer-generated Twitter account with the opposite political views makes them hold their original views even more strongly.¹⁰⁴

'When examining evidence ... for desired conclusions, we ask ourselves, "Can I believe this?," but for unpalatable conclusions we ask, "Must I believe this?"'

Thomas Gilovich, *How We Know What Isn't So* (1993) New York, US: Free Press, p.84.

One explanation is that people who encounter opposing arguments experience 'cognitive dissonance': the discomfort of being exposed to two conflicting thoughts. In reaction, they try to resolve this discomfort by dismissing the idea that challenges their initial position – coming up with reasons why it is wrong, even if those reasons do not stand up to scrutiny. This process is called 'motivated reasoning'. This is particularly likely to happen for opinions that people are particularly invested in – i.e. those they have a strong motivation to preserve.¹⁰⁵

At the same time, confirmation bias does not just apply to long-held, entrenched positions. Attachment to a particular option or opinion can form incredibly quickly.¹⁰⁶ For example, the 'crime as a beast/virus' study mentioned above found that people subsequently sought out information related to the particular frame they had seen – the initial idea 'coerc[ed] further incoming information to fit with the relational structure suggested by the metaphor'.¹⁰⁷ This attachment even occurs when people know that their position has been adopted recently, hastily, and arbitrarily.¹⁰⁸

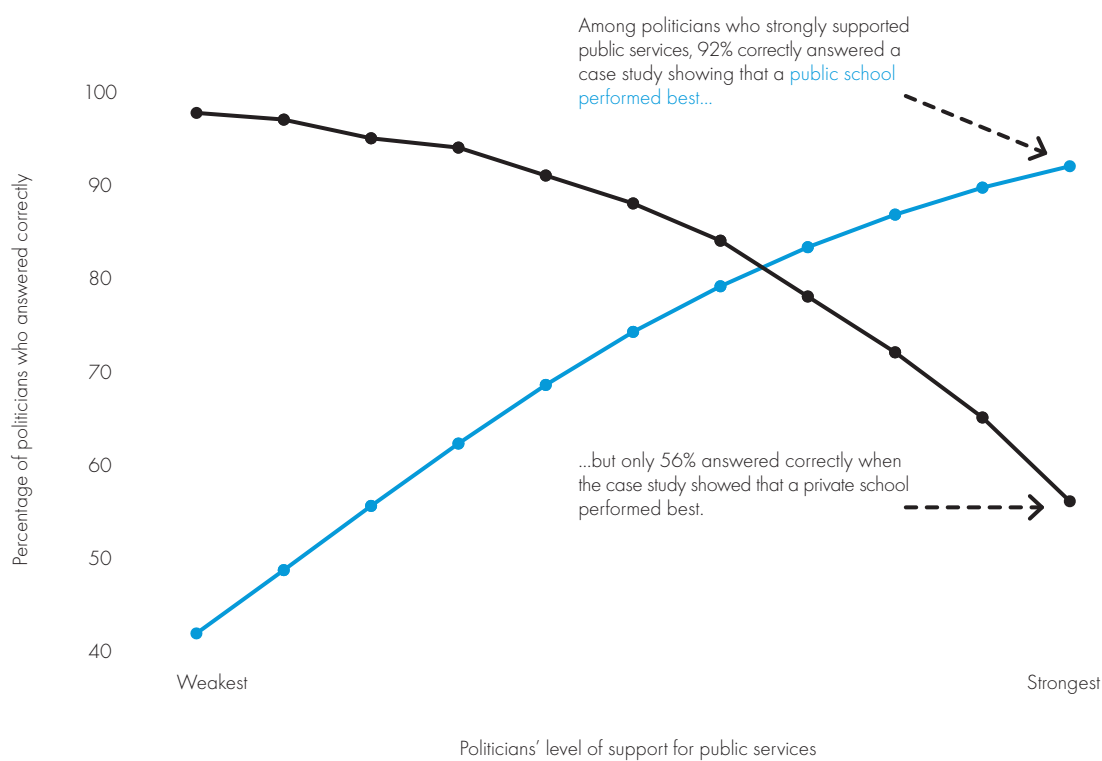
The third problem is that motivated reasoning may actually reduce our very ability to understand and interpret evidence. A recent study conducted in Denmark showed 233 local politicians (hypothetical) satisfaction statistics for two different schools and then asked them to identify the best-performing one.¹⁰⁹ Around 75% answered correctly when the options were labelled innocuously (e.g. 'School A' and 'School B').

However, these results changed dramatically when the options were framed in terms of public vs private services (e.g. 'Private School' and 'Public School'), a contentious issue in Danish politics. Figure 10 shows that when the correct answer was in line with the politician's pre-existing beliefs about public services (i.e. when the politician strongly believed in the value of public services and the correct answer was that the public school was better), 92% of politicians chose correctly. But only 56% got it right when the answer was at odds with their beliefs (i.e. when the politician strongly believed in the value of public services and the correct answer was that the private school was better).

These hypothetical choices have real-world consequences, since the politicians in the study were responsible for procuring these kinds of local services. What is perhaps even more troubling is that when the politicians were given more pieces of information on performance, they actually performed worse and relied more on their prior attitudes.¹¹⁰ Therefore, this issue cannot be addressed simply by providing more or better evidence for policymaking.¹¹¹

Figure 10:

Relationship between prior attitudes and correct interpretations of statistical data among 233 Danish politicians.



A similar experiment with 2,878 staff from the World Bank and UK Department for International Development also showed that motivated reasoning degraded judgement.¹¹² When given identical sets of statistics, 65% of the policy professionals correctly evaluated a question about the effectiveness of skin cream, but only 45% answered correctly when the question was about the effectiveness of a minimum wage intervention. Once again, prior beliefs drove the results: the officials were much less likely to correctly identify when the minimum wage intervention failed to help workers when they also had a strong preference for greater societal redistribution of income.

One startling aspect of motivated reasoning is that it can have a *larger effect* on people who are *most numerate*.¹¹³ Although the evidence is not conclusive, intelligent people can be more affected by motivated reasoning than less intelligent ones.¹¹⁴ One explanation is that more intelligent people are more able to identify whether evidence contradicts their opinion, and have greater cognitive ability to twist, critique and re-interpret information in order to support a pre-existing view.

Proposals

Separate evidence and diagnosis from solutions. Perhaps the biggest risk of confirmation bias comes when policymakers rapidly jump to a preferred solution – and then select evidence that supports that position. One way of countering that is to explicitly separate diagnosis or exploration from solution identification. This was the approach adopted by the UK Pensions Commission, which attempted to find an enduring solution to low rates of saving for retirement. The Commission first consulted on its evidence gathering, before moving on to proposing solutions.¹⁵ However, we recognise that this was a particular type of policy issue: it was relatively long term and technocratic, and there was consensus that it had to be studied carefully. In many instances, policymaking does not proceed in clearly defined stages – in which case, the following proposals may be useful.

Consider the opposite. When assessing evidence, one effective strategy is to ‘consider the opposite’. This involves asking ‘would you have made the same judgement if exactly the same study had produced results on the other side of the issue?’ There is quite consistent evidence that this strategy leads to a more objective assessment of the quality of evidence.¹¹⁶

Require transparency about the evidence base used to make policy decisions. Since 2016, Sense about Science and the Institute for Government have been evaluating the transparency of the evidence base produced by UK government departments to support policy decisions. They have found that practices vary greatly across and within departments. In contrast, the US requires the data, sources, and methods used in a Regulatory Impact Assessment to be provided to the public online, so that others can evaluate the analysis.¹¹⁸

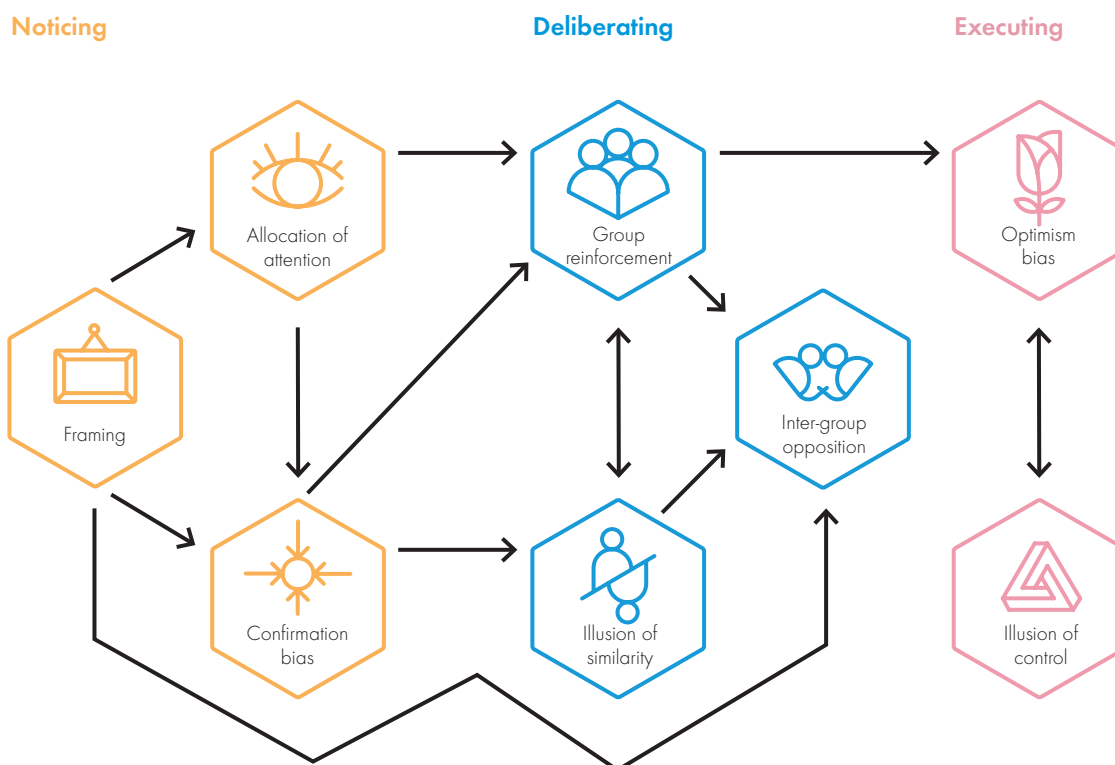
If governments are required to be clear about the evidence base they are using for their decisions, there could be two main benefits. First, the knowledge that the evidence base could be externally evaluated may provide incentives to encourage a better evidence review.

Second, the quality of the evidence could be improved by outside experts pointing to (for example) evidence that has been overlooked.¹¹⁹ However, the timing of this scrutiny is very important. Ideally, it would happen while the evidence base is still a work in progress, and before policymakers are locked into a decision. This is what happened in the two-stage process undertaken by the Pensions Commission. If the challenge comes later, when the evidence base is presented as a finished product that needs to be defended, motivated reasoning may kick in and even useful contributions may be dismissed if they seem to undermine the conclusion already reached.

Build in opportunities to change course and revisit assumptions. Confirmation bias can mean that even weak proposals become difficult to discard. This risk can be mitigated by pre-planning formal ‘break points’, similar to those used in surgery to prevent medical errors, that allow a genuine reappraisal of options.¹²⁰ (Such a break point could be led by a red team, as set out below.) An obvious objection is that political pressures will mean policymakers are concerned about making a ‘U-turn’. But this could be less of a concern if the process is more open, if options are floated without a strong commitment and if feedback is taken on early. The real danger of a U-turn comes with absolute secrecy, followed by sudden strong commitment. We recognise that keeping multiple options open for longer may create problems for project planning.



4 / Deliberating



So far, we have covered the influence of biases on how and whether policymakers notice information and ideas. But these ideas are not treated separately by individuals – almost all policymaking involves discussions within and between groups. There are many teams, networks and coalitions involved in policymaking. In order to make the topic manageable, we have focused mostly on ‘policy teams’. By ‘policy teams’ we mean groups of people (usually officials) that are created or assigned to develop information into policy ideas, or to assess pre-existing policy ideas and work out how they relate to current problems.

Teams like these should offer many potential advantages. They should allow people to aggregate, combine and interrogate information from more sources, and they may create a new perspective that unlocks better solutions. Belief in these advantages is widespread.¹²¹

Unfortunately, the evidence on group behaviours and outcomes paints a different picture. Performance gains are likely to be modest and uncertain, while

group decision-making can be seriously flawed.¹²² If they are dealing with questions that have definite answers (e.g. ‘What is the capital of Peru?’), then the most knowledgeable group members usually do better on their own, whereas groups collectively perform about as well as their members with average knowledge.¹²³ But policymaking groups do not usually deal with questions that have clear and uncontested right answers. More commonly, they have to generate ideas and make judgements.

Here, the evidence in favour of groups is weaker, as perhaps best shown by the literature on ‘brainstorming’.¹²⁴ Although groups are often believed to create more and better ideas than people working separately, this is not the case – they actually produce fewer and worse ideas.¹²⁵ Moreover, as we explain below, there are some specific biases that are created and amplified in group settings: group reinforcement, the illusion of similarity, and inter-group opposition.¹²⁶

4.1 Group reinforcement

Thomas Hobbes, in one of the first modern treatises on government, recognised that in groups advisors are 'not moved by their own sense, but by the eloquence of another, or for fear of displeasing some that have spoken, or the whole by contradiction'.¹²⁷

Some 350 years later, many studies have confirmed Hobbes' observation: individuals are very sensitive to the behaviour of other group members. One consequence of this is that groups often end up agreeing with whatever most members thought originally.

Worryingly, there is much evidence that this 'fear of displeasing' narrows perspectives and weakens decisions.¹²⁸ As noted above, a lack of challenge and divergent thinking is seen as a major cause of policy failures.

Two main factors drive group reinforcement.¹²⁹ First, people may hear many others expressing an opposing view and think their personal opinion may be wrong. Perhaps other people have better information and good reasons for thinking differently? While it may be useful to consider this possibility, the effects of this 'informational influence' can be so strong that people end up conforming to majority opinions which are obviously wrong.¹³⁰

A second cause of this type of conformity is when people do not feel free to give their opinion because of social pressure. They may feel that others, particularly leaders, will disapprove if they speak up, and that they will be less liked, influential and rewarded in future.

So, even if the group (and the policy) as a whole would benefit from their knowledge, the best personal strategy is to not challenge the accepted view. This was seen as one of the reasons why the emerging problems with the Affordable Care Act website were not fed upwards to President Obama, for example.¹³¹

Groups create issues you may not expect

Majority influence in groups can lead to issues that may not be obvious.¹³² For example, studies show that:

Groups focus on what most people already know. The more group members that possess a piece of information, the more influence it has on the group decision – regardless of its actual quality or importance. This has been called the 'common knowledge effect'.¹³³ Part of the reason is that people seem to like group members more if they talk about shared information.¹³⁴ As a result, crucial insights that only a few people or organisations have may not be shared.¹³⁵

Discussion can make groups' views more extreme. When people express opinions in line with the majority, then collectively those views get reinforced and become stronger and more extreme.¹³⁶ In homogeneous groups, views can also become more extreme because people gravitate towards a position that clearly represents the group's identity.¹³⁷ For example, a health policy team may wish to push for the strongest measures to improve health because they see that as their mission.

Initial contributions can strongly sway group opinion. If people are taking cues from each other, then speaking first – or getting to set the agenda and provide supporting papers – can have a big impact on the outcome.¹³⁸ The decisions of the first contributors, even if they are marginal calls, can create domino effects whereby subsequent speakers fall into line (through either informational influence or social pressures).¹³⁹ The result can be that a few contributors can cause a weak idea to mushroom into a popular proposal without being thought through.

Government officials may be particularly exposed to these social pressures. This is because such pressures are more likely to occur in homogeneous groups, which have been common in government organisations (although this is changing),¹⁴⁰ and because bureaucratic institutions are often formal and hierarchical, which inhibits confrontation and dissent.¹⁴¹ Many existing examples concern foreign policy decisions. For example, the Chilcot Inquiry into the UK's deployment of military force in Iraq repeatedly found evidence that policy proposals were not challenged sufficiently (or at all) as they emerged.¹⁴²

Nevertheless, it can be tricky to find real-world policy examples of group dynamics, since it is rare that group discussions by policymakers are both recorded and made public.¹⁴³ However, one clear exception is the discussions by members of central bank committees, which are increasingly a matter of public record.¹⁴⁴ The Bank of England's Monetary Policy Committee includes five internal members (who are career central bankers) and four external expert members. The Committee sets the short-term interest rate; if a member disagrees with the majority view, they can cast a dissenting vote.

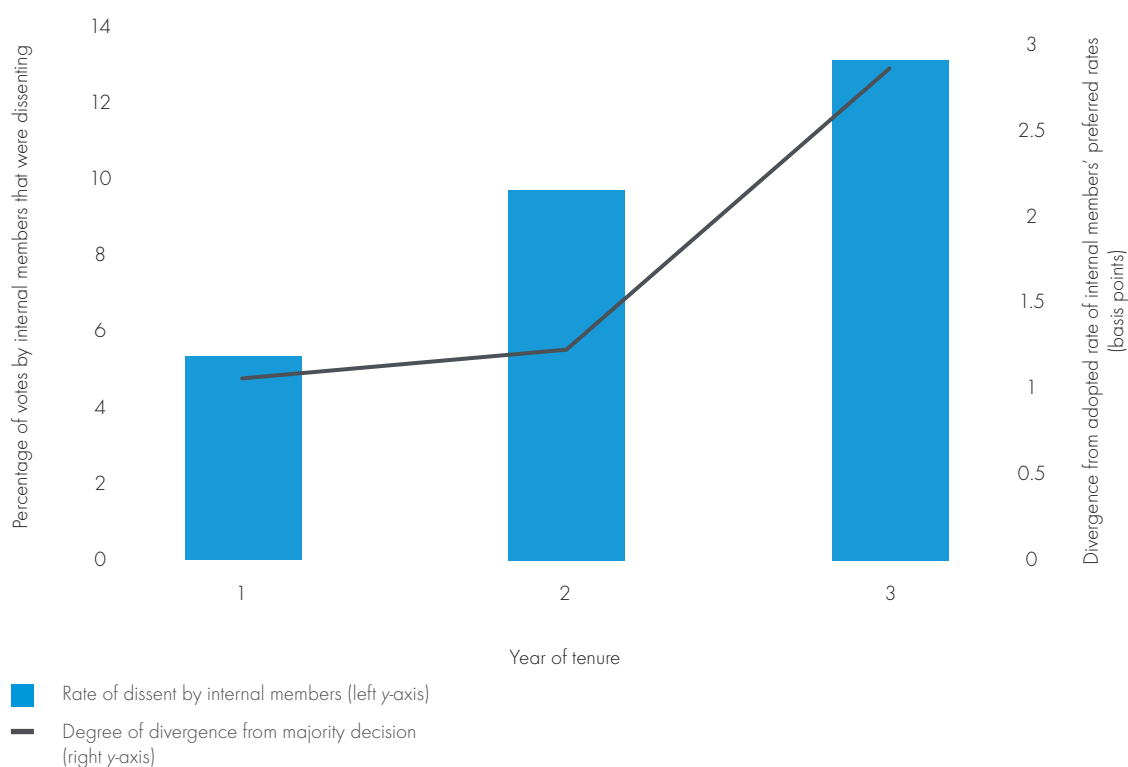
Interestingly, an analysis of 1997–2008 voting shows that the rate at which *internal* members dissented increased as they went through their three-year term (from 5.5% to 13.5%).¹⁴⁵ In contrast, the dissenting rate of the *external* members started much higher and did not change over time. See Figure 11.

One explanation could be that internal members were more susceptible to majority influence as they started out on the committee.¹⁴⁶ This could have been because of informational effects (in a new setting, people may be more open to the possibility of others' judgements informing theirs) or social pressures (the existing norms of a hierarchical institution may bias people towards conformity).¹⁴⁷

The interesting question is why this dissent increased over time. A plausible explanation is that the group dynamics actually *helped* these internal members to be more open-minded and independent in their thinking. The high rate of dissent from the external members could have been a factor here. Therefore, this example shows that groups may be able to increase divergent thinking, with the right structures and members.

Figure 11:

Rate of dissent by internal members of the Bank of England Monetary Policy Committee, by year of tenure.



Adapted from Berk, J. M., Bierut, B. K., & Meade, E. E. (2010). The dynamic voting patterns of the Bank of England's MPC (Working Paper No. 261). De Nederlandsche Bank.

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Create routes for diverse views to be fed in before, during, and after group discussions.

Majority influence is easier to resist outside group discussions – especially in organisations with a culture of deference. Therefore, policy teams could pose a set of questions anonymously through a Google Form or similar before and after policy discussions, giving a chance for divergent views to be captured (and acted on with minimum loss of face). A more developed form of this idea was the UK's Contestable Policy Fund, which provided matched funding to try to give ministers direct access to external policy advice.¹⁴⁸

During the discussion itself, participants could be offered new ways of choosing which ideas they wish to develop or respond to, since otherwise the group's attention is inefficiently focused on just one idea at a time. For example, the Behavioural Insights Team (BIT) has developed a ThinkGroup process, where participants all silently contribute to a single online document at once. This allows people both to interact and to pursue their own trains of thought – our inability to do so in traditional brainstorming meetings is why they produce poor results.¹⁴⁹

Finally, we could invest more in other options to permit challenge within meetings. For example, the UK's Ministry of Defence, admitting that 'groupthink' has afflicted past military plans, has published a *Guide to Reasonable Challenge* that helps dissent to take place in a constructive way.¹⁵⁰

Explore alternatives to conventional chaired meetings. Many governments still expect decisions to be made in formally chaired meetings with set agendas and processes. This can close down debate in order to get through an agenda – and gives undue weight to those who control the agenda. There are already some examples of workshop approaches being used, particularly in the arena of service design. But policymakers should be equipped with the skills to allow them to design and facilitate much more open workshop discussions – and ministers should also be encouraged to discuss policy within government in forums other than conventional committee meetings. Doing so could disrupt some of the automatic behaviours that have become associated with the format of traditional meetings.

Assemble teams that are cognitively diverse.

Teams whose members approach problems in different ways do better – particularly at tasks requiring creativity. Many organisations are already investing in increasing the diversity of their teams in terms of race, gender and socio-economic status. Although the evidence is mixed on this point, this kind of diversity could help to bring in different perspectives.¹⁵¹ Even so, there may still be a tendency to recruit people with similar ways of *thinking*, particularly since many public sector organisations recruit using a single process that privileges certain approaches to problems. There is evidence that introducing a diversity of perspectives improves problem-solving, as long as interpersonal tensions can be minimised.¹⁵² Therefore, managers should be helped to identify how team members differ in their problem-solving approaches and look for a variety of these approaches when composing teams, wherever possible. In the UK, the proposal to develop up to 50 new psychometric tests for public officials may help with this goal.¹⁵³

4.2 Illusion of similarity

When policymakers are exposed to pressures to conform with a group of peers (who are committed to achieving a certain goal), they are more likely to experience an 'illusion of similarity'.¹⁵⁴ The illusion of similarity is where policymakers have a) inaccurate assumptions about what people think or know and b) inaccurate predictions about how people will act.

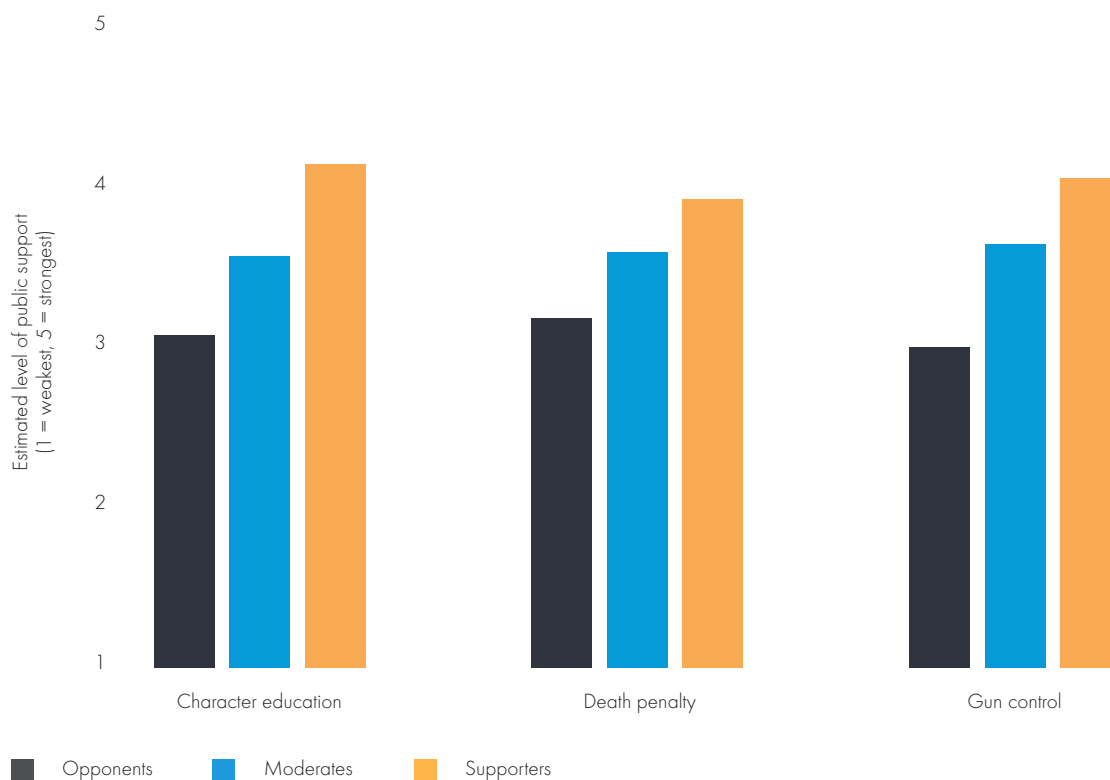
In the first case, policymakers may think that more people share their own opinions or attitudes regarding an issue than is actually the case. The thought process goes like this: someone thinks that they personally have unbiased attitudes, beliefs and priorities because they see the world objectively, and therefore they believe other people will think the same way, if those people have access to the same information, and process it in an open-minded way.¹⁵⁵ In other words, policymakers may not realise how much they are assuming that others share their views. This tendency is called the 'false consensus effect', and it is reliable and widespread.¹⁵⁶

For example, an online study compared the personal support of Americans for three controversial policies to their estimates of public support for those measures.¹⁵⁷ First, respondents were asked to rate their support on a four-point scale (1 – oppose strongly, 4 – favour strongly) for a) teaching morality in public schools, b) the death penalty for those convicted of murder, and c) registration and licensing of all new handguns sold in America.

Later, they were asked to estimate the proportion of US citizens who would favour these policies (from 1 – fewer than 20%, 5 – more than 80%; with 20% intervals in between). Figure 12 shows the results, which are clear. For each of the three policies, the more respondents were in favour of a policy, the more they thought others were as well.

Figure 12:

Personal views bias perceptions about public support for policies.



Adapted from Wojcieszak, M., & Price, V. (2009). What underlies the false consensus effect? How personal opinion and disagreement affect perception of public opinion. *International Journal of Public Opinion Research*, 21(1), 25-46.

Closing coal mines: misunderstanding how a policy will be received

In 1992, the UK government announced a plan to close 31 of the country's coal mines, with the loss of 30,000 jobs – a massive change to the industry. The minister responsible, Michael Heseltine, argued that the closures were unavoidable because of 'the remorseless pressure of the market decline for coal'.¹⁵⁸ But public reaction to the decision was swift and savage. Newspapers accused the government of trying to destroy the industry, other politicians from the ruling Conservative party thought the miners had been betrayed, and within days 200,000 people marched in protest through London. The government was forced into cancelling ten of the closures and postponing the remaining ones. Days later, it had to retreat further, with the Prime Minister ordering a wide-ranging inquiry into energy policy.¹⁵⁹

Why had the policymakers failed to anticipate this reaction? Recently released archive papers suggest several reasons.

First: framing effects. Michael Heseltine had framed his actions as overseeing 'the next major, popular

privatisation'; he did not realise that the public would adopt the completely different frame of him 'act[ing] as undertaker to the coal industry'.¹⁶⁰

Second: the assumption that most people already expected or accepted the mine closures – i.e. that people shared the policymakers' opinion. A document showing that closures were likely had already been leaked, but had attracted a fairly 'muted response'.¹⁶¹ This 'lulled' the government into thinking that a similar reaction was likely again.¹⁶² As Heseltine admitted twenty five years later, 'I thought that this was not going to be the great shock that I had previously thought it might be'.¹⁶³

Third: failing to re-focus attention away from internal battles. For several months, the Department of Trade and Industry (DTI) had been pushing the UK Treasury to provide more generous compensation terms for the miners. The Treasury strongly resisted, but eventually Heseltine secured a package of £1 billion – more than £30,000 per miner. Since this battle had occupied much of the policymakers' attention, they thought the reaction would centre on the 'decent terms' they had secured.¹⁶⁴

Fourth: confirmation bias. A contemporary analysis for the Prime Minister put it like this: 'The [DTI] officials became *captured by their early prejudices* so that, by this summer, they were failing to stop and ask themselves at regular intervals whether what they were proposing remained sensible.'¹⁶⁵

Finally: group reinforcement. The policy team 'became mesmerised by the detail of the process and failed to stand back to keep the wider context

and implications in view'. The junior minister involved also 'allowed himself to become uncritically captured by the momentum of the Coal Team's proposals'.¹⁶⁶ Moreover, because the plan had been 'jealously guarded' and not shared widely in government, there had been little external challenge that could have flagged up the potential strength of reaction.¹⁶⁷

We would like to thank Nicholas Jones for his help with this case study.

Another problem is that the illusion of similarity can cause policymakers to overestimate how much people will understand or embrace a new policy. Policymakers, deeply immersed in the detail, may assume that the public will also pay attention to the policy, see what it is trying to do, and go along with it – none of which may be true.

A simple illustration of this problem comes from a study where people tried to communicate well-known songs to someone else simply by tapping out the song's rhythm.¹⁶⁸ The group that was tapping out the song expected that the listeners would get the song right 50% of the time; in reality, they only got it right 2.5% of the time. Interestingly, this was not because people overrated their skill – the results were the same even if the person knew the tune but was watching someone else tap it out. People failed to recognise how different the listener's situation or experience was from their own.

Similar failings happen in policymaking, particularly when there is little external input into the process.¹⁶⁹ A good example of misperceptions is provided by a recent study on the power of defaults in education.¹⁷⁰ This study randomly assigned parents of students to three different ways of signing up for an education-focused text message support system:

- **Standard.** Parents were sent a text message saying that they could adopt the technology by enrolling on a website (standard practice).
- **Simplified.** Parents were told by text message that they could sign up just by replying 'Start'.
- **Automatically enrolled.** Parents were told by text message that they could opt out of the service by replying 'Stop'.

The results show that there was an extremely strong effect from automatic enrolment: signup rates were 1% for the Standard group, 8% for the Simplified group, and 96% for the Automatic Enrolment group.

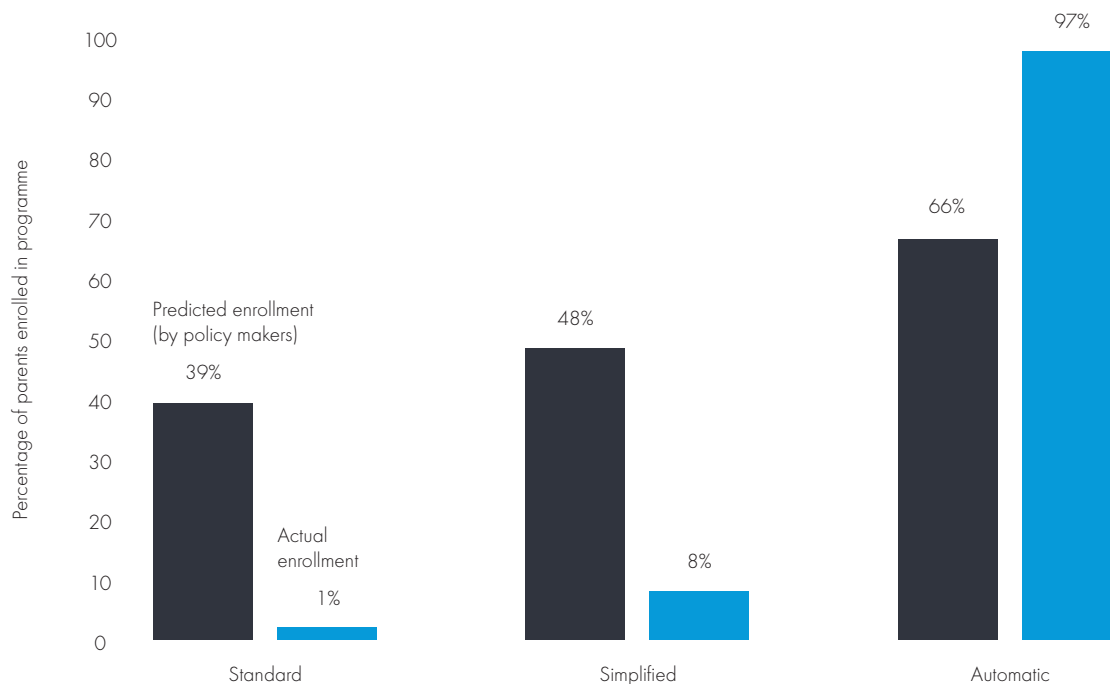
However the study *also* surveyed 130 education decision makers (e.g. senior teachers and administrators) to find out how effective they thought each approach would be. Figure 13 shows that these experts predicted uptake of 39%, 48% and 66% – a good deal off the true rates. For example, they overestimated the Standard group's take-up rate by 38 percentage points and underestimated the effectiveness of the Automatic group by 31 percentage points. This is not a trivial misperception: the Automatic Enrolment group ended up with higher test scores and a 10% lower rate of course failures.

Our view on this study is that the decision makers overestimated how engaged the parents would be, and failed to see how they might not want to expend even a small amount of effort to sign up.

Indeed, we think that policymakers often overestimate how much the public will engage with their initiatives (see box). This is because they have spent so much time thinking about the policy and discussing it with others in a similar position.

Figure 13:

Take-up of educational innovation vs take-up predicted by policymakers.

***The Green Deal: Expectations about behaviour may not match reality***

The Green Deal was a UK policy introduced in 2011 by the then Department of Energy and Climate Change. It was designed to address what economists perceived as a market failure – the underinvestment by households in energy efficiency. The idea was simple. It assumed that the barrier to investment was that people had to pay upfront for energy efficiency measures (better insulation, new boilers, etc.) but only reaped the benefits over a long period.

Instead of forcing people to make that big upfront payment, the Green Deal would offer an assessment of measures that people could take to improve their energy efficiency, offer a loan to cover those costs and then allow repayment over time through energy bill surcharges – the assumption being that those bills would be lower because of the efficiency measures.

However, in reality, take-up was only a fraction of what was expected. The scheme made economic sense, but the policymakers failed to see that the way it was designed put barriers in people's way. The scheme required a series of steps (from awareness, to organising an assessment to taking out a loan) to make happen. For example, only half of people who applied for finance plans finished the process of taking out a loan.¹⁷² While the relevant department had gathered evidence about what people wanted, this was not fully integrated into the policy design, meaning that it lacked 'insight into the behaviours of the target groups for the scheme'.¹⁷³

Proposals

Get political involvement throughout the decision-making process. The insights politicians can bring from their electors and constituents can act as a useful antidote to the illusion of similarity. Politicians spend much time talking to varied groups in society, and arguably have been elected because they understand how others think and feel. However, elected officials often reflect that they feel they are involved in policymaking too little, too late, or in formats that are too tightly structured. As one UK Secretary of State said, 'A lot of the policy comes to the minister pre-cooked ... often you don't get real options.'¹⁷⁴

This risk can be reduced by ensuring political input throughout the process of option development (rather than at the initiation and the conclusion). However, this would require public officials who are willing to have conversations with ministers that involve uncertainty and not having 'all the facts to hand'; in many governments, this would cut against the prevailing bureaucratic culture.

Consider 'zero interest' scenarios. If policymakers overestimate the public's interest in a policy, we think this can be addressed by two simple thought experiments: one is to ask: 'what happens if there is zero interest or enthusiasm for what we are offering?' The second is to ask: 'why would people bother to do something differently?' These questions should act as checks to make it less likely that policymakers will build in unreasonable assumptions and more likely that they will develop contingency plans for coping with low take-up and weak reactions. The answers may also suggest changes to policy design to build in early measures to attract attention and build momentum.

Bring in wider perspectives early. There are structured ways of helping policymakers to understand whether their assumptions are shared more generally. Citizens' juries and other deliberative events can provide convincing evidence of public views on an issue – which may be complex and nuanced.¹⁷⁵ For these to be as useful as possible, they should take place before major policy decisions have been made.

4.3 Inter-group opposition

Inter-group opposition is when members of one group reject the arguments coming from another, even if they are good ones. This can happen when group reinforcement and the illusion of similarity strengthen a policymaker's sense that their proposal and perspectives are right. If someone disagrees, this must be because they are incompetent, biased or malicious – and it is particularly easy to think this if they are seen as belonging to a different group. Even strong arguments can get dismissed as a result, making the ensuing policy weaker.

Underpinning this problem is the way that we identify ourselves with 'in-group(s)' in contrast to 'out-group(s)'.¹⁷⁶ We believe that the groups we identify with are better than other groups. That is the case even if a) there is strong evidence they are not, or b) they have only just been created, and we therefore have no prior attachment to them.¹⁷⁷

This strong identification means that, when groups have to co-operate, people are biased towards their in-group.¹⁷⁸ In fact, evidence shows that when groups interact with each other they are *less cooperative and more competitive* than when individuals interact with each other.¹⁷⁹

For example, one study created a game where participants competed to win a prize by engaging in wasteful spending. Spending levels were much higher if groups were competing than if individuals were competing – and both were greater than a rational analysis would predict.¹⁸⁰ In other words, this opposition between groups can lead to poor outcomes and greater risk-taking.

Another cause of these group dynamics is the way we view our own opinions. As noted above, people often think that they personally are unbiased, and that others will think the same way – if they are given the facts. If another party does *not* think the same way, then our preferred reaction is not to reassess our own opinions (since confirmation bias kicks in). Instead, we try to come up with ways of denigrating the opposition.¹⁸¹ This happens because we find it hard to simultaneously maintain both a positive image of ourselves and a positive image of someone who disagrees with us.¹⁸²

The way that this denigration usually plays out in policymaking is that we decide that those who think differently are biased, through ideology, self-interest, malice or stubbornness. While we have considered the issue carefully, *they* are just proceeding from dogma. This perception of bias makes conflict and division escalate further.¹⁸³ As a result, both sides may reject ideas, compromises, and dialogue that could lead to a better outcome for all.

One way conflict can escalate is through 'false polarisation'. We see the other group's views as *more extreme* than they actually are.¹⁸⁴ In our minds, we falsely make the group more distant and different from us.

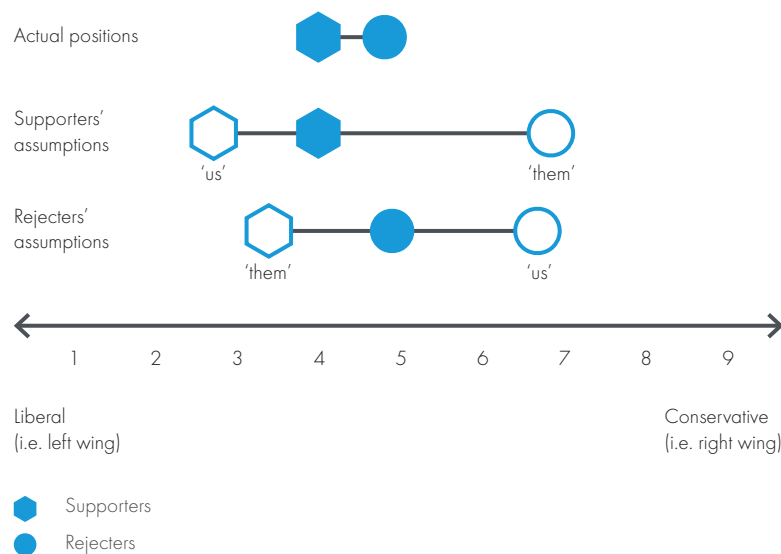
This process happens most clearly between competing interest groups, where it has been called the 'devil shift': seeing your opponents as more extreme and more 'evil' than they actually are.¹⁸⁵

For example, one study asked people whether they would support an 'affirmative action' programme to increase the diversity of a university's student intake.¹⁸⁶ The participants were asked to place themselves along a nine-point scale from liberal to conservative (i.e. left wing to right wing). They were also asked where they would place people who a) supported and b) opposed the proposal along this political scale.

In reality, supporters and opposers did not differ much in their self-reported political views (Figure 14). But their relative perceptions of themselves and the other group were more extreme. The supporters thought members of their own group were more left wing than they actually were, and thought that their opponents were much more right wing; the reverse was true for the opponents of the policy.

Figure 14:

Actual and perceived differences in political positions among supporters and opponents of affirmative action.



Adapted from Sherman, D. K., Nelson, L. D., & Ross, L. D. (2003). Naive realism and affirmative action: Adversaries are more similar than they think. *Basic and Applied Social Psychology*, 25(4), 275-289.

While these issues are most intense between competing policy pressure groups, they also occur within government itself. Governments are made up of various groups: departments, offices, committees, agencies, teams, political alliances, professional communities and so on. Culture and behaviours can vary from institution to institution – even if the differences between them are not as big as their members think.¹⁸⁷ There are often few incentives to join up policy between departments, since they usually control their own budgets and line management, effectively creating competing power bases.¹⁸⁸

As a result, policy can emerge through an adversarial process where evidence is used to justify the position of a department (or similar group), rather than a collaborative exploration of potential options and approaches.

Proposals

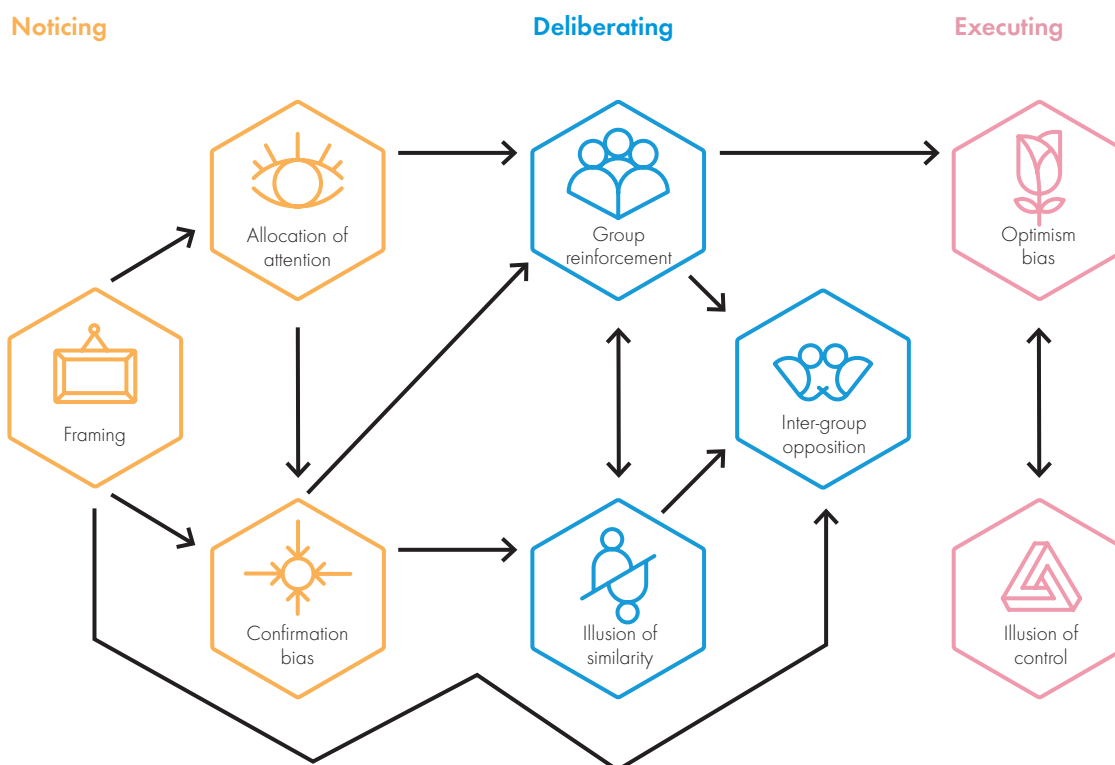
Use collaborative red teaming. In the military arena, use is often made of 'red teams', which are groups that are tasked with finding weaknesses in a proposal or system. The UK military defines the work of red teams as 'the independent application of a range of structured, creative and critical thinking techniques to assist the end user to make a better informed decision or produce a more robust product'.¹⁸⁹

While we think red teams are a good idea, our concern is that involving an 'out-group' in this way means that their recommendations are more likely to be dismissed defensively.¹⁹⁰ Instead, evidence shows that people are more likely to accept criticism from someone who is part of their own group, or who identifies with it.¹⁹¹ Therefore, we propose that part of a policy team splits off to create a 'red team' at a point when plans have been developed but not fixed. (Note that the team should consist of more than one person, since having a single person acting as 'devil's advocate' is not always effective.)¹⁹² If there are a number of challenge points, different sets of team members could act as challengers for each, to reinforce the message that this is a 'team' not an 'outsider' behaviour.

An interesting example of collaborative red teaming came in May 2018, when the UK Prime Minister divided her Cabinet into two teams to critique potential policies for leaving the European Union. Each team of three ministers contained two opponents of the proposal to be discussed and one supporter.¹⁹³



5 / Executing



Executing concerns the choices that attempt to realise policy decisions in practice. We admit that this category can be fuzzy, since it is misleading to insist on a hard separation between 'policy' and 'implementation'. People who are 'delivering' a policy are not simply executing instructions: they are making decisions that change the purpose and design of the policy as it is realised in practice.¹⁹⁴ Therefore, the ideas here may be relevant to other elements of the policy process as well.

The common theme in this section is that people have a strong tendency to be overconfident in their judgements. Overconfidence has been called 'the most significant of the cognitive biases', 'the mother of all biases', and 'perhaps the most robust finding in the psychology of judgment'.¹⁹⁵

Different kinds of overconfidence have been identified.¹⁹⁶ We focus first on a person's tendency to overestimate their abilities, the quality of their plans, and the likelihood of future success. We refer to this as 'optimism bias'. Then we consider an issue that causes particular

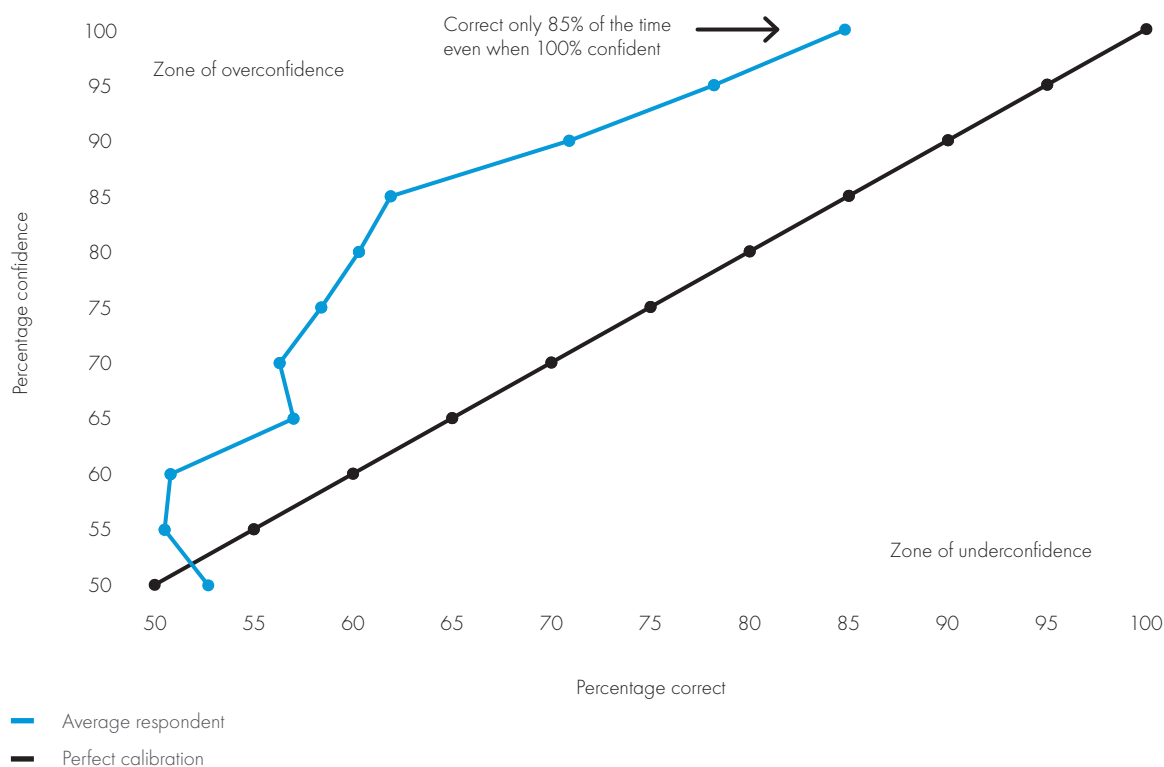
problems for policy - the tendency for policymakers to overestimate the amount of control they can exert (an 'illusion of control').

5.1 Optimism bias

Many large studies have shown that experts in fields such as business, health care, and engineering are prone to overconfidence about their abilities, plans and predictions.¹⁹⁷ So are readers of BIT's email newsletter, according to a survey we conducted as part of this project. In this survey, 1,154 people completed a general knowledge quiz where, for each question, they were asked how confident they were that they had got the answer right. If 60% of people got the answer right and people were 60% confident, then this would be perfect 'calibration' - they would have an accurate sense of their knowledge. The results showed that the average respondent got 60% of questions correct but was 72% confident that they were right (see Figure 15). In other words, they were slightly overconfident about their knowledge.

Figure 15:

Analysis of responses from 1,154 subscribers to BIT's newsletter.



Recently, studies have started to measure the overconfidence of politicians and government officials directly. One study looked at 579 officials in agencies related to climate change mitigation and adaptation in the US.¹⁹⁸ The officials were asked both to answer questions on climate change ('assessed knowledge') and to rate how informed they thought they were on climate change matters ('perceived knowledge'). People were overconfident if their perceived knowledge was higher than their assessed knowledge.

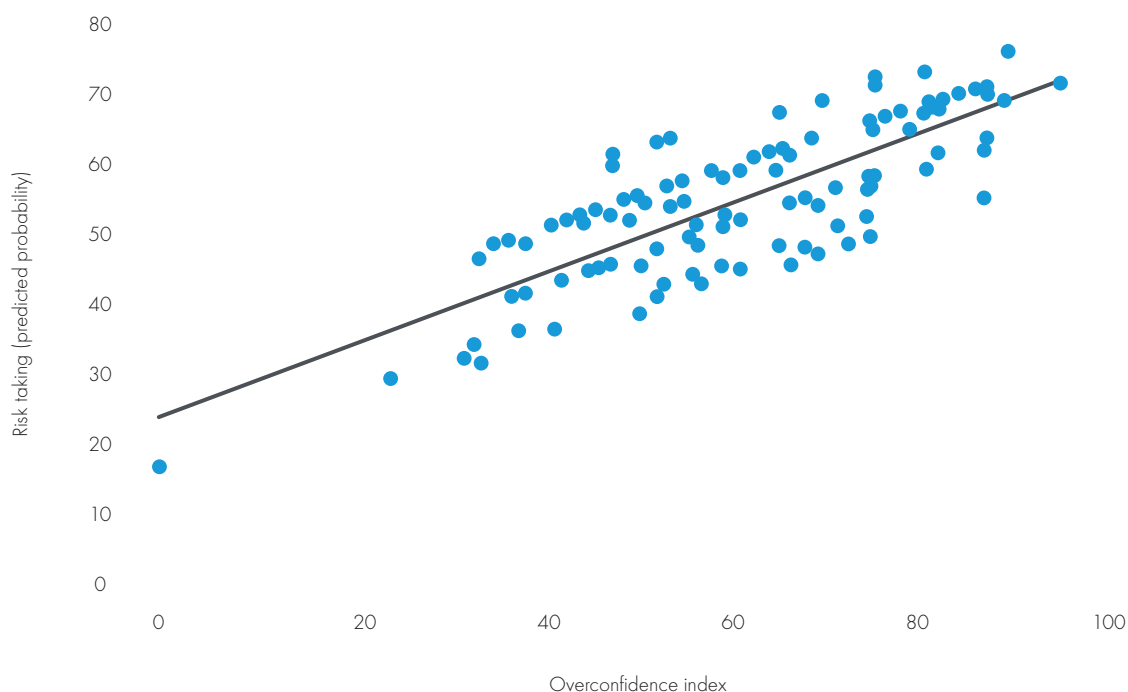
Interestingly, the study found that the more experienced officials were the most overconfident about their own expertise.¹⁹⁹ This is worrying because more experienced bureaucrats are more likely to be in positions of power in the bureaucratic hierarchy.²⁰⁰ Perhaps most importantly, the more overconfident an official was, the more likely they were to take risky policy decisions. These were decisions such as opposing basic risk-reduction policies – for example, improving agricultural practices to reduce methane levels, or protecting coastal settlements from rising sea levels. In other words, overconfident officials rejected risk-mitigation policies – perhaps without clear alternative plans.

Politicians can also be overconfident. Empirical evidence for this in elected officials comes from a study of incumbent members of the national parliaments of Belgium, Canada, and Israel.²⁰¹ This study asked the politicians to rate their confidence that they would be re-elected. It then created an 'objective' measure of electoral safety by combining past electoral performance of individuals (which is predictive of future success) with current party opinion poll data. Comparing self-ratings against the objective level created a measure of overconfidence. The study also measured how willing the politicians were to take the risky choice in a policy scenario.

The results showed that the politicians who were most overconfident were the ones most likely to choose the risky policy alternative (just like in the previous study). This was a big effect – moving from the lowest to the highest levels of overconfidence was associated with moving from a 0.3% selection rate of the risky option to an 83.3% selection rate. In contrast, objective measures of electoral safety were not associated with risk-taking (see Figure 16).

Figure 16:

Overconfident politicians are more likely to be risk seeking.



What are the consequences of political and official overoptimism? One, as shown above, is that people are more likely to take risky policy decisions without a realistic understanding of their abilities. Another is that policymakers will make unrealistic plans, neglect risks, and fail to react to evidence of emerging problems. This is a well-recognised problem in government, particularly in large infrastructure projects.²⁰² Consider a review of 258 public transportation infrastructure projects conducted between 1910 and 1998, mostly in Europe and the US, with a collective cost of \$90 billion. On average, project costs were 28% higher than expected, and they were underestimated for almost 9 out of 10 projects. Worryingly, there was no evidence of improved forecasting accuracy over the 88-year period observed – meaning that governments were just as likely to be surprised by a cost overrun at the end of the 20th century as they were at the beginning.²⁰³

What are the causes of overoptimism in government? Arguably, politicians and officials have incentives to express optimism (which may become divorced from reality). Politicians looking to gain and retain power may achieve success by expressing more confidence than their rivals.²⁰⁴ Officials and ministers may be rewarded for making claims that they can deliver outcomes on a certain budget, and may have moved position by the time those claims are shown to be false – if they ever are.²⁰⁵

These incentives may reinforce our natural desire to feel good about our self and actions.²⁰⁶ A range of ‘self-serving biases’ mean that people may have an inflated sense of their abilities – partly because they attribute good outcomes to their actions, while putting bad outcomes down to luck or circumstance.²⁰⁷

Group reinforcement, discussed earlier, also drives optimism.²⁰⁸ Group participants become more confident in their judgements after they speak with each other.²⁰⁹ Groups make more optimistic estimates of how long a task will take than individuals do – they focus on what they hope will go right, rather than what may go wrong.²¹⁰ Fully appreciating risks and ‘bad news’ is unpleasant, and a group member may not want to be the person who creates these negative feelings – not least because they may be punished for doing so.²¹¹

The result of incentives, self-serving biases, and group reinforcement is that policymakers may overweight information that points towards success. (This has been called the ‘desirability bias’ or ‘asymmetric updating’.)²¹² For example, policymakers may base projections on the most desirable scenarios, and neglect evidence from previous projects – even if they had personal experience of them.²¹³ This tendency to value good news more than bad news has been shown to operate outside conscious awareness.²¹⁴ The consequence can be a ‘ratcheting up’ of optimism: the lopsided updating of beliefs takes plans further and further away from reality.²¹⁵

Proposals

Apply and extend reference class forecasting corrections for optimism bias.

The UK government's *Green Book* sets out a sophisticated process for correcting for overoptimism when making plans.²¹⁶ Crucially, these corrections are based on empirical evidence of how past projects turned out. The use of these corrections could be expanded from infrastructure projects to social programmes in general – recognising the complexities in doing so. The Institute for Government has done in-depth work on this topic.²¹⁷ In the absence of reference data, an even simpler process would require a standard optimism correction – on the basis of current evidence, a rough rule of thumb might be 25–30% – to all projections of costs or results as standard.

Conduct 'pre-mortems'. Pre-mortems are an exercise where decision makers imagine the future failure of their project, and then work back to identify why things went wrong.²¹⁸ This process encourages people to explore doubts, thereby highlighting weaknesses that can then be addressed. There is emerging evidence that pre-mortems can be successful in real-world settings,²¹⁹ but they are still not widely used in policymaking – we think they should be.

Keep two estimates. There is evidence that judgement is improved simply by making two estimates rather than one.²²⁰ Just as we suggested earlier that different policy options should be kept in play, teams should retain both their central estimate and their high-cost, low-impact (i.e. pessimistic) estimate throughout the process. This strategy would prevent teams from focusing solely on the central estimate and should help to correct for the fact that this central estimate is itself likely to be overoptimistic. There would then be scope for revisiting whether it would be worth proceeding if the outcome were nearer the pessimistic portion.

Build trials and variations into policy execution wherever possible.

Optimism bias strengthens the case for rapid and continual experimentation, which should provide early feedback on whether plans are realistic. If these experiments are well constructed, they will be more difficult to dismiss, even if people are motivated to do so.

5.2 Illusion of control

The illusion of control is the tendency to overestimate how much personal influence one has over events – or, we suggest, how much influence a policy will have over events.²²¹ Illusions of control happen when people misjudge the causal connection between actions they have taken and a specific outcome that they are motivated to achieve.²²²

The simplest examples are where people believe they are exerting control over purely random events. A classic experiment showed that people who were allowed to choose their own lottery ticket demanded nearly \$9 to sell the ticket back, compared to \$2 for people who had not been allowed to make a choice.²²³ People are even willing to disadvantage themselves to retain some perceived control. For example, one study allowed people to use a handbrake device so they could stop a roulette wheel on demand. People kept using the device even when losses started being punished with electric shocks – and even when using the handbrake actually reduced the known probability of winning, making shocks more likely.²²⁴

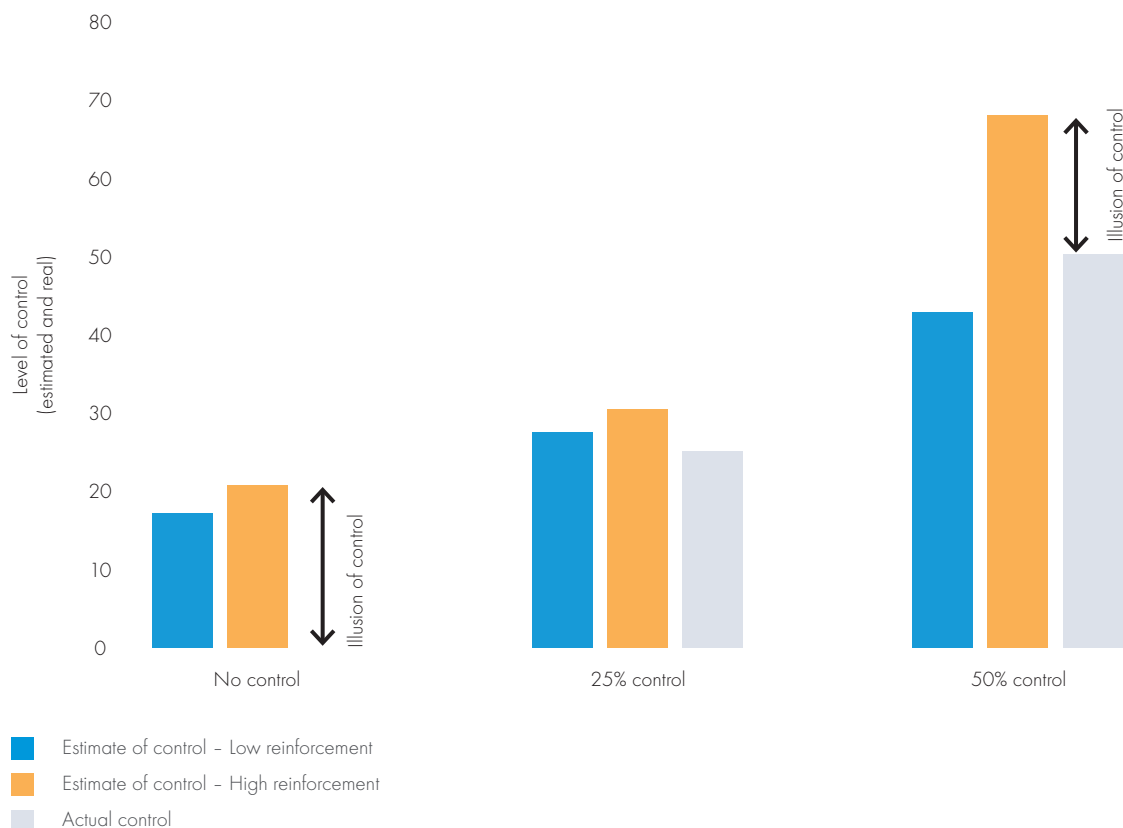
Of course, policymakers are not buying lottery tickets or spinning roulette wheels – it is plausible that they have some influence over events. Nevertheless, evidence suggests that people still overestimate their levels of control in such situations. One experiment showed this by presenting participants with a computer screen that said 'Begin'. They then had three seconds to decide

whether to press the space bar or not. After three seconds, they would see either the target screen (three green Xs) or the non-target screen (three red Os).

Afterwards, participants were asked to rate their level of control. In reality, they had no control over the outcome (whether the target screen appeared was random), 25% control, or 50% control. The other thing that varied was how often the target screen was programmed to appear on average (30% of the time – 'Low Reinforcement' or 70% of the time – 'High Reinforcement'). This was to see whether people's judgements were affected if it was relatively easy or hard to get the Target screen to appear in general. Figure 17 shows the results. First, overestimates of control appeared when people actually had no control, which is a common finding. But they also occurred when people had control over the outcome half of the time – and the target screen was programmed to come on fairly often. This is likely to have occurred because people noticed the Target screen appearing fairly often, and linked that to their actions too strongly. In fact, the results show that the people who overestimated their level of control did not pay attention to the cases that suggested they were not exerting control (unlike those who were accurate).²²⁵

Figure 17:

How the illusion of control varies according to different levels of control.



What problems can illusions of control produce? One is that (as in the case of optimism bias) people are more willing to take risks, and judge those risks as less severe, on the basis of inaccurate assumptions.²²⁶ More generally, illusions of control can mean policymakers have a false picture of the impact they are having. As a result, they may persist in strategies which seem like they should take charge of a problem and produce results, but actually do not. Poorer performance is the result.

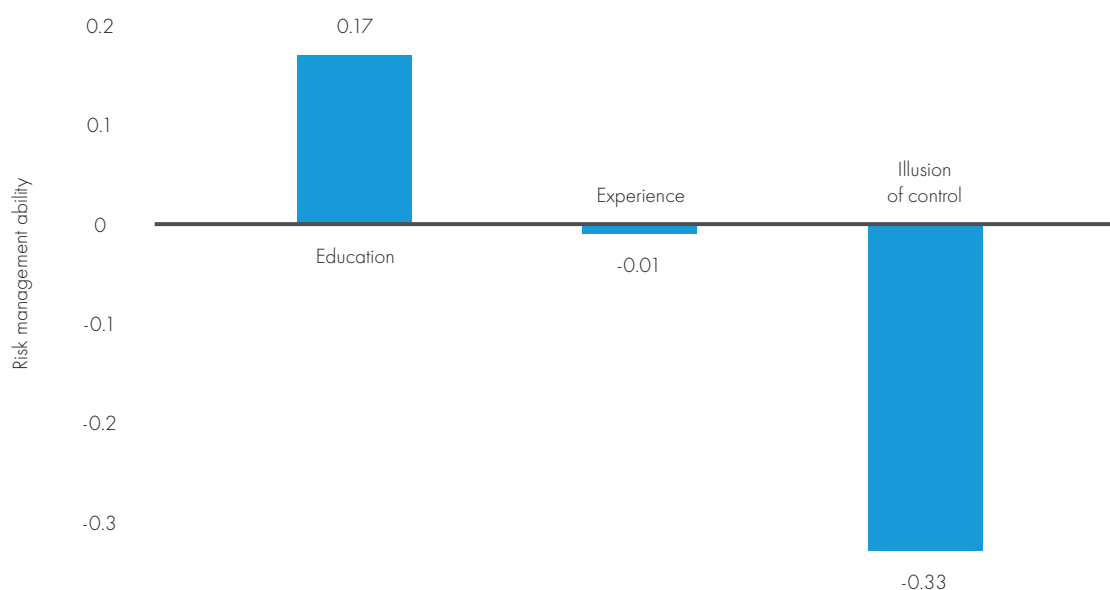
Real-world evidence for this poorer performance comes from a study of 107 traders in four City of London investment banks, all making decisions that involved some level of risk for their respective firms.²²⁷ The traders were presented with a simulated stock index. They were told that changes in the index were partly random, but that three specific keys on the keyboard 'may have some effect' on the index's movements.

In reality, the keys had no effect on the index, which was based on a programmed trend, with 10% random variation built in. At the end of the exercise, participants were asked to rate their perceived success in raising the value of the stock index. Since no control was possible, a higher self-rating meant a greater illusion of control.

The results were telling (see Figure 18). The traders who thought they had more control over the index were rated by their managers as less successful and were the ones being paid a lower salary. They contributed less to profits and were rated as lower in risk management and analytical ability (but not people skills). Since illusions of control were related to lower career success, despite people skills, it is plausible that they produce worse results.

Figure 18:

The association between illusion of control and performance in a real-world setting (financial trading).



The concern is that policymakers, like traders, may work in contexts that encourage illusions of control. Illusions of control are more common when people are stressed or feel they are in a position of power.²²⁸ More importantly, policymakers often deal with complex adaptive systems where it can be difficult to separate information from mere noise.²²⁹ In these situations, the causal links between actions and consequences are unlikely to be linear or obvious – and so illusions of control are more likely. (Regenerating a city or preventing the spread of extremist ideologies might be good examples here.) By solving a problem in one area, policymakers may create unintended consequences in another part of the system. They may then keep trying to correct the new problems with more new actions, not realising that the system is not responding as they intend.²³⁰

Proposals

Use simulations to challenge people’s assumptions about control. It is now possible to obtain cheap, accurate simulations of complex challenges that policymakers may face. These simulations can be set up to show how well-intentioned changes in one area can have unintended consequences in another. They could be used to challenge policymakers’ assumptions about the amount of control they can realistically exercise. Once this happens, there could be a role for follow-up training in systems thinking approaches.

Incorporate mechanisms for feedback and adaptation in implementation plans. All policy implementation plans should include effective mechanisms to find out how they are being realised in practice – with clearly allocated responsibilities to intervene if policy is going off course. These should also include early warning indicators of emerging trade-offs that may require a policy or administrative response. Engaging in this way should also give a more accurate understanding of what level of control is realistic.

6 / Conclusion

The issues highlighted in this report matter: mental shortcuts are an essential part of being human, and public servants and services play a crucial role in nearly all our lives.²³¹ Our goal is to encourage a set of practices that can lead to more effective decision-making in government. However, there is clearly a big task ahead.

6.1 Increased awareness and new training: What it can and cannot do

Policymakers should become more aware of the biases outlined in this report and why they occur. A major aim of this report is to increase such awareness. However, we want to stress again that raising awareness is *desirable but not sufficient on its own*. People find it difficult to notice their own biases, which often operate outside conscious awareness. Various studies have shown that we have a ‘bias blind spot’ when it comes to our own behaviour: we tend to think that others are biased, but not ourselves.²³²

In fact, the problem is even worse. Simply highlighting the existence of biases and directing people to be less biased can backfire and create *more* bias. This seems to happen because people reflect on their thoughts and behaviour and, since they often cannot spot any signs of bias, they may feel even more confident in their clear judgement and objectivity.²³³ And, if people feel more confident in their objectivity, they actually end up displaying *more* bias in their decisions. For example, in one study, people who were primed to feel objective were more likely to discriminate on the basis of gender when making a hiring decision.²³⁴ Therefore, we also offer some simple strategies that policymakers could implement that may stop these biases operating automatically. There is a strong case for testing these strategies empirically wherever possible, since many of them have not been tried extensively in policymaking settings.

Can training play a role? After all, there is evidence that implicit bias training related to race or gender is ineffective or even counterproductive.²³⁵ Recognising the issues just outlined, our view is that training on how to adopt these strategies *could* bring benefits – but only if it focuses on a specific context and behaviour, and gives practical ways to help someone develop new reactions to this context.²³⁶

With this in mind, there is some promising research on how the effect of biases could be mitigated by through direct debiasing training. Recent experiments involving 507 people in Pennsylvania found that an educational computer game and 30-minute training video, designed to teach people to identify and mitigate six cognitive biases, led to large, immediate decreases (39%) in biased judgement, with the effects persisting for at least two months.²³⁷

Another study found that one hour of debiasing training improved the ability of so-called ‘superforecasters’ to make accurate predictions by 6–11%. This is particularly impressive given that the participants in this study already tended to have exceptional analytical and reasoning capabilities. The most effective components of that training had the participants conduct rigorous post-mortems of their decision-making processes after they had made inaccurate predictions, and suggested they start their estimates of how likely something was by examining how often it had occurred in the past.²³⁸

Overall, our view is that there is value in trying to develop debiasing training for policymakers, but it will require rigorous testing before being used at scale.

6.2 The need for changes to institutions, structures and processes

We have set out some strategies that policymakers could adopt to reduce biases – and that could perhaps be reinforced by well-specified training. But reforms cannot focus on individuals in isolation – they also need to incorporate how systems, processes and institutions create behaviours. Some of these drivers may be too large and complex to change (e.g. the role of the media), but others can be re-thought in the light of the evidence above.

Since these structural changes should be tailored to the department or government in question, we provide pointers but do not develop detailed recommendations. Instead, we see this project as making the case for careful consideration of wide-ranging changes. Therefore, behavioural scientists should work with interested policymakers to develop proposals for change in their particular institutions. BIT welcomes these discussions.

Endnotes

- 1 Whitehead, M., Jones, R., Howell, R., Lilley, R., & Pykett, J. (2014). *Nudging all over the world: Assessing the global impact of the behavioral sciences on public policy*. Swindon, UK: Economic and Social Research Council.
- 2 Organisation for Economic Co-operation and Development. (2017). *Behavioural insights and public policy: Lessons from around the world*. Paris, France: Organisation for Economic Co-operation and Development.
- 3 Lourenço, J. S., Ciriolo, E., Almeida, S. R., & Troussard, X. (2016). *Behavioural insights applied to policy: European report 2016*. Brussels: European Commission; World Bank.
- 4 (2015). *World development report 2015: Mind, society, and behaviour*. Washington, DC: World Bank.
- 4 Behavioural Insights Team. (2014). *EAST: Four simple ways to apply behavioural insights*. London, UK: Behavioural Insights Team; Institute for Government and Cabinet Office. (2010). *MINDSPACE: Influencing behaviour through public policy*. London, UK: Institute for Government.
- 5 See <https://www.gov.uk/marriage-allowance>.
- 6 Royal London. (2017, 23 September). FOI reply reveals over £1.3 billion in unclaimed tax breaks for married couples. Retrieved 27 June 2018 from <https://www.royallondon.com/about/media/news/2017/september/foi-reply-reveals-over-13-billion-unclaimed-tax-breaks-for-married-couples>.
- 7 Institute for Government and Cabinet Office. (2010). *MINDSPACE: Influencing behaviour through public policy*. London, UK: Institute for Government; Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. New Haven, CT: Yale University Press.
- 8 Sharot, T. (2011). The optimism bias. *Current Biology*, 21(23), R941–R945.
- 9 John, P. (2018). *How far to nudge? Assessing behavioural public policy*. Cheltenham, UK: Edward Elgar.
- 10 Rutter, J., Marshall, E., & Sims, S. (2012). Pensions reform: The Pensions Commission (2002–6). In *The 'S' factors: Lessons from IFG's policy success reunions* (pp. 86–98). Institute for Government. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/sites/default/files/publications/The%20S%20Factors.pdf>; Madrian, B. C., & Shea, D. F. (2001). The power of suggestion: Inertia in 401(k) participation and savings behavior. *Quarterly Journal of Economics*, 116(4), 1149–1187.
- 11 Department for Work and Pensions. (2017). *Automatic enrolment review 2017: Maintaining the momentum*. Retrieved 28 June 2018 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/668971/automatic-enrolment-review-2017-maintaining-the-momentum.pdf.
- 12 See, for example, Behavioural Insights Team. (2016). *The Behavioural Insights Team update report 2013–2015*. Retrieved 28 June 2018 from http://www.behaviouralinsights.co.uk/wp-content/uploads/2015/07/BIT_Update-Report-Final-2013-2015.pdf; Behavioural Insights Team. (2017). *The Behavioural Insights Team update report 2016–17*. Retrieved 28 June 2018 from <https://www.behaviouralinsights.co.uk/publications/the-behavioural-insights-team-update-report-2016-17>.
- 13 Hallsworth, M. (2016). Seven ways of applying behavioral science to health policy. In I. G. Cohen, H. Fernandez Lynch, & C. T. Robertson (Eds.), *Nudging health: Health law and behavioral economics* (pp. 40–51). Baltimore, MD: Johns Hopkins University Press.
- 14 For example, Mols, F., Haslam, S. A., Jetten, J., & Steffens, N. K. (2015). Why a nudge is not enough: A social identity critique of governance by stealth. *European Journal of Political Research*, 54(1), 81–98; Rebonato, R. (2012). *Taking liberties: A critical examination of libertarian paternalism*. Basingstoke, UK: Palgrave Macmillan; White, M. (2013). *The manipulation of choice: Ethics and libertarian paternalism*. New York, NY: Palgrave Macmillan.
- 15 For example, Glaeser, E. L. (2006). Paternalism and psychology. *University of Chicago Law Review*, 73(1), 133–156; Lodge, M., & Wegrich, K. (2016). The rationality paradox of nudge: Rational tools of government in a world of bounded rationality. *Law & Policy*, 38(3), 250–267; Waldron, J. (2014). It's all for your own good. *New York Review of Books*, 9 October.
- 16 National Audit Office. (2013). *Over-optimism in government projects*. Retrieved 28 June 2018 from <https://www.nao.org.uk/wp-content/uploads/2013/12/10320-001-Over-optimism-in-government-projects.pdf>, p. 4.
- 17 See, for example, Flyvbjerg, B., Bruzelius, N., & Rothengatter, W. (2003). *Megaprojects and risk: An anatomy of ambition*. Cambridge, UK: Cambridge University Press.
- 18 Simon, H. (1948). *Administrative behavior*. New York, NY: Free Press.
- 19 Lucas, G., & Tasic, S. (2015). Behavioural public choice and the law. *West Virginia Law Review*, 118, 199–266; Viscusi, W. K., & Gayer, T. (2015). Behavioural public choice: The behavioural paradox of government policy. *Harvard Journal of Law and Public Policy*, 38(3), 973–1007.
- 20 For an overview, see Cairney, P., & Kwiatkowski, R. (2017). How to communicate effectively with policymakers: Combine insights from psychology and policy studies. *Palgrave Communications*, 3(37), doi:10.1057/s41599-017-0046-8.
- 21 Grimmelikhuisen, S., Jilke, S., Olsen, A. L., & Tummers, L. (2017). Behavioral public administration: Combining insights from public administration and psychology. *Public Administration Review*, 77(1), 45–56; Jones, B. D. (2017). Behavioral rationality as a foundation for public policy studies. *Cognitive Systems Research*, 43, 63–75.
- 22 Todd, P. M., & Gigerenzer, G. (2012). *Ecological rationality: Intelligence in the world*. New York, NY: Oxford University Press.
- 23 Strunk, D. R., Lopez, H., & DeRubeis, R. J. (2006). Depressive symptoms are associated with unrealistic negative predictions of future life events. *Behaviour Research and Therapy*, 44(6), 861–882.
- 24 For example, studies have shown that surgical checklists can be an effective way of reducing harm caused to patients. They act by disrupting automatic thinking and providing a prompt for more junior members of the surgery team to raise concerns. But checklists seem to produce results in some hospitals and not in others. The emerging thinking on this point is that supporting changes in the surgical environment are needed for checklists to address behavioural biases. This example is particularly pertinent because several UK government departments have introduced 'policy tests' to improve policymaking – some explicitly modelled on the surgical checklist movement.
- 25 Glaeser, E. L. (2006). Paternalism and psychology. *University of Chicago Law Review*, 73(1), 133–156.
- 26 The main practical recommendation from Lodge and Wegrich appears to be that 'nudge enthusiasts in government (and beyond) should be nudged into considering further the limits of their knowledge' (Lodge, M., & Wegrich, K. (2016). The rationality paradox of nudge: Rational tools of government in a world of bounded rationality. *Law & Policy*, 38(3), 250–267, at p. 263). We hope this report represents an initial attempt to act on this recommendation and to note the limits of our knowledge.

- 27 Loewenstein, G., Bryce, C., Hagmann, D., & Rajpal, S. (2015). Warning: You are about to be nudged. *Behavioral Science & Policy*, 1(1), 35–42.
- 28 We recognise that this is a recursive argument: the people who design the institutions and systems may themselves be vulnerable to biases, and so on. All we can do is subject ourselves and others to as much scrutiny as is practically possible.
- 29 Bovens, M., & 't Hart, P. (2016). Revisiting the study of policy failures. *Journal of European Public Policy*, 23(5), 653–666; McConnell, A. (2011). *Understanding policy success*. Basingstoke, UK: Palgrave.
- 30 Bovens, M., & 't Hart, P. (2016). Revisiting the study of policy failures. *Journal of European Public Policy*, 23(5), 653–666; McConnell, A. (2011). *Understanding policy success*. Basingstoke, UK: Palgrave, p. 656.
- 31 Bovens, M., 't Hart, P., & Peters, B. G. (Eds.). (2001). *Success and failure in public governance: A comparative analysis*. Cheltenham, UK: Edward Elgar.
- 32 Bovens, M., & 't Hart, P. (2016). Revisiting the study of policy failures. *Journal of European Public Policy*, 23(5), 653–666.
- 33 Rutter, J., Marshall, E., & Sims, S. (2012). *The 'S' factors: Lessons from IFG's policy success reunions*. Institute for Government. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/sites/default/files/publications/The%20S%20Factors.pdf>.
- 34 Gilovich, T., Griffin, D., & Kahneman, D. (Eds.). (2002). *Heuristics and biases: The psychology of intuitive judgment*. Cambridge, UK: Cambridge University Press.
- 35 For example, a recent study finds that 'politicians deviate from expected utility theory ... but that these deviations are somewhat smaller than those of other people'. Linde, J., & Vis, B. (2017). Do politicians take risks like the rest of us? An experimental test of prospect theory under MPs. *Political Psychology*, 38(1), 101–117.
- 36 It should be noted that many of the examples we give here concern individuals making judgments. We deal with group performance later in the report.
- 37 Galbraith, J. (2013). Treaty options: Towards a behavioral understanding of treaty design. *Virginia Journal of International Law*, 53, 309–363.
- 38 For a good, recent overview of these kinds of studies, see the introduction in Bellé, N., Cantarelli, P., & Belardinelli, P. (2018). Prospect theory goes public: Experimental evidence on cognitive biases in public policy and management decisions. *Public Administration Review*, doi:10.1111/puar.12960.
- 39 Two important qualifications are needed here. First, the label 'policymaker' clearly covers different roles and groups. The most obvious distinction is between elected and unelected officials (e.g. ministers and civil servants in the UK). We recognise that we are simplifying here. Second, it could be argued that no clear comparisons can be made with other professions, given the specific requirements of government. We think that there are enough similarities in the behaviours involved to justify these comparisons.
- 40 Saposnik, G., Redelmeier, D., Ruff, C., & Tobler, P. (2016). Cognitive biases associated with medical decisions: A systematic review. *BMC Medical Informatics and Decision Making*, 16(138), 1–14.
- 41 Chen, D., & Philippe, A. (2017). *Mental accounting and social preferences: Judicial leniency on defendant birthdays* (Working Paper). Retrieved 28 June 2018 from http://nber.org/~dchen/papers/Mental_Accounting_and_Social_Preferences.pdf.
- 42 Eren, O., & Mocan, N. (2016). *Emotional judges and unlucky juveniles* (NBER Working Paper No. 22611). National Bureau of Economic Research. Retrieved 28 June 2018 from <http://www.nber.org/papers/w22611>.
- 43 Tetlock, P. (2005). *Expert political judgment: How good is it? How can we know?* Princeton, NJ: Princeton University Press.
- 44 Bhagat, C., & Kehoe, C. (2014). High-performing boards: What's on their agenda? *McKinsey Quarterly*, April. Retrieved 28 June 2018 from <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/high-performing-boards-whats-on-their-agenda>.
- 45 A good recent overview of the 'blind spots' of public administration is provided by Bach, T., & Wegrich, K. (Eds.). (2018). *The blind spots of public bureaucracy and the politics of non-coordination*. Basingstoke, UK: Palgrave Macmillan.
- 46 Quoted in Crewe, I., & King, A. (2014). *The blunders of our governments*. London, UK: Oneworld, p. 246.
- 47 Lindblom makes a famous critique of the 'rational-comprehensive' approach to government decision-making along these lines. Lindblom, Charles A. (1959). The science of 'muddling through'. *Public Administration Review*, 19, 79–88.
- 48 Scott, J. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven, CT: Yale University Press, pp. 11–22.
- 49 Channel 4 News. (2007, 8 May). FactCheck: Labour's election pledge cards. Retrieved 28 June 2018 from <http://www.channel4.com/news/articles/politics/domestic-politics/factcheck+labours+election+pledge+cards/507807.html>.
- 50 Ipsos MORI. (2001, 24 May). Small classes now top reason for going independent. Retrieved 28 June 2018 from <https://www.ipsos.com/ipsos-mori/en-uk/small-classes-now-top-reason-going-independent>.
- 51 Department for Education. (2011). *Class size and education in England evidence report* (Research Report DFE-RR169). Retrieved 28 June 2018 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/183364/DFE-RR169.pdf, p. 37.
- 52 Department for Education. (2011). *Class size and education in England evidence report* (Research Report DFE-RR169). Retrieved 28 June 2018 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/183364/DFE-RR169.pdf, p. 1. For the contemporaneous research, see Day, C., Tolley, H., Hadfield, M., Parkin, E., & Watling, R. (1996). *Class size research and the quality of education: A critical survey of the literature related to class size and the quality of teaching and learning*. Haywards Heath, UK: National Association of Head Teachers; Jamison, J., Johnson, F., & Dickson, P. (1998). *Every child counts: The impact of class size at Key Stage 1*. National Foundation for Educational Research. Retrieved 28 June 2018 from <https://www.nfer.ac.uk/publications/91087/91087.pdf>.
- 53 Coates, D., & Lawler, P. (Eds.). (2000). *New Labour in power*. Manchester, UK: Manchester University Press, p. 172.
- 54 Crick, B. (1962). *In defence of politics*. London, UK: Weidenfeld & Nicolson. This argument is also summarised in Hallsworth, M., Rutter, J., & Parker, S. (2011). *Policy making in the real world*. London, UK: Institute for Government. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/sites/default/files/publications/Policy%20making%20in%20the%20real%20world.pdf>, chapter 8.
- 55 'The biggest fiascos are not caused by division, ceaseless debate, all too powerful checks and balances and institutional paralysis, but by the closing up of policy-making processes: concentrating authority in too few hands; constraining the scope and duration of deliberation; and shutting down diversity and dissent': Bovens, M., & 't Hart, P. (2016). Revisiting the study of policy failures. *Journal of European Public Policy*, 23(5), 653–666, at p. 663. See also Civil Service. (2012). *The Civil Service reform plan*. Retrieved 28 June 2018 from <https://www.gov.uk/government/publications/civil-service-reform-plan>.
- 56 We defined each of the eight biases and gave an example of how each could affect policy (e.g. we defined framing as 'the same content can produce very different reactions if it is presented even slightly differently' and gave the example 'A policy to "reduce the voting age from 18 to 16" attracts much more opposition than a policy to "give 16 and 17 year olds the right to vote"'). We then asked respondents 'How often have you seen this bias affect government decision-making?' where they could answer on a scale of 'Never - Rarely - Sometimes - Often - Always'.
- 57 Cornelissen, J. P., & Werner, M. D. (2014). Putting framing in perspective: A review of framing and frame analysis across the management and organizational literature. *Academy of Management Annals*, 8(1), 181–235; Dewulf, A., Gray, B., Putnam, L., Lewicki, R., Aarts, N., Bouwen, R., & Van Woerkum, C. (2009). Disentangling approaches to framing in conflict and negotiation research: A meta-paradigmatic perspective. *Human Relations*, 62(2), 155–193.

- 58 What UK Thinks. (2015). Ipsos MORI 14/12/15: About this poll. Retrieved 28 June 2018 from <https://whatukthinks.org/eu/poll/ipsos-mori-141215>.
- 59 Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-292.
- 60 Sheffer, L., Loewen, P., Soroka, S., Walgrave, S., & Shaefer, T. (2018). Select nonrepresentative representatives: An experimental study of the decision making of elected politicians. *American Political Science Review*, 112(2), 302-321.
- 61 Banuri, S., Dercon, S., & Gauri, V. (2017). *Biased policy professionals* (Policy Research Working Paper No. 8113). World Bank. Retrieved 28 June 2018 from <http://documents.worldbank.org/curated/en/685691498482210671/Biased-policy-professionals>; Bellé, N., Cantarelli, P., & Belardinelli, P. (2018). Prospect theory goes public: Experimental evidence on cognitive biases in public policy and management decisions. *Public Administration Review*, doi:10.1111/puar.12960.
- 62 Van Hulst, M., & Yanow, D. (2016). From policy 'frames' to 'framing' theorizing a more dynamic, political approach. *American Review of Public Administration*, 46(1), 92-112. Examples of studies that apply this notion of framing to specific policies include Dudley, G. (1999). British Steel and government since privatization: Policy 'framing' and the transformation of policy networks. *Public Administration*, 71, 55-71; Grant, W. (2009). Intractable policy failure: The case of bovine TB and badgers. *British Journal of Politics and International Relations*, 11, 557-573; Rasmussen, A. C. (2011). Contraception as health? The framing of issue categories in contemporary policy making. *Administration & Society*, 43, 930-953.
- 63 Schon, D., & Rein, M. (1994). *Frame reflection: Resolving intractable policy issues*. New York, NY: Basic Books.
- 64 Thibodeau, P. H., & Boroditsky, L. (2011). Metaphors we think with: The role of metaphor in reasoning. *PloS one*, 6(2), e16782.
- 65 Christmann, U., & Göhring, A.-L. (2016). A German-language replication study analysing the role of figurative speech in reasoning. *Scientific Data*, 3, 160098.
- 66 A good example of the opposing frames is a 1983 debate on crime in the House of Commons. Dr Shirley Summerskill, who was then the Labour opposition spokesperson on home affairs, used the 'crime as a virus' frame. She said: 'Certain conditions, if they are not the reason for crime, certainly tend to encourage crime ... **The effects of crime spread to all those who fear that they will become a victim, when their neighbour or relative has become a victim. ...** The control of crime should be the responsibility of every television programme maker, every teacher, every parent and every citizen. **Criminals are influenced by the environment in which they live.** That is where crime starts' (our emphasis): HC Deb 7 February 1983 vol 36 cc644-662. Retrieved 28 June 2018 from http://hansard.millbanksystems.com/commons/1983/feb/07/crime-social-consequences#S6CV0036PO_19830207_HOC_241. In contrast, George Cunningham, from the Social Democratic Party, adopted the 'beast' frame: 'These days, hundreds of thousands of people live in constant fear. They fear that a knock on the door after dark will be a knock not from a friendly neighbour but from **somebody who, once the door is open a fraction, will bash his way in to mug and rob. ...** Many parents are completely unable to control their offspring. ... If a person mugs someone else, breaks a window or throws a firebomb, that is not the fault of the victim. It is not the fault of the parents of the offender. It is not my fault, nor is it the fault of society. **It is the fault of the person who commits the offence. ...** We need to think of prison for some offenders - especially the offender about whom I am speaking - as a first step in a more prolonged period of supervision. ... That is one reason why the Home **Office must maintain its prison building programme**' (our emphasis): HC Deb 7 February 1983 vol 36 cc644-662. Retrieved 28 June 2018 from http://hansard.millbanksystems.com/commons/1983/feb/07/crime-social-consequences#S6CV0036PO_19830207_HOC_229.
- 67 Schon, D., & Rein, M. (1994). *Frame reflection: Resolving intractable policy issues*. New York, NY: Basic Books, p. 23.
- 68 Gray, B. (2005). Framing in mediation and mediation as framing. In M. Herman (Ed.), *Mediation from beginning to end* (pp. 195-216). New York, NY: Blackwell; Putnam, L. L., Burgess, G., & Royer, R. (2003). We can't go on like this: Frame changes in intractable conflicts. *Environmental Practice*, 5(3), 247-255.
- 69 These strategies are taken from Dewulf, A., & Bouwen, R. (2012). Issue framing in conversations for change: Discursive interaction strategies for 'doing differences'. *Journal of Applied Behavioral Science*, 48(2), 168-193.
- 70 'Information cascades' is an alternative term. For 'information cascade', see Anderson, L. R., & Holt, C. A. (1997). Information cascades in the laboratory. *American Economic Review*, 87(5), 847-862; Bikhchandani, S., Hirshleifer, D., & Welch, I. (1992). A theory of fads, fashion, custom, and cultural change as informational cascades. *Journal of Political Economy*, 100(5), 992-1026. For 'attention cascade', see Halpin, D. (2011). Explaining policy bandwagons: Organized interest mobilization and cascades of attention. *Governance*, 24(2), 205-230; Shiller, R. (2000). Irrational exuberance. *Philosophy & Public Policy Quarterly*, 20(1), 18-23.
- 71 Slovic, P., Fischhoff, B., & Lichtenstein, S. (2012). Cognitive processes and societal risk tasking. In P. Slovic (Ed.), *The perception of risk* (pp. 32-50). Oxford, UK: Earthscan; Sunstein, C. R., & Zeckhauser, R. (2011). Overreaction to fearsome risks. *Environmental and Resource Economics*, 48(3), 435-449.
- 72 Gigerenzer, G. (2004). Dread risk, September 11, and fatal traffic accidents. *Psychological Science*, 15(4), 286-287.
- 73 Eisensee, T., & Stromberg, D. (2007). News droughts, news floods, and U.S. disaster relief. *Quarterly Journal of Economics*, 122(2), 693-728.
- 74 On a related point, studies have shown that people are much more likely to donate to a charity if an advert features a single identifiable person.
- 75 Miller, K. C. (2009). The limitations of heuristics for political elites. *Political Psychology*, 30(6), 863-894.
- 76 'The relationships between organizational decision making and individual decision making are not metaphorical; they are causal. One cannot really understand how organizations operate without a strong sense of how individuals process information and make decisions': Jones, B. D. (2003). Bounded rationality and political science: Lessons from public administration and public policy. *Journal of Public Administration Research and Theory*, 13(4), 395-412, at 401. For an account of this kind of 'satisficing' search, see Simon, H. A. (1985). Human nature in politics: The dialogue of psychology with political science. *American Political Science Review*, 79(2), 293-304.
- 77 This is one of the few studies to look at how information selection actually works in practice. Note that party leadership is considered to be 'the highest office in Belgium', with comparable - if not more - power than ministers but fewer constraints: Walgrave, S., & Dejaeghere, Y. (2017). Surviving information overload: How elite politicians select information. *Governance*, 30(2), 229-244.
- 78 See Baumgartner, F. R., & Jones, B. D. (1993). *Agendas and instability in American politics*. Chicago, IL: University of Chicago Press; Iyengar, S., & Simon, A. (1993). News coverage of the Gulf crisis and public opinion: A study of agenda-setting, priming, and framing. *Communication Research*, 20(3), 365-383; Jones, B. D., & Wolfe, M. (2010). Public policy and the mass media: An information processing approach. In S. Koch-Baumgarten & K. Volmer (Eds.), *Public policy and the mass media: The interplay of mass communication and political decision making* (pp. 17-43). London, UK: Routledge; Wolfe, M., Jones, B. D., & Baumgartner, F. R. (2013). A failure to communicate: Agenda setting in media and policy studies. *Political Communication*, 30(2), 175-192.
- 79 'Policy underreaction' and 'policy overreaction' have attracted a lot of academic interest recently. See Maor, M. (2012). Policy overreaction. *Journal of Public Policy*, 32(3), 231-259; Maor, M. (2014). Policy persistence, risk estimation and policy underreaction. *Policy Sciences*, 47(4), 425-443.

- 80 Of course, we mean 'programmatic' costs and benefits here, and we are aware that there are many difficulties in measuring them. One obvious problem is at what point you make the measurement - what seems like an overreaction at one point may generate large benefits later. For example, actions to prevent climate change may have been seen as an overreaction for many decades in the 20th century. See Maor, M., Tosun, J., & Jordan, A. (2017). Proportionate and disproportionate policy responses to climate change: Core concepts and empirical applications. *Journal of Environmental Policy & Planning*, 19(6), 599-611.
- 81 Roach, K. (2012). The criminal law and its less restrained alternatives. In V. V. Ramraj, M. Hor, & K. Roach (Eds.), *Global anti-terrorism law and policy* (pp. 91 - 121). Cambridge, UK: Cambridge University Press.
- 82 Jones and Baumgartner suggest an 'error accumulation' model, whereby errors accumulate as important signals to change course are not noticed or responded to in time. They talk about 'a pattern of overlooking clues in plain sight and then overreacting when attention is directed at the previously-obvious clues': Jones, B. D., & Baumgartner, F. R. (2005). *The politics of attention: How government prioritizes problems*. Chicago, IL: University of Chicago Press, p. 60.
- 83 Rinscheid, A. (2015). Crisis, policy discourse, and major policy change: Exploring the role of subsystem polarization in nuclear energy policymaking. *European Policy Analysis*, 1(2), 34-70.
- 84 'The connections between solutions and problems thus was attention-driven: only when the organization devoted collective attention to a problem could a solution be connected to the problem': Jones, B. D. (2017). Behavioral rationality as a foundation for public policy studies. *Cognitive Systems Research*, 43, 63-75, at p. 69.
- 85 'Humans have a set of pre-packaged solutions to problems that are based in human biology and cultural transmission, so that when they encounter a familiar problem they respond virtually automatically. The same is true about policy making and implementing organizations': Jones, B. D. (2017). Behavioral rationality as a foundation for public policy studies. *Cognitive Systems Research*, 43, 63-75, at p. 69.
- 86 Boushey, G. (2012). Punctuated equilibrium theory and the diffusion of innovations. *Policy Studies Journal*, 40(1), 127-146.
- 87 Boushey, G. (2010). *Policy diffusion dynamics in America*. New York, NY: Cambridge University Press, pp. 1-2.
- 88 This kind of rapid shift is more likely to occur 'when awareness of the innovation simultaneously reveals both the policy problem and the policy solution': Boushey, G. (2012). Punctuated equilibrium theory and the diffusion of innovations. *Policy Studies Journal*, 40(1), 127-146, at p. 131. In other words: is there a demand for 'something to be done' or for 'this thing to be done'?
- 89 Cartwright, N., & Hardie, J. (2012). *Evidence-based policy: A practical guide to doing it better*. Oxford, UK: Oxford University Press.
- 90 Jones, B. D., Thomas, H. F., & Wolfe, M. (2014). Policy bubbles. *Policy Studies Journal*, 42(1), 146-171.
- 91 Note that this assumes that the increased prison population is not itself the driver of the lower crime rate, which is not a possibility that the authors discuss.
- 92 The report and associated resources are available at Government Office for Statistics. (2018). *Future of the sea*. Retrieved 28 June 2018 from <https://www.gov.uk/government/collections/future-of-the-sea>.
- 93 Institute for Government. (2018). *How government can work with academia*. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/publications/how-government-can-work-academia>.
- 94 Cabinet Office. (2018, 31 January). Introducing the Open Innovation Team. Retrieved 28 June 2018 from <https://openinnovation.blog.gov.uk/2018/01/31/open-innovation-team-deepening-collaboration-between-officials-and-academics>.
- 95 Burgess, S. (2018). Bottle and can deposit return scheme gets green light in England. *Sky News*, 28 March. Retrieved 28 June 2018 from <https://news.sky.com/story/govt-launch-deposit-return-scheme-for-single-use-bottles-in-england-11306448>; Department for Environment. (2018). Prime Minister's speech on the environment: 11 January 2018. Retrieved 28 June 2018 from <https://www.gov.uk/government/speeches/prime-ministers-speech-on-the-environment-11-january-2017>.
- 96 Werner, S., Budziak, A., Van Franeker, J., Galgani, F., Hanke, G., Maes, T., Matiddi, M. ... Vlachogianni, T. (2016). *Harm caused by marine litter*. European Commission. Retrieved 28 June 2018 from <http://publications.jrc.ec.europa.eu/repository/bitstream/JRC104308/lbna28317enn.pdf>.
- 97 Neimand, A. (2018). How to tell stories about complex issues. *Innovation Review*, 7 May. Retrieved 28 June 2018 from https://ssir.org/articles/entry/how_to_tell_stories_about_complex_issues; Slovic, P. (2007). 'If I look at the mass I will never act': Psychic numbing and genocide. *Judgment and Decision Making*, 2(2), 79-95; Väsifjäll, D., Slovic, P., Mayorga, M., & Peters, E. (2014). Compassion fade: Affect and charity are greatest for a single child in need. *PLoS one*, 9(6), e100115.
- 98 Nickerson, R. (1998). Confirmation bias: A ubiquitous phenomenon in many cities. *Review of General Psychology*, 2(2), 175-220. On remembering: Jerit, J., & Barabas, J. (2012). Partisan perceptual bias and the information environment. *Journal of Politics*, 74(3), 672-684.
- 99 Brock, T. C., & Balloun, J. L. (1967). Behavioral receptivity to dissonant information. *Journal of Personality and Social Psychology*, 6(4, Pt.1), 413-428.
- 100 Schmidt, A. L., Zollo, F., Del Vicario, M., Bessi, A., Scala, A., Caldarelli, G., Stanley, E. H., & Quattrociocchi, W. (2017). Anatomy of news consumption on Facebook. *Proceedings of the National Academy of Sciences of the United States of America*. Retrieved 28 June 2018 from <http://www.pnas.org/content/early/2017/02/28/1617052114>.
- 101 Hart, W., Albarraquin, D., Eagly, A. H., Brechan, I., Lindberg, M. J., & Merrill, L. (2009). Feeling validated versus being correct: A meta-analysis of selective exposure to information. *Psychological Bulletin*, 135(4), 555-588.
- 102 See, for example, Redlawsk, D. P. (2002). Hot cognition or cool consideration? Testing the effects of motivated reasoning on political decision making. *Journal of Politics*, 64(4), 1021-1044.
- 103 Lord, C. G., Ross, L., & Lepper, M. R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, 37(11), 2098-2109.
- 104 Bail, C. A., Argyle, L., Brown, T., Bumpuss, J., Chen, H., Hunzaker, M. F., ... Volfovsky, A. (2018, 19 March). Exposure to opposing views can increase political polarization: Evidence from a large-scale field experiment on social media. Retrieved 28 June 2018 from <https://osf.io/preprints/socarxiv/4yguX>.
- 105 Banuri, S., Dercon, S., & Gauri, V. (2017). *Biased policy professionals* (Policy Research Working Paper No. 8113). World Bank. Retrieved 28 June 2018 from <http://documents.worldbank.org/curated/en/685691498482210671/Biased-policy-professionals>, explained below.
- 106 Russo, J. E., Medvec, V. H., & Meloy, M. G. (1996). The distortion of information during decisions. *Organizational Behavior and Human Decision Processes*, 66, 102-110; Schulz-Hardt, S., Frey, D., Lüthgens, C., & Moscovici, S. (2000). Biased information search in group decision making. *Journal of Personality and Social Psychology*, 78(4), 655-669.
- 107 Thibodeau, P. H., & Boroditsky, L. (2011). Metaphors we think with: The role of metaphor in reasoning. *PLoS one*, 6(2), e16782. Work on conflicting policy frames has shown that they are 'resistant to resolution by appeal to facts or reasoned argumentation because the parties' conflicting frames determine what counts as a fact and what arguments are taken to be relevant and compelling': Schön, D. A., & Rein, M. (1994). *Frame reflection: Toward the resolution of intractable policy controversies*. New York, NY: Basic Books, p. 23.
- 108 Sharot, T. (2017). *The influential mind: What the brain reveals about our power to change others*. London, UK: Little, Brown.
- 109 Baekgaard, M., Christensen, J., Dahlmann, C., Mathiasen, A., & Petersen, N. (2017). The role of evidence in politics: Motivated reasoning and persuasion among politicians. *British Journal of Political Science*, doi:10.1017/S0007123417000084.

- 110 Presentation by Julian Christensen at the Behavioural Insights Team, 18 May 2018.
- 111 A caveat: there is some evidence that people find it difficult to keep ignoring disconfirming evidence *ad infinitum*. For example, a 2010 study showed that there was eventually a 'tipping point', after which motivated reasoners did realign their views to take account of the evidence: Redlawsk, D. P., Civettini, A. J., & Emmerson, K. M. (2010). The affective tipping point: Do motivated reasoners ever 'get it'? *Political Psychology*, 31(4), 563–593.
- 112 Banuri, S., Dercon, S., & Gauri, V. (2017). *Biased policy professionals* (Policy Research Working Paper No. 8113). World Bank. Retrieved 28 June 2018 from <http://documents.worldbank.org/curated/en/685691498482210671/Biased-policy-professionals>.
- 113 Kahan, D. M., Dawson, E. C., Peters, E., & Slovic, P. (2017). Motivated numeracy and enlightened self-government. *Behavioural Public Policy*, 1(1), 54–86. But note that this does not mean that the more numerate respondents gave less accurate responses than less numerate respondents – just that there was a greater relative effect from cognitive dissonance on the more numerate respondents.
- 114 Kahan and colleagues find that greater numeracy is associated with a greater effect of motivated reasoning: Kahan, D. M., Dawson, E. C., Peters, E., & Slovic, P. (2017). Motivated numeracy and enlightened self-government. *Behavioural Public Policy*, 1(1), 54–86. However, other studies have found that those higher in 'need for cognition' (i.e. who enjoy complex thinking) are less likely to engage in motivated reasoning. See, for example, Nir, L. (2011). Motivated reasoning and public opinion perception. *Public Opinion Quarterly*, 75(3), 504–532.
- 115 Pensions Commission. (2005). *A new pension settlement for the twenty-first century: The second report of the Pensions Commission*. Retrieved 28 June 2018 from <http://webarchive.nationalarchives.gov.uk/+http://www.dwp.gov.uk/publications/dwp/2005/pensionscommreport/main-report.pdf>.
- 116 Larrick, R. P. (2004). Debiasing. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgment and decision making* (pp. 316–337). Chichester, UK: Blackwell; Lord, C. G., Lepper, M. R., & Preston, E. (1984). Considering the opposite: A corrective strategy for social judgment. *Journal of Personality and Social Psychology*, 47(6), 1231–1243.
- 117 Sense about Science. (2016). *Transparency of evidence: An assessment of government policy proposals May 2015 to May 2016*. Retrieved 28 June 2018 from <http://senseaboutscience.org/wp-content/uploads/2016/11/SaS-Transparency-of-Evidence-2016-Nov.pdf>.
- 118 Regulatory Group. (2010). *Agency checklist: Regulatory impact analysis*. Retrieved 28 June 2018 from [https://www.regulationwriters.com/downloads/RIA_\(post_Jan_2017\)/OIRA-RIA_Checklist-2010.pdf](https://www.regulationwriters.com/downloads/RIA_(post_Jan_2017)/OIRA-RIA_Checklist-2010.pdf).
- 119 Institute for Government. (2015). *Show your workings: Assessing how government uses evidence to make policy*. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/publications/show-your-workings>.
- 120 Haynes, A. B., Weiser, T. G., Berry, W. R., Lipsitz, S. R., Breizat, A.-H. S., Dellinger, P., Herbosa, T. ... Gawande, A. A. (2009). A surgical safety checklist to reduce morbidity and mortality in a global population. *New England Journal of Medicine*, 360(5), 491–499.
- 121 Allen, N. J., & Hecht, T. D. (2004). 'The romance of teams': Toward an understanding of its psychological underpinnings and implications. *Journal of Occupational and Organizational Psychology*, 77(4), 439–461.
- 122 The literature on group behaviours is enormous, and it is clear that group performance can vary greatly according to contextual factors. Perhaps the best overview of the evidence is provided by Kerr, N. L., & Tindale, R. S. (2004). Group performance and decision making. *Annual Review of Psychology*, 55, 623–655. Sometimes, structures can harness the 'wisdom of crowds' to produce extremely useful forecasts and estimates. See Navajas, J., Niella, T., Garbulska, G., Bahrami, B., & Sigman, M. (2018). Aggregated knowledge from a small number of debates outperforms the wisdom of large crowds. *Nature Human Behaviour*, 2, 126–132.
- 123 Sunstein, C. R., & Hastie, R. (2015). *Wiser: Getting beyond groupthink to make groups smarter*. Boston, MA: Harvard Business Press, p. 30, citing Gigone, D., & Hastie, R. (1997). Proper analysis of the accuracy of group judgments. *Psychological Bulletin*, 121(1), 149–167.
- 124 Osborn, A. F. (1957). *Applied imagination*. New York, NY: Scribner.
- 125 Diehl, M., & Stroebe, W. (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. *Journal of Personality and Social Psychology*, 53(3), 497–509; Mullen, B., Johnson, C., & Salas, E. (1991). Productivity loss in brainstorming groups: A meta-analytic integration. *Basic and Applied Social Psychology*, 12(1), 3–23.
- 126 Kerr, N. L., Maccoun, R. J., & Kramer, G. P. (1996). Bias in judgment: Comparing individuals and groups. *Psychological Review*, 103(4), 687–719.
- 127 Hobbes, T. (1651). *Leviathan*, chapter 25.
- 128 Nemeth, C. (2017). *In defense of troublemakers: The power of dissent in life and business*. New York, NY: Basic Books.
- 129 In the next few paragraphs, we draw on Cass Sunstein and Reid Hastie's book *Wiser*, which is an excellent summary of group behaviours: Sunstein, C. R., & Hastie, R. (2015). *Wiser: Getting beyond groupthink to make groups smarter*. Boston, MA: Harvard Business Press.
- 130 A series of famous experiments by Solomon Asch in the 1950s illustrate this point. However, it should be noted that there is an active debate on the interpretation of these experiments. See Kim, D., & Hommel, B. (2018). Reply to Ihmels and Ache (2018): Event-based conformity versus regression to the mean. *Psychological Science*, doi:10.1177/0956797618773095.
- 131 Borger, G. (2013). Obama's 'no drama' credo led to the ACA website disaster. *Time*, 14 November. Retrieved 28 June 2018 from <http://ideas.time.com/2013/11/14/gloria-borger-obamas-no-drama-credo-led-to-the-aca-website-disaster>.
- 132 See Sunstein, C. R., & Hastie, R. (2015). *Wiser: Getting beyond groupthink to make groups smarter*. Boston, MA: Harvard Business Press.
- 133 Note that this may be a useful heuristic sometimes: the fact that something is generally known may mean that it is actually important: Gigone, D., & Hastie, R. (1993). The common knowledge effect: Information sharing and group judgment. *Journal of Personality and Social Psychology*, 65(5), 959–974.
- 134 Wittenbaum, G. M., Hubbell, A. P., & Zuckerman, C. (1999). Mutual enhancement: Toward an understanding of the collective preference for shared information. *Journal of Personality and Social Psychology*, 77(5), 967–978.
- 135 Stasser, G., & Titus, W. (2003). Hidden profiles: A brief history. *Psychological Inquiry*, 14(3–4), 304–313.
- 136 Baron, R. S., Hoppe, S. I., Kao, C. F., Brunzman, B., Linneweh, B., & Rogers, D. (1996). Social corroboration and opinion extremity. *Journal of Experimental Social Psychology*, 32(6), 537–560.
- 137 Turner, J. C., Wetherell, M. S., & Hogg, M. A. (1989). Referent informational influence and group polarization. *British Journal of Social Psychology*, 28(2), 135–147.
- 138 Ottaviani, M., & Sørensen, P. (2001). Information aggregation in debate: Who should speak first? *Journal of Public Economics*, 81(3), 393–421.
- 139 Hung, A. A., & Plott, C. R. (2001). Information cascades: Replication and an extension to majority rule and conformity-rewarding institutions. *American Economic Review*, 91(5), 1508–1520.
- 140 Institute for Government. (2018). *Ethnicity in the Civil Service*. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/explainers/ethnicity-civil-service>.
- 141 Simon, H. (1948). *Administrative behavior*. New York, NY: Free Press. It is important to note that the same government can have very different cultures in different departments. For example, in the UK, the organisational culture and norms of HM Treasury are generally thought to tolerate a greater degree of open debate in groups than other departments. See Ministers Reflect. (2016). Kenneth Clarke: 'I didn't bother with the grid and asking permission and all this rubbish'. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/ministers-reflect/person/kenneth-clarke>.

- 142 Chilcott, J. et al. (2016). Executive summary. In *The Iraq Enquiry*. Retrieved 28 June 2018 from <https://www.gov.uk/government/publications/the-report-of-the-iraq-inquiry>, paragraphs 410, 618.
- 143 Moreover, most of the ones that do exist – such as those in Janis, I. (1982). *Groupthink: Psychological studies of policy decisions and fiascoes* (2nd ed.). Boston, MA: Houghton Mifflin – are accounts given after the event and therefore are highly vulnerable to hindsight bias and self-justification.
- 144 See Dincera, N. N., & Eichengreen, B. (2014). Central bank transparency and independence: Updates and new measures. *International Journal of Central Banking*, 10(1), 189–253.
- 145 Berk, J. M., Bierut, B. K., & Meade, E. E. (2010). *The dynamic voting patterns of the Bank of England's MPC* (Working Paper No. 261). De Nederlandsche Bank. Retrieved 28 June 2018 from https://www.dnb.nl/en/binaries/261%20-%20The%20Dynamic%20Voting%20Patterns%20of%20the%20Bank%20of%20England%20MPC_tcm47-239585.pdf.
- 146 Of course, this is not the only explanation. Other studies, controlling for more variables, argue that the voting record does not show self-censoring 'career effects' like this (but they do find other dynamic group effects). See Hansen, S., & McMahon, M. (2016). First impressions matter: Signalling as a source of policy dynamics. *Review of Economic Studies*, 83(4), 1645–1672.
- 147 Interestingly, the Chief Economist at the Bank of England, Andrew Haldane, has explicitly linked the lack of discussion of banking issues by the Monetary Policy Committee prior to 2007 to groupthink pressures: Haldane, A. (2014). Central bank psychology. Speech given at the Leadership: Stress and Hubris conference, London, UK.
- 148 Cabinet Office. (2015). Contestable Policy Fund. Retrieved 28 June 2018 from <https://www.gov.uk/guidance/contestable-policy-fund>.
- 149 Stroebe, W., & Diehl, M. (1994). Why groups are less effective than their members: On productivity losses in idea-generating groups. *European Review of Social Psychology*, 5(1), 271–303.
- 150 Ministry of Defence. (2018). *The good operation*. Retrieved 28 June 2018 from <https://www.gov.uk/government/publications/the-good-operation>.
- 151 Bell, S. T., Villado, A. J., Lukasik, M. A., Belau, L., & Briggs, A. L. (2011). Getting specific about demographic diversity variable and team performance relationships: A meta-analysis. *Journal of Management*, 37(3), 709–743; Stahl, G. K., Maznevski, M. L., Voigt, A., & Jonsen, K. (2010). Unraveling the effects of cultural diversity in teams: A meta-analysis of research on multicultural work groups. *Journal of International Business Studies*, 41(4), 690–709; Williams, K., & O'Reilly, C. (1998). Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior*, 8, 70–140.
- 152 Mannix, E., & Neale, M. A. (2005). What differences make a difference? The promise and reality of diverse teams in organizations. *Psychological Science in the Public Interest*, 6(2), 31–55.
- 153 Trendall, S. (2018, 6 June). Civil Service HR looks to develop library of online psychometric tests. *Public Technology*. Retrieved 28 June 2018 from <http://www.publictechnology.net/articles/news/civil-service-hr-looks-develop-library-online-psychometric-tests>.
- 154 This is exactly the same concept as 'naive realism'. However, we found that this term was not intuitive for people, and therefore we coined the term 'illusion of similarity'. For naive realism, see Ross, L., & Ward, A. (1996). Naive realism in everyday life: Implications for social conflict and misunderstanding. In T. Brown, E. S. Reed, & E. Turiel (Eds.), *Values and knowledge* (pp. 103–135). Hillsdale, NJ: Erlbaum.
- 155 Ross, L., & Ward, A. (1996). Naive realism in everyday life: Implications for social conflict and misunderstanding. In T. Brown, E. S. Reed, & E. Turiel (Eds.), *Values and knowledge* (pp. 103–135). Hillsdale, NJ: Erlbaum.
- 156 Mullen, B., Atkins, J., Champion, D., Edwards, C., Hardy, D., Story, J., & Vanderklok, M. (1985). The false consensus effect: A meta-analysis of 115 hypothesis tests. *Journal of Experimental Social Psychology*, 21(3), 262–283.
- 157 Wojcieszak, M., & Price, V. (2009). What underlies the false consensus effect? How personal opinion and disagreement affect perception of public opinion. *International Journal of Public Opinion Research*, 21(1), 25–46.
- 158 HC Deb 19 October 1992 vol 212 cc205–236. Retrieved 28 June 2018 from https://api.parliament.uk/historic-hansard/commons/1992/oct/19/coal-industry#S6CV0212PO_19921019_HOC_222.
- 159 Jones, N. (2017, 29 December). 1992 Cabinet records reveal government chaos and confusion over death knell for coal industry. *Nicholas Jones Archive and Blog*. Retrieved 28 June 2018 from <http://www.nicholasjones.org.uk/articles/categories/trade-union-reporting/336-1992-cabinet-records-reveal-government-chaos-and-confusion-over-death-knell-for-coal-industry>.
- 160 Poole, D. (1992, 4 December). The pit closures episode (Note to the Prime Minister), p. 2. We are extremely grateful to Nicholas Jones for providing us with a copy of this note.
- 161 Jones, N. (2017, 29 December). 1992 Cabinet records reveal government chaos and confusion over death knell for coal industry. *Nicholas Jones Archive and Blog*. Retrieved 28 June 2018 from <http://www.nicholasjones.org.uk/articles/categories/trade-union-reporting/336-1992-cabinet-records-reveal-government-chaos-and-confusion-over-death-knell-for-coal-industry>.
- 162 Poole, D. (1992, 4 December). The pit closures episode (Note to the Prime Minister), p. 2.
- 163 Appearance on *UK Confidential*, BBC Radio 4, 30 December 2017. Retrieved 28 June 2018 from <https://www.bbc.co.uk/programmes/b09jxn5p>.
- 164 Michael Heseltine: 'Here I do accept a degree of responsibility. It was no secret that the mines were going. So I thought ... They know what's coming. So I need to get decent terms for them, which I did. Where I got it wrong was that it was Middle England who felt for the miners. And that I did not anticipate.' Appearance on *UK Confidential*, BBC Radio 4, 30 December 2017. Retrieved 28 June 2018 from <https://www.bbc.co.uk/programmes/b09jxn5p>.
- 165 Poole, D. (1992, 4 December). The pit closures episode (Note to the Prime Minister), p. 1 (our emphasis).
- 166 Poole, D. (1992, 4 December). The pit closures episode (Note to the Prime Minister), p. 2.
- 167 Note by Sir Peter Gregson, Permanent Secretary at the Department of Trade and Industry, cited in Jones, N. (2017, 29 December). 1992 Cabinet records reveal government chaos and confusion over death knell for coal industry. *Nicholas Jones Archive and Blog*. Retrieved 28 June 2018 from <http://www.nicholasjones.org.uk/articles/categories/trade-union-reporting/336-1992-cabinet-records-reveal-government-chaos-and-confusion-over-death-knell-for-coal-industry>.
- 168 Newton, E. (1990). *Overconfidence in the communication of intent: Heard and unheard melodies* (Unpublished doctoral dissertation). Stanford University, Stanford, CA.
- 169 Randall, J., & Hughes, N. (2015). *Connecting policy with practice: Insights from the Connecting Policy with Practice Programme in 2014–15*. Institute for Government. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/sites/default/files/publications/Connecting%20Policy%20with%20Practice%20Y2%20Paper%20-%20FINAL.pdf>.
- 170 Bergman, P. L. S., & Rogers, T. (2017). *The impact of defaults on technology adoption, and its underappreciation by policymakers* (Working Paper No. 6721). CESifo. Retrieved 28 June 2018 from http://www.cesifo-group.de/ifoHome/publications/docbase/DocBase_Content/WP/WP-CESifo_Working_Papers/wp-cesifo-2017/wp-cesifo-2017-11/12012017006721.html.
- 171 This box is based mainly on National Audit Office. (2016). *Green Deal and energy company obligation*. Retrieved 28 June 2018 from <https://www.nao.org.uk/wp-content/uploads/2016/04/Green-Deal-and-Energy-Company-Obligation.pdf>.
- 172 National Audit Office. (2016). *Green Deal and energy company obligation*. Retrieved 28 June 2018 from <https://www.nao.org.uk/wp-content/uploads/2016/04/Green-Deal-and-Energy-Company-Obligation.pdf>, p. 42.
- 173 National Audit Office. (2016). *Green Deal and energy company obligation*. Retrieved 28 June 2018 from <https://www.nao.org.uk/wp-content/uploads/2016/04/Green-Deal-and-Energy-Company-Obligation.pdf>, p. 42.

- Deal-and-Energy-Company-Obligation.pdf, p. 41.
- 174 Hallsworth, M., Rutter, J., & Parker, S. (2011). *Policy making in the real world*. London, UK: Institute for Government, p. 93.
- 175 A recent example of a citizens' jury being used in policy development can be found at VicHealth. (2016). Citizens' jury on obesity. Retrieved 28 June 2018 from <https://www.vichealth.vic.gov.au/programs-and-projects/victorias-citizens-jury-on-obesity>.
- 176 Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup bias. *Annual Review of Psychology*, 53(1), 575–604.
- 177 Gramzow, R. H., & Gaertner, L. (2005). Self-esteem and favoritism toward novel in-groups: The self as an evaluative base. *Journal of Personality and Social Psychology*, 88(5), 801–815.
- 178 Balliet, D., Wu, J., & De Dreu, C. K. (2014). Ingroup favoritism in cooperation: A meta-analysis. *Psychological Bulletin*, 140(6), 1556–1581.
- 179 This is known as the 'discontinuity effect'. Wildschut, T., Pinter, B., Vevea, J. L., Insko, C. A., & Schopler, J. (2003). Beyond the group mind: A quantitative review of the interindividual–intergroup discontinuity effect. *Psychological Bulletin*, 129(5), 698–722. It is even true when dealing with individuals who are representing groups. See Song, F. (2008). Trust and reciprocity behavior and behavioral forecasts: Individuals versus group-representatives. *Games and Economic Behaviour*, 62(2), 675–696.
- 180 Abbink, K., Brands, J., Herrmann, B., & Orzen, H. (2010). Intergroup conflict and intra-group punishment in an experimental contest game. *American Economic Review*, 100(1), 420–447.
- 181 There is a good account of this process in Ross, L., & Ward, A. (1996). Naive realism in everyday life: Implications for social conflict and misunderstanding. In T. Brown, E. S. Reed, & E. Turiel (Eds.), *Values and knowledge* (pp. 103–135). Hillsdale, NJ: Erlbaum.
- 182 Cognitive dissonance drives this effect. See Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- 183 Chambers, J. R., Baron, R. S., & Inman, M. L. (2006). Misperceptions in intergroup conflict: Disagreeing about what we disagree about. *Psychological Science*, 17, 38–45; Kennedy, K. A., & Pronin, E. (2008). When disagreement gets ugly: Perceptions of bias and the escalation of conflict. *Personality and Social Psychology Bulletin*, 34(6), 833–848.
- 184 Blatz, C. W., & Mercier, B. (2017). False polarization and false moderation: Political opponents overestimate the extremity of each other's ideologies but underestimate each other's certainty. *Social Psychological and Personality Science*, doi:10.1177/1948550617712034; Levendusky, M. S., & Malhotra, N. (2015). (Mis)perceptions of partisan polarization in the American public. *Public Opinion Quarterly*, 80(S1), 378–391; Robinson, R. J., Keltner, D., Ward, A., & Ross, L. (1995). Actual versus assumed differences in construal: 'Naive realism' in intergroup perception and conflict. *Journal of Personality and Social Psychology*, 68(3), 404–417.
- 185 Sabatier, P., Hunter, S., & McLaughlin, S. (1987). The devil shift: Perceptions and misperceptions of opponents. *Western Political Quarterly*, 40(3), 449–476.
- 186 Sherman, D. K., Nelson, L. D., & Ross, L. D. (2003). Naive realism and affirmative action: Adversaries are more similar than they think. *Basic and Applied Social Psychology*, 25(4), 275–289.
- 187 Ministers Reflect. (2016). Kenneth Clarke: 'I didn't bother with the grid and asking permission and all this rubbish'. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/ministers-reflect/person/kenneth-clarke>.
- 188 Peters, B. G. (1998). Managing horizontal government: The politics of co-ordination. *Public Administration*, 76(2), 295–311.
- 189 Ministry of Defence Development, Concepts and Doctrine Centre. (2013). *Red teaming guide* (2nd ed.). Retrieved 28 June 2018 from <https://www.gov.uk/government/publications/a-guide-to-red-teaming>, p. 3.
- 190 Hornsey, M. J., Oppes, T., & Svensson, A. (2002). 'It's OK if we say it, but you can't': Responses to intergroup and intragroup criticism. *European Journal of Social Psychology*, 32, 293–307.
- 191 Hornsey, M. J., Trembath, M., & Gunthorpe, S. (2004). 'You can criticize because you care': Identity attachment, constructiveness, and the intergroup sensitivity effect. *European Journal of Social Psychology*, 34(5), 499–518.
- 192 Evidence for devil's advocates is mixed. See Greitemeyer, T., Schulz-Hardt, S., & Frey, D. (2009). The effects of authentic and contrived dissent on escalation of commitment in group decision making. *European Journal of Social Psychology*, 39, 639–647; Nemeth, C., Brown, K., & Rogers, J. (2001). Devil's advocate versus authentic dissent: Stimulating quantity and quality. *European Journal of Social Psychology*, 31(6), 707–720; Sunstein, C. R., & Hastie, R. (2015). *Wiser: Getting beyond groupthink to make groups smarter*. Boston, MA: Harvard Business Press, pp. 117–119.
- 193 BBC News. (2018, 11 May). Theresa May splits cabinet to consider customs options. Retrieved 28 June 2018 from <https://www.bbc.co.uk/news/education-44077847>.
- 194 Hallsworth, M. (2011). *System stewardship: The future of policy making?* (Working Paper). Institute for Government. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/sites/default/files/publications/System%20Stewardship.pdf>, p. 7.
- 195 Bazerman, M. H., & Moore, D. A. (2013). *Judgment in managerial decision making* (8th ed.). Chichester, UK: John Wiley; DeBondt, W. F., & Thaler, R. H. (1995). Financial decision-making in markets and firms: A behavioral perspective. *Handbooks in Operations Research and Management Science*, 9, 385–410; Kahneman, D. (2011). *Thinking fast and slow*. New York, NY: Allen Lane.
- 196 Moore, D. A., & Healy, P. J. (2008). The trouble with overconfidence. *Psychological Review*, 115(2), 502–517.
- 197 For example, Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *The Quarterly Journal of Economics*, 116(1), 261–292; Galasso, A., & Simcoe, T. S. (2011). CEO overconfidence and innovation. *Management Science*, 57(8), 1469–1484; Lin, S. W., & Bier, V. M. (2008). A study of expert overconfidence. *Reliability Engineering & System Safety*, 93(5), 711–721; Tetlock, P. (2005). *Expert political judgment: How good is it? How can we know?* Princeton, NJ: Princeton University Press.
- 198 Liu, X., Stoutenborough, J., & Vedlitz, A. (2017). Bureaucratic expertise, overconfidence, and policy choice. *Governance*, 30(4), 705–725.
- 199 Liu et al. give useful explanations about the link between experience and overconfidence: Liu, X., Stoutenborough, J., & Vedlitz, A. (2017). Bureaucratic expertise, overconfidence, and policy choice. *Governance*, 30(4), 705–725.
- 200 Women were much less likely to be overconfident than men.
- 201 Sheffer, L., & Loewen, P. (2017). Electoral confidence, overconfidence, and risky behavior: Evidence from a study with elected politicians. *Political Behavior*, doi:10.1007/s11109-017-9438-0.
- 202 National Audit Office. (2013). *Over-optimism in government projects*. Retrieved 28 June 2018 from <https://www.nao.org.uk/wp-content/uploads/2013/12/10320-001-Over-optimism-in-government-projects.pdf>, p. 1.
- 203 Flyvbjerg, B., Holm, M. S., & Buhl, S. (2002). Underestimating costs in public works projects: Error or lie? *Journal of the American Planning Association*, 68(3), 279–295. See also Flyvbjerg, B. (2005). *Policy and planning for large infrastructure projects: Problems, causes, cures* (Vol. 3781). Washington, DC: World Bank; MacDonald, M. (2002). *Review of large public procurement in the UK*. London, UK: HM Treasury.
- 204 Radzevick, J. R., & Moore, D. A. (2011). Competing to be certain (but wrong): Market dynamics and excessive confidence in judgment. *Management Science*, 57(1), 93–106.
- 205 Guerin, B., McCrae, J., & Shephard, M. (2018). *Accountability in modern government: What are the issues?* London, UK: Institute for Government.
- 206 Alicke, M. D., & Sedikides, C. (2010). *Self-enhancement and self-protection: Historical overview and conceptual framework*. New York: Guilford Press, pp. 1–22.
- 207 Engel, C. (2010). The behaviour of corporate actors: How

- much can we learn from the experimental literature? *Journal of Institutional Economics*, 6(4), 445-475; Jones, E. E., & Harris, V. A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology*, 3(1), 1-24.
- 208 Buehler, R., Messervey, D., & Griffin, D. (2005). Collaborative planning and prediction: Does group discussion affect optimistic biases in time estimation? *Organizational Behavior and Human Decision Processes*, 97(1), 47-63. Retrieved 28 June 2018 from <https://www.sciencedirect.com/science/article/pii/S0749597805000348>.
- 209 Heath, C., & Gonzalez, R. (1995). Interaction with others increases decision confidence but not decision quality: Evidence against information collection views of interactive decision making. *Organizational Behavior and Human Decision Processes*, 61(3), 305-326.
- 210 Buehler, R., Messervey, D., & Griffin, D. (2005). Collaborative planning and prediction: Does group discussion affect optimistic biases in time estimation? *Organizational Behavior and Human Decision Processes*, 97(1), 47-63.
- 211 Bénabou, R. (2012). Groupthink: Collective delusions in organizations and markets. *Review of Economic Studies*, 82(3), 429-462.
- 212 This is different from confirmation bias because it concerns the way that people find information more credible because it pleases them - even if it does not accord with their pre-existing beliefs. Sunstein, C. R., Bobadilla-Suarez, S., Lazzaro, S. C., & Sharot, T. (2016). How people update beliefs about climate change: Good news and bad news. *Cornell Law Review*, 102, 1431-1443; Tappin, B. M., Van der Leer, L., & McKay, R. T. (2017). The heart trumps the head: Desirability bias in political belief revision. *Journal of Experimental Psychology: General*, 146(8), 1143-1149.
- 213 Atkins, G., Davies, N., & Bishop, T. K. (2017). *How to value infrastructure: Improving cost benefit analysis*. Institute for Government. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/sites/default/files/publications/IfG%20Report%20CBA%20infrastructure%20web%20final1.pdf>; Buehler, R., Griffin, D., & Ross, M. (1994). Exploring the 'planning fallacy': Why people underestimate their task completion times. *Journal of Personality and Social Psychology*, 67(3), 366-381; Flyvbjerg, B. (2013). Quality control and due diligence in project management: Getting decisions right by taking the outside view. *International Journal of Project Management*, 31(5), 760-774; Kahneman, D., & Lovallo, D. (1993). Timid choices and bold forecasts: A cognitive perspective on risk taking. *Management Science*, 39(1), 17-31.
- 214 Kappes, A., & Sharot, T. (2018). The automatic nature of motivated belief updating. *Behavioural Public Policy*, doi:10.1017/bpp.2017.11; Mijovi-Prelec, D., & Prelec, D. (2010). Self-deception as self-signalling: A model and experimental evidence. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1538), 227-240; Mobius, M. M., Niederle, M., Niehaus, P., & Rosenblat, T. S. (2011). *Managing self-confidence: Theory and experimental evidence* (Working Paper No. 17014). National Bureau of Economic Research. Retrieved 28 June 2018 from <http://www.nber.org/papers/w17014>.
- 215 Eil, D., & Rao, J. M. (2011). The good news-bad news effect: Asymmetric processing of objective information about yourself. *American Economic Journal: Microeconomics*, 3(2), 114-138.
- 216 HM Treasury. (2018). *The green book: Central government guidance on appraisal and evaluation*. Retrieved 28 June 2018 from <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>.
- 217 Atkins, G., Davies, N., & Bishop, T. K. (2017). *How to value infrastructure: Improving cost benefit analysis*. Institute for Government. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/sites/default/files/publications/IfG%20Report%20CBA%20infrastructure%20web%20final1.pdf>.
- 218 Klein, G. (2007). Performing a project premortem. *Harvard Business Review*, 85(9), 18-19; Mills, J. K., & McKimm, J. (2017). Pre-empting project failure by using a pre-mortem. *British Journal of Hospital Medicine*, 78(10), 584-585.
- 219 Peabody, M. J. (2017). *Improving planning: Quantitative evaluation of the premortem technique in field and laboratory settings* (Unpublished doctoral dissertation). Michigan Technological University, Houghton, MI.
- 220 Herzog, S. M., & Hertwig, R. (2009). The wisdom of many in one mind: Improving individual judgments with dialectical bootstrapping. *Psychological Science*, 20(2), 231-237.
- 221 Presson, P., & Benassi, V. (1996). Illusion of control: A meta-analytic review. *Journal of Social Behavior & Personality*, 11(3), 493-510; Stefan, S., & David, D. (2013). Recent developments in the experimental investigation of the illusion of control: A meta-analytic review. *Journal of Applied Social Psychology*, 43, 377-386. Illusions of control are driven by the common and important desire to perceive that we have control over our own lives, and by the fact that we get greater satisfaction from outcomes that arise from our own behaviour. See Heider, F. (1958). *The psychology of interpersonal relations*. New York, NY: John Wiley; Leotti, L. A., & Delgado, M. R. (2011). The inherent reward of choice. *Psychological Science*, 22(10), 1310-1318; Norton, M. I., Mochon, D., & Ariely, D. (2012). The IKEA effect: When labor leads to love. *Journal of Consumer Psychology*, 22(3), 453-460; Taylor, S. E., & Brown, J. D. (1988). Illusion and well being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193-210.
- 222 Thompson, S. C., Armstrong, W., & Thomas, C. (1998). Illusions of control, underestimations, and accuracy. *Psychological Bulletin*, 123(2), 143-161; Thompson, S. C., Kyle, D., Osgood, A., Quist, R. M., Phillips, D. J., & McClure, M. (2004). Illusory control and motives for control: The role of connection and intentionality. *Motivation and Emotion*, 28(4), 315-330.
- 223 It is worth noting, however, that this could also be an example of the 'endowment effect': Langer, E. J. (1975). The illusion of control. *Journal of Personality and Social Psychology*, 32(2), 311-328.
- 224 Friedland, N., Keinan, G., & Regev, Y. (1992). Controlling the uncontrollable: Effects of stress on illusory perceptions of controllability. *Journal of Personality and Social Psychology*, 63(6), 923-931.
- 225 Thompson, S. C., Nierman, A., Schlehofer, M. M., Carter, E., Bovin, M. J., Wurzman, L., ... Jackson, A. (2007). How do we judge personal control? Unconfounding contingency and reinforcement in control judgments. *Basic and Applied Social Psychology*, 29(1), 75-84.
- 226 Brandimarte, L., Acquisti, A., & Loewenstein, G. (2013). Misplaced confidences: Privacy and the control paradox. *Social Psychological and Personality Science*, 4(3), 340-347; Slovic, P. (1987). Perception of risk. *Science*, 236(4799), 280-285.
- 227 Fenton O'Creevy, M., Nicholson, N., Soane, E., & Willman, P. (2003). Trading on illusions: Unrealistic perceptions of control and trading performance. *Journal of Occupational and Organizational Psychology*, 76(1), 53-68.
- 228 Fast, N. J., Gruenfeld, D. H., Sivanathan, N., & Galinsky, A. D. (2009). Illusory control: A generative force behind power's far-reaching effects. *Psychological Science*, 20(4), 502-508; Friedland, N., Keinan, G., & Regev, Y. (1992). Controlling the uncontrollable: Effects of stress on illusory perceptions of controllability. *Journal of Personality and Social Psychology*, 63(6), 923-931. Note that the findings from Fast et al.'s study have been questioned.
- 229 Hallsworth, M. (2011). *System stewardship: The future of policy making?* (Working Paper). Institute for Government. Retrieved 28 June 2018 from <https://www.instituteforgovernment.org.uk/sites/default/files/publications/System%20Stewardship.pdf>.
- 230 For more on the psychology of how humans try to manage complex systems, see Dörner, D. (1997). *The logic of failure: Recognising and avoiding error in complex situations*. New York, NY: Basic Books.
- 231 Halpern, D. (2015). *Inside the Nudge Unit*. London: W. H. Allen.
- 232 Pronin, E., Gilovich, T., & Ross, L. (2004). Objectivity in the eye of the beholder: Divergent perceptions of bias in self versus others. *Psychological Review*, 111(3), 781-799; Pronin, E., Lin, D. Y., & Ross, L. (2002). The bias blind spot: Perceptions of bias in self versus others. *Personality and Social Psychology Bulletin*, 28(3), 369-381; West, R. F., Meserve, R. J., &

- Stanovich, K. E. (2012). Cognitive sophistication does not attenuate the bias blind spot. *Journal of Personality and Social Psychology, 103*(3), 506-519.
- 233 Pronin, E., & Schmidt, K. (2013). Claims and denials of bias and their implications for policy. In E. Shafir (Ed.), *The behavioral foundations of public policy* (pp. 195-216). Princeton, NJ: Princeton University Press.
- 234 Uhlmann, E. L., & Cohen, G. L. (2007). 'I think it, therefore it's true': Effects of self-perceived objectivity on hiring discrimination. *Organizational Behavior and Human Decision Processes, 104*(2), 207-223.
- 235 Dobbin, F., & Kalev, A. (2016). Why diversity programs fail. *Harvard Business Review*, July-August. Retrieved 28 June 2018 from <https://hbr.org/2016/07/why-diversity-programs-fail>; Forscher, P., Lai, C., Axt, J., Ebersole, C. R., Herman, M., Devine, P. G., & Nosek, B. A. (2016). *A meta-analysis of procedures to change implicit measures* (Project). Washington University in St. Louis. Retrieved 28 June 2018 from <https://osf.io/awz2p>; Kalinoski, Z. T., Steele Johnson, D., Peyton, E. J., Leas, K. A., Steinke, J., & Bowling, N. A. (2013). A meta analytic evaluation of diversity training outcomes. *Journal of Organizational Behavior, 34*(8), 1076-1104.
- 236 Larrick, R. P. (2004). Debiasing. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgment and decision making* (pp. 316-337). Malden, MA: Blackwell.
- 237 Morewedge, C. K., Yoon, H., Scopelliti, I., Symborski, C. W., Korris, J. H., & Kassam, K. S. (2015). Debiasing decisions: Improved decision making with a single training intervention. *Policy Insights from the Behavioral and Brain Sciences, 2*(1), 129-140.
- 238 Chang, W., Chen, E., Mellers, B., & Tetlock, P. (2016). Developing expert political judgment: The impact of training and practice on judgmental accuracy in geopolitical forecasting tournaments. *Judgment and Decision Making, 11*(5), 509-526.

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