



Negotiator Briefs on Cognition and Climate Change

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Rationality, Risk Perceptions and Risk Hierarchies

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This is the first of three *CCC Briefs* dealing with issues related to rationality. This *Brief* explains what it means to be rational when it comes to multilateral cooperation on climate change, and analyzes how individuals think in particular about the expected costs of climate change and climate policy. The three *Briefs* taken together assess to what extent climate negotiators do in fact think and decide rationally, and what else is going on in their minds when considering options for global climate governance.

Most research on political decision-making assumes that political actors are rational thinkers who make decisions and act based on their rational conclusions. You probably agree with those assumptions – of course, you are a rational human being.

In the language of political science and economics, rationality is the weighing of the expected costs and benefits of certain policy options in response to a problem (including the option to do nothing at all), and choosing the option with the highest net benefit (assuming that all relevant costs and benefits can be calculated and that the problem has a certain time frame over which all the costs and benefits are discounted).

This cost-benefit analysis (CBA) framework reflects what moral philosophers call utilitarian thinking, in other words the aim to maximize utility from the decision-maker's point of view. Utilitarianism is a form of consequentialism - the moral imperative to achieve 'the greatest good for the greatest number'. Political scientists call this the logic of consequences, which fits squarely into theories of realpolitik and national interests to the extent that 'the greatest good for the greatest number' refers to the citizens represented by the decision-maker and their wellbeing.

Research on the psychology of decision-making has added a lot of subtlety to these basic theories, establishing solid evidence that rationality is 'bounded' and influenced by a range of biases, heuristics and framing effects.

Key Lessons

- **Rational thinking** means assessing expected costs and benefits of climate change and climate policies; beliefs about expected costs are risk perceptions.
- Three factors affect risk perceptions: the **risk target** (your in-group or others), the **timing** of the expected impact (now or in the future), and the quality or **type of risk**.
- Concerning the quality of risk, climate negotiators' beliefs contain at least seven categories of risks that are best understood in a hierarchical framework.
- People who focus on risks above a certain **severity threshold** (e.g., survival, identity loss, human suffering) use a very different moral and ethical framework to form their negotiation positions than those who care most about risks below this threshold (e.g., infrastructure damage, economic loss).
- An individual's **risk perceptions** depend on a lot of factors, most prominently the perceived vulnerability of their home country, which is based on both their interpretation of climate science and their personal experience of past and present climate impacts.



These theories explain the multitude of deviations from purely rational decision-making that one can observe in everyday life and in particular in complex and stressful political decision-making contexts like the UNFCCC. Some recent work on what is called cultural cognition has gone a step further and suggests that every individual relies extensively on cultural meanings developed in the course of their lives when developing risk perceptions and making decisions.

While acknowledging the growing evidence for the limits of rationality, it is worth exploring how negotiators think about the costs and benefits of climate change and climate policies. As you are probably acutely aware, the distinction between these two types of costs is very important.

Costs, Risks and Risk Perceptions

Before we can start talking about costs we need to understand something about risk perceptions. In the case of climate change, costs are primarily expected damages and losses that have attached to them a certain probability of occurring at a certain time in the future. Although these probabilities are not known due to scientific uncertainty, one can call these expected future costs risks, and people's beliefs about them risk perceptions.

There are multiple factors that influence what types of risks people focus on, which ones they consider morally unacceptable and how they respond to these risks, both in their minds and through their actions. I only want to point out three very simple ones: the risk target (i.e., whether the risk affects yourself and the people you care about or others that are not part of your 'in-group'), the timing of the risk (now or later) and the quality or type of the risk (i.e., how bad it will be).

The in-group concept will be very important throughout the entire *CCC Brief* series. It describes the fundamental finding by sociologists that people have a natural tendency to divide the world into in- and out-groups, and to treat their in-groups more favorably. In the case of climate negotiations this raises important questions:

- *How do negotiators define their in-group(s)?*
- *Are diplomats (morally or politically) obligated to include only the citizens of the country they represent in their in-group?*

Who belongs in your in-group(s)? Do you prioritize a sub-group within that in-group? Why? What about business representatives from multinational companies or members of major NGOs – who should they care for?

The timing of expected risk impacts also matters, but my focus in this Brief is the quality of expected risks. Data from my research suggests that different negotiators focus on very different types of risk related to climate change. Everybody is concerned about multiple kinds of risks, but each individual has a tendency to focus on one or two particular risk categories. The table below organizes these risk categories into a hierarchy with more grave or serious risks on top (e.g., risks relating to survival, identity, health and well-being), and less severe risks like material and economic losses toward the bottom.

As later *Briefs* will explain in more detail, thinking about risk categories in terms of a hierarchy does matter. The types of risks you worry about influence your moral judgments of climate change governance options.

Somewhere along the hierarchy there is a severity threshold. Negotiators who focus on risk categories above that threshold (e.g., on existential threats to their in-groups or on potential identity loss) tend to think about climate governance in terms of moral rights and obligations that are disconnected from the idea of a cost-benefit analysis. In their view certain actions are simply right or wrong rather than cost-effective or not. For example, from this perspective it could be morally imperative to prevent the disappearance of island states, while others ask about the costs of preventing such a calamity and how to justify these costs to their tax payers.



Hierarchy and Description of Risk Categories

Cost Category	At Risk Groups	Description
Existential Threat	Humanity, Cultures, States, Individuals	Climate change could lead to the destruction of the entire group (i.e., wipe out humanity, destroy cultures, e.g., island cultures, lead to the disappearance of states, or the death of individuals).
Identity Loss	Nations, Cultures, Communities, Individuals	Identity loss can take many forms, e.g., the loss of an occupation (e.g., fishermen becoming farmers), the loss of homes, the loss of ritual sites and other forms of cultural practice, the loss of landscapes, territory, and associated activities and emotions, the loss of seasons and possible experiences, the loss of species central for hunting, diet, experience of nature
Human Suffering	Developing world, States, Regions, Communities, Individuals	Human suffering refers to issues like poverty, hunger, hardship, disease, and water scarcity.
Extreme Weather Events/ Link between environment and economy	States, Regions, Communities, Cities, Individuals	Extreme weather events include storms, floods, droughts, heat waves, and the associated human, environmental and economic losses, often mediated by the effects on agricultural productivity and infrastructure.
Global Food Shortage	All humans, Poor States and Communities	This is a unique category in the sense that it is perceived to be a global concern, not linked to a particular place but systemic. However, poor people are expected to suffer more from it.
Economic and development costs	States, Regions, Communities	This category refers to the loss of GDP due to the effects of climate change (overlap with extreme weather events), and the reversal of development progress, e.g., migration of fish populations leaving fishing communities and infrastructure stranded, or increasing temperatures decreasing agricultural yield.
Economic costs of action	States, Industries, Voters	The financial costs and GDP loss associated with climate policies; also the loss of global competitiveness.

Individuals who fall in the latter category tend to worry about cost categories below the severity threshold, (e.g., economic losses, material and infrastructure damage) and use a utilitarian moral framework as explained above.

There is plenty of diversity in the risk perceptions and beliefs of people above or below the severity threshold, but generally this feature divides negotiators into two groups: those who are mainly concerned about climate change impacts and those with a focus on climate change policies – completely different sources of costs and risk perceptions.

- *What risk category is your primary concern?*
- *Where on the hierarchy do you find yourself? If you are worried about survival of some people, are those 'your people'? What if they were your people?*
- *What is your ethical framework – utilitarian or rights- and obligation based?*
- *Why are other negotiators not concerned about the same risks that are on your mind?*



The last question opens a whole new conversation about interpreting scientific information surrounding climate vulnerability, personal experience of climate impacts, and again the definition of in-groups and national interests. I will return to these issues in future *CCC Briefs*.

A key take-away from this *Brief* is the fact that rationality and morality are connected in surprising ways. The quality of climate-related risks you are concerned about influences the moral framework your mind applies to the problem of multilateral climate governance.

About this document

This document is part of the publication series "Negotiator Briefs on Cognition and Climate Change" that builds on research conducted by Manjana Milkoreit since 2011. The series is co-sponsored by the Walton Sustainability Solutions Initiative (WSSI) at Arizona State University's Global Institute of Sustainability (GIOS) and the Waterloo Institute of Complexity and Innovation (WICI) at the University of Waterloo in Canada.




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The Rob and Melani Walton Sustainability Solutions Initiatives are the result of a \$27.5 million investment in Arizona State University's Global Institute of Sustainability by the Walton Family Foundation. Within the Walton Sustainability Solutions Initiatives, diverse teams of faculty, students, entrepreneurs, researchers, and innovators collaborate to deliver sustainability solutions, accelerate global impact, and inspire future leaders through eight distinct initiatives.

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