

Supporting ministerial decision making



Brunel
University
London



University
of Essex

Lancaster
University



UNIVERSITY
of York



Open Innovation Team

About us

HM Government's Open Innovation Team (OIT) works with academics to generate analysis and ideas for policy.

We are sponsored by four universities — Brunel, Essex, Lancaster, and York — but we work with academics from all UK universities and institutions overseas.

This slide pack

As part of a broader programme of work on ministerial decision making, the Policy Profession Unit (PPU) asked OIT to review academic thinking on the topic and identify factors which affect the quality of decisions, as well as potential problem areas and solutions for government.

This pack combines insights from 45 expert interviews with those from grey literature and selected academic articles. Decision making is a broad topic, so each slide summarises the most relevant points from the interviews and reading, but the pack does not assess all possible evidence. The pack gives an overview to prompt questions or ideas for more detailed exploration in future PPU work on specific aspects of decision making.

Most studies of decision-making techniques are conducted on students or in the private sector – their applicability to government is unclear. So this pack also draws on practical insights from politics and policy experts.

Where academics have proposed solutions, further work would be needed to develop and assess the evidence base in a policy context. It is likely that some suggestions are already happening in government – primary research could establish this.

This pack covers:

1. Constraints
2. Structure and approach
3. Gathering and presenting evidence
4. Deliberation
5. Learning and improving

Summary

- > **Understand how ministerial decisions are made at the moment. Experiment with new approaches, evaluate their impact and adapt as appropriate.** Academia provides relevant ideas and evidence, but few techniques have been tested in government. Teams could conduct their own research or partner with academics to test approaches to the following advice.
- > **Focus on improving decision-making processes to improve outcomes in aggregate**, as government has less control over individual outcomes. Use training and incentives to support people to follow new processes.
- > **Dedicate time to identifying the right question, criteria and approach for each ministerial decision.** Reassess when circumstances change.
- > **Explicitly acknowledge complexities and limitations of the evidence base**, such as gaps, uncertainties and risks. Otherwise advice can be misleadingly confident. Build further knowledge of how the presentation of evidence affects what people take away from it.
- > **Present distinct and equally well-developed options**, including ones which challenge assumptions.
- > **Develop checklists to detect likely biases and suggest steps to mitigate their effects.** Use group decision making to mitigate individual biases, such as overconfidence. Structure deliberation to mitigate against the biases that can arise in groups, such as authority bias.
- > **Take steps to reduce the cognitive load of ministers**, so they are able to engage critically with the most important decisions. Consider a small increase in the number of ministerial support staff, or changes to their role. Test whether specific heuristics can speed up some ministerial decisions without compromising performance.
- > **Document and regularly reflect on decision making.** Without a record, hindsight bias may distort reflection. Use storytelling and onboarding processes to build dynamic institutional memory, so lessons are not forgotten.

We interviewed experts from a range of disciplines

Anthropology

Emma Crewe ♦
SOAS

Rod Rhodes ♦
University of Southampton

Behavioural sciences

Gerd Gigerenzer
University of Potsdam

Konstantinos Katsikopoulos
University of Southampton

Richard Kwiatkowski
Cranfield University

Sunita Sah
Cornell University

Michael Sanders ♦
King's College London

Miroslav Sirota
University of Essex

Data

Helen Kennedy
University of Sheffield

Nektarios Oraiopoulos
University of Cambridge

Cağatay Turkyay
University of Cambridge

Decision sciences

Igor Linkov
Carnegie Mellon University

Julia Minson
Harvard Kennedy School

Johannes Siebert ♦
Management Centre Innsbruck

Detlof von Winterfeldt ♦
University of Southern California

Economics

Stefan Dercon ♦
University of Oxford

Mike Felgenhauer
Brunel University

Pedro Rey Biel ♦
ESADE

History

Catherine Haddon ♦
Institute for Government

Michael Weatherburn ♦
Data Science Institute

Alec Steel ♦
NAO

Law

Dan Simon
University of Southern California

Cass R Sunstein ♦
Harvard Law School

Management

Ian Elliott ♦
Northumbria University

Jane Hendy
Brunel University

Marie Juanchich
University of Essex

Jonathan Rosenhead ♦
London School of Economics

Gaëlle Vallée-Tourangeau
Kingston University

George Wright ♦♦
University of Strathclyde

Natural sciences

Heather Douglas
Michigan State University

Kara Morgan ♦
Ohio State University

Nibedita Mukherjee
Brunel University

Roger Pielke Jr. ♦
University of Colorado

Politics & policy

Paul Cairney ♦
University of Stirling

Jonathan Craft ♦♦
University of Toronto

Claire Craig ♦
University of Oxford

Ivor Crewe ♦
University of Oxford

Dennis Grube ♦♦
University of Cambridge

Andrew Kakabadse ♦
Henley Business School

Nada Kakabadse ♦
Henley Business School

Joshua Newman
Monash University

Graham Room
University of Bath

Alastair Stark ♦♦
University of Queensland

Dave Richards ♦
University of Manchester

Martin Smith ♦
University of York

- ♦ UK government experience
- ♦ International government experience

Experience = previous government employment or primary research

Please note, academics working on decision making often work beyond the disciplinary boundaries as set out here.



Constraints

Ministerial decisions are complex and have to be made under limitations

Complexity

- > **Multiple conflicting objectives:** Ministers have to weigh up the trade-offs between their objectives. This is complicated further by the competing priorities of the citizens they represent.
- > **Uncertainty:** Policy decisions are often about situations which are in a state of flux. A minister has to choose without knowing all the options or the likelihood of the consequences of each option.
- > **Interdependence:** The consequences of a minister's decision are also affected by other decisions that minister will take, as well as those of other ministers and actors outside of government. This partly drives the uncertainty.

Limitations

- > **Evidence:** Decisions must be made, even when evidence is poor quality, conflicting or unavailable. And the evidence is often difficult to interpret quickly or without specialist skills.
- > **Cognitive capacity:** Humans have a limited ability to process large amounts of information. Mental shortcuts, known as 'heuristics', allow judgements to be made efficiently. But they sometimes cause cognitive biases, which are systematic errors in judgement.
- > **Time and resources:** The ministerial decision process cannot deploy unlimited time, money or people. Decisions can only be as structured, informed or reasoned as is possible with the time and resources available.

It is not straightforward to assess how good a ministerial decision is

- > It is hard to define a *good* ministerial decision in terms of its outcomes (i.e. the ultimate consequences of acting on the decision). The definition would depend on each individual minister's objectives, which can be wide ranging (see box), conflicting, and are underpinned by personal values.
- > It is more useful to think about a *successful* decision: one which takes the decision maker closer to their objectives.
- > But ministers' decisions rarely have a static outcome – the situation continues to evolve after a decision has been acted upon. So there may be no clear point at which one can assess whether the decision took the minister closer to their objectives.
- > Combine this with the multiple conflicting objectives and interdependencies, and it is not straightforward to assess the successfulness of a ministerial decision either. But the quality of the decision-making process can be assessed (see [slide 9](#)).

Potential objectives of a minister

- > **Individual policy:** social impact, economic impact, equality impacts, duration of impact, efficiency or value for money, deliverability, stakeholder approval.
- > **Government:** efficient allocation of resources, compliance with the law, impact on public trust in government, impact on other government priorities e.g. 'levelling up'.
- > **Personal and political:** reflection of personal values, realisation of political principles, creation of political or tactical advantage (personal, departmental, factional or party).

Ministers have to consider political objectives alongside policy objectives

- > The dominant accountability system in Westminster is elections, so politics will be front of mind for ministers. Since political objectives are not always explicit, decisions which are rational for ministers may not appear so to officials. For example:
 - **Short-termism**: short electoral cycles, spending periods and tenure can motivate ministers to put their name to policies which are likely to have immediate impact. This can take focus away from solving complex or long-term problems.
 - **Unwillingness to change course**: if a minister changes their mind, the media often portray this as a 'u-turn' or political failure. This dissuades flexible decision making and adaptation when new information prompts re-evaluation.
 - **Defensive decision making**: cultures of blame amongst the media, the electorate and Westminster risk encouraging ministers to choose the most easily defensible option rather than the best one. Radical and long-term solutions may then be considered unviable, even when there is strong supporting evidence.



“Ministers’ jobs are to make decisions in a way that will help their party stay in power – that’s democracy. We can’t change that, but we can improve policy outcomes by improving the advice that informs those decisions.”

JOSHUA NEWMAN
ASSOC PROF. OF POLITICS AND PUBLIC POLICY
MONASH UNIVERSITY

Government should focus on following good decision-making processes to improve outcomes



“Decision quality and decision outcome are different. You should assess a decision not by its outcome but by the process it employed.”

JOHANNES SIEBERT
PROFESSOR OF DECISION MAKING
MANAGEMENT CENTER INNSBRUCK

- > A good decision-making process can result in a bad outcome, as some factors cannot be foreseen or controlled. If one were to judge the quality of that decision by its outcome alone, they might wrongly conclude that the process should be changed.
- > It is more useful to focus on following the best decision-making process possible, given the time available and any other constraints. Better processes should then lead to better outcomes, on average, so the outcomes of multiple decisions could be considered together.
- > Sections 2-4 of this report explore what the elements of a quality process might look like in government, focusing on: problem structuring, gathering and presenting evidence, and deliberation.
- > These elements can be presented as part of a ‘policy cycle’, but they are not linear. They can be done by different people, in different orders, and may need to be revisited multiple times as the situation changes.
- > Teams should pay attention to each element, because if one is weak it will hold back the overall quality of the decision. When designing process improvements, it is best to target the weakest element first.

Structure and approach



Structuring the problem can avoid wasting time on the wrong question



“Before the work really begins, it’s important to have a clear statement of the decision that needs to be made, which everyone accepts. Having that as an anchor for the rest of the work might seem like a very simple thing, but it’s rarely done.”

KARA MORGAN
DECISION SCIENCES COLLABORATIVE MEMBER
OHIO STATE UNIVERSITY

- > A problem situation, such as rising energy prices, needs to be structured to determine the ‘decision problem’ (i.e. the decision the minister is being asked to make).
- > Problem structuring approaches can be used to define: the nature of a problem, the decision problem and related questions to be answered, the variables at play, the criteria against which options will be assessed, and the intended outcomes. They help groups explore different views and reach mutual understanding. Problem structuring is a competence which can be improved with training.
- > There can be pressure to rush problem structuring in government. But even when a decision is urgent, policy advisors, private secretaries and special advisers could structure the problem in a brief discussion before advising the minister.
- > Structuring may be rushed or skipped entirely because some people don’t see it as ‘real work’. Seniors could signal its value by role modelling its use, embedding it within team approaches and praising those who use it well.



The strategic choice approach showcases one method of problem structuring

The **Strategic Choice Approach (SCA)** is designed to help structure decisions about complex problems. It is useful when there are divergent stakeholder views and significant uncertainties or interdependencies.

In SCA, a representative group of stakeholders is brought together in a workshop to develop a clearer shared understanding of the problem. This could include the minister, if time allows, or bring other stakeholders together to shape advice.

There are four stages: shaping, designing, comparing and choosing. The first stage, shaping, has three steps:

1

Identify areas for choice

Participants discuss the nature of the problem and identify different areas where choices could be made.

2

Discuss priorities

Participants deliberate the urgency, importance and interconnectedness of the possible areas for choice.

3

Establish problem focus

The areas determined to be most urgent, important, and interconnected are established as the “problem focus” (or decision problem) — the choices that participants will aim to reach decisions on.

Specifying the decision criteria and underlying values helps find solutions



“If you act as if a decision is not values based, you might think you’ve fixed the problem when, if the solution conflicts with other values, you have actually created new problems.”

KARA MORGAN
DECISION SCIENCES COLLABORATIVE MEMBER
OHIO STATE UNIVERSITY

- > Before developing options, consider the values of the minister as well as their consideration of stakeholders' values. These underpin their objectives (see [slide 7](#)), which in turn underpin the criteria against which options will be assessed, e.g. cost effectiveness or deliverability. Explicitly discussing the role of values and encouraging dissensus helps surface underlying assumptions or hidden objectives. This can lead to more productive evidence gathering, better option development and evaluation, and improved deliberation.
- > Given the multiple conflicting objectives, officials should think about how the minister and different stakeholders would weight the criteria and handle trade-offs. Or they could ask them directly.
 - o For high-stakes, non-urgent decisions, consider structured methods like multi-criteria decision analysis, which is explained in supplementary guidance to the Green Book ([available here](#)).
 - o Where time is limited, simpler approaches or heuristics may be more suitable. For example, in 'one reason decision making', the most important criteria is used to determine between choices. This leads to decisions that are quick and 'good enough', but not necessarily optimal. Heuristics are explained and explored on [slide 29](#).

The question, options and criteria should be reassessed if circumstances change

- > The problem structure should be reassessed when new information comes to light or circumstances change. It is hard to do this when one is in the middle of progressing work under an existing problem structure, so it can be helpful to plan periodic challenge from people who have not been involved in the work.
- > Officials may feel locked into the structure given to them by a minister, Treasury officials or other colleagues. Seniors could support junior officials to clarify what ministers really want them to achieve, recognising that ministers' 'steers' may sound more definitive than they are. Where there are good reasons for giving advice that does not match a minister's original question, these reasons should be given in the advice itself.
- > It's harder to change a problem structure if it has become entrenched in the minds of the public by the media or by previous government decisions. A change may look like a u-turn or a failure in the eyes of those outside the decision making process. Advisors should pay extra attention to a communications and handling strategy to mitigate this.



“Even if a minister gives you a clear question, it may be important to create space for them to redefine the question by asking what they really want to achieve, or making sure that some of your answers go further than what was initially asked.”

CLAIRE CRAIG
FORMER DIRECTOR, GOVT OFFICE FOR SCIENCE
UNIVERSITY OF OXFORD

The best approach to advice and decision making depends on the nature of the problem



“Do not only come up with a list of decision making methods – make sure people understand them and why they are appropriate in different contexts.”

JOHANNES SIEBERT
PROFESSOR OF DECISION MAKING
MANAGEMENT CENTER INNSBRUCK

- > All approaches to decision making involve intuition and analysis, but the amount of each can be adjusted. The appropriateness of an approach depends on the problem and the situation. For example:
 - **Stakes:** Investment in rigorous analysis and governance to improve judgements is more likely to be worthwhile when stakes are high. But there is a tradeoff with the agility of decision making.
 - **Time and resources:** Intuitive decision making is faster. But its quality depends on the decision maker's expertise. To do this well, one must make similar decisions repeatedly and receive feedback.
 - **Uncertainty:** Using heuristics to limit the amount of information under consideration may be more appropriate when evidence is limited or the situation is liable to change (see [slide 29](#)).
 - **Audience:** The approach can be adapted to mitigate the cognitive biases of those involved (see [slide 30](#)), for example by planning stages at which external people will provide challenge (see [slide 33](#)).

- > Officials could build more understanding of which methods are effective in different policy contexts. It could trial a unit that advises teams on selecting the right approach and carrying out complex approaches.

The approach to a decision should also consider an individual minister's preferences

- > Approaches to decision making need to work for the minister as the ultimate decision maker. Otherwise, they may not engage well with advice. And if a minister does not support a way of working, others may follow their example and disengage too.
- > But tailoring to a minister's personal style should not take the approach too far away from what would otherwise be best practice.
- > Permanent Secretaries are well practiced in adapting to how a minister likes to work, but this is done informally and can take some time. Coaching and facilitation by a third party of sufficient experience could help establish a clear working relationship here, ideally within the first three months in post.
- > Special advisers can also help officials understand the mindset of the minister and adapt their approach accordingly. But many special advisers focus too much on the minister's perspective to effectively bridge the gap with officials. Government could better recognise the potential of special advisers to champion improved decision making processes and support them with training where appropriate.



“Mandating certain structures may cause ministers to simply find new ways to work around them by having the ‘real’ discussions elsewhere.”

DENNIS GRUBE
PROFESSOR OF POLITICS AND PUBLIC POLICY
UNIVERSITY OF CAMBRIDGE

Gathering and presenting evidence



Policy decisions should be informed by multiple sources of evidence



Diverse disciplines

Policymakers tend to associate 'evidence' with science, economics or law, sidelining other disciplines like anthropology. It is rare that one piece of evidence alone answers a policy question, so ministers need synthesis across disciplines. For example, public health responses to controlling an Ebola outbreak in West Africa failed until they factored in anthropological evidence on burial rites.

Officials with the right skills could proactively synthesise evidence on policy issues, but this risks inefficiency if some syntheses are never used.



Users

Advisors are rarely diverse enough to reflect the citizens for whom they make policy. They know it is important to understand users' values and how they respond to change, but time limitations mean this can become a tick box exercise. **Policy teams could establish a routine flow of information from users to test their ideas, e.g. in regular meetings with committees of stakeholder representatives.**



Practitioners

The UK government is highly centralised and siloed, separating policy officials from practitioners, who are a vital source of evidence. Understanding the requirements for successful design and implementation early on reduces the risk of a costly 'u-turn' later. **Departments could consult practitioners directly. It may also help to bring policy and delivery teams together more, or increase policy advisors' experience of delivery.**

“It is important to recognise the difference between evidence and a ‘body of evidence’. One piece of research usually cannot assess all angles, it happens in a particular time and context. You risk thinking you’re being evidence informed, when actually it is a handful of papers driving the decision.”

STEFAN DERCON

PROFESSOR OF ECONOMIC POLICY
UNIVERSITY OF OXFORD

There are some well-known factors affecting how well evidence is used in government

Skills

Many officials and ministers lack the skills to interpret evidence, especially statistical concepts such as probabilities.

Ministers and officials could benefit from more and better training in interpreting evidence. Officials could also be trained in carrying out basic research and presenting evidence (see slides [21-22](#)).

Time & incentives

Policy advisors argue that they lack the time to rigorously analyse evidence or even to fill in forms to access academic papers behind paywalls. Alternatively, they might not be sufficiently incentivised to spend their time on this.

New incentives, such as feedback based on audits of the use of evidence in advice, could increase the focus on analysis.

Silos

Policy problems often cut across teams or departments, but relevant evidence can sit in silos. There are practical challenges to sharing, such as incompatible IT systems. Or teams may hold back due to conflicting objectives and funding processes which pit teams against each other.

Cross-government objectives and funding can incentivise working across silos. Aligning data platforms supports data sharing.

Policy-analyst divide

Analysts are often only involved in policy in limited ways. They may not have enough capacity, or policy colleagues may undervalue their contributions at particular stages of policy development.

Analysts could have a more integrated working relationship with policy advisors in multi-disciplinary teams, instead of serving discrete policy requests – though there are trade-offs with the efficiency of a central analytical team.

Advice should help a minister understand the complexities and limitations of the evidence

- > Ministerial decisions can rarely wait for conclusive evidence. Instead, advisors should help ministers understand how rigorous, applicable, diverse, contested or uncertain the evidence base is. For example, advice should acknowledge when important information is unavailable.
- > This is especially important when advice presents modelling outputs, because they can give the false impression of being certain and objective. It is worth involving analysts to ensure limitations are well explained.
- > Advisors could be tempted to hide limitations or complexities, since clear and confident arguments may make them appear more competent, or this nuance may be filtered out in order to provide advice a minister can absorb quickly. But if the nuance could change the choice a minister makes, it should be included – otherwise the advice is misleading.
- > Officials could be rewarded for being open about limitations, to override incentives to simplify. For example, this could be included in criteria for appraisals or awards. Or rules could be added which mandate assessment of the quality of evidence, allowing this to lengthen advice if necessary.



“Information is diluted as you move up the chain of decision making, for understandable reasons of limited time. But the lost nuances may be a big compromise for the gains in efficiency.”

CAGATAY TURKAY
ASSOC PROF. OF VISUAL DATA SCIENCE
UNIVERSITY OF OXFORD

Small changes to the presentation of evidence affect what the reader thinks it means

Framing

The framing of an issue changes how the reader perceives it. E.g. writing *'it's unlikely that...'* suggests the decision maker does not need to do anything about it, whereas *'there's a chance that...'* is more neutral. This also affects advisors' interpretation of evidence: DfID and World Bank officials were 45% more likely to select a risky treatment policy option if the issue was framed as a loss (*people who will die*) as opposed to a gain (*lives saved*) (research [available here](#)).

Expressing probabilities

People can misunderstand the class of events to which ratios or percentages refer. For example, if one is told that patients on a new medication have a *'30% chance of migraines'*, they may think patients will have migraines 30% of the time. It is clearer to use natural frequencies and say *'3 in 10 people on this medication will develop migraines'*.

Examples and narrative

Examples and stories are effective at demonstrating abstract or complex ideas in a short time, which is useful for busy ministers. But care must be taken to ensure that examples are consistent with the bulk of the available evidence, otherwise the reader may be misled by focusing too much on a specific unrepresentative example.

Interactive data visualisation

Interactivity, such as a sliding graph, helps decision makers engage with data in a short space of time. With the help of analysts, interactive data visualisation can explore alternatives and scenarios, surface uncertainties, and tailor presentation to show what one wants to learn about. But this interactivity also allows a decision maker to adjust visualisation so it supports their prior beliefs or values.

The person presenting the advice also influences how it is incorporated into a decision



"[Academic] advisors have to be sufficiently senior in the civil service and entrusted with the authority that hierarchy brings."

STEFAN DERCON
PROFESSOR OF ECONOMIC POLICY
UNIVERSITY OF OXFORD

- > Role and performance style affects how seriously advice is taken. For example, ministers tend to be more influenced by professionals like lawyers who speak with confidence. Whereas when advice or insight comes directly from a service user with lived experience, less confident delivery can make a minister more likely to take the points on board.
- > More specifically, under the current culture, ministers are most likely to listen to academic input when academic advisors are appointed into senior roles in government. This provides them with sufficient status to challenge senior officials and ministers. They are also likely to be more effective when they aren't given wider responsibilities such as managing a team.
- > In the longer term, ministers should be encouraged to consider advice from whoever is best placed to give it, regardless of seniority or style. But for now, when choreographing the delivery of advice, officials should balance this with the reality that ministers are most likely to engage with evidence when it is presented by a confident senior figure.

4

Deliberation

It's best to deliberate on a wide range of options that are equally well thought out



“Consider alternatives that you don’t really want to act on, because they help you to reflect on the alternatives that you do want to contemplate.”

DETLOF VON WINTERFELDT
PROFESSOR OF PUBLIC POLICY
UNIVERSITY OF SOUTHERN CALIFORNIA

- > Ministers are often presented with options that are unequally developed or too similar to each other. This is particularly common when a minister or policy team already has a preconceived idea about the way forwards.
- > Weighing up equally well developed options avoids the risk that one option appears stronger just because it is better developed. This risk is exacerbated by the mind’s unconscious tendency to misrepresent complex decisions as easy choices between a compelling solution and a weak alternative.
- > Deliberating on options that reflect a range of stakeholder values is useful, even if the minister is unlikely to choose some of them. It shows the minister how their own values are situated within the range of those found in society. This can challenge their assumptions or help them think more clearly about an option they do wish to take forwards. It’s similar to the rationale for including the ‘do nothing’ base case, with which officials will be more familiar.
- > If ministers do not understand why they are being presented with options they would never choose, then officials won’t do this, for fear of looking incompetent. Ministers would need to be bought in to this way of being advised.

“Experts are generally not particularly representative of their societies. This means that if they come up with only one or two ‘best’ options, the whole decision making process runs a very real risk of not being viewed as legitimate by the population. One role of a good advisor is to provide a variety of options that accurately reflect the range of values found in society.”

ROGER PIELKE JR
PROFESSOR OF ENVIRONMENTAL POLICY
UNIVERSITY OF COLORADO, BOULDER

Decision makers engage less critically with advice when they are stressed and distracted



“Decision making quality is undermined by the lack of time ministers can devote to decision making and the comparatively smaller capacity of British private offices.”

JONATHAN CRAFT
ASSOC PROF. OF POLITICAL SCIENCE
UNIVERSITY OF TORONTO

- > Ministers must juggle an increasingly large number of decisions. This is partly driven by an increasingly centralised government in which fewer policy decisions are taken at local level. It's also driven by accountability structures which hold ministers ultimately responsible for departmental decisions, making them reluctant to delegate decisions to others.
- > This means ministers often have to deliberate on decisions under high cognitive load. When stressed and low on energy or time, decision makers have less willpower and can become distracted. They are more likely to follow advice without providing enough challenge, and less likely to adjust their actions to new information.
- > They are also at risk of asking advisors to help take decisions, which can blur accountability. During the BSE crisis in the late 1990s, for example, it was found that departments often asked experts to assist with policy decisions that should have been reserved for government.

More private office staff and special advisers could help reduce ministers' cognitive load

- > Support staff for ministers can help prioritise decision making tasks, run processes more efficiently and provide additional capacity.
- > But UK private offices (POs) are atypically small compared with other Westminster style governments like New Zealand, Australia or Canada. And the UK's small number of special advisers is even more of an outlier.
- > Increasing the number of ministerial support staff can protect ministers against overload. It risks getting in the way of the minister's relationship with their department, but this is unlikely with only a small increase. Doubling the number of special advisers in a department would only add two more people.
- > Alternatively, support for ministers may also be impacted by the ability of their staff. This is likely impacted by high turnover – onboarding takes time, while skills and institutional memory are lost. Retention rates could be improved by tackling long working hours and, for special advisers, providing more training and management support.



“In other countries, private offices are often bigger, meaning decision makers have more time, more personal mental capacity and less stress.”

RICHARD KWIATKOWSKI
PROFESSOR OF ORGANISATIONAL PSYCHOLOGY
CRANFIELD UNIVERSITY

Heuristics reduce the cognitive load of decisions - government could explore how best to use them

- > Heuristics are mental shortcuts for complex decisions. They ignore part of the relevant information so the decision can be made more simply. Everyone relies on them, especially for decisions where time is short, information is costly to gather, or a few attributes of the problem strongly point towards an option.
- > Some psychologists see heuristics as an attempt to optimise a presumed trade-off between effort and performance: they are low effort but they can reduce performance, since they sometimes lead to cognitive biases (see box).
- > For others, heuristics can be more accurate than complex analytical methods. For example, in uncertain situations, complex methods can give highly variable results, some of which will be very far from the truth. Sometimes this variation will have a worse impact on performance than the bias from heuristics.
- > Heuristics and training can be designed for specific situations – ‘fast and frugal trees’ for infantry decisions of junior British Army officers were less mentally demanding but still as accurate as analytical methods (research [here](#)). Government could invest in research to understand the current use of heuristics and which heuristics work well for different types of policy decision, with a view to training ministers and advisors in effective approaches.



Example

Availability heuristic

One can assess the likelihood of an event by the ease with which relevant instances can be brought to mind.

This heuristic **can be effective** because instances of more likely events can usually be recalled faster than instances of less likely events.

But since availability is not only affected by likelihood, this **can lead to cognitive biases**. For example, more well known events tend to be judged more likely than they should be (retrievability bias), as are events that are easy to imagine (imaginability bias).



The cognitive biases of advisors and ministers can distort deliberation – checklists can mitigate this

An article by Kahneman et al. ([available here](#)) explains how a checklist can help detect the below biases and minimise their effects when reviewing important recommendations. This is best done by someone not involved in the formulation of advice.

Preliminary checks

> Self-Interested Biases

Review proposals with extra care for errors motivated by self-interest, especially overoptimism.

> The Affect Heuristic

Ensure enthusiasm from the team does not compromise quality control.

> Groupthink

Build teams that include diverse perspectives. Solicit dissenting views, discreetly if necessary. Ask whether there are dissenting opinions and if they are explored adequately.

Challenge

> Saliency Bias, Halo Effect

Ask for more analogies and rigorously assess their similarity to the current situation. Eliminate false inferences about the translation of success across contexts and request additional comparable examples.

> Confirmation Bias

Request additional options.

> Availability Bias

Use checklists to keep track of the data relevant to each kind of decision.

> Anchoring Bias

Re-anchor data with new benchmarks.

> Sunk-Cost Fallacy

Assess the proposal as if you were brand new to the post.

Evaluation

> Overconfidence, Planning Fallacy, Optimistic Biases, Competitor Neglect

Have the team build a case that takes an outside view. Use war games.

> Disaster Neglect

Have the team conduct a premortem: imagine that the worst has happened, and assess the possible causes.

> Loss Aversion

Realign incentives so that responsibility for negative outcomes is shared.

Group deliberation can mitigate individual biases, but this needs to be carefully managed



“Getting multiple independent opinions will, on average, make for a better decision than just acting on one piece of advice.”

SUNITA SAH
PROFESSOR OF BEHAVIOURAL ECONOMICS
CORNELL UNIVERSITY

- > Group deliberation can prioritise and refine options before advising the minister. It can also support the minister in the moment of the decision.
- > Groups can make more accurate and confident judgements than individuals by sharing information or ways of interpreting it and by monitoring one another for mistakes. Collaboration - and some forms of disagreement - can reduce individual overconfidence.
- > But groups introduce the risk of information cascades, where people base their opinion on the prior opinions of others and amplify any errors. The opinions of authority figures are more likely to have undue influence.
- > Deliberation amongst those with similar backgrounds or perspectives might miss key stakeholder insights, leading to erroneous consensus. Alternatively, deliberation amongst a group with different values can lead to endless debate, with the group eventually following the most senior person's opinion to break the deadlock.
- > The majoritarian traditions of Westminster systems of government, as well as governments' desire to project unity, increase the likelihood of groupthink. But deliberation could be structured to mitigate this.

Officials could experiment with formal methods for group deliberation to mitigate bias

	Method	Pros	Cons
Nominal Group Technique	Independently generate ideas. Discuss everyone's ideas in a group and then privately vote. Choose the option with the most votes.	Generates many ideas. Useful when some group members are more vocal than others. Balances power dynamic.	Requires experienced facilitator and planning. Can minimise discussion and full development of all ideas.
Delphi method	Anonymously develop ideas. Rank them in a group. Reflect on others' views and reposition own views. Reach a consensus through deliberation.	Establishes consensus. Anonymity mitigates the risk of authority bias. Allows for reflection and iteration.	Requires experienced facilitator and planning. Facilitator must watch for groupthink during open deliberation. Participants need to be subject experts.
IDEA Protocol	Investigate what the question means. Provide first estimates, discuss reasoning and evidence, then provide second and final estimates. Average final estimates.	Improves the quantitative judgements of experts. Allows for reflection and iteration.	Requires experienced facilitator and planning. Requires a diverse group of experts. Designed specifically for probabilistic or quantitative judgements.

Evidence base: The 'pros' of these methods have been established following extensive use by academics, across disciplines. However, their successful use in academic research does not guarantee these methods will always have the same positive effects for government policy decisions. Officials could experiment to find what is effective, consult with external experts, and adapt methods to make them suitable for government contexts.

Or government could try applying simpler versions of these principles to their meetings

- > Everyone could speak for a set amount of time, to reduce the influence of seniority. This also discourages groupthink by setting a precedent that a range of perspectives are welcomed.
- > Also, senior staff could delay their input so that juniors share their thoughts without concern that they are contradicting seniors.
- > Contrarian roles, like a 'Devil's advocate' or 'Red and Blue Teams', can be assigned to encourage teams to test assumptions, expand the range of options, and enhance the accuracy of group solutions.
- > Seniors could incentivise junior staff to challenge them by showing appreciation for it. This includes acknowledgement and thanks, as well as following through on ideas.
- > Inviting independent opinions from outside a team or organisation can also reduce the likelihood of reinforcing similar institutional perspectives. But even external people may be influenced by ministers' or officials' power and charisma. Getting their input away from those more powerful than them could help them feel freer of the consequences of giving their opinion so they can provide tough reflection and criticism.



“The bigger the potential mistake that could occur from a decision, the more important it is to involve challenge.”

JANE HENDY
PROFESSOR OF ORGANISATION STUDIES
BRUNEL UNIVERSITY

Learning and
improving



Learning lessons from past decisions requires systematic reflection and prioritisation

Reflect

Ministers tend to look forward, not reflecting on past decisions. And there are political incentives to claim that a decision was successful, even when it wasn't.

To aid reflection and reduce post-hoc rationalisation, Private Office (PO) could document decision rationales and outcomes, and make time to reflect on them. Ministers may be more likely to reflect if it is framed as 'collecting their wisdom' and is facilitated by former ministers or sympathetic academics.

There is also no institutionalised approach to policy teams' reflection. The NAO recommends that teams reflect on performance and lessons learned daily, weekly and monthly – this requires time and capability.

Identify and prioritise lessons

The point of reflection is to identify lessons and design improvements. But often, for example at the end of inquiries, too many changes are proposed. This overwhelms people, leading to them disengaging, especially over the longer term.

Teams should prioritise which lessons they will act on, as implementing changes from just one lesson is resource intensive. The trade-off between effort and impact should be considered here.

When identifying improvements, involve those who will be delivering them. They should be designed with a good awareness of the recipients to have the best chance of being implemented.

Focusing on explanatory accountability over blame helps, but may require greater transparency

- > Focussing on who is to blame for a bad decision can prejudice lesson learning. *'Explanatory accountability'* – interrogating processes to drive lesson learning and longer term improvements – is more beneficial here.
- > Greater transparency of policy development would enable external people, e.g. experts, to contribute to this interrogation. For example, advice could be published or scrutinised in parliamentary committees. This could even lead to errors being spotted and amended before they have impacted citizens.
- > On the other hand, keeping advice and deliberation private allows for frank discussion and challenge – ministers and officials are likely to value this more for contentious topics. However, the UK government is often private by default, so there could be more consideration of where greater transparency would be appropriate.
- > Another factor is whether the right people are being asked to explain past policy decisions. Although there may be practical challenges, government could consider ways of involving former ministers, as the outcomes of their decisions become apparent over time, as well as officials to explain the development of their policy advice.



“Explanatory accountability is the basis for a great deal of learning. Problems arise when this bleeds into blame, punishment, or sacrificial accountability.”

ALASTAIR STARK
PROFESSOR OF PUBLIC POLICY
UNIVERSITY OF QUEENSLAND

Archiving, storytelling and onboarding help drive longer term improvements



“We need to think of file storage more as an archive and less as a repository of files. It’s an ethical working practice, which improves the effectiveness of projects.”

MICHAEL WEATHERBURN
DATA SCIENCE INSTITUTE FELLOW
IMPERIAL COLLEGE LONDON

- > Currently, poor record keeping combined with the high turnover of ministers and officials leads to lessons from past decisions being forgotten.
- > Departments could use more formal onboarding and storytelling sessions when people leave or start a role, to build dynamic institutional memory. In this way, churn both prompts the sharing of better ways of working while letting go of past poor practice.
- > Record keeping needs to be viewed as building an accessible archive, not a repository. Lots of digital data is stored, but not in a way that allows for quick access. To encourage improved record keeping, it should be framed as an ethical obligation which is essential to longer term goals and entrusted to staff who have the skills and interest in this work. Further thought is needed on how these improved records should be used.
- > When used properly, dynamic archives become both a way of remembering how to support good decision making and a further source of evidence to feed into decision making. Information on historical decisions and lessons learned can also be a useful starting point for problem structuring and planning the approach, to avoid duplication or repetition of mistakes.

Research into how decisions are currently made could provide a foundation for improvement

- > There is little recent academic research on decision making within government. Academics rarely have the right access to do rigorous research in this context.
- > The limited available research is insightful. For example, Banuri et al. found DfID and World Bank officials were susceptible to framing effects and confirmation bias ([available here](#)). But they also noted that government rarely collects this kind of data – a wider body of evidence is needed to develop evidence-based approaches.
- > New research could be used to create a shared analysis of strengths, weaknesses, challenges and trade-offs for government decision making. This not only helps set the right ambition and design for improvements, but also garners the support needed to deliver them.
- > Government could help academics wanting to research ministerial decision making by allowing access to data, engaging in staff interviews and surveys, or providing research grants. Or internal teams could set up their own research on decision making, either with their own skills or through collaboration with a relevant research centre.



“Don’t reform support for decision making without understanding what happens at the moment.”

ROD RHODES
DIRECTOR, CENTRE FOR POLITICAL
ETHNOGRAPHY
UNIVERSITY OF SOUTHAMPTON

Areas for further research

Which decision making methods are effective in different policy contexts?

- > This could include piloting and evaluating methods for structuring, use of evidence, heuristics, presentation of advice, group deliberation, and learning and improving. It would also be useful to explore how officials can assess if a good process or method is being followed.

Which biases are officials and ministers most susceptible to? How can their effects be minimised?

- > This may be relevant to the design of decision making methods in general, or inform the design of methods specifically targeted at minimising the effects of bias.

What is the impact of relationships on the quality of decision making? How can effective relationships be built?

- > It is worth considering ministers, senior officials, junior officials, special advisers and external advisers here.

Which skills require training? What determines whether training is effective?

- > Research suggests training can be effective for structuring problems, interpreting evidence, and tackling bias, but it would be beneficial to test this in the context of ministerial decision making.

What impact is there of spending more time on different elements of decision making?

- > It is also worth investigating how officials can be incentivised to spend more time on elements with a significant positive impact. This has been raised with regards to evidence gathering in particular.

Which accountability systems best support successful decision making?

- > This could include consideration of models from other countries, while bearing in mind that these might have different impacts within UK political and media culture.



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