

Communicating uncertain science of global change to policy makers



Anthony Patt

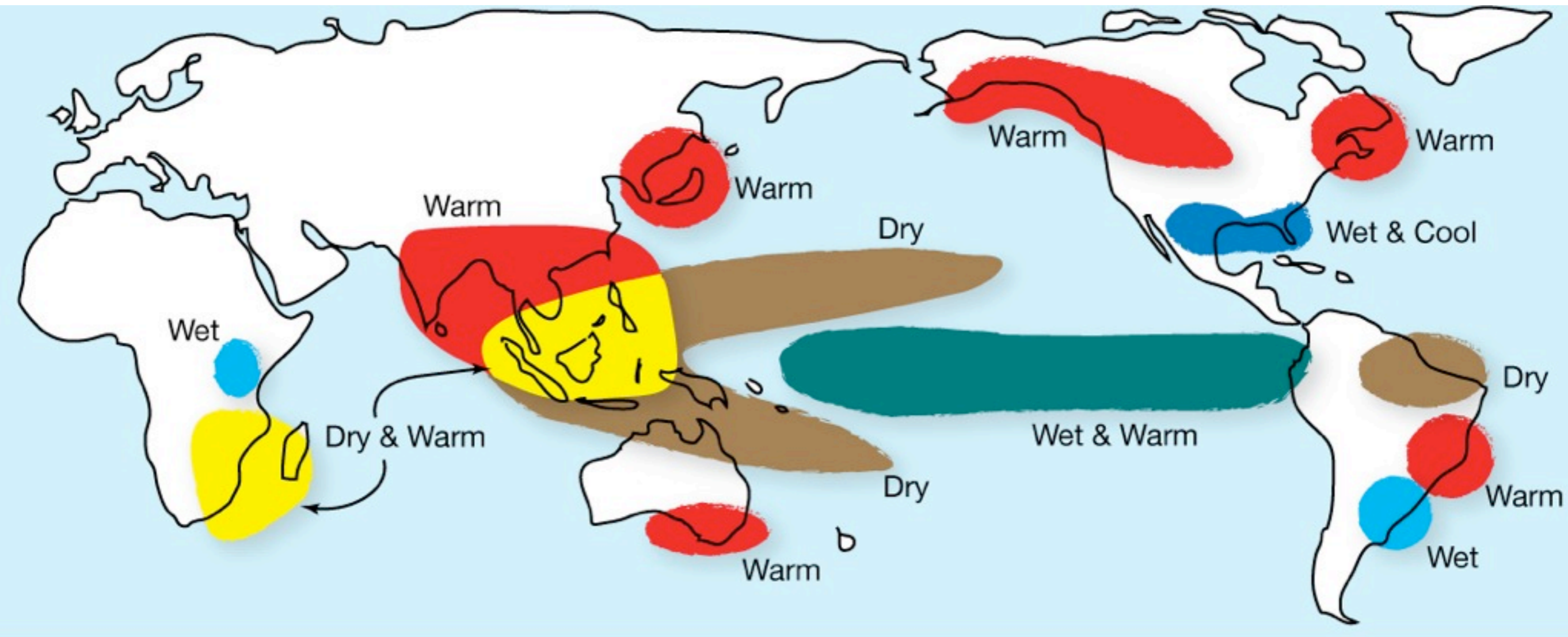
International Institute for Applied Systems Analysis

Presentation at Alternet Summer School

Peyresq, France

14 September 2009

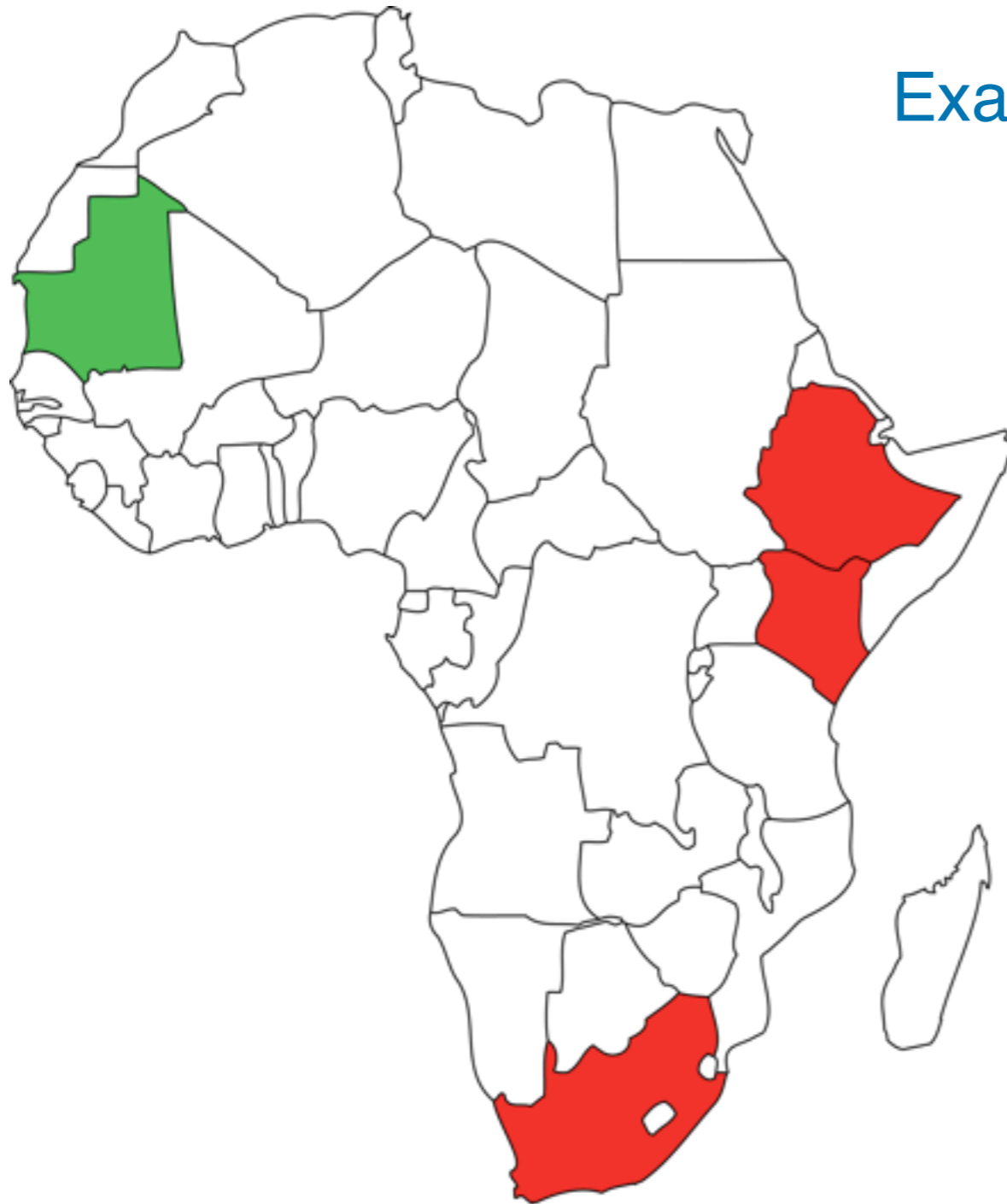
Why isn't science used?



Source: IRI

Why isn't science used?

Example Use of seasonal climate forecasts to assist in water management decisions



- ✓ Céron (2006) *Use of seasonal forecasts: water management for the Manantali Dam*
- ✗ Babu & Corecha (2001) *Evaluation of economic contributions of seasonal outlooks for the power industry in Ethiopia*
- ✗ Oludhe et al. (2003) *An assessment of the potential benefits of seasonal rainfall prediction in relation to hydroelectric power generation in Kenya*
- ✗ Johnson, Ziervogel, & Matthew (2007) *The uptake and usefulness of weather and climate forecast information among water resource managers in the SW Cape region of South Africa*

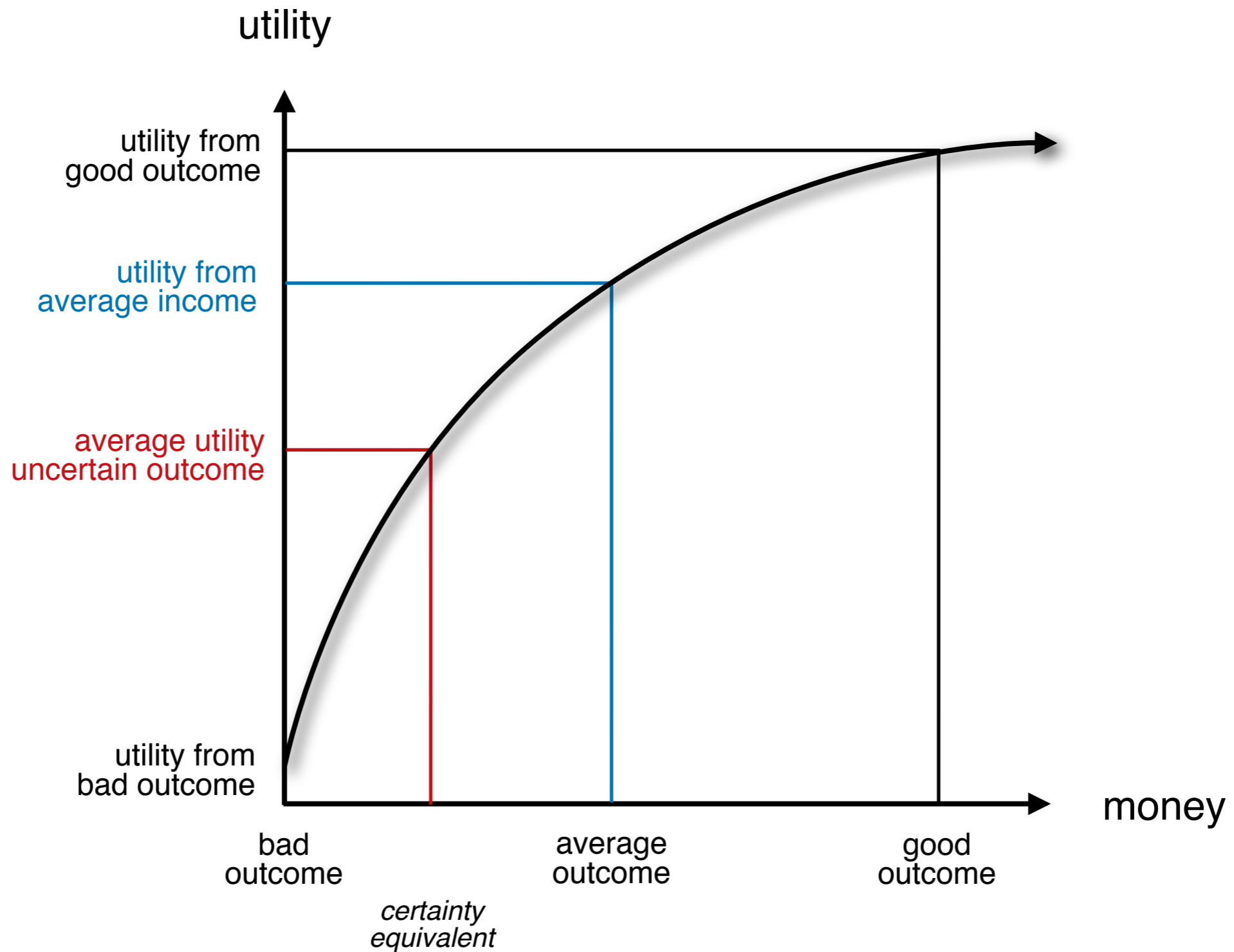
Outline

Models of how people use information

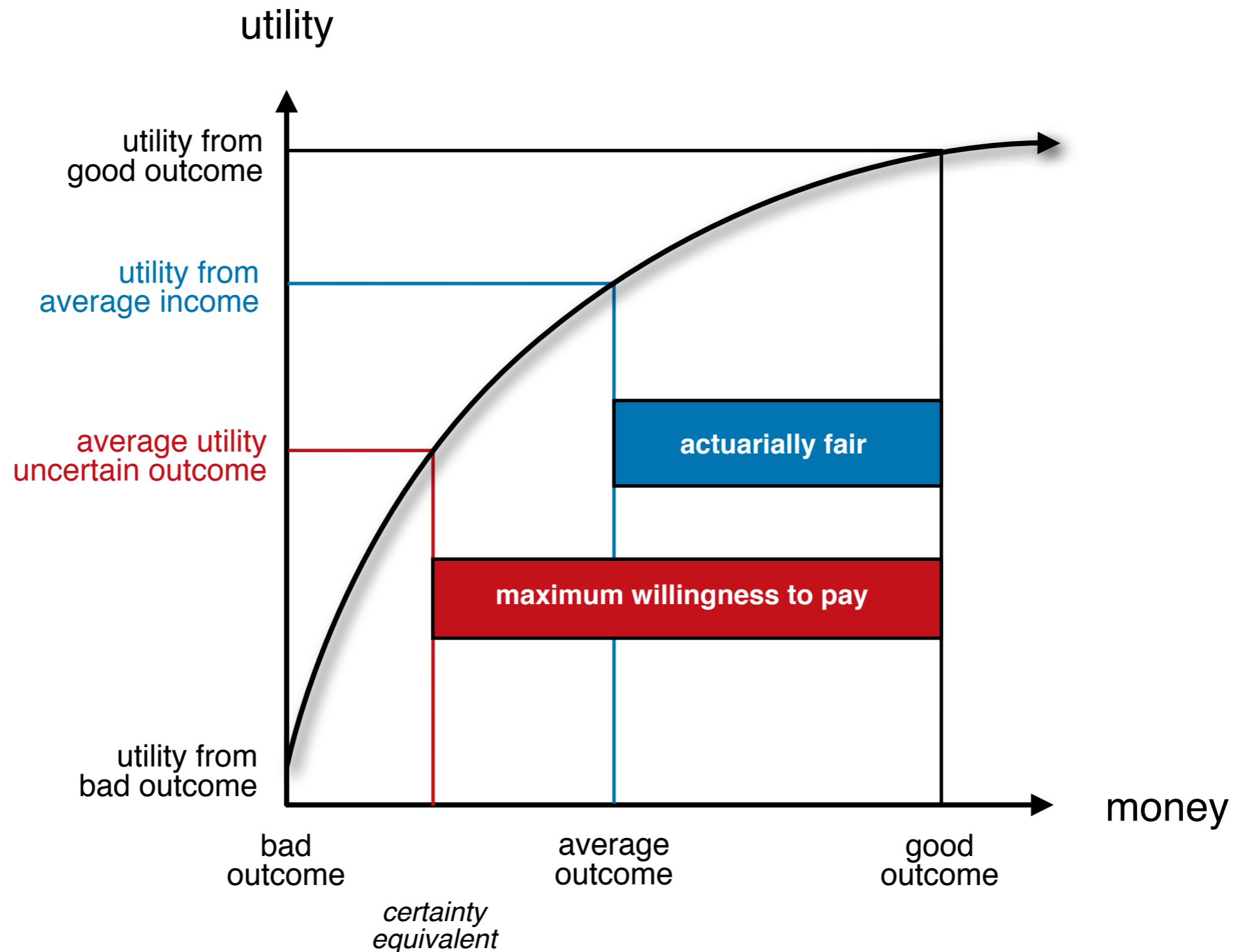
Problems that you will encounter

Strategies of how to give people information

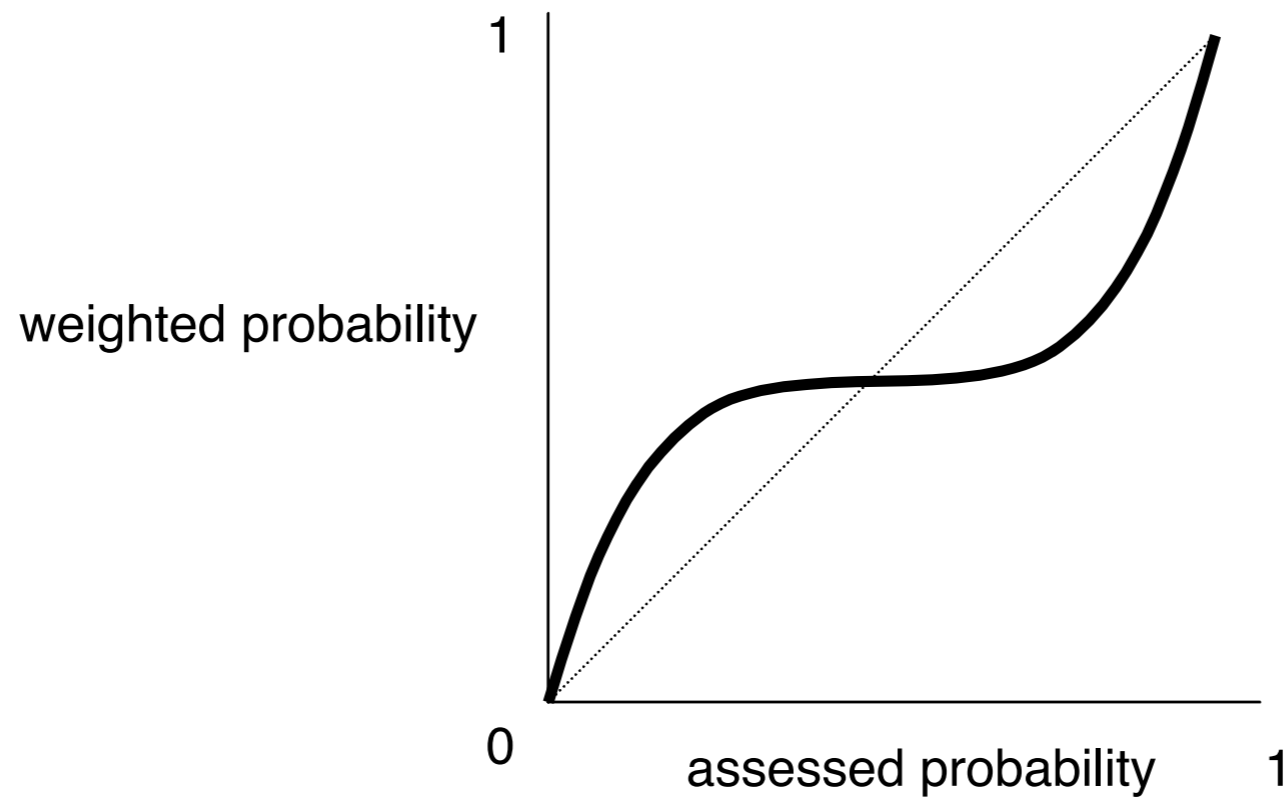
Models: Neo-classical economic model



Models: Neo-classical economic model



Models: Behavioral economic models



Models: Behavioral economic models research example

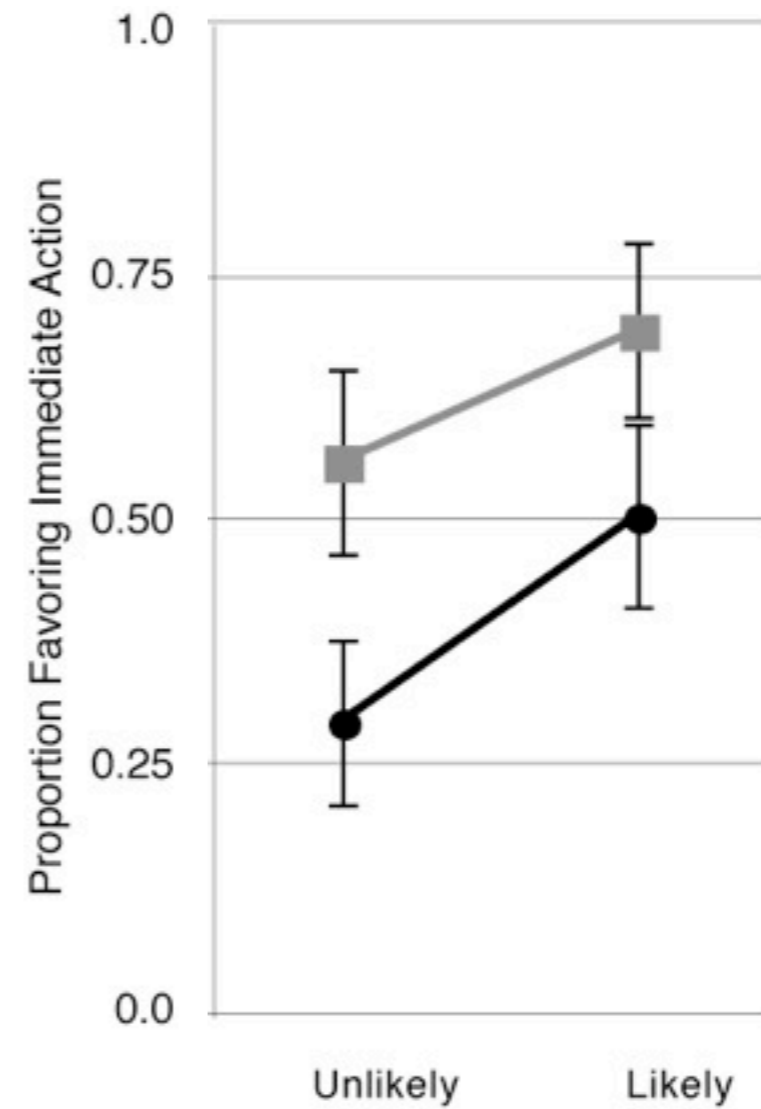
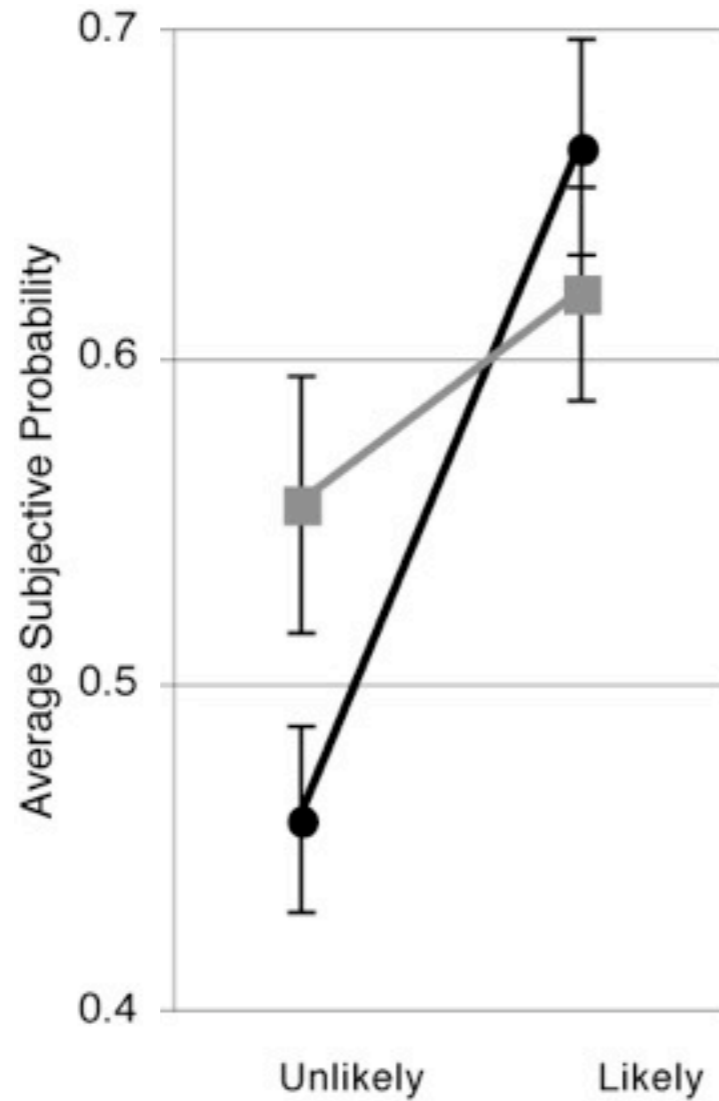
uncertainty as conflict

Two (*eight*) out of the ten experts on the scientific panel believe that sea level rise will create a problem for coastal protection for Boston this century.

model-based uncertainty

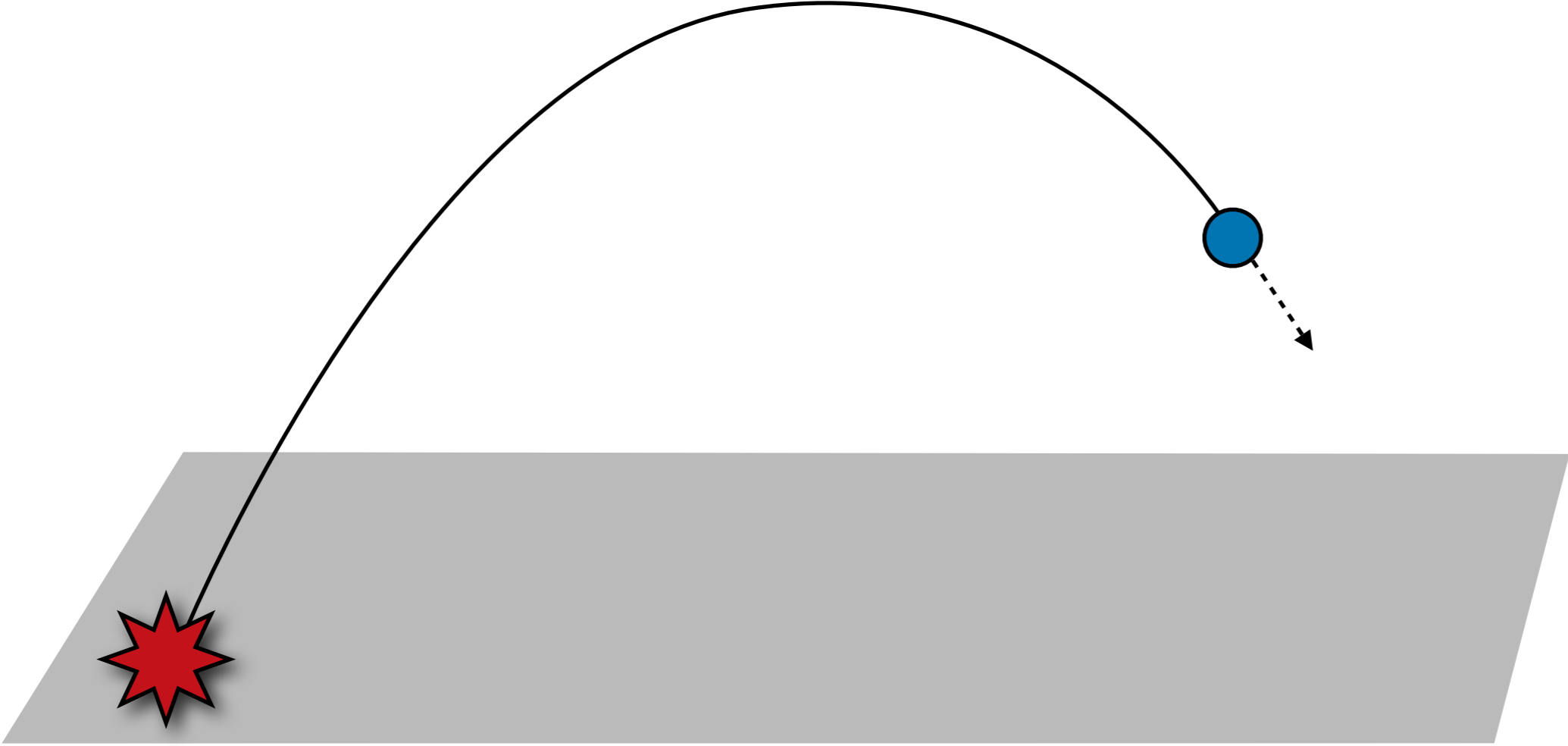
Model ensembles show that there is a 20% (*80%*) chance that sea level rise will create a problem for coastal protection for Boston this century.

Models: Behavioral economic models research example

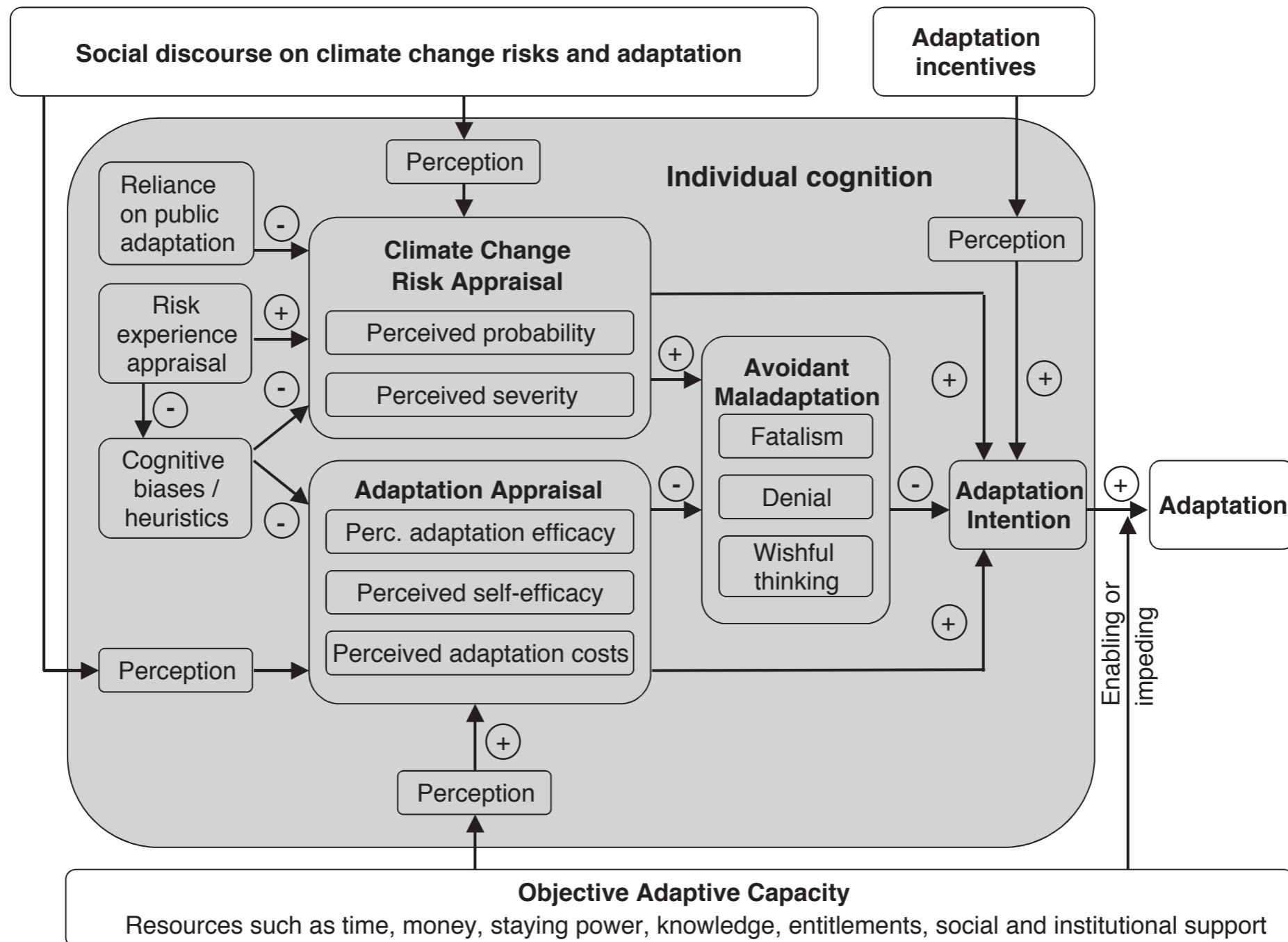


- uncertainty as conflict
- model-based uncertainty

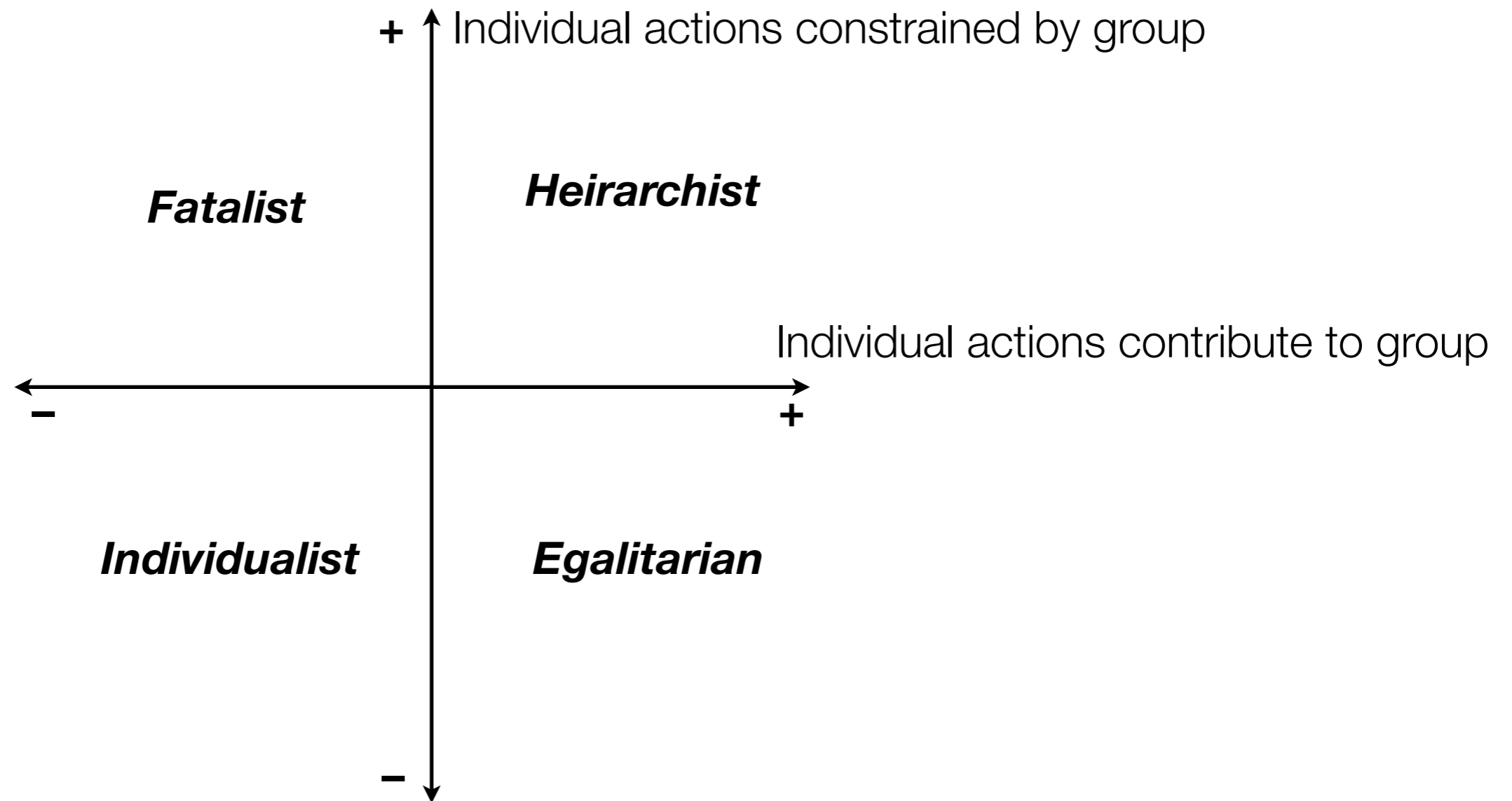
Models: Psychological models



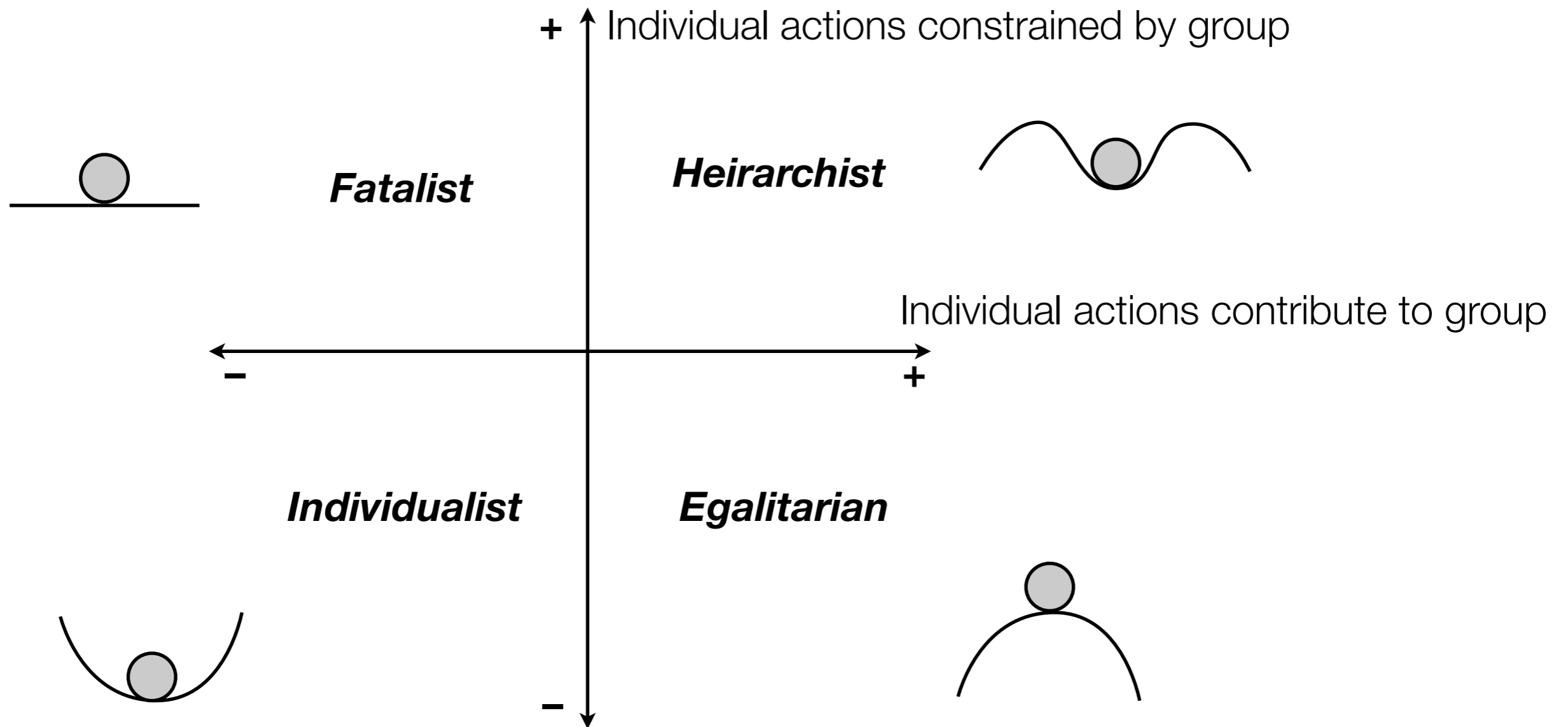
Models: Psychological models



Models: social and political models



Models: social and political models



Models: social and political models

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Fixing climate carries big costs

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Elizabeth Dalziel, AP

A chimney spouts a column of smoke in residential and commercial district of Beijing, China in Jan. 2007.

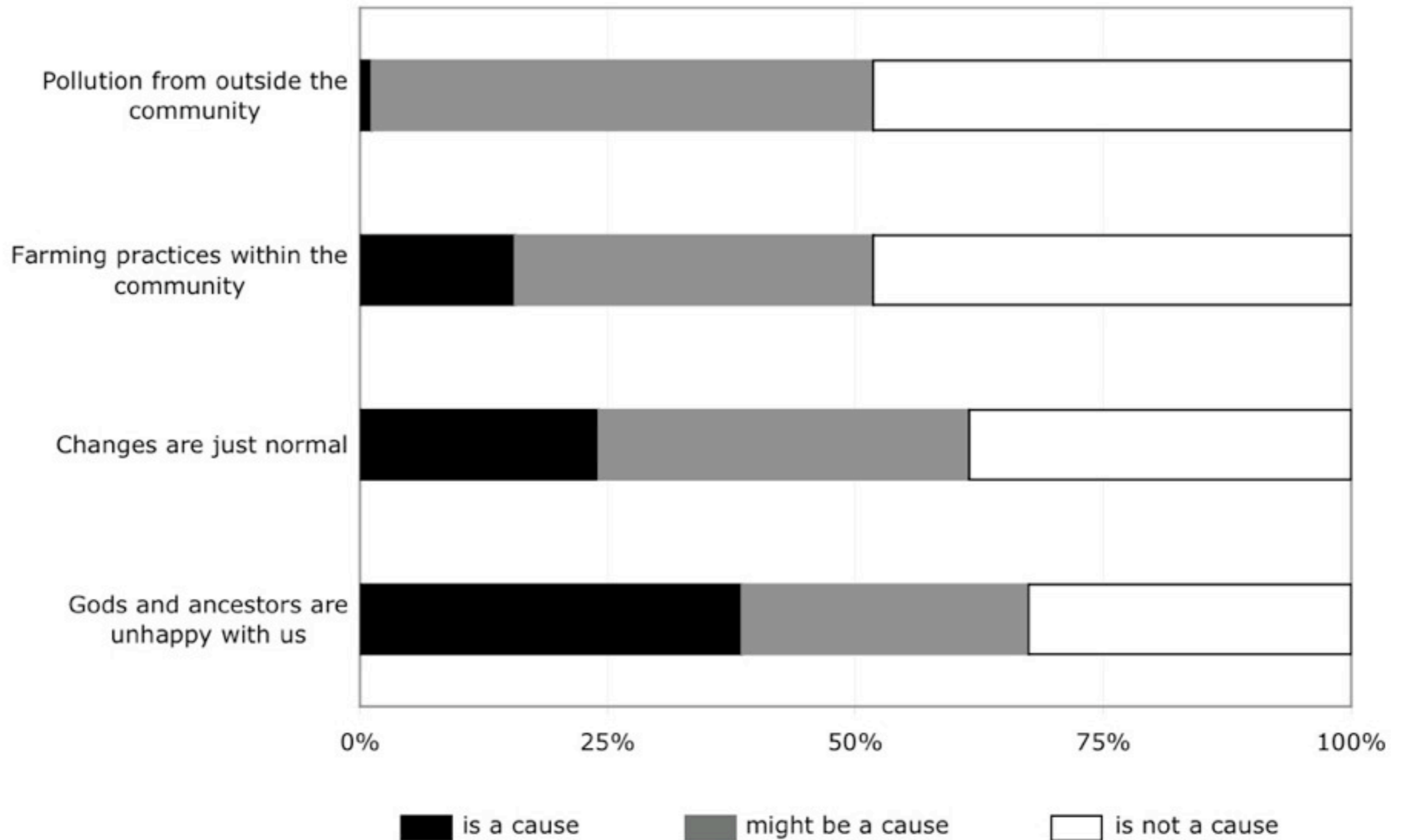
By [Dan Vergano](#), USA TODAY

Global warming's demands on human ingenuity, and pocketbooks, will take center stage Friday in the latest international report on climate change.

Whether humans bury greenhouse gases, blunt them with new technology or buy them off with tax incentives, banishing the emissions responsible for global warming will take quick action, experts conclude in advance of the report.

The latest International Panel on Climate Change report, "Mitigation of Climate Change," examines fixes — or "mitigation" in climate lingo — to global warming, both technological and economic. The report will underline the environmental and financial benefits of quick action to

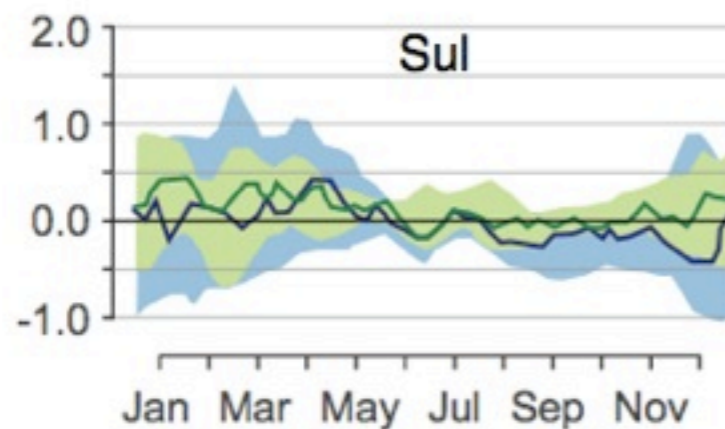
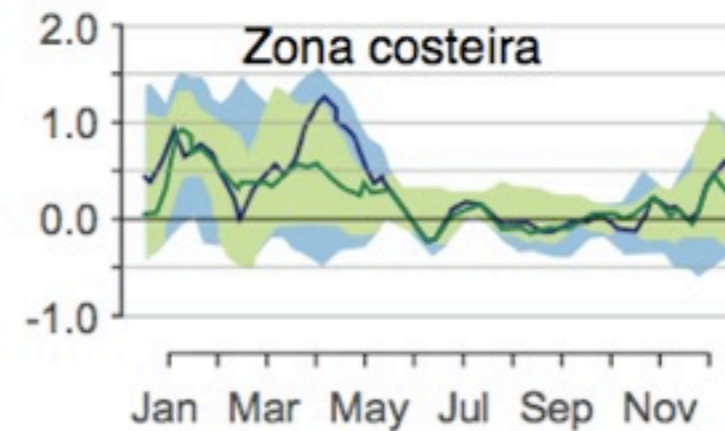
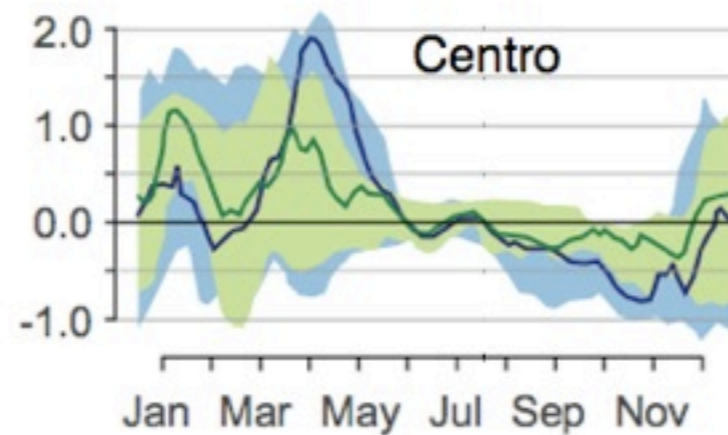
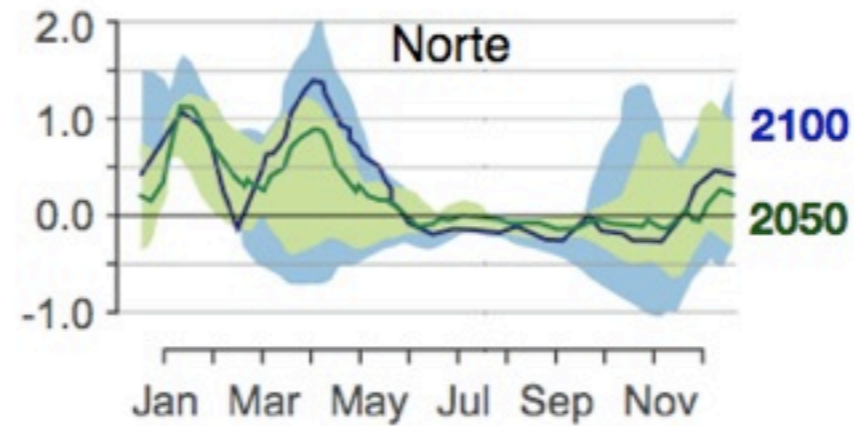
Problems: Confirmation bias



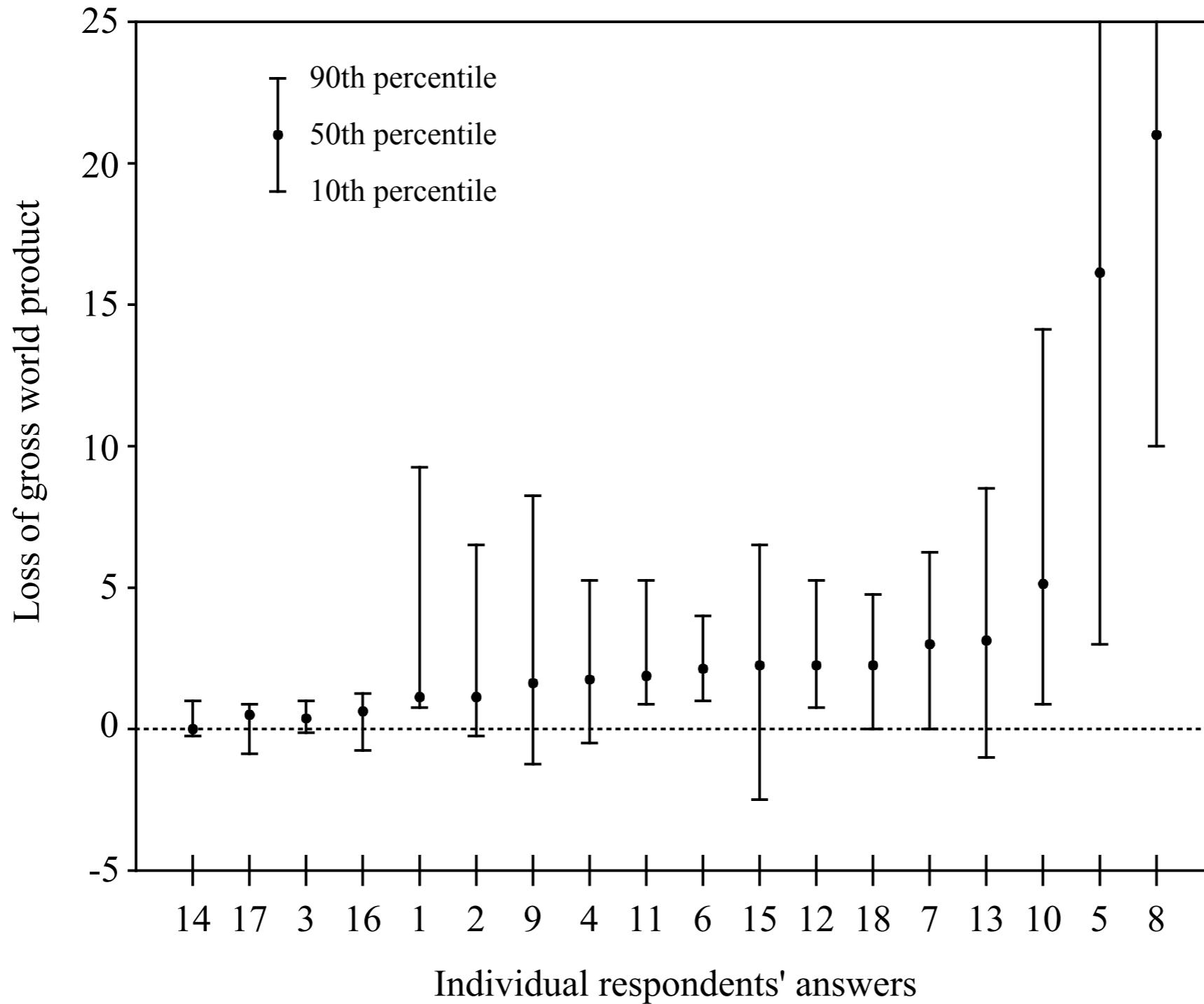
Problems: People focus on what they worry about

Impactos diretos

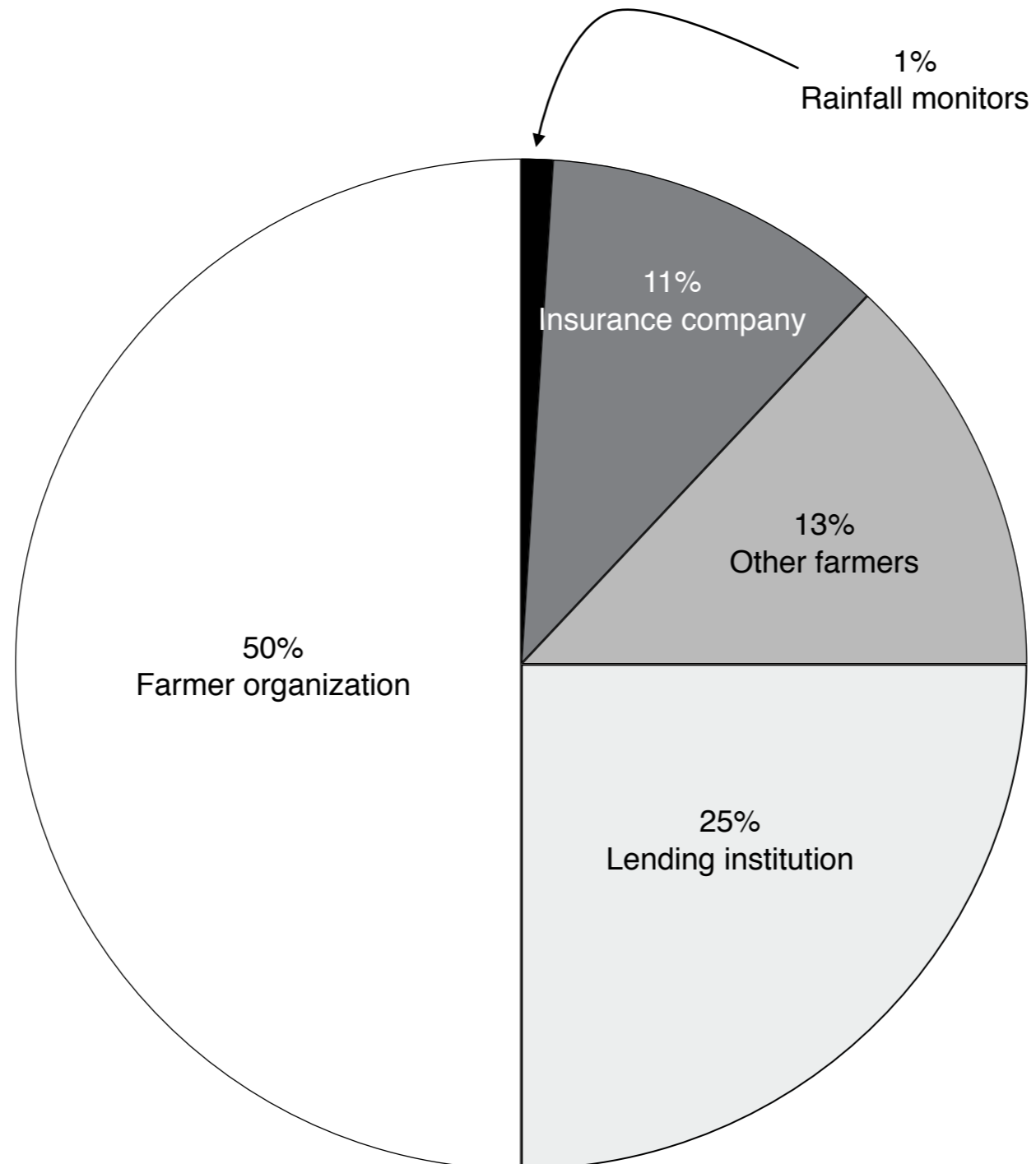
Disponibilidade de água



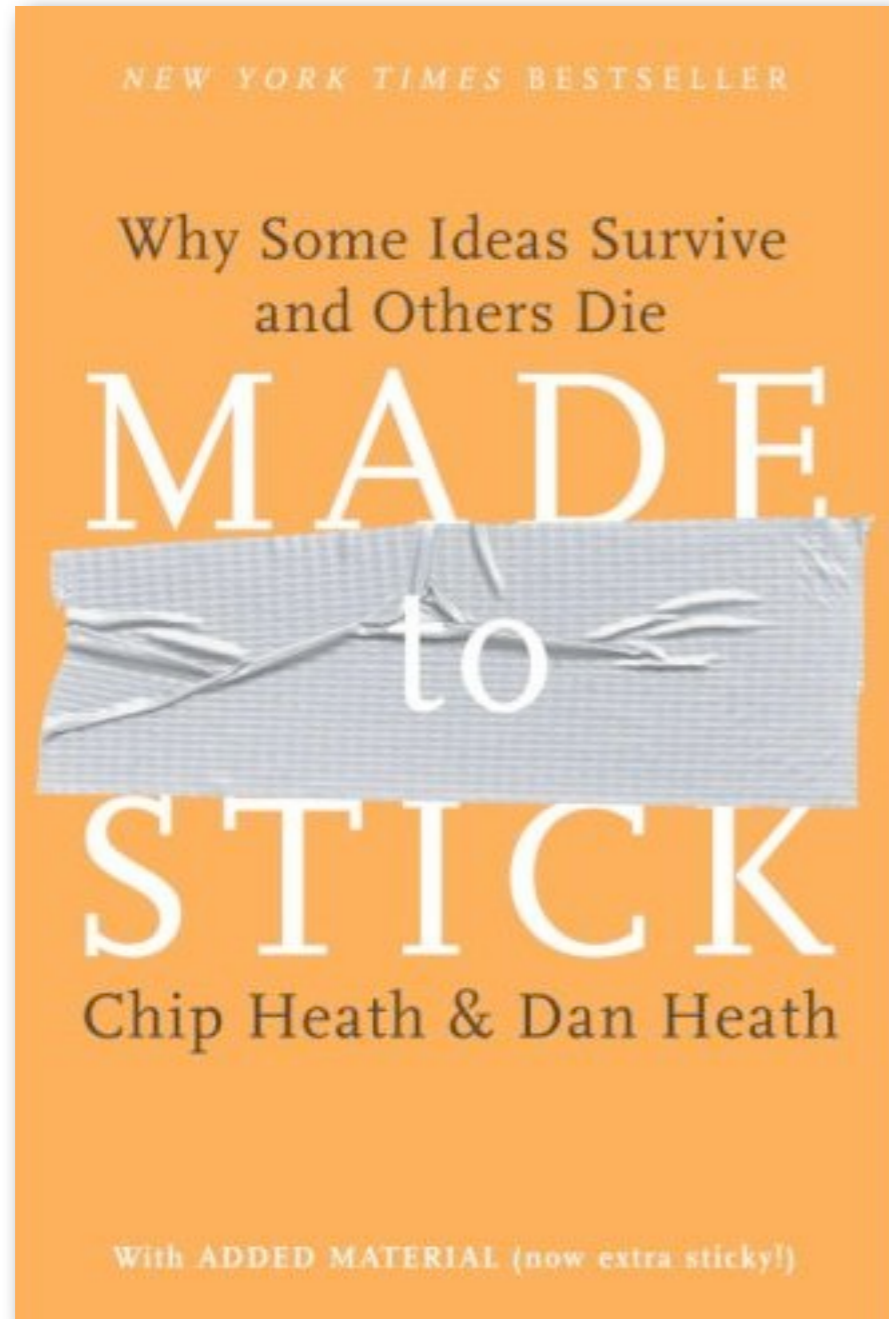
Problems: Overconfidence



Problems: Lack of trust



Strategies: Read this book



Simple
Unexpected
Credible
Concrete
Emotional
Storie(s)
S

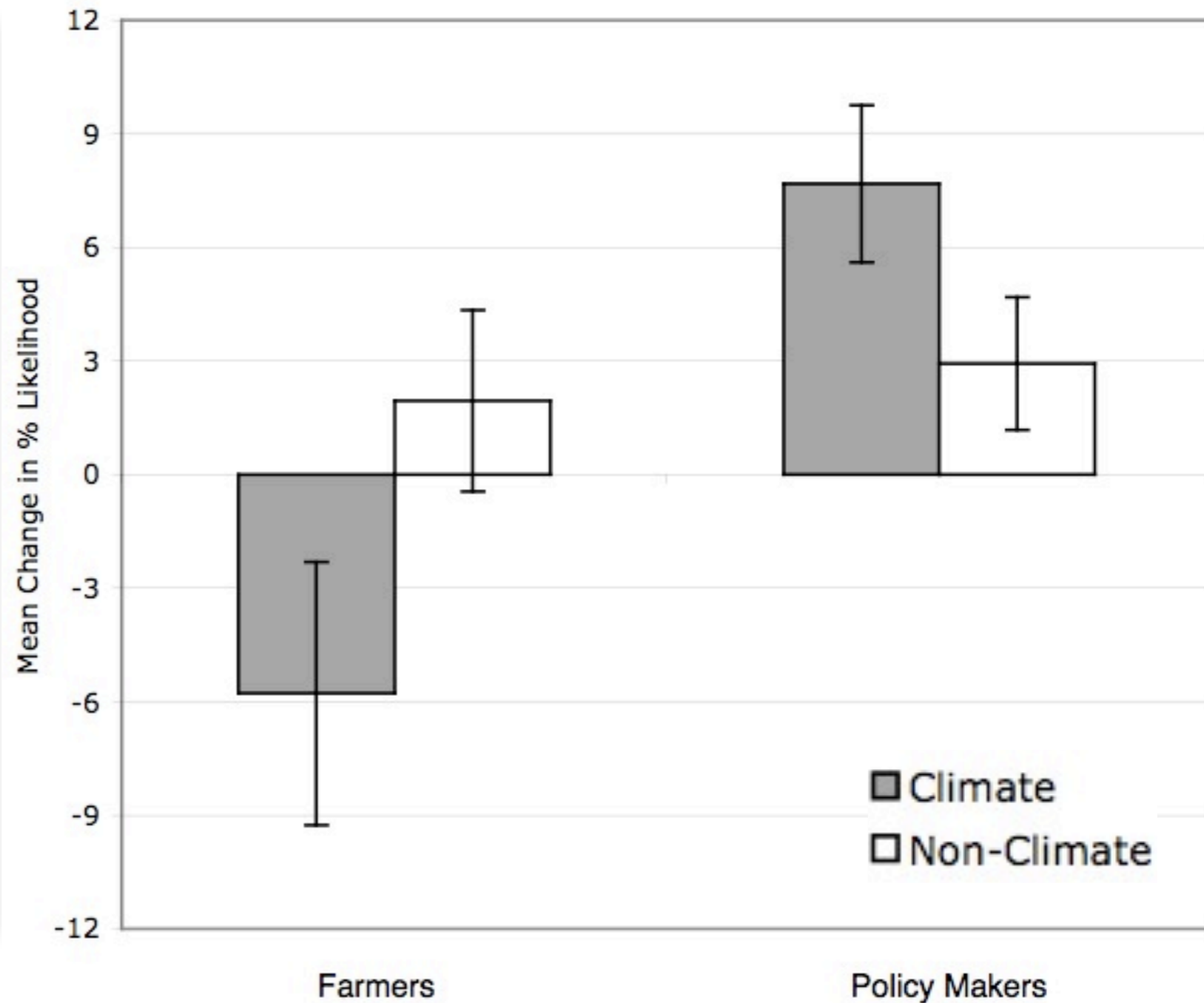
Strategies: Recognize multiple perspectives



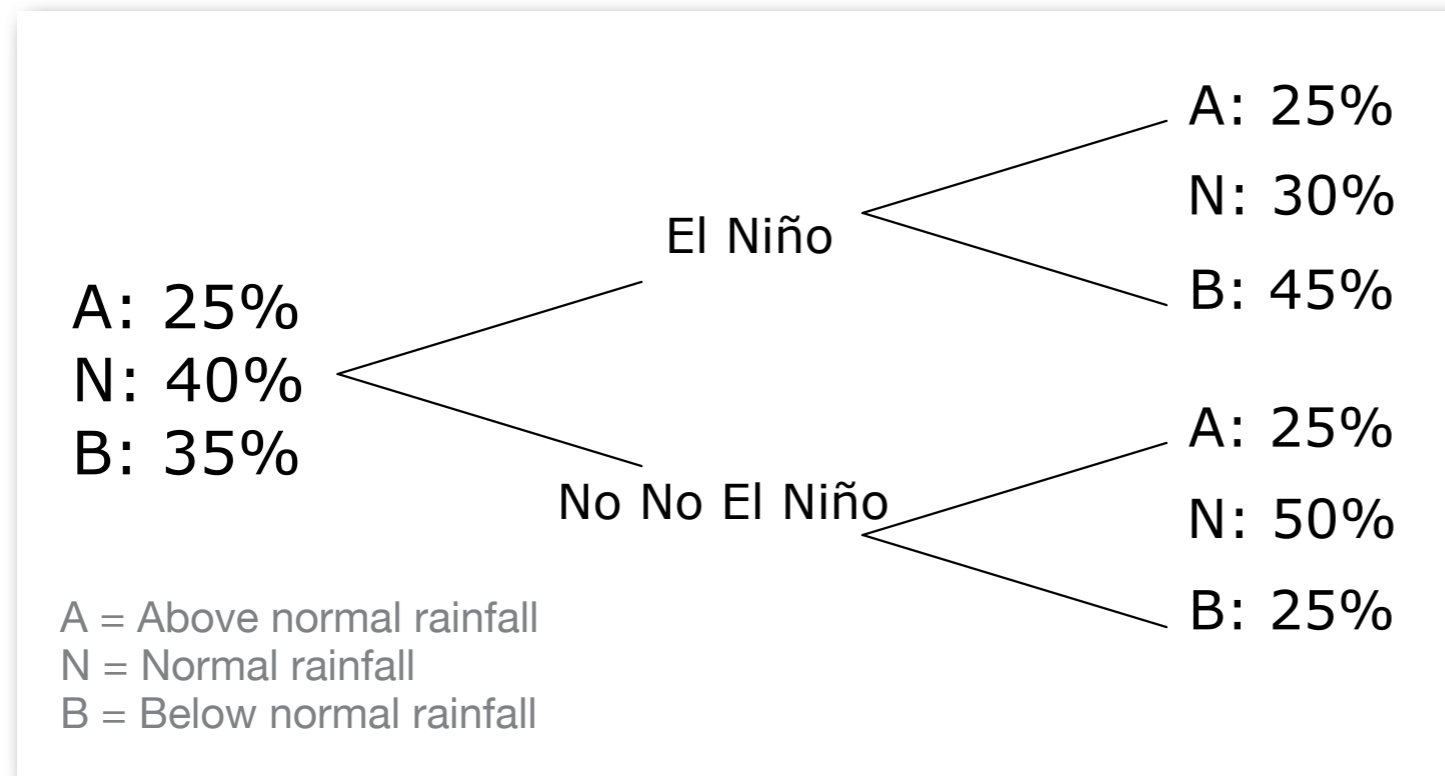
Strategies: Recognize multiple perspectives



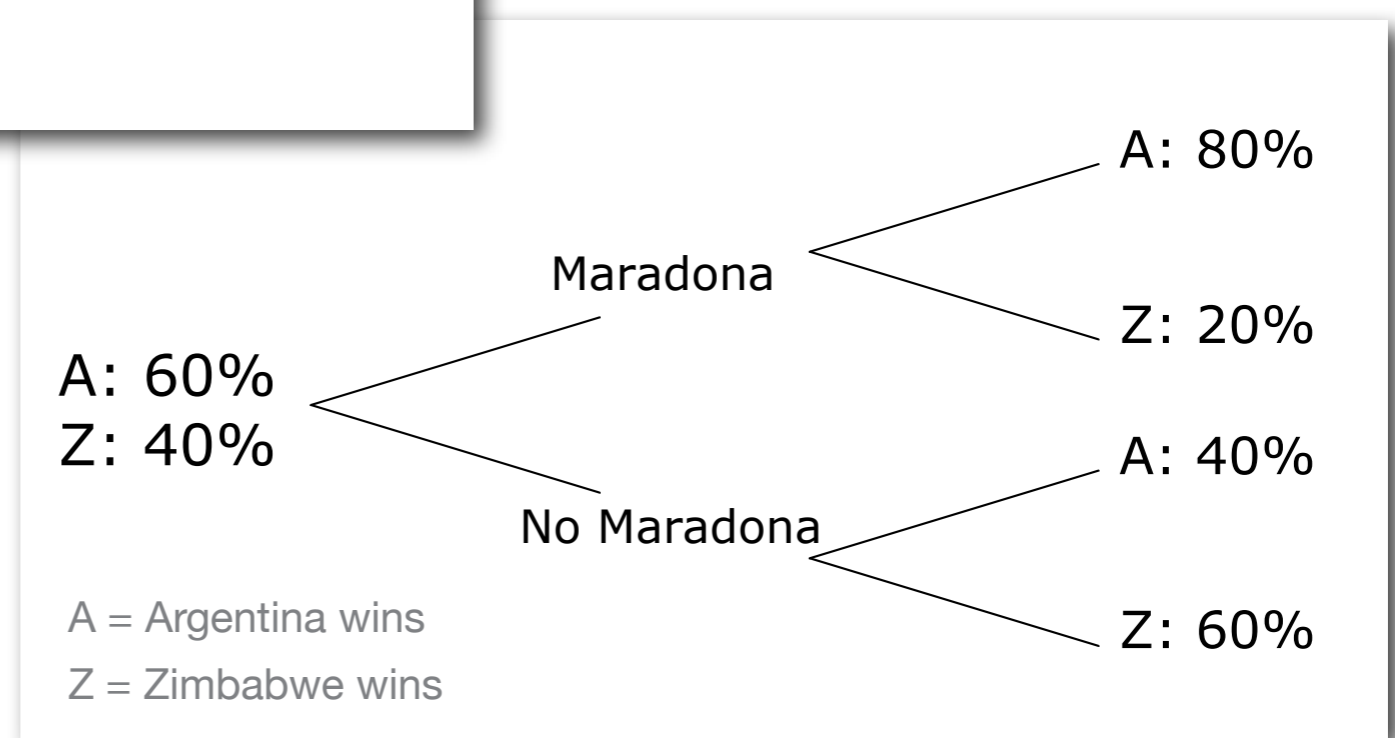
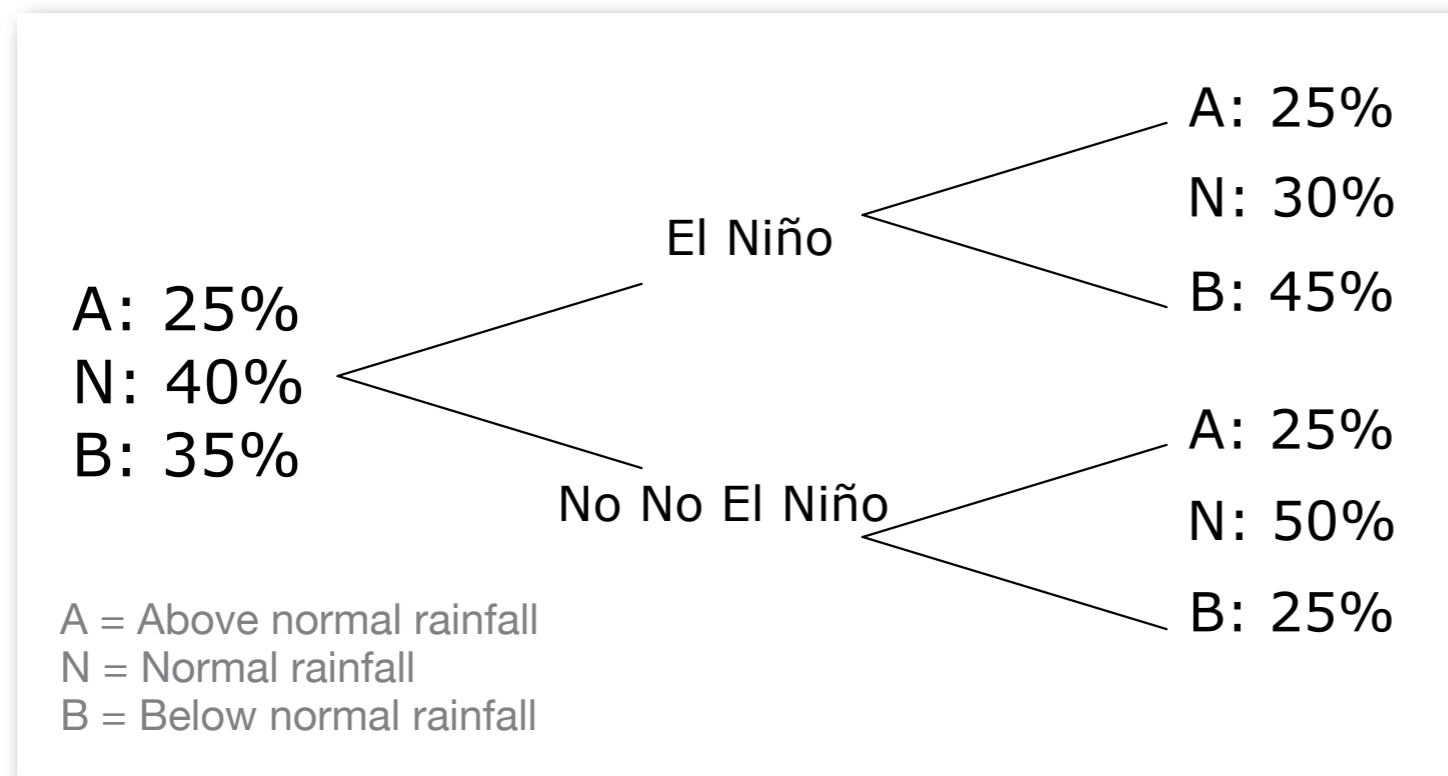
Strategies: Recognize multiple perspectives



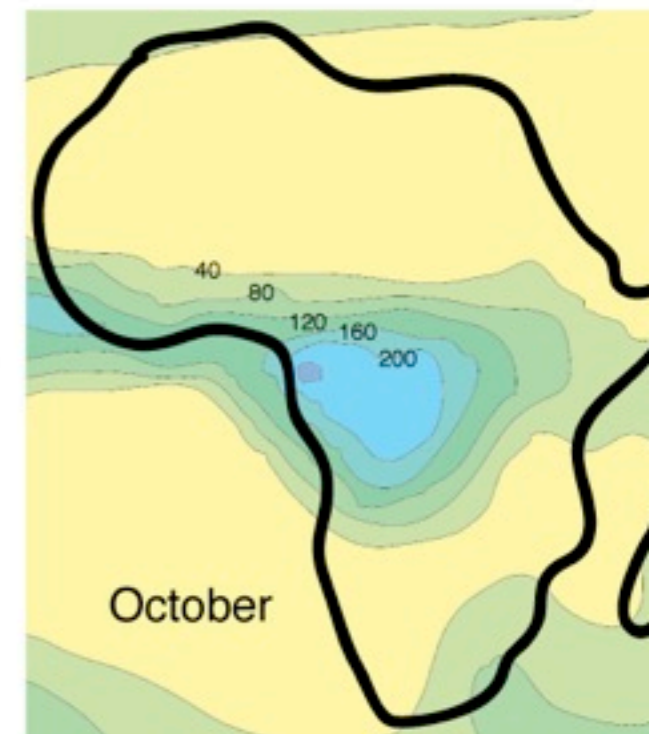
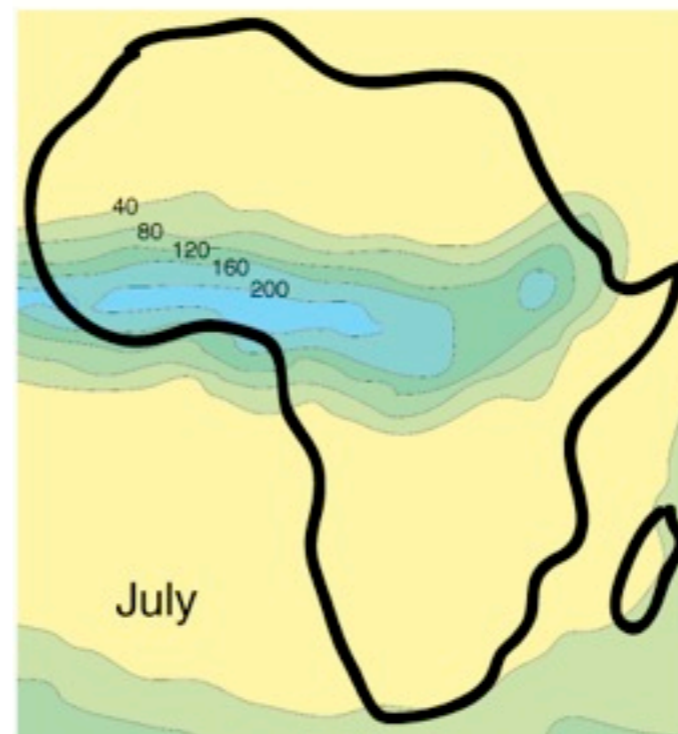
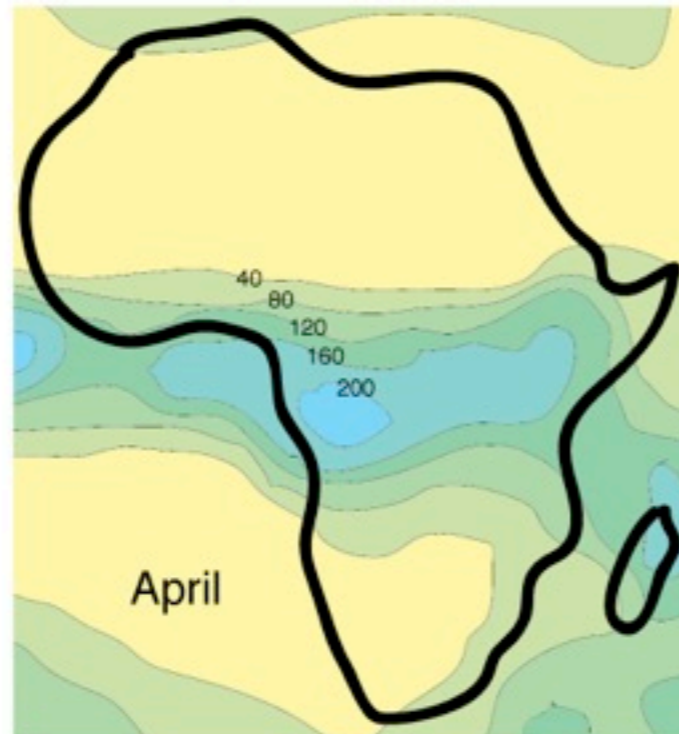
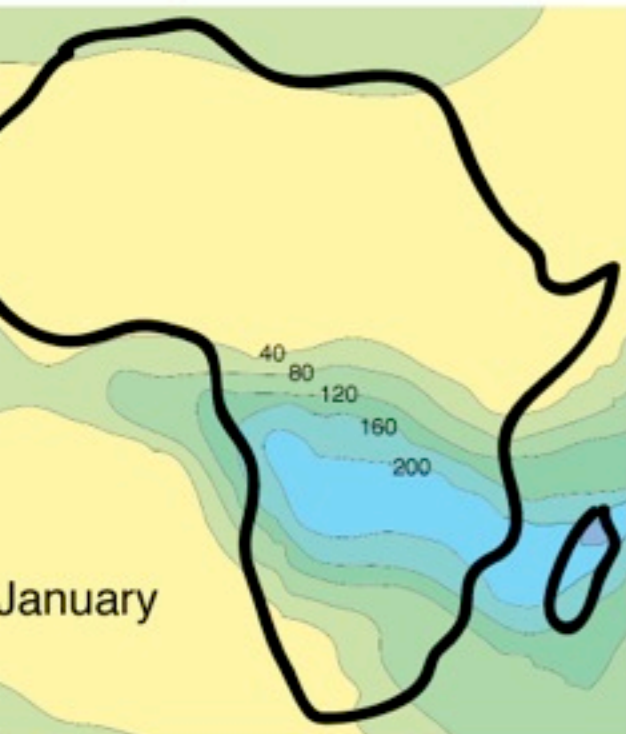
Strategies: Use familiar analogies for tricky concepts



Strategies: Use familiar analogies for tricky concepts



Strategies: Build a new mental model

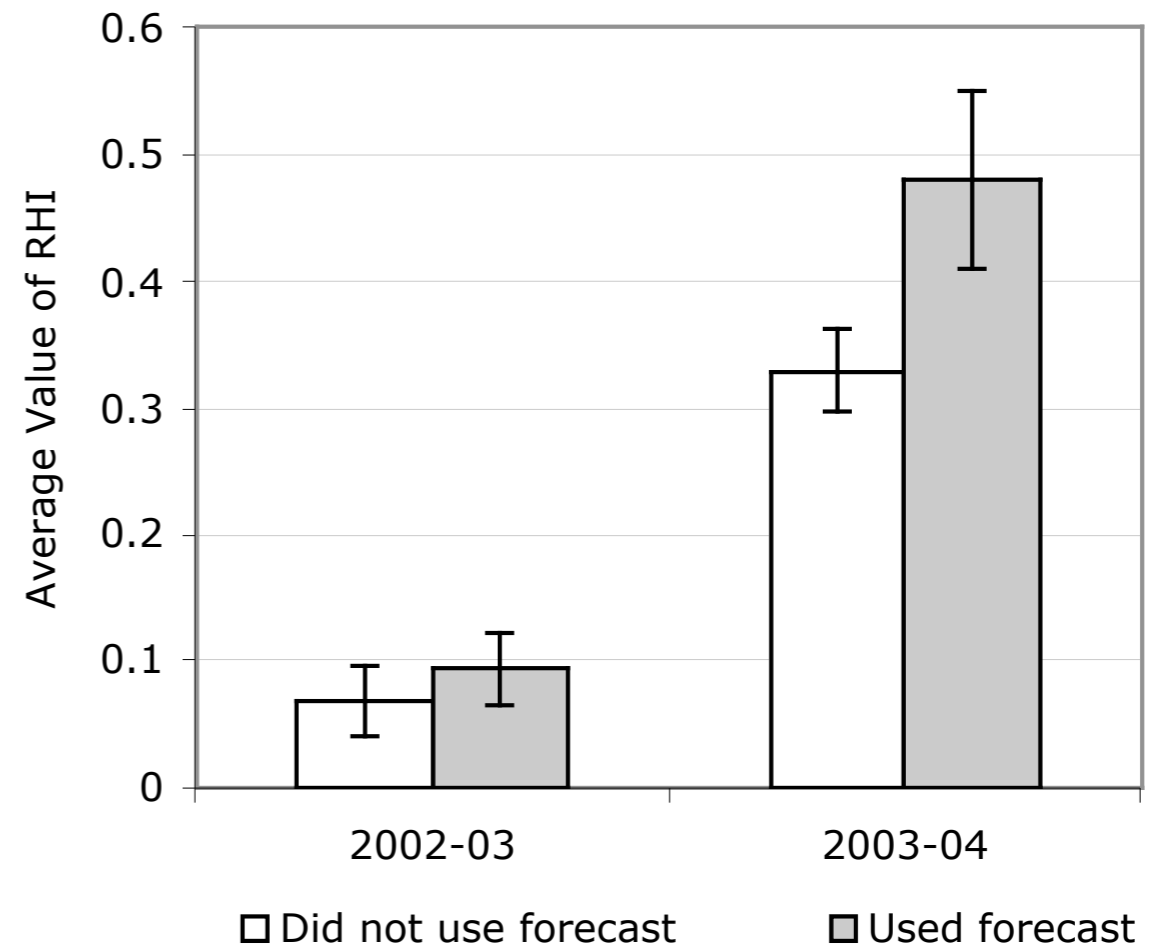
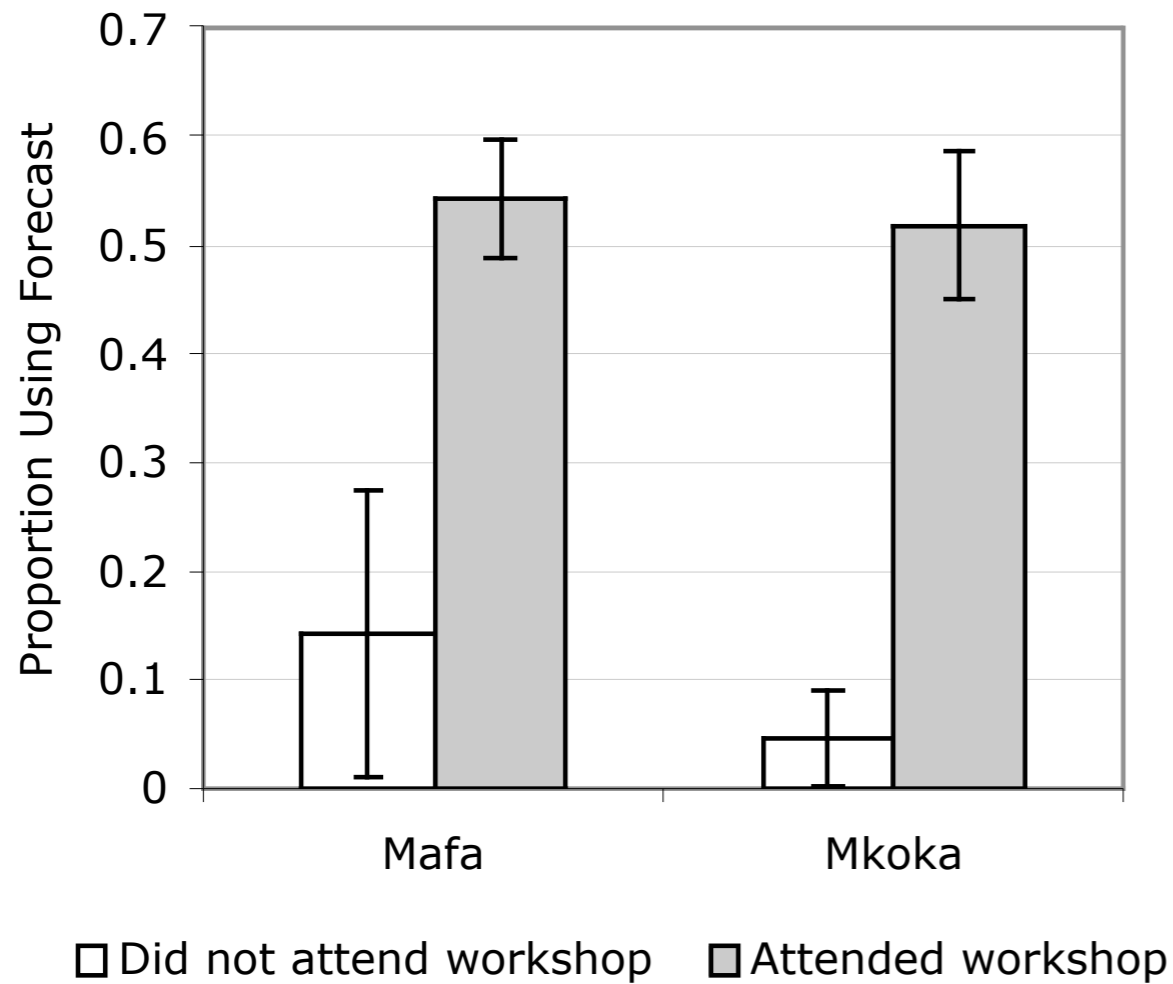


Source of data: NOAA N

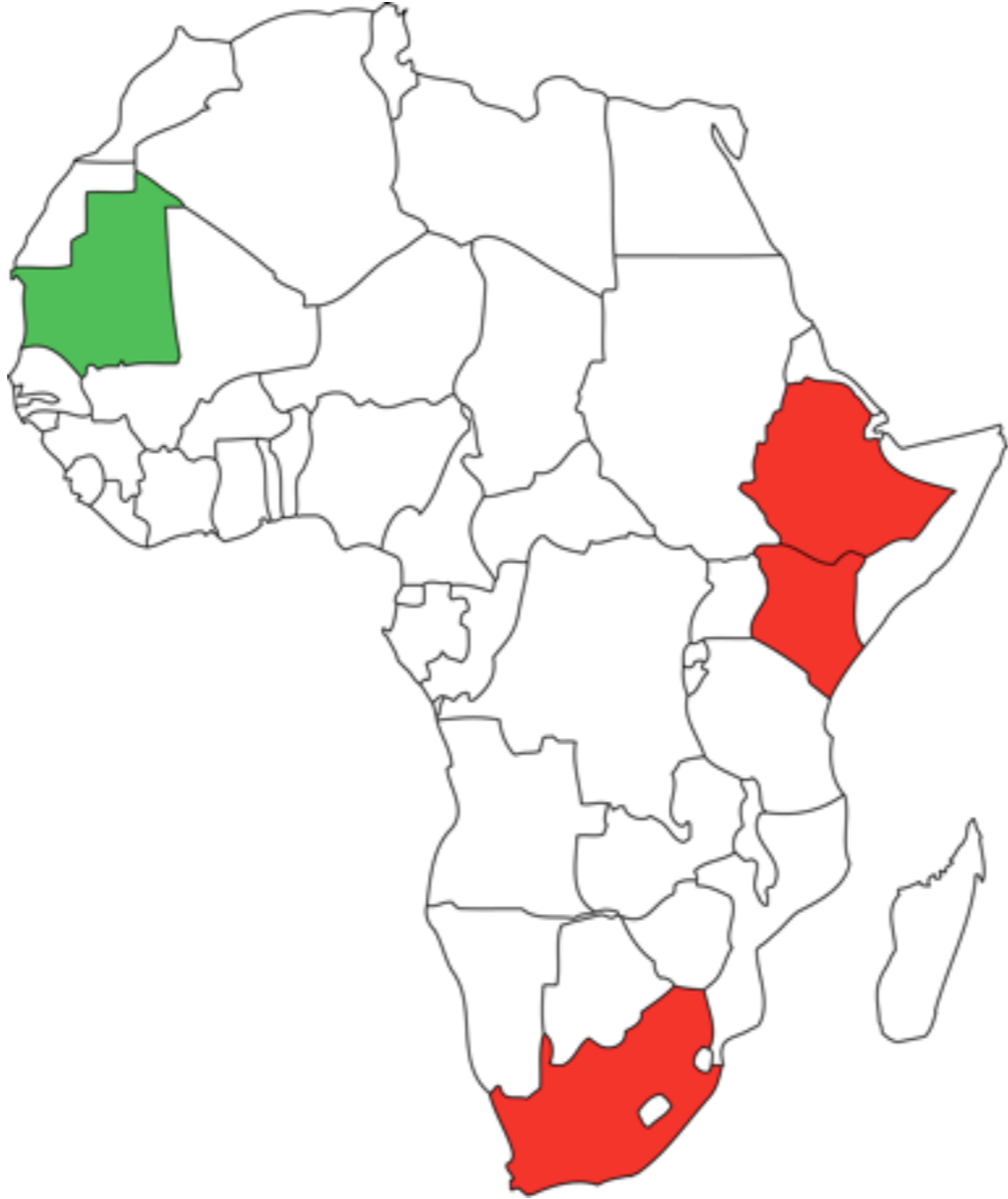
Strategies: Participatory decision support



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Conclusion



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