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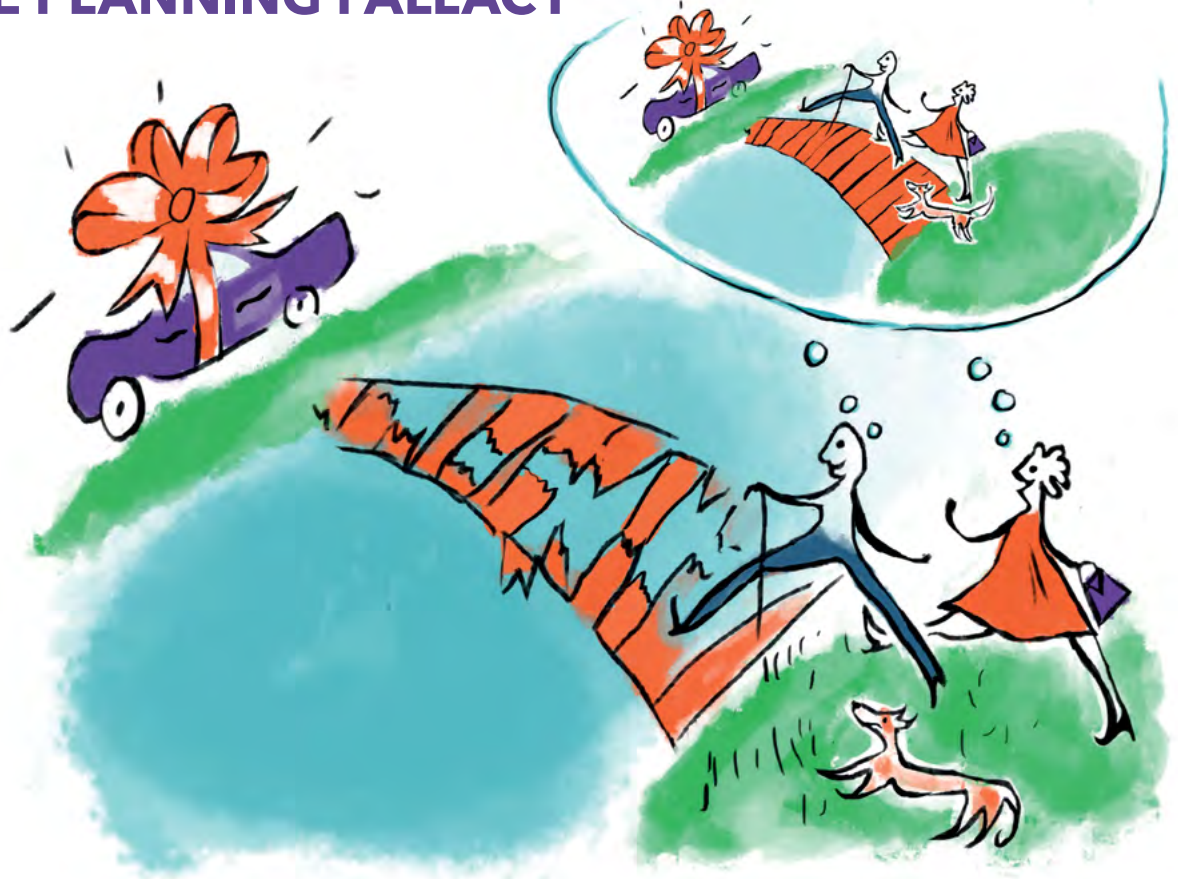
COGNITIVE BIASES IN CLIMATE RISK MANAGEMENT

Our brains use shortcuts to help us make decisions. Sometimes called 'cognitive biases,' these shortcuts are essential for making quick decisions such as deciding to swerve to avoid a car accident. However, these automatic judgements can also lead to bad decision-making when we rely too heavily on intuition and use defective reasoning. This infographic series explains 5 common shortcuts, how they play a role in decision-making related to climate risk management, and strategies to outsmart our tendency to use shortcuts.

1

THE PLANNING FALLACY

'Getting our new car is going to be so easy!'



What is it?

The Planning Fallacy is the tendency to be confident that a future task will proceed as planned, even while knowing that the vast majority of similar tasks have encountered challenges and have involved underestimates of the time needed for completion. It arises when people take on a risky task or project—setting up an early warning system, delivering food aid, working in conflict-affected areas—confident of a best case scenario without seriously considering the worst case scenario.

We can see examples of the Planning Fallacy throughout history. A belief that current plans are realistic alongside knowledge that most previous predictions have been overly optimistic is commonplace in large construction projects. The Sydney Opera house was originally forecast to be completed early in 1963 at a cost of \$7 million, but in the end a scaled-down version opened 10 years later, in 1973, at a cost of \$102 million.

What does it look like in climate risk management?

The Planning Fallacy inevitably shows up in relation to risks that may delay the implementation of climate change adaptation and development projects. A drought adaptation intervention may not seriously consider or plan for the possibility that drought will occur during the lifetime of the project, even while understanding the high incidence of drought in the region that prompted the intervention in the first place. This tendency to ignore seemingly obvious risks often leads to foreseeable delays to implementation and may undermine the ability of projects to deliver on key adaptation outcomes.

What can you do to outsmart this cognitive bias?

Data can be an important ally in avoiding falling into the Planning Fallacy. Reference class forecasting is a method that uses data on past projects to more accurately predict the outcomes of future projects, therefore circumventing errors in human judgement. It involves

1. establishing a 'reference class' of similar, past projects,
2. observing the range of possible outcomes, including those that occur most often and
3. comparing the specific project to the distribution of reference projects to understand the most likely outcome

A second method simply entails getting a second opinion from someone who is not involved with the project but who has experience in implementing similar projects. Since it is not 'their project', this person is more likely to provide an 'outside view' that more accurately predicts the costs or the time it will take to complete a project.

2 THE COMMITMENT HEURISTIC

'But we have to finish the irrigation system since we've invested so much into it!'



What is it?

The Commitment Heuristic is the tendency to continue investing in a decision even if there is new evidence that suggests that the cost of continuing outweighs the expected benefit. Investing time, energy and resources into a project can raise people's confidence in the project itself and can make changing course very difficult. In part, this occurs because people tend to have a much stronger preference for avoiding losses than for acquiring gains. By continuing the investment, people want to avoid short-term negative feelings associated with stopping a project in which a significant investment was made.

Buying a used car for \$1,000 and then spending double that amount on repairs in the 12 months following the purchase is an example of escalating commitment.

What does it look like in climate risk management?

Local-level climate change adaptation projects are often testing innovative ideas that require the ability to 'fail fast'—that is, by abandoning ideas that don't work in order to be able to test new ideas. The Commitment Heuristic can make it difficult for organisations to truly fail fast enough so they can test variants of an idea during a project's duration. This often results in wasted time, and commitment to an idea that ultimately doesn't work.

What can you do to outsmart this cognitive bias?

The Commitment Heuristic can be avoided through putting in place systematic decision points, which entail reviewing whether an investment is still worthwhile. As part of the decision point, you can create a checklist of criteria that a project must meet in order to still be worth investing in. If the project doesn't meet the criteria, it should be discontinued. Keep in mind that, while sticking to the checklist may be difficult, instituting its use as policy (instead of relying on ad hoc decision-making, which is susceptible to mental shortcuts) can help systematically reduce bad decisions.

Another option is to hand off decisions on whether to commit more resources to a new decision-maker, such as a colleague or manager with less stake in the decision.

3

THE AVAILABILITY HEURISTIC

“It will be like the 1997 floods all over again!!”



What is it?

The Availability Heuristic is a mental shortcut whereby we guess the frequency of an event based on how easily we are able to recall past examples of such an event. We intuitively think the things we remember are more likely to happen again and are thus more important. In addition, vivid, easily imagined but uncommon events are weighted more in our brains, particularly if they are highly publicised. This can distort risk perception and may cause people to worry about the wrong risks—those that are statistically unlikely but vividly covered in media rather than those that are common and not considered newsworthy.

In East Africa, many people remember the 1997–1998 El Niño event, which brought devastating flooding to many countries in the region. People’s homes and livelihoods were destroyed and many people died, resulting in trauma for those who lived in the region.

When people who experienced the 1997–1998 El Niño event hear that another potential El Niño event is forecast, there is a tendency to assume the same impacts will arise again. However, scientifically, we know that each El Niño event is different—and, in fact, the increased rainfall can even be a good thing for some arid regions. In this case, the Availability Heuristic may lead people and governments to over-prepare for a risk that may not actually be as high as perceived.

What does it look like in climate risk management?

The Availability Heuristic has many implications for climate risk management, particularly through its ability to distort risk perception. An accurate understanding of risks associated with extreme weather events now and in the future is critical to any effort to adequately adapt to climate change. For example, when people are asked to evacuate during a hurricane, they are less likely to do so if they have no readily available memory of the last hurricane. This was the case in 2008 in Texas, when people refused to evacuate because public perception was that a Category 2 hurricane like Ike was not dangerous. The hurricane resulted in 113 deaths in the United States and \$38 billion in damages.

At the organisational level, this mental shortcut can also come in to play when deciding on what risk a climate adaptation project should focus on. Assessments based on community members’ memories of risks may be unintentionally biased towards recent events, instead of providing an objective perspective on the risks most likely to affect people now and in the future.

What can you do to outsmart this cognitive bias?

When making important decisions about managing climate risks, it’s important to rely on data, when it is available, rather than memory or personal accounts alone. Data on the occurrence of various climate hazards can often be obtained through the national hydro-meteorological service. An assessment of how risks will change in the future at the regional scale is provided in the [Intergovernmental Panel on Climate Change \(IPCC\) assessment reports](#).

Furthermore, extreme event attribution studies can help quantify the risks of particular extreme events, provide the actual frequency of an extreme event and explain how the frequency is expected to change as a result of climate change.

4 THE OPTIMISM BIAS

"I don't feel old! A quick game won't hurt."



What is it?

The Optimism Bias occurs when people perceive that they are at a lower risk than others of experiencing a negative event. Even if people have information about a risk, and that information says they are at a high risk, they are often overly optimistic and think, 'It'll never happen to me.' The Optimism Bias is more likely to occur if the negative event is perceived as unlikely. If, for example, a person believes that dying of lung cancer is very rare, he or she is more likely to be unrealistically optimistic about the risks.

What does it look like in climate risk management?

People often exhibit Optimism Bias during heat waves. Even if they know that heat waves can be deadly, they often don't think they themselves will be affected. For example, elderly people with knowledge of the relationship between illness and vulnerability to the effects of heat do not apply this knowledge to themselves. In a 2009 study of elderly people, only a minority of respondents were aware that their own medical conditions meant they were considered vulnerable to heat, or that their prescribed medications might increase the risk of adverse effects during hot weather. This mental shortcut can also show up at the organisational level and is often linked to the Planning Fallacy, in which we perceive that 'our tasks' are less likely than 'other tasks' to be affected by risk factors.

What can you do to outsmart this cognitive bias?

Optimism Bias can be difficult to reduce in individuals, but studies find that asking individuals to think about themselves relative to other people can help. When individuals were asked to make comparisons between themselves and close friends, they did not exhibit Optimism Bias when estimating the likelihood of a negative event occurring. Similar to the Planning Fallacy, it is important to take an 'outside view' by seeking additional perspectives. A good way of doing this is through an exercise called 'prospective hindsight', in which you imagine your undertaking has failed and then identify all of the possible ways it could have done so. This exercise helps people identify possible risks in their plans that may not come to mind otherwise.

5

THE SINGLE ACTION BIAS

'Our magnificent new grove will help solve climate change!'



What is it?

The Single Action Bias occurs when individuals take only one action to respond to a threat, even when it provides only incremental risk reduction and may not be the most effective option. People often take no further action, presumably because the first action succeeded in reducing their feeling of worry or vulnerability.

For example, a person may choose to recycle and think they have 'done their bit' to reduce climate change. At the same time, the person may make other choices like choosing to fly, eat meat or drive an SUV—all actions that contribute to climate change.

What does it look like in climate risk management?

In climate change adaptation projects also, it is easy to fall prey to Single Action Bias by promoting one intervention to reduce the impact of a particular threat. For example, a project may focus on developing an early warning system for floods that are likely to become more frequent with climate change, but it may not address other factors that contribute to flood impacts. For example, deforestation in a nearby region may be contributing to increased exposure to flooding. Local communities may also lack resources to take appropriate action based on the early warning (such as a place to store food to protect it from floodwater). In this case, we are failing to address the vulnerability and exposure factors that increase flood risk, even though we may feel like we've done 'enough' to manage a particular risk, and the cumulative result entails no significant increase in the resilience of people to that particular risk.

What can you do to outsmart this cognitive bias?

Acknowledging and being aware of Single Action Bias is an important first step. Another step to discourage Single Action Bias is to change the decision-making environment, thereby making it easier for people to see the range of possible actions and to take more than one action. For example, instead of offering one adaptation option, as simply a 'yes or no' choice, we can instead offer a checklist of good options, with people encouraged to engage in as many as possible. In addition, when working with groups, use of a [problem/solution tree analysis](#) can help people see the multiple causes and effects of a problem, as well as potential solutions.

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