



**What's the Mind Got To Do With It?
A Cognitive Approach to Global Climate Governance**

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Cover Photo: Negotiators huddle together to work out the final details of the Durban Platform at COP17 in December 2011
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ABSTRACT

After more than 20 years of unsuccessful international negotiations, the United Nations Framework Convention on Climate Change (UNFCCC) might be one of the biggest, and maybe most important, global governance failures of our time. Why is this problem so hard to tackle? Starting with the assumption that all human behaviour has cognitive origins, this paper begins to explore the importance of cognition – processes of thought – for both past political conflicts and the possibility of future cooperation on climate change within the multilateral system. After a brief outline of the fundamental questions that a cognitive research programme could and should answer, the paper introduces cognitive-affective mapping as a novel research tool that can facilitate such a programme by providing 'access to the mind'. Cognitive-affective maps open up a wealth of analytical opportunities, including a comparison of individual and collective belief systems and mental structures that might inhibit cooperative outcomes at the international level. The paper concludes with a brief summary of ongoing research that seeks to identify distinct belief systems regarding international cooperation on climate change among participants in the UNFCCC negotiations, using cognitive-affective mapping. The study will assess to what extent mental content and structures influence the search for cooperative solutions, and whether and how cognitive obstacles to cooperation can be removed.

1. THE ROLE OF COGNITION IN GLOBAL CLIMATE GOVERNANCE

After more than 20 years of international negotiations without any meaningful effect on climate change, one could call the United Nations Framework Convention on Climate Change (UNFCCC) one of the biggest, and maybe most important, global governance failures of our time. The climate regime is unambitious and ineffective, and it lacks enforcement mechanisms, as Canada's recent withdrawal from the Kyoto Protocol impressively demonstrated. A follow-up agreement to the Kyoto Protocol has been postponed until 2020 and faces a major uphill battle to find a consensus amongst developed, developing and emerging countries. Success – however it is defined – continues to be elusive.

States have not only failed at global cooperation – their domestic actions to address the climate challenge have also remained woefully inadequate, on both the mitigation and the adaptation side of the governance equation.

It is particularly puzzling that the political failure persists despite the emergence and continuing consolidation of a scientific consensus about the anthropogenic causes and expected impacts of climate change, which leaves no doubt about the necessity and increasing urgency of action. This is not only “deeply troubling to our enlightenment sensibilities in which we presume that knowledge will lead to rational action” (Norgaard 2009), but also contrary to the experience with ozone depletion and the Montreal Protocol, in which an effective international regime was created in the absence of scientific consensus (Parson 2003). The comparison suggests that we have learned more than is necessary for meaningful action, but we continuously fail to act upon our newly gained insights.

So what is going wrong? And how do we fix it?

Cognitive research provides a set of potentially powerful answers to these questions. Every human behaviour, whether individual or collective, is driven by a certain motivation or mix of reasons. Humans are purposeful beings, pursuing desirable outcomes and trying to avoid harmful ones. That means everything we do starts in the mind, yet, the mind is the “variable” least understood in today's research on global politics and governance.

Past attempts to study the mind have been constrained by several factors, in particular significant methodological challenges (Bleiker and Hutchison 2008). How does one “access” someone's mind, especially the minds of individuals in important political decision-making positions? How could one know or verify what people think or feel, and what they thought in the moment they signed a treaty or debated a policy? It seems even more daunting to investigate how groups “think”, how they form and change opinions or make decisions in the absence of a collective brain.

Rather than analyzing cognitive processes, many scholars have worked with the useful assumption that it does not matter what people think, only what they do. Why bother with the confusing cognitive mess that never manifests itself in action? Focusing on behaviour rather than on the underlying brain processes has created a broad range of interesting insights contradicting previous theoretical work on the presumably rational motivations of (political) behaviour. Behavioural researchers such as Daniel Kahneman¹ and Cass Sunstein have demonstrated this impressively with ideas such as prospect theory (Kahneman and Tversky 1979), nudging (Thaler and Sunstein 2009), and fast and slow thinking (Kahneman 2011).

¹ Kahneman also studies cognitive processes, e.g., the role of heuristics that are relevant for political decision-making. To learn more about his work, see <http://www.princeton.edu/~kahneman/>. For more on Sunstein, see <http://www.law.uchicago.edu/faculty/sunstein/>.

Recently psychologists, decision researchers and communication specialists have begun to explore cognitive barriers to individual engagement with climate change at the level of citizens, local communities, or national populations. These scholars point to the relevance of emotions (Lorenzoni et al. 2006; Wolf and Moser 2011), cultural cognition and polarization (Leiserowitz in Moser and Dilling 2007, chap.2; Kahan et al. 2011; Kahan et al. 2012), ideologies (Weber 2010; Antilla 2005; McCright and Dunlap 2000), communicative strategies, and the (lack of) physical experience of climatic events (Dessai et al. 2004; Spence et al. 2011); all these factors can affect individual decisions and public opinion on climate policy. Shifting from “lack of information”– and “lack of concern” – explanations to more complex processes in the human mind, this body of work is highlighting the cognitive barriers to bottom-up, political mobilization for climate change action. Some of these insights lead to the troubling conclusion that there are fundamental motivational obstacles to climate action: people might simply not want to change, even if they are fully informed about the problem and aware of the different perspectives regarding the problem and its solution.

Equally important but less studied is the question of how the belief systems and mental structures of decision-making elites influence the search for national and global political solutions to climate change. Do diplomats, policy-makers, and government representatives working on climate change struggle with the same cognitive barriers as citizens and community organizers? If not, are they dealing with other mental constraints? More generally, what is the role of cognition in the global climate negotiations? Answering these questions might open up new opportunities for steering the global negotiations or national political process towards more productive outcomes.

Cognitive theories could also contribute to a broader range of research on political decision-making and behaviour more generally, including political science, international relations, and global governance. So far scholars in these fields have been reluctant to embrace either behavioural theories or cognitive approaches. Major theories deal with the mind problem in a rather impoverished way, e.g., by making highly simplified assumptions about the mental work decision-makers do when they create policies, enter an international agreement or deploy military force. Political decisions are supposedly based on “rational choice” – a mental calculation of the expected costs and benefits of various paths of action, with the goal of selecting the path with the highest net benefits.

While this approach has generated a wealth of knowledge and political advice over the last 50 years, we need to ask whether it adequately explains real-world decision-making. Did George W. Bush really calculate the costs and benefits of going to war with Iraq? And if so, what costs did he include: the cost of deploying troops, of military equipment, of contractors? How about the loss of American lives – or of Iraqi lives? The same can be asked about less-controversial decisions. Did anybody come up with a list of costs and benefits of signing the Convention Against Genocide? Hardly.

Integrating cognitive approaches into the study of global politics offers exciting research opportunities. This paper takes a first step in this direction by exploring the interface between cognitive research and the study of global climate politics.

Fundamental questions for a cognitive analysis of global climate politics

Cognitive analysis – the attempt to identify, describe and understand the content, structure and dynamics of systems of mental representations – can fill an important gap in the study of global climate politics. Building on recent advances in the cognitive and decision sciences as well as on rapidly evolving technological support tools for studying the mind, a cognitive approach promises new insights that could increase our ability to influence political processes and shape the necessary social change in the transition to a carbon-neutral future.

Cognitive analysis builds on four basic questions that are applied here to global climate politics:

How does the mind represent the world? Which concepts (mental representations) related to climate change (and needed policy responses) exist in a person's mind, and how do they relate to one another? How can one describe and analyze this mental structure – as a network, as a complex system? If one assumes that there is only a limited number of possible and valid points of view on global solutions to climate change, e.g., because of logical constraints or other necessary characteristics of a viewpoint, one can explore whether all possible views are already represented in the public debate, which new ones can be created, and why some points of view seem to be more popular than others (“cognitive magnets”).

How do people make decisions? Do voters, politicians or diplomats make rational choices (calculating costs and benefits to their best ability) when faced with the possibility to act on climate change, or do they rely on other criteria? Does it matter if these decisions concern the local, national or global scale of action, i.e., whether they are about low-carbon consumption choices, national energy policy or a multilateral climate treaty? Do individuals combine rational and non-rational elements in their decision-making, and how do these elements relate to and influence each other? How does increasing complexity in the decision-making environment influence this process? Are there mental elements we have not yet considered?

How do people's minds change over time? Why and how do people take on new beliefs regarding climate change or shed old ones? What is happening when mental structures change? Can a climate sceptic become an advocate of climate change policies? Is it easier for a scientist to revise her views regarding the causes of climate change than it is for a non-scientist member of the Tea Party? How can a person move – or can be made to move – from one set of beliefs (i.e., cognitive basin of attraction) to another?

How can we understand the relationship between individual and collective beliefs and decisions? Given that only individuals have brains and thus the ability to think about climate governance, does it make sense to speak of group cognition? How else could we talk about the negotiation position of India, the decision of the Mexican government to enact climate change legislation, or the refusal of the U.S. to join the Kyoto Protocol?

Exploring these questions may require the expertise of researchers across multiple disciplines: international relations, global governance, psychology, sociology, policy studies and sustainability sciences. The theoretical and methodological challenges of such an endeavour are significant, but the resulting insights could be valuable not just for the UNFCCC process, but also for national, sub- and transnational processes of climate governance. Research-based policy advice could support negotiators and decision-makers in their efforts to shape the future climate regime across multiple scales, e.g., by developing different frames and narratives for the multilateral process, proposing changes in national negotiation strategies, designing communication strategies for national or international climate policy choices, or setting up local change processes that can create a shared sustainability vision.

As a modest contribution to such a research endeavour, this paper introduces a new and simple qualitative tool to study the mind: cognitive affective mapping. It briefly outlines some of the many possible applications of this tool for scholarly purposes and more practical policy-making processes. Finally, it describes the application of cognitive-affective mapping in the author's ongoing dissertation research on global climate politics.

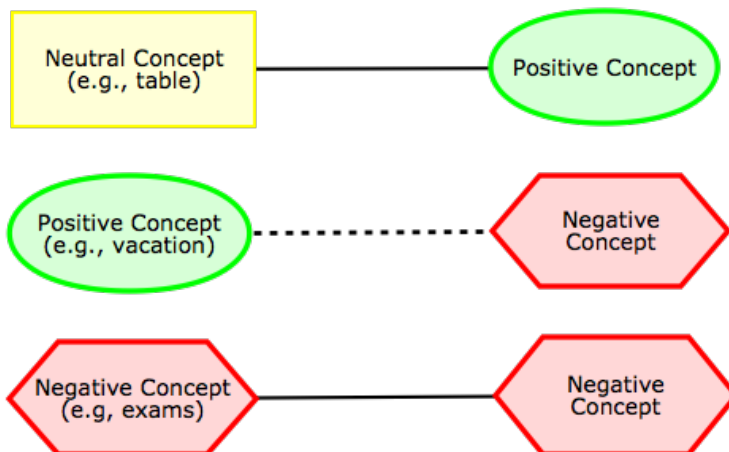
2. CREATING MIND ACCESS: COGNITIVE-AFFECTIVE MAPPING

Cognitive-affective mapping is a qualitative research tool to identify, visualize and analyze existing belief structures (Homer-Dixon et al., forthcoming). A cognitive-affective map (CAM) is a network diagram or concept graph that “displays not only the conceptual structure of people's views, but also their emotional nature, showing the positive and negative values attached to concepts and goals” (Thagard 2011).

Cognitive maps have been used in the past (Axelrod 1976; Bonham 1993; Novak 1998), but the novelty introduced by CAMs is the ability to include affective information, adding an important layer of information about mental states and processes (Mercer 2010). In contrast to Axelrod's mental maps, CAMs do not focus exclusively on causal beliefs, but on the network of relevant concepts for a given subject matter (e.g., considerations when buying an electric car, beliefs about the existence of planetary boundaries, or doubts about the ability of the multilateral system to address climate change).

The networked representation of mental structures and processes is based on neural network research in the cognitive sciences that conceptualizes and simulates (biological) brain processes in terms of connections between neurons that can be modelled computationally (Galushkin 2007).

Figure 1: Examples of CAM elements



The main elements of a CAM are the network nodes (cognitive elements, mainly individual concepts or propositions), emotional valences of these nodes (positive, neutral, negative, ambivalent), and links/connectors between the nodes. Positive nodes are depicted as green ovals, neutral ones as yellow rectangles and negative ones as red hexagons. “Ambivalent” concepts are perceived as positive in some contexts and negative in others, e.g., a sports car as a status symbol and source of joy vs. its role in a fatal accident. Hence, ambivalent concepts are depicted as a combination of an oval and a hexagon (purple). The thickness of a shape's edges represents the emotional intensity associated with the node. Links are (solid or dotted) lines, indicating compatibility or incommensurability between two concepts.

Figure 2: CAM representation of a concept about which the subject is ambivalent

CAMs can be generated in a number of different ways, which can include the use of software tools such as Empathica.² The research subject can be asked to develop his or her own CAM of a specific issue. Alternatively the researcher can generate the CAM based on data gathered through qualitative interviews or from primary and secondary written sources (e.g., published statements, speeches, journal articles, statutes) and observations. The validity of such a researcher-generated CAM can be verified in a (second) interview with the research subject, providing the opportunity to correct the map by adding, deleting or changing concepts, emotional valences or links. Another way to verify an initial CAM that is based on text sources is to have other researchers generate a CAM based on the same source material, and then compare the results.

CAMs can reveal and represent the deep, ideational content of various political situations that deserve analysis. In the context of climate change politics they can reveal the breadth of factors that influence a government's negotiation position and strategy, offering very different insights than game-theoretic considerations of system structure and payoffs. CAMs can depict the complexities that have led to the ideological polarization of views on climate change in the U.S., or identify differences between traditional Republican and Tea Party perspectives. CAMs can reveal the existence or absence of normative motivations among state and non-state actors and – if tracked over time – the dynamics that lead to the acceptance of a new climate-related norm.

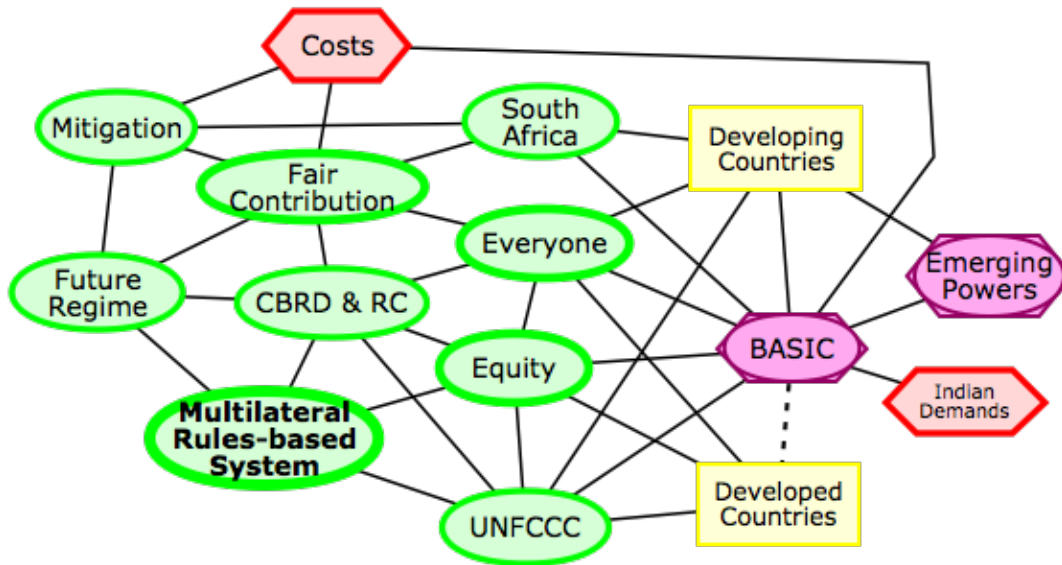
The CAM below shows a small section of the South African negotiation position at the latest round of climate negotiations in Durban (COP17, held in December 2011), depicting a cluster of concepts relevant for South Africa's views on equity in global climate governance. Source material for this CAM included a number of press briefings by the South African delegation in Durban;³ two statements made by President Jacob Zuma during the conference;⁴ an interview with Alf Wills, the South African chief negotiator, conducted by the South African Institute for International Affairs (SAIIA) in 2011, available online as podcast, and personal observations of the Durban negotiations.⁵

² Empathica, which is available for free, was created in 2011 by fourth-year software engineering students at the University of Waterloo. Learn more at <http://cogsci.uwaterloo.ca/empathica.html>.

³ Available as webcasts on the UNFCCC website: http://unfccc4.meta-fusion.com/kongresse/cop17/templ/ovw_onDemand.php?id_kongressmain=201#.

⁴ Available on the website of the UNFCCC: http://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/cop17cmp7_opening_stat_zuma.pdf and http://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/111206_cop17_hls_jacob_zuma.pdf.

⁵ SAIIA podcast "South Africa's Chief Negotiator, Alf Wills, speaks to SAIIA ahead of COP 17", November 14, 2011, <http://saiiapodcasts.podhoster.com/index.php?pid=27252>.

Figure 3: CAM representing South Africa's views on equity at COP17

The CAM captures and simplifies some of the central themes of the complex equity debate in the climate negotiations, and reveals how South Africa's views differ from others'. In line with arguments made by the developing countries⁶ and the emerging powers in the BASIC group (Brazil, South Africa, India, China),⁷ South Africa believes that an equitable distribution of the mitigation burden in the future climate regime has to be based on "common but differentiated responsibilities and respective capabilities", an equity principle anchored in Article 3(1) of the UNFCCC, a much-valued multilateral treaty. A novel aspect is the view that everyone – not only the developed countries – should make a fair contribution to reducing global emissions. The basic principle still applies and determines what is fair – wealthy countries with large cumulative emissions do more and poor countries with few historical emissions do less – but every country (including South Africa) should carry some part of the mitigation burden.

CAMs are not only a valuable analytical tool, but could also be used for more practical and policy-oriented purposes. In the case of the climate negotiations, mutually mapping the views of parties can provide a rich set of information that can clarify and elaborate differences, but can also reveal misperceptions and previously hidden concepts that are relevant for the discussion. In some areas the opportunity to correct misunderstanding and unearth deeper layers of meaning might contribute to identifying areas of agreement and potential solutions. A more contentious but also powerful application of CAMs would be as strategic support tools for designing political interventions with the purpose of changing people's minds – e.g. to frame more persuasive arguments and communications strategies.

3. A UNIVERSE OF RESEARCH OPPORTUNITIES

Cognitive-affective mapping can be used to examine questions at many different levels and for very different purposes. This section briefly describes different types of applications and how they might be relevant to questions that arise in climate policy and diplomacy.

⁶ The largest grouping of developing countries is the G77&China, which issues statements on behalf of its members during the negotiations, e.g., <http://www.g77.org/statement/getstatement.php?id=120515b>.

⁷ The BASIC groups repeats this argument in the joint statements issued after multiple ministerial meetings since 2009, e.g., <http://www.indianembassy.org.cn/newsDetails.aspx?NewsId=267>.

Understanding individual thinking: CAMs can provide rich insights into the belief systems that shape how an individual perceives him- or herself, another person (e.g. an adversary), country or entity (e.g. Barack Obama, China, Greenpeace), a specific problem (such as climate change), the merits of different reasons to select one policy option rather than another (e.g. cap-and-trade vs. a carbon tax) – even scientific questions such as the role of climate change in droughts in the Amazon, or philosophical issues such as their attitudes regarding the relationship between humankind and nature.

Individual-level analysis can identify the most important concepts a person uses to make sense of an issue, and the mental connections that exist between these concepts. Exploring the person's mental structure, the researcher can learn about the sources of meaning in a given belief system, and which concepts are more important for that person, and thus least likely to change. For example, a person's stance on equity in climate negotiations might be driven by a pragmatic view of who has more resources, by a deep-seated resentment of colonial powers, or by a fundamental sense of social justice. The resulting stance might be the same, but the person's willingness to negotiate and trust another's good intentions might differ considerably.

Comparing beliefs across individuals: A comparison of individual viewpoints can enable the researcher to identify categories of concepts (meta-concepts) that are part of every CAM being compared, but take on very different meanings in each of them. For example, one might observe that all research subjects deploy concepts related to equity and justice when considering whether their government should join a new legal instrument under the UNFCCC. However, the relative importance of equity concerns compared with other considerations, such as economic costs, might differ across individuals, and every person might have a different understanding of equity. The next step then is to compare their definitions of equity and justice, and the relative weight each person gives to different aspects of a decision (e.g. is ability to pay a crucial factor, or are moral values the priority?).

Understanding collective views: A collective CAM depicts concepts and beliefs that are shared by all members of a certain group, and are therefore relevant sources of meaning and shared identity for the collective, e.g., members of an environmental NGO regarding the purpose of the organization, or members of a negotiation delegation regarding their national identity (Mock 2012) and national interests in the climate arena. Research can contrast and compare group perspectives (e.g., negotiation positions of two or more countries) in order to identify room for agreement or sources of conflict. It can also explore differences among sub-groups within a larger group (factions), identifying cognitive elements they all hold in common and those that keep them apart. Finding such cracks in what appears to be a group's unified front can offer opportunities for creating new political or negotiation alliances. When applied in practical settings, CAMs can potentially contribute to the resolution of conflicts or the facilitation of negotiations.

Exploring the relationship between the individual and collective: The most interesting but also most challenging questions for cognitive research concern the relationship between the individual and the group, e.g., a head of state or a head of delegation at the climate negotiations and the citizens of the country she represents. The recent change in the Indian negotiation team offers a colourful example. While Jairam Ramesh took a very cooperative and bridge-building stance in Cancun, offering the prospect of larger Indian contributions to the climate regime, his successor, Jayanti Natarajan, presented the Indian position in starkly different terms, rejecting the notion that a developing country such as India should have larger responsibilities. Yet both individuals represented the Indian government and people. How can one theorize about group cognition given that only individuals have brains and

therefore the capacity to think? How do shared views (e.g., a national negotiation position) emerge from communication among individuals (e.g., an inter-ministerial coordination process)? Why do individuals often treat a group (e.g., a state) as if it had a mind or were a person?

Understanding and influencing mental dynamics: Comparing CAMs (of the same individual or the same group) at different points in time can reveal cognitive and emotional dynamics that are significant indicators for behavioural change and political outcomes. One can explore how an existing system of networked beliefs has changed: Are concepts added (e.g., on the role of aerosols for global warming and cooling) or discarded? Are new clusters of concepts formed (e.g., regarding the potential role of geoengineering)? And what happens when a previously central concept is cast aside, such as the 2°C target (now quietly dismissed by many negotiators as unattainable), or the clear differentiation between Annex-I and non-Annex-I countries?

Understanding processes of social and institutional change: Combining insights from the various research directions outlined above has the potential to advance existing knowledge about the psychological, sociological and political processes involved in creating the necessary social change in response to global climate change. Grappling with different dynamics at various social system scales and their interactions (e.g., individual cognitive changes triggered by participating in a national political debate), a cognitive approach to world politics opens up new space for theoretical, methodological and empirical research that is needed in a time of mounting global political challenges.

When combined with data on behaviour (e.g., voting, grassroots activism, or negotiation positions) and social networks, insights regarding cognitive dynamics can generate powerful theories of political behaviour. A policy-maker who wants to trigger cognitive change in a certain population, e.g., to spur the acceptance of electric vehicles at the national level, can use CAMs to explore the effects of different communicative interventions (e.g., scientific information or ad campaigns, deliberative practices, public events) on individual and collective beliefs. Finally, the neural network foundation of CAMs means they can be used to inform the design of realistic computational models, especially agent-based models that seek to simulate belief and social change through communication and the diffusion of ideas (Wolf et al. 2012). If the CAMs have a solid empirical foundation they can offer realistic psychological input for such models that is superior to theory-based alternatives.

The last section of this paper briefly outlines how an ongoing research project on the role of cognition in global climate change politics deploys cognitive-affective mapping, and what kinds of results this work can generate.

4. THE ROLE OF COGNITION IN THE UNFCCC NEGOTIATIONS

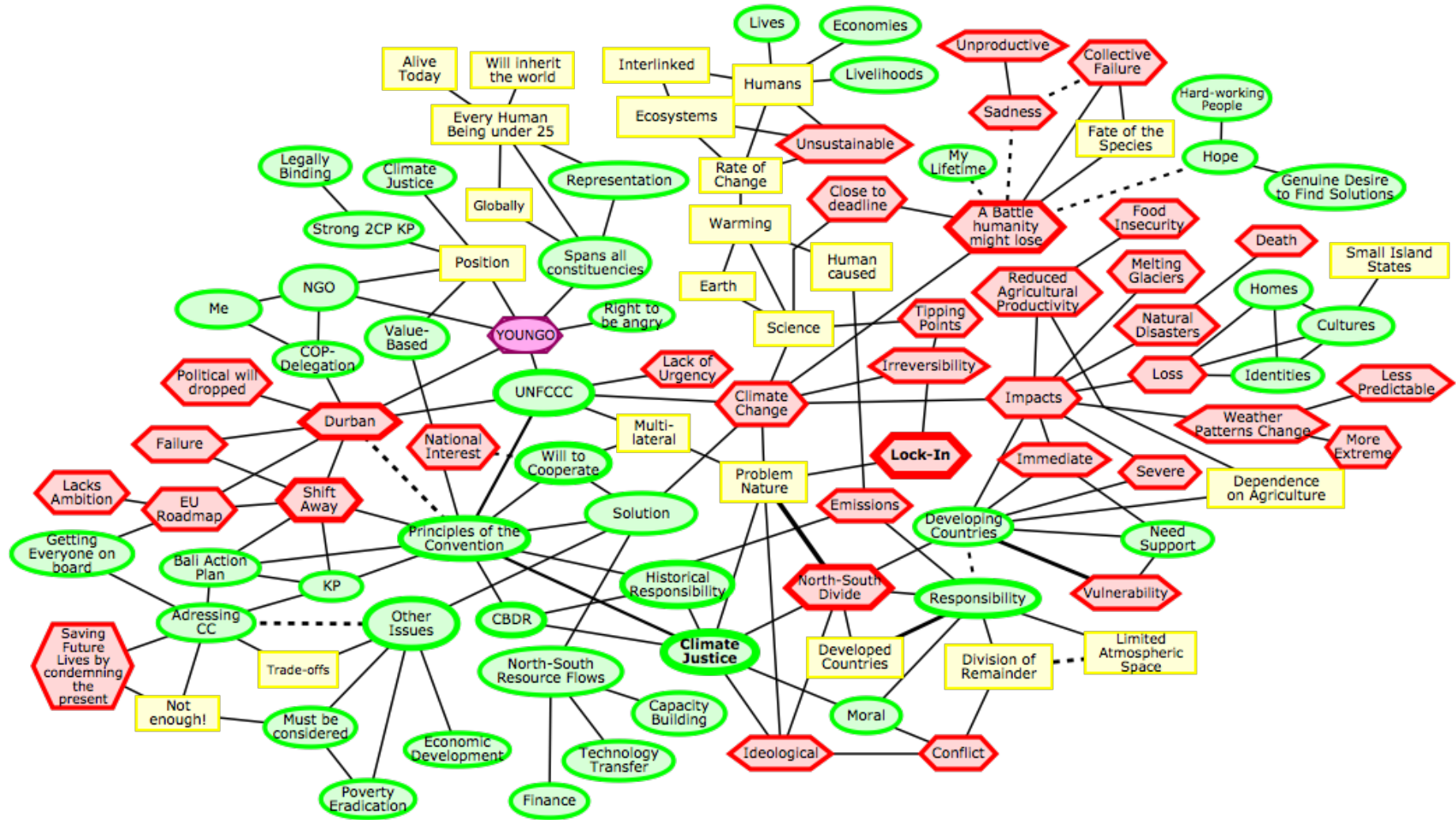
Climate change has presented humanity with a great puzzle: all global actors – state and non-state – share and have access to the same scientific data, but there are vastly different opinions on the appropriate political response to the problem identified. In some countries the validity of the science is still disputed, although this is mainly an artificially created debate funded by actors vested in the status quo, who seek to stall political action by sowing public doubt. Generally, governments around the world agree on the science, but disagree on what to do about it (mitigation, adaptation, geoengineering) and in what mix, how much of it to do (450ppm, 350ppm, or 300ppm, 2°C or 1.5°C), in what time frame, who should do what (developed vs. emerging vs. developing) and how (mitigation targets vs. pledges, public vs. private funding, technology transfer, transparency and accounting), but also why to do it (e.g.,

to prevent harm to people today vs. people in the future, to preserve wealth in the rich world vs. allow wealth to be created in the poor world, to create a greener and cleaner economy or to rethink the existing economic paradigm, to protect national interests or to act in the interest of humanity).

Are the possible viewpoints on the issue endless, or is there a limited set of beliefs on climate change and international cooperation? Do all climate negotiators share a set of concepts or meta-concepts, e.g., climate change as a global problem, the economic costs of action, or the need for climate justice? Do these shared concepts form the structural core of a climate related viewpoint (i.e., what is the consequence of attacking or removing one of them)? Does the diversity of perspectives allow for an international agreement? What in these belief systems motivates (global) action? If the current constellation of beliefs prevents agreement, is it possible to change minds? Whose minds? Can negotiations change minds? Should they?

This project seeks to answer some of the questions raised above by combining two methodological instruments to reveal individual (CAM) and collective (Q Method) cognitive patterns that shape and possibly impede global efforts to create an effective climate regime. The central goal of the project is to identify distinct belief systems regarding international cooperation on climate change among participants in the UNFCCC negotiations in order to assess to what extent mental content and structures influence the search for cooperative solutions. In the course of the project roughly 50 CAMs are being generated, based on semi-structured interviews with various participants in the climate negotiations (diplomats, NGO and business representatives). Each CAM visualizes one study participant's existing beliefs and mental structures regarding international cooperation and climate change. An example of such an individual-level CAM is included below.

Figure 4: CAM representing individual point of view: NGO representative at COP17



The “Climate Change” node at the centre is a possible starting point for reading and interpreting this CAM. Several clusters of concepts are linked to this node: concepts related to science on top, concepts related to impacts on the right hand side or concepts related to the UNFCCC on the left.

Many aspects of this CAM offer interesting material for analysis, but the person’s views on the nature of the problem (the bottom part of the image) are particularly interesting. This person perceives climate change mainly as a conflict of ideas – a fight between a neoliberal ideology in the developed world and a more Marxist worldview in the developing countries. The idea that climate change negotiations are essentially an ideological battle between the global North and the global South is connected to the science cluster and the notion of climate justice via the concept “Emissions”.

Emissions are important to understand responsibility (those who emitted in the past) and vulnerability (those who did not emit in the past). In that sense historical emissions are the source of the North’s moral obligation to both mitigate the problem and provide resources to the South for mitigation and adaptation. These are concepts central to the definition of climate justice. But in this view the moral responsibility does not stop there – addressing climate change is not enough. Instead, the moral responsibility of the developed countries extends to addressing development and poverty eradication in the developing world. The negotiations cannot be allowed to save future generations by forsaking the needs of people living today. There must be trade-offs between the two goals.

Seen in that light, this person considers Durban an abysmal failure. The Durban Platform might be beneficial for the climate problem, but it completely fails to address the justice-related issue of development, which is essential in this particular cognitive structure. Instead of addressing existing global inequity based on historical patterns of exploitation, Durban reinforced these patterns by placing a larger responsibility for addressing climate change on developing countries.

This example invites a brief comment on the recently concluded Rio+20 negotiations, which offered another opportunity to observe the fundamental importance of different belief systems for the politics of global sustainability. Many stakeholders expected the vague concept of the “green economy” to bridge the differences between free market- and growth-oriented economies, and between development and environmental concerns. But the different parties came to the table with such contrasting understandings of what the term might mean – from a desirable pathway of economic growth to a neo-colonial tool for exploiting the poor – that a substantive agreement was impossible. Without a good handle on these cognitive barriers to agreement, a sustainable trajectory into humanity’s future becomes more and more elusive.

Comparing multiple CAMs provides insights into the structural but also substantive similarities and differences among the views of negotiation participants. Based on this comparison, one can not only identify areas of agreement that are yet unexplored, but also begin to understand the different value and belief systems that feed into, but need to be distinguished from, formal negotiation positions. It is conceivable that parties with strongly opposing negotiation positions share a significant set of beliefs and values. This kind of insight could provide the foundation for different negotiation dynamics or alliances, potentially increasing the possibility of finding agreement in the long run.

Further, it might be possible identify meta-concepts (e.g., related to agency, identity and justice) contained by all CAMs, and the more general cognitive and emotional characteristics displayed by different views on this complex global issue. Using the notion of a limited spectrum of possible points of view (Etkin 2010), this research can reveal which sets of

beliefs are currently embraced by negotiation participants, what these “cognitive magnets” have in common, but also whether there are yet unexplored points of view that negotiation parties could adopt.

This latter issue is connected to the question of how one can change minds. Existing theories of cognitive change distinguish between incremental processes of belief revision (e.g., adding or deleting individual elements), and systemic theories of cognitive reorganization in the sense of a gestalt switch or threshold (Thagard 1992; Mackie 2006). While the point analysis conducted for this project does not provide any useful data to answer the question how climate negotiators change their minds, it does identify the starting conditions for any attempt to intervene in the cognitive status quo of climate negotiations.

In addition to identifying existing viewpoints among actors in global climate negotiations, the project also explores whether climate change is a unique problem that poses special (maybe unprecedented) cognitive challenges for these actors. Are there any problem characteristics (other than existing power asymmetries) that make it particularly difficult for humans to deal with climate change? And what is the cognitive response to this challenge?

While this research might result in a couple of quick wins for the climate negotiations, such as the discovery of yet-unexplored areas of agreement among the different actors, the immediate benefits in terms of creating an effective multilateral agreement are limited. The goal of this project is not to improve the design of negotiation strategies or to develop proposals for the future regime design, but to get to the cognitive-affective roots of persistent global disagreement over climate governance. Scoping the cognitive landscape of climate negotiations could be a starting point for revising our understanding of the main drivers of the political process – mental-emotional mirrors of material and social reality, distorted and cracked. Equipped with such an understanding, the insights and cognitive research tools can be deployed to support climate policy-making and negotiations at various political levels, e.g., developing and testing the effects of different negotiation frameworks (e.g., burden vs. benefit sharing, various equity conceptions), devising strategies to mobilize different groups for climate action (e.g., conservative voters in the U.S.), or designing policies with a high probability of generating desirable behavioural change or innovation diffusion.

Given that this type of research is in its very early stages, no serious policy recommendations can be offered at this point in time. Instead, the arguments and questions presented here, and the increasing availability of analytical tools such as cognitive-affective mapping, show the potential value of fostering substantial research in this field. Such research should operate at the intersection of science and policy, be designed on the basis of the most urgent needs formulated by political actors at all relevant scales, and be capable of translating its findings into policy advice almost in real time.

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