

## Knowledge Brief

# Decision-making Biases



Cognitive biases can undermine decision-making processes and obscure the influence of evidence. This briefing describes key cognitive biases and provides an overview of eight available tools and techniques that can be used to counter them in organizational decision-making.

## Why biases matter

Evidence-informed decision-making is the process of combining individual professional judgement with systematic research and other sources of information. However, even experts will make regular errors of judgement (Breckon 2018). Over the last four decades, empirical research has demonstrated that we underestimate, procrastinate, and overpay in systematic and predictable ways (Tversky and Kahneman 1974; Ariely 2010). These cognitive biases are especially present when the subject matter is novel, complex, or ideologically loaded (Cosmides and Tooby 1992).

There is no agreement on the number of cognitive biases that exist: different researchers take alternative approaches to categorizing and subdividing them (Dougherty et al., 1999). One (visually striking) categorization is the Cognitive Biases Codex, which illustrates 180 different biases grouped into 20 categories that arise because of four cognitive challenges: having too much information, lacking meaningful information, a need to act fast, and an inability to remember the right things.<sup>1</sup>

These biases all arise because we take mental shortcuts to assess information and make judgements (Tversky and Kahneman 1974). Such shortcuts include taking an “educated guess” or using “a rule of thumb.” One of the insidious things about cognitive biases is their close relationship with pattern-recognition skills and mindsets that often serve managers well (Lovallo and Sibony 2010a). There is some discussion in the academic literature over the extent to which cognitive biases represent irrational errors in judgement versus important and functional ways of making decisions (Lerner and Tetlock 2003).

Research from the Behavioral Insights Team (Hallsworth and Egan 2010), McKinsey (Lovallo and Sibony 2010a), and others identifies biases that are particularly pertinent to organizational decision-makers (examples are provided in Table 1). These can result in teams missing options, gathering self-serving information, living with bad decisions, or retaining unreasonable confidence about the outcome of their choices (Heath and Heath 2013). Moreover, these flaws in decision-making are exacerbated when decision-makers are under pressure, over-confident, or part of a group (Hall 2007); these factors are often present for decision-makers working in conservation.

<sup>1</sup> See <https://medium.com/better-humans/cognitive-bias-cheat-sheet-55a472476b18>



**Table 1. Examples of important biases within organizational decision-making. We adopt the categories used by Lovallo and Sibony (2010a) in their brief typology of biases affecting organizational decision makers.**

Category	Bias	Description	Examples
<b>Action-oriented biases</b>	<b>Optimism bias</b>	We tend to overestimate our odds of success and underestimate our chances of failure or of negative events happening to us.	Overestimating the potential social benefits of marine protected areas (MPAs) based on positive examples from different contexts.
	<b>Planning fallacy</b>	The tendency to optimistically plan project timescales and resources and to overlook project risks.	Planning a new MPA without factoring the time needed for NGO staff to build relationships with new political appointees.
<b>Stability biases</b>	<b>Sunk bias</b>	We are often influenced by the past. Sunk costs which are irretrievable and have no bearing on future outcomes will continue to distort our decisions.	Investing time in research activities that will not yield new or useful results, because they have already started.
	<b>Status quo bias</b>	The tendency to stick to a current course of action because it is harder to justify a change of course than the status quo and the fact that it is more effort to change course.	Continuing with pre-agreed stakeholder engagement activities without trying new techniques in sites where participation indicators are low.
<b>Social biases</b>	<b>Groupthink</b>	The tendency to be influenced by the opinions and actions of others when operating within a group.	Project managers agreeing with the funding projections for the next phase of work based on the opinion of the loudest team member in a strategy meeting.
<b>Pattern-matching biases</b>	<b>Confirmation bias</b>	When we want something to be true we will identify the evidence that supports it.	Seeking and referencing research studies that support our pre-existing beliefs.

Organizations have traditionally tried to overcome bias through formalizing decision-making. Whilst the research demonstrates the value of systematic processes for complex decision-making (Tanner et al., 2020), too many models are simply “glorified spreadsheets” (Heath and Heath 2013) where staff rate options according to set criteria or list the pros and cons of different options. These approaches ignore the conflicted emotions that are often part of difficult decisions and the way that biases will influence us both consciously and unconsciously.

Heath and Heath (2013) describe a study in which researchers tracked 1,048 commercial organizational decisions over five years. They found that most of the teams had conducted rigorous analysis but that the decision-making process often differed. The authors assert that decision-makers that held discussions about uncertainty or sought people with different views increased their market share by a factor of six (Lovallo and Sibony 2010a). Heath and Heath concluded that analysis is useless unless it is accompanied by a decision-making process that gives different types of evidence a “fair hearing”. Smaller studies of decision-making in non-governmental organizations (NGOs) have highlighted the importance of methods that illuminate alternative interpretations (Stirling 2010).



## Tools and techniques for responding to biases

Organizational leaders are becoming more aware of cognitive biases and are trying to do just that: their tactics include checklists and frameworks that involve having someone play devil's advocate, reference class forecasting (where planners are required to predict future outcomes by comparing previous similar situations), and search for evidence that does not support one's own hypothesis (De Smet et al., 2017).

Different types of decision processes tend to accentuate or reduce particular types of cognitive bias (Das and Teng 1999). However, systematic flaws in the process may be easier to monitor and control when there is awareness of their potential impact on organizational decisions (Hall 2007). In his book, *Thinking Fast and Slow*, Kahneman (2013) agrees that a "richer language" gives people the vocabulary to spot biases and constructively assess the quality of decisions.

### Regular practices for reducing biases in organizational decision-making:

**Prioritize** – Identify which decisions most warrant attention.

**Processes** – Embed practices within formal processes.

**Multiple perspectives** – seek out dissenting voices in teams to help challenge conventional wisdom.

**Stop defending and analyze** – when team members have competing ideas and get stuck debating the merits of each, ask: "What would have to be true for each option to be the right answer?" The question helps the team move from an adversarial tone to an analytical one.

**Multitrack** – consider more than one option simultaneously. Try to think in terms of this AND that, instead of this OR that.

**Opposite thinking** – consider the opposite of what you believe. Actively seek disagreement by asking disconfirming questions.

**Reflect** – on your own views and values.



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Teams can employ a range of tools and techniques to help highlight and reduce biases as a valuable step towards better evidence-informed decisions. The eight techniques listed on the following page are highlighted as examples of simple and easy-to-implement techniques that provide a first step to countering biases in organizational decision processes and have been tested in major organizations.

**Table 2. Techniques to counter biases in organizational decision-making processes.**

Title	Description
1 <b>Project pre-mortems</b>	<p>Instead of doing a post-mortem on a project (looking back to figure out what went well and what didn't), a pre-mortem can be used: imagining a dismal result for a current project 6 or 12 months in the future, team members can “fill in the blanks” on how things could have gone so badly. The team will generate a list of items that can be used as a reminder of what will prevent the project moving forward.</p> <p><b>Reference and additional information.</b> A discussion of project pre-mortems can be found at: <a href="https://hbr.org/2007/09/performing-a-project-premortem">https://hbr.org/2007/09/performing-a-project-premortem</a></p>
2 <b>The vanishing options test</b>	<p>Sometimes a team brainstorms options along a certain trajectory, then fails to explore other avenues. Avoid this pitfall by using the “vanishing options” test. Once team members have generated a list of possible solutions, remove those choices from the table and challenge them to come up with additional options. Teams will start to dig beyond their first instinctive responses.</p> <p><b>Reference and additional information.</b> A brief overview is available at: <a href="https://usmanconsulting.com/tag/vanishing-options-test/">https://usmanconsulting.com/tag/vanishing-options-test/</a></p>
3 <b>WRAP model for decision-making</b>	<p>WRAP is a mnemonic/acronym for:</p> <ul style="list-style-type: none"> <li>• Widen frames</li> <li>• Reality test assumptions</li> <li>• Attain detachment</li> <li>• Prepare for failure</li> </ul> <p>It helps teams test their assumptions to reduce the effects of biases and to consider what failure means in their context.</p> <p><b>Reference and additional information.</b> An overview of the method is described here: <a href="https://litfl.com/wrap-decision-making-approach/">https://litfl.com/wrap-decision-making-approach/</a></p>
4 <b>Delphi method</b>	<p>The Delphi technique is a quantitative method aimed at generating consensus while countering groupthink biases. It solicits opinions from groups in an iterative process of answering questions. After each round the responses are summarized and redistributed for discussion in the next round. Through a process of convergence involving the identification of common trends and inspection of outliers, a consensus is reached. This method has been tested to support group decision-making methods in the humanitarian sector.</p> <p><b>Reference and additional information.</b> A brief guide to using Delphi, with links to other resources and examples: <a href="https://www.betterevaluation.org/en/evaluation-options/delphitechnique">https://www.betterevaluation.org/en/evaluation-options/delphitechnique</a></p>
5 <b>Red teaming</b>	<p>The term red teaming is used differently in different contexts. In essence it is a tool for understanding a situation from alternative perspectives. It is meant to challenge assumptions and fully explore alternative outcomes, in order to reduce risks and increase opportunities.</p> <p><b>Reference and additional information.</b> A basic introduction: <a href="https://whatis.techtarget.com/definition/red-teaming">https://whatis.techtarget.com/definition/red-teaming</a> A podcast with the author of the bestseller ‘Red teaming’: <a href="https://www.rogerdooley.com/red-teaming-hoffman/">https://www.rogerdooley.com/red-teaming-hoffman/</a></p>
6 <b>Scenario planning</b>	<p>This is a set of techniques used to explore different future states developed by varying a set of key trends, drivers, and/or conditions. Strategic analysts use alternative futures analysis to investigate the effectiveness of a proposed policy in different possible futures.</p> <p><b>Reference and additional information.</b> A popular article on how to build scenarios: <a href="https://www.wired.com/1995/11/how-to-build-scenarios/">https://www.wired.com/1995/11/how-to-build-scenarios/</a> McKinsey provides an article on the use and abuses of scenarios: <a href="https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-use-and-abuse-of-scenarios">https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-use-and-abuse-of-scenarios</a> A detailed description of the method is available from: Ramírez, Rafael, and Angela Wilkinson. 2016. <i>Strategic Reframing: The Oxford Scenario Planning Approach</i>. Oxford University Press.</p>
7 <b>Nominal group technique</b>	<p>In a Nominal Group Technique (NGT), the team divides itself into smaller groups and generates ideas. Possible options are noted in writing and the team members further discuss these to narrow down the possible choices they would like to accept. Team members then discuss and vote on the best possible choice. The choice that receives the maximum votes is accepted as the group decision.</p> <p><b>Reference and additional information.</b> A simple guide from the CDC: <a href="https://www.cdc.gov/healthyyouth/evaluation/pdf/brief7.pdf">https://www.cdc.gov/healthyyouth/evaluation/pdf/brief7.pdf</a></p>
8 <b>Select a devil's advocate</b>	<p>Selecting a devil's advocate can help a team counter groupthink and consider all the possibilities that may arise from a decision. The devil's advocate should focus on the available evidence and present alternative interpretations and options.</p> <p><b>Reference and additional information.</b> Ideas on how to appoint a devil's advocate are discussed in this accessible blog: <a href="https://www.forbes.com/sites/chunkamui/2014/04/23/3-keys-to-an-effective-devils-advocate/">https://www.forbes.com/sites/chunkamui/2014/04/23/3-keys-to-an-effective-devils-advocate/</a></p>



# References

PLEASE CITE AS:

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## Table 2.

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