Ariel Macaspac Hernández

Strategic Facilitation of Complex Decision-Making

How Process and Context Matter in Global Climate Change Negotiations

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I dedicate this research project to all those policy makers, scientists, and advocates who have come together, often even without any financial remuneration, to deliberate on environmental issues that concern us all.

Nais ko ring italaga ang aking paghanga sa aking mga kababayan sa larangan ng agham at aktibismo. Marami sa inyo ang nagbuwis ng buhay para sa pagtayugod ng karapatan ng tao at ng kalikasan.

Preface

Addressing climate change through mitigation policies is a highly tedious endeavor, not only because of the scientific and technical complexity of climate issues involved but also because of the limited sets of acceptable procedures in reaching decisions. Negotiations, as the chosen approach in global climate decision making, touch on various conflict cleavages that need to be managed to enable the achievement of legitimate, effective, and sustainable agreements. As conflicts may pertain to objects, relationships, and values (ideologies), negotiators require an integrated outlook in managing decision-making processes.

The main purpose of this research project is to provide theoretical and practical insights for effective decision making in situations that involve various types of conflict cleavages. Embedding historical analysis, negotiation analysis, political scientific analysis, and game theoretical analysis in an integrated analytical framework allows a comprehensive perspective on various dilemmas and self-enforcing dynamics that inhibit decision making. The conceptualization of stumbling blocks as typologies of complexity, which are responsible for the intractability of global decision making to address climate change, is beneficial in finding practical tools to cope with the complexities of negotiations.

The value of looking at the past is rediscovered by relating path dependence to the context of the climate change negotiations. The results of past consensus building through knowledge diplomacy are most likely to determine not only the behavior of actors when negotiating; these also limit the possible sets of negotiation outcomes. The analysis of the negotiation process becomes inevitable when the intractability of decision making is not only attributed to the complexity of environmental issues but also to the complexity of negotiations. When achieving an outcome depends not only on the technical feasibility of solutions but also on its political acceptability, negotiation moves to the limelight of analysis.

The conceptualization of strategic facilitation which provides actors additional resources to cope with stumbling blocks highlights the value of leadership, chair-

manship, and the role of threshold states in facilitating decision making as the global climate change negotiation process unfolds. Furthermore, as the simulation games have identified, flexibility mechanisms can be adopted by negotiating actors to manage the complex bargaining table.

Leipzig, Germany
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Ariel Macaspac Hernández

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Contents

List of Abbreviations and Acronyms

AdapCC	Adaptation to Climate Change for Smallholders of Coffee and Tea
AOSIS	Association of Small Island States
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
AWG-KP	Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol
AWG-LCA	Ad Hoc Working Group on Long-Term Cooperative Action under the Framework Convention
BASIC	Brazil, South Africa, India, China
CAN	Climate Action Network
CCAD	Comision Centroamericano de Ambiente y Desarollo
CDAC	Carbon Dioxide Assessment Committee
COP/MOP	Conference of Parties/Meeting of the Parties to the Protocol
COP15	Fifteenth Conference of the Parties
EASD	Equitable Access to Sustainable Development
ETS	Emissions Trade Scheme
FOD	First Order Draft
GHG	Greenhouse Gas
GNP	Gross National Product
ICAO	International Civil Aviation Organization
IIASA	International Institute for Applied Systems Analysis
IPCC	Intergovernmental Panel on Climate Change
JUSSCANZ	Japan, the US, Switzerland, Canada, Australia, Norway and New Zealand, Iceland, Mexico, the Republic of Korea
LDCs	Least Developed Countries
LGUs	Local Government Units
LULUCF	Land Use, Land Use Change and Forestry
MEF	Major Economies Forum on Energy and Climate
MERCOSUR	Mercado Común del Sur
NAS	National Academy of Sciences
NGOs	Non-Governmental Organizations

ODA	Official Development Assistance
OPEC	Organisation of Petroleum Exporting Countries
PPPs	Private-Public Partnerships
REDD	Reducing Emissions from Deforestation and Degradation
SAR	Second Assessment Report
SOD	Second Order Draft
SPM	Summary for Policymakers
TS	Threshold States (also Threshold Countries)
TSU	Technical Support Unit
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations Office for Disaster Risk Reduction
WHC	World Heritage Convention
WMO	World Meteorological Organization
WTO	World Trade Organization
ZOPA	Zone of Possible Agreement

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Part I
Introduction

Chapter 1
Introduction: Decision-Making, Global Negotiations and Climate Change: The Making of a Decision Framework

"It does not matter how slow you go so long as you do not stop" (Confucius)

The difficulties of current global climate talks may be too vague or too complex for the layman to grasp. The failure to understand the whole climate issue, particularly how it incrementally erodes human well-being and how decisions are made, may leave some people wondering how climate change should be addressed, and even if it can be addressed at all. This disenchantment elucidates discernible objections to behavioral changes, and reduces the integrity of climate protection strategies.

Having climate change as a "sensational" subject in the media does not always contribute to a sober and balanced understanding of climate change, as the media follows its own rules and practices in presenting information to the public (see Mazur and Lee 1993; Shoemaker and Reese 1996; Boykoff 2009). For instance, Maxwell Boykoff and Jules Boykoff (2004) point out that within the four top US newspapers between 1988 and 2002, most of the articles focused on the small group of climate change doubters rather than the consensus view drawn by the scientific community.

A few critical scientists and "climate skeptics" found it easy to undermine the integrity of climate science in its entirety by pointing out some (legitimate or non-legitimate, real or imagined) weaknesses and gaps in the scientific knowledge presented by the International Governmental Panel on Climate Change (IPCC) (see Alexander 2004; Carrington 2010). For example, the Himalayan 'glacier error' in the IPCC's 2007 Assessment Report has negatively affected the whole IPCC report. Although the faulty information appeared only in one paragraph (second paragraph in Sect. 10.6.2) of a 900-plus page Working Group II Report, the credibility of the whole document, of all past, present and future IPCC works, and also of climate science in general has been a subject to doubt if not of ridicule (see Raloff 2010) as a consequence. This ignores the fact that anthropogenic climate change is still supported by multiple lines of independent empirical evidence by nearly every

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national and international scientific body (see Berini 2010; Carrington 2010; IPCC 2010).

Science cannot always guarantee absolute values and assure that scientific results will be absolutely free of errors. As it will be pointed out in this research project, the issue of climate change deals with knowledge that is a product of consensus-generating deliberation processes among scientists, which implies that the range of "scientific positions" will more likely be very broad. Some positions may be complementary while others may be mutually exclusive. Furthermore, while the IPCC's works are aimed at being policy-relevant, these works have no intention of dictating specific policies to policy-makers, or to relay to the general public which knowledge is "true". It merely presents a synthesis of all the different directions of scientific studies relevant to climate change that are published in the literature. The IPCC does not conduct its own research (IPCC 2013a; b).

Particularly when the effects of climate change are not obvious at a personal level, international actions to address global climate issues, which are frequently referred to as a "scam", "hoax", "conspiracy" or "invention of eco-doomsayers" (Caruba 2013; Inhofe 2006; The Washington Times 2007), may lack legitimacy and comprehensibility. When global decisions mean changes of lifestyle and limiting access to amenities for the sake of something which is still "uncertain" and "far away", it becomes a huge challenge to justify climate protection policies. The lack of legitimacy and comprehensibility of climate issues may be detrimental to the implementation of globally-reached climate policies.

1.1 Climate Change: A Decision Problem on Resources, Relations and Ideologies

Although the global climate change case is a highly complex one, it touches on many basic processes and conflict cleavages that equally confront businesses, universities and private households when the allocation of scarce resources is the subject of decision-making under conditions of social context. Conflicts may pertain to objects, relationships and ideologies ('values'). To explain this, a simple hypothetical case has been chosen by the author and called—the "*printer problem*" to allow readers to relate to the climate problem. In a research institute of a university that produces world-class knowledge on sustainability and resource management, fifteen scholars share one color laser jet printer. The researchers and their research profiles are diverse. While some work on computer modeling for price predictions, others work on theoretical research that looks on related concepts and theories. Furthermore, some of the researchers are post-doctoral students, others are Ph.D. candidates and some are student assistants. Moreover, there are four working groups with distinct projects, which are more or less independent from one another in terms of funding and scientific outputs. One working group (G1) collaborates with external research institutes for an

international project that is financed by the German Federal Government. Another group (G2) won a research grant from the federal government and advises local city governments on sustainability management. The two remaining working groups deal with projects with private businesses. While the third working group (G3) deals with computer modeling for predicting future electricity price developments, the fourth group (G4) works on very distinct planning and management issues.

The conflict was triggered when one junior scholar of G3 openly criticized some researchers (both senior and junior), accusing them of behaving in a 'very unsustainable' way when printing out their drafts. He argued that because the institute is an institute for sustainability, everyone should act in the manner that is "objectively" sustainable. At first glance, this deals with the concrete problems associated with a specific resource, of a common good that brings costs. The institute as a whole needs to shoulder the costs for new cartridges. However, the conflict escalated when those criticized felt that it was done in a very rude manner and that this "idealistic" junior scholar was not in the position to say this, not only because of his junior status, but also because each working group has different needs. The junior scholar (from G3) does computer modeling and as such, his "print outs" are in relative terms very low. He sees himself doing his "share" while the others do not. G1 has printed out enormously in the past. As G1 deals with various layers of reviewing of research outputs, researchers from this working group have been motivated to print out hundreds of pages for manual review. Especially when one unidentified error could fatally compromise the integrity of the whole research project, researchers from G1 have been instructed to print out and carefully read the documents, not only once, but thrice.

As the conflict escalated, the student assistants working for G3 who were not familiar with the specificities of the various projects joined the junior scholar in criticizing G1 scholars, leading to some emotional tensions during lunch breaks: "If researcher A of G1 will stop printing his papers, the whole paper industry will collapse". It became obvious that the simple problem of one object (the printer) had become a problem of relationships. Exposed to criticisms, researchers in G1 subsequently refused to provide "goodwill" assistance to G3, leading to a decrease in the productivity of the institute. For instance, a few of the research reports from G3 were usually regularly reviewed and copy-edited by researchers of G1. In all cases, G3 scholars collected enormous overtime because of this work load. Now, G3 researchers, who are not English native speakers, need to find additional financial resources for external language proof-reading, which the working group does not have. G1 researchers refuse to provide assistance on grounds that they are not willing to spend overtime for G3. Meanwhile, the researchers from the other working groups find themselves between two fronts which cause frustration on their part.

The conflict over one object (which became a conflict of relationships) further developed into a conflict of (normative) ideologies or values. As an institute of sustainability, researchers, especially G3 researchers, were keen to monitor "printing behavior". A list of printed outputs per researcher has been regularly produced

by the junior scholars to showcase and monitor the difference among the absolute number of printing by the research groups and to "blame" those with high printing outputs, which of course did not differentiate the diverging needs of the different working groups. If the amount of printing by G1 will be reduced to the amount of G3 prints, then this would significantly reduce the quality of the work of G1, leading to some G1 researchers threatening to quit their job. Sustainability is here competing with efficiency. G1 researchers have retaliated by criticizing the number of computers and LED monitors that G3 has at its disposal in its laboratory, not to mention the electricity costs of running computers overnight and during weekends to conduct calculations. They argue that compared to printing papers, computers leave a greater environmental footprint, leading to a conflict involving normative notions and ideologies with diverging views on specific concepts such as sustainability. Does sustainability mean that researchers should not print their works and that computer modelers are forced to use their hands when computing? Is there a selection bias here? Why are papers the focus of criticism and not additional computers?

The global climate change case is more complex than the above mentioned case. Nevertheless, process-wise, both cases involve various conflict cleavages that need to be identified and resolved. Acknowledging that cases of conflict involve conflict cleavages around objects (resources), relationships and ideologies, the path of the conflict-resolution process can be classified accordingly. While conflicts about objects can be easily resolved through formulas, conflicts around relationships require greater effort if reconciliation is to be achieved. Without reconciliation the conflict of the printer might have easily extended to other resources such as the common scanner or the common meeting room.

Reconciling ideologies may be an impossible endeavor, but the principle of "agreeing to disagree" may be used to tolerate other views assuming that everyone is aware of his or her own responsibility. Understanding that various conflict cleavages are highly contextualized can lead to more focused strategies to resolve problems, bridge differences and to empower actors to cope with the conflict cleavages. While the dependencies between the four working groups of the institute are rather limited and assessable, global climate change involves a web of multidimensional complexities and various inter-linkages involving positive and negative externalities that affect all elements of the decision-making process (see Chap. 5).

The decision to mitigate climate change brings additional stress to the relationships between countries, because of the relevance of past relational experiences, and conflictual relationships in other domains are easily ascribed to climate change negotiations. For instance, the (un-reconciled) relational conflicts that have existed in other domains such as international trade and security have been projected onto the relationships of countries in global climate negotiations. When conflict cleavages have been institutionalized through conventions and other norms, for example, through the Annex Listings in the UNFCCC and the Kyoto Protocol, complex differences in interests such as that the North-South divide manifestations may be

self-enforcing in determining, enhancing or inhibiting certain behaviors from actors.

The printer problem could be easily resolved through the intervention of the head of the institute, whose formal authority is accepted by all. Each working group can get one printer and the costs will be shouldered by project budgets according to the needs of the working groups, with the major printing actors shouldering the appropriate costs. As there is currently no world government in the international system consisting of sovereign states of formally equal ranks, the resolution of the various problems around climate change inevitably depends on consensus-building and cooperation among countries.

Similarly, the context of climate change dictates that costs of mitigating climate change should be allocated in an equitable manner, whereas the impossibility of reliably attributing costs to those actors who have caused them remains a huge challenge. The uncertainty of climate change and its long term implications may be inhibiting countries from accepting the costs of climate change. With this, it is possible that a specific stakeholder may exaggerate how negatively it is affected by climate change, while underestimating how the others are affected.

The long-term perspective on climate change adds to the intractability of global decision-making on climate issues, as it deals with normative issues such as equity among generations. When achieving or failing to achieve decisions that will have long-term impacts, accountability problems become the focus of negotiations. How can policy-makers justify a costly policy to their national constituents when the effectiveness of such a policy remains uncertain, and economic competitors from other countries (who may or may not be free-riding) will also benefit from this costly policy?

1.2 Purpose and Goals of Research

The main purpose of this research project is to provide theoretical and practical insights into effective decision-making in situations that involve various types of conflict cleavages. This research project aims to contribute innovative and critical insights to the already rich literature on climate change. Bringing the negotiation perspective as well as the decision-analytical perspective, particularly with regard to the path dependence of decisions, may effectively assist policy-makers in understanding the various processes and dilemmas that hinder them in achieving effective and acceptable outcomes. The conceptualization of stumbling blocks as typologies of complexities may enhance the solution-orientation of decisions. In addition, bringing in game theoretical insights through the various simulation games in order to identify concepts and "constructs" implies the "experiential" approach in analyzing decision-making processes. The results of the simulation games serve as departure points for subsequent theoretical analyses.

In addition, this research project aims to provide practical tools for policy-makers to cope with the complexities of global negotiation. While some negotiators

are highly equipped with technical and scientific knowledge, they very often feel overwhelmed by various dilemmas and challenges during negotiation. Others are highly qualified diplomats who, frustrated with the technical complexity of climate change issue resort to resignation. Assuming that it is not possible to eliminate conflict cleavages as they are the inevitable elements of a social context, actors can be instead prepared and equipped to cope with the underpinnings of conflictual relationships under the context of multilateral decision-making.

In many cases, proposed sets of solutions demand the identification and operationalization of new mechanisms and institutions as well as the involvement of additional actors, which further increases the complexity of the issue. New actors may for example bring new interests and new issues to the negotiation table, which may further increase the intractability of decision-making. In addition, the procedures established to achieve or implement solutions may enforce existing conflict cleavages and reproduce existing inequities, which further inhibits the legitimization process of decision-making. This research project argues that there are currently "unnoticed" missed opportunities that can be tapped to facilitate the global decision-making process. While these missed opportunities may require intensive shifting of existing paradigms and assumptions, the costs of merely identifying and strengthening already existing actors, processes, structures and agreements to promote decision-making are likely to be manageable. Furthermore, understanding that regressions and set-backs are equally "opportunities" to find and identify "unfinished business" may enhance the perseverance of decision-makers who are frustrated by the bargaining process.

1.3 Methodology and Research Design: Learning from Modeled Experience

The distinctive methodology and approach that this research project employs is an immediate result of the primary research question of this project, requiring new perspectives. The research project primarily asks the following question:

> How is the intractability of global decision-making around issues of climate change to be understood and to be explained? In other words, why are climate change related issues difficult to negotiate?

The answers to the primarily question leads to the prescriptive part of the research project that deals with the following question:

> How can decision-makers cope with the complexity of the climate negotiation process?

The way in which the above mentioned questions should be answered involves a set of innovative approaches that can be summarized through the following figure:

The social scientific approach of this research project is composed of four theoretical pillars: historical analysis, negotiation analysis, political scientific analysis and the game theoretical analysis. The first two pillars enable the

conceptualization of interdependencies and dilemmas that enable readers to understand why decision-making in a global climate change context has been so complex. Historical analysis postulates the influence of contextualized past decisions on how present and future decisions are made (see Liebowitz and Margolis 1994b; Hirsch and Gillespie 2001; Page 2006). Negotiation analysis asserts the relevance of the self-inducing dynamics inherent in negotiations and decision-making (see William Zartman 1988; Young 1991; Raiffa 2002).

The last two pillars aim to explain why decision-makers are unable to come to a consensual outcome. Political scientific analysis asserts the importance of looking at power structures—including patterns of dominance and how relations and identities are formed—through existing power asymmetries (Habeeb 1988; Dupont 1994; Zartman and Rubin 2000). Furthermore, game theoretical analysis emphasizes the value of experience in explaining the behavior patterns of actors in a complex and dynamic system (Luce and Raiffa 1957; Shubik 1982; Gilbert and Troitzsch 2005). Connecting the ability to understand and to explain the problems that climate change with the process chosen to address its effects allows the formulation of solutions to bridge gaps and use missed opportunities.

1.4 Structure of the Project: A Coherent Storyline

The narrative of the project and the coherence of the arguments are emphasized by the analytical structure presented here. The research project is composed of four parts that correspond to the analytical framework introduced in Fig. 1.1. Following the introductory part, the significance of context is discussed by looking at the path dependence, that is, the historical value of decisions (Chap. 2) to present and future decisions (Pillar 1: Historical Analysis). Past decisions assert norms, procedures and institutions that are used by actors to reduce contingencies through the management of relationships. Context pertains to an environment where actors negotiate with each other to achieve a collective decision, a decision that entails individual efforts to resolve a global problem affecting all (Chap. 3). The application of negotiation as the chosen decision-making instrument implies the interdependence of actors and therefore the necessity for cooperation. Only when an individual actor sees itself as overwhelmed by a problem, and that the solution to this problem requires further changes in the behavior of others, can an actor find itself in a social context. Therefore, the sociality of climate context implies interdependence and the need for cooperation.

Negotiation is subjected to a learning process, wherein actors identify the benefits of negotiations. As negotiation processes are highly context-dependent, it is only as the process unfolds that actors can realize the value of negotiation. Although negotiators are able to prepare and anticipate upcoming negotiations, they need to be equally open and flexible in modifying their tactics and strategies as they conduct negotiation. Various context-related challenges will eventually expatiate if actors negotiate. Furthermore, negotiators are confronted by changing

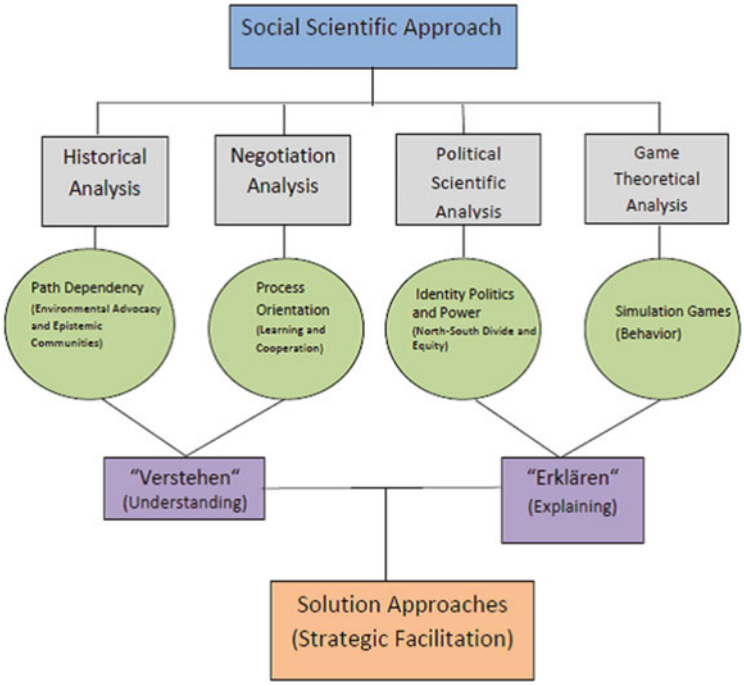

Fig. 1.1 Analytical framework

settings at the bargaining table (see Walton and McKersie 1965a, b; Ware 1980). For instance, in integrative (or collaborative) negotiations, that is, when actors collaborate to increase the values at stake, collective gains are absolute, which means that the group gains along with the individual. However the setting can also be distributive, that is, when collective gains are divided among actors. Here gains are in relative terms, which mean that what one gains the other loses. This re-frames relations as competitions.

When actors want to increase their entitlements they develop strategies around how to reach their short and long-term goals. In some cases, actors may need to see negotiation as integrative in the short-term and distributive in the long-term. Negotiators need to know when to agree to compromise, and also when concessions should not be accepted. Negotiators should also know when to claim value if they want to maintain legitimacy in front of the constituents they are representing. Negotiation is about getting what one thinks he or she deserves.

In many cases, negotiating actors are confronted by self-enforcing dynamics when negotiations are under conditions defined by power structures. The multidimensionality and multiplicity of actors and issues may create synergies that require innovative approaches. In addition, as the need for actors to cooperate may differ between actors, some countries may either demand a fast negotiation process or seek to slow down the process. Therefore, the success of actors in

fulfilling their goals depends on how they manage information and learn during the negotiation process (Pillar 2: Negotiation Analysis). This learning process builds on practical experiences. These need to be managed as they may provide opportunities to cope with various stumbling blocks (Chap. 5).

Stumbling blocks are typologies of complexity that inhibit decision-making in the global climate decision framework (see Sjöstedt and Penetrante 2013). Contributing to the complexity of climate change decision-making are power structures that determine how identities are crystalized, maintained, reproduced and eventually modified as the negotiation process unfolds. Particularly when power structures do not match expectations, gaps arise in understanding identity-building processes. For instance, gaps arise when de facto developed countries act as if they were developing countries or by pursuing positions typically pursued by developing countries. Patterns of politics and behavior of actors are likely to change as issues emerge and join the political agenda (see Prins 1990). While the North-South identities existed before policy-makers became sensitized to climate change, only as the negotiation process unfolds can actors realize the meaning of their identities to them. Global negotiations on climate change have led to a unique identity-building process that requires contextualized conceptualization (Pillar 3: Political Scientific Analysis). Because the various conflict cleavages between the North and the South are reproduced by existing power structures and power asymmetries, a re-examination of power and its manifestations during negotiation must be tempered by ecological interdependence.

As negotiation rounds are highly contextualized, producing academic knowledge on negotiations is a tricky endeavor. Not only are the value and validity of insights over highly contextualized negotiations limited in their general applicability, but access to relevant information is very often constrained. Negotiation meetings are in many cases conducted confidentially. In many cases, confidential documents are sealed in the archives and are out of reach of observing researchers. Negotiation processes may span for years requiring institutional memory—which researchers do not always have—to enable them to formulate qualified conclusions. In addition, several processes occur outside the formal plenary, for instance, during coffee breaks, which are usually beyond the attention of negotiation researchers. The resources available to negotiation researchers are very often retrospective and therefore not always useable in testing theories. Very often, researchers depend on interviews with selected negotiators, who as participants may not have had an overview of the macro or meta-level processes that occur at the negotiation table. As specific negotiation meetings are conducted only once, researchers cannot ask negotiators to meet again in order to test scientific theses, so negotiation researchers usually depend on protocols, documents and interviews in gathering knowledge. As a consequence, researchers may not always be aware of all the aspects of negotiation (see Depledge 2005, 3).

This research project uses an innovative approach in gathering knowledge: Pillar 4—Game Theoretical Analysis. Simulation games are "systemic" models, whose analysis serves as a tool for gathering information on structures and processes that may be self-enforcing and may directly or implicitly affect the behavior of actors. The author of this project has conducted several simulation games, both with students and scientists between 2009 and 2012. Chapter 4 deals with the results

of these simulation games. The results are preliminary interpretations of the concepts that may be relevant in the global climate talks. Those conceptual insights identified from these games have been partially published as a peer-reviewed article in the *Negotiation Journal* of the Harvard Program on Negotiation (PON) in 2012 (see Penetrante 2012). Through these games—all simulating the COP15 meeting—an impression is gained that this specific negotiation meeting was repeated over and over producing "experiential" knowledge. Interestingly, the simulation games have produced diverse results depending on how parameters were modified. Parameters were changed to look at various processes that result from these modifications. The observations made at the simulation games are the subjects of theoretical analysis in the following chapters.

Part III deals with the analysis of existing conflict cleavages in global climate talks. It postulates the value of the negotiation perspective in understanding the various (conflictual) diffuse and fragmented processes that define the relationships between actors and how paradigms may be shifted. Exacerbating the complexity of the negotiation process is the complexity of environmental problems including its high degree of dependence on the inputs of the scientific community. Environmental problems are highly synergistic and multidimensional, which may effectively reduce the sets of possible agreements that are acceptable to all. The entanglement of the climate change negotiations in the North-South divide is the inevitable result of competing interests between developed and developing countries (Chap. 6), and North-South discourse contends not only which results are viable, but also which procedures are acceptable. The existing power structures and power asymmetries need to be managed in a way that acknowledges and understands the diversity of equity, fairness and justice while not inhibiting decision-making (Chap. 7). Chapters 6 and 7 are further developments of preliminary working papers that have been partly published as book chapters in peer-reviewed edited volumes (Penetrante 2010a, 2011, 2013).

Part IV pertains to the prescriptive part of this research project. After the analytical focus of the previous chapters, the subsequent chapters deal with strategies that are selected to enable parties to cope with complexities during the negotiation process. The concept of strategic facilitation that is introduced in this research project is a further development of the concept that has been presented in another book project co-edited by the author of this research project (see Sjöstedt and Penetrante 2013). Strategic facilitation refers to long-term strategies of coping with the various conflict cleavages of the global climate decision framework. For instance, the value of the leadership, chairmanship and facilitation of threshold states has been analyzed with regard to how the negotiation process can be strategically facilitated (Chap. 8). In addition, flexibility mechanisms that promote reaching international agreements have been conceptualized in Chap. 9.

The research project ends with Part V, that is, Chap. 10 (Conclusion) that summarizes lessons for theory and lessons for practice. It enlists the scientific and practical value-added aspects of this research project. Moreover, it provides a research outlook on negotiations and on climate change negotiations in general.

Part II
The Climate Change Negotiations: The Value of Context and Modeled Experience

Chapter 2
Contextualization of Multilateral Climate Change Negotiations: Understanding the Meaning of Path Dependency for Decision-Making

"Study the past if you would define the future" (Confucius)

Claiming that history matters in climate change negotiations is a commonly accepted notion among policy makers and researchers. Nevertheless, there seems to be much difficulty in providing answers as to how history actually matters, and how things in the past are not only determining the current behavior of decision makers but also defining the sets of possible subsequent decisions. Looking at the climate change regime building process, which already started long before the Rio convention of 1992, involves a historical process that is difficult to grasp. The complexity of the climate change negotiations is a product of this unique historical process and understanding its complex trajectory requires reexamining the past.

The use of negotiation between countries (see Chap. 3) to address issues of climate change has taken a specific historical path. Assuming that the ultimate goal of these negotiations is to select a regime that aims to regulate actions in order to adequately confront the effects of climate change, climate change negotiations can be considered as a unique construction of actions, structures, processes and outcomes. As it will be presented in the following chapters of this research project, the uniqueness of this climate change negotiation system produces unprecedented complexities that require a specifically tailored approach to comprehensively understand the various characteristics and difficulties. While similar elements can be observed in other negotiation systems—such as international trade and security—each element of climate change negotiations has undergone a specific historical process, limiting the usefulness and applicability of other negotiation systems and creating unique complexities and dilemmas for climate change theorists.

This research project argues that climate change regime building is so unique that other approaches are needed to enable researchers to look beyond what is obvious and evident. It involves looking not only at the actors, issues, structures, processes, and outcomes, but also at the context, and requires a careful "deconstruction of the construct" to see whether self-evident assumptions are really applicable to the climate change context. This requires analyzing not only the

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future and the present, but equally as important the past. The combination of these various "conditions" and time perspectives builds the context.

This chapter starts with the presentation of path dependence to establish the climate change negotiation context. It builds on the assumption of this research project that the current climate change context is highly dependent on how the scientific community and advocacy groups have built consensual knowledge in the past. Put simply, the possibly trajectories of decision making are dependent upon the individuals involved and the methodologies they use.

Scientists and experts provide the platform for the context while their diversity in terms of their worldview, view of humanity ("Menschenbild"), research approach (with regards to information scoping and solution generation), structural and organizational resources, and external communication preferences defines how they pursue "*knowledge diplomacy*" (Kjellen 2013). Following this logic, it can be argued that this knowledge diplomacy brings with it various conflict cleavages.

2.1 The Value of Context in Generating Knowledge: How History Matters

The contextualization of the climate change negotiations requires the consideration of existing conditions and factors influencing the behavior of the actors (e.g., the assumption of leadership), the setting of the structure (e.g., adherence to the UNFCCC, sectoral specificities or more market orientation), the listing of issues (e.g., technical issues or political issues), the course of the process (e.g., multilateral or bilateral talks), and the achievement of outcomes (e.g., voluntary or binding reduction targets). In several cases, the systematic analysis of the traces that the past has left—its *historicity*—may also provide very useful insights and aid the identification of dilemmas that may distort present and future decision making. It may also resolve some of the questions generated by the intractability of current decision-making processes.

By understanding the rationales applied by actors, the various self-enforcing dynamics, externalities and feedbacks behind processes, knowledge can be generated to understand how constraints have been established. Subsequently, strategies must be developed to allow actors to cope with, if not eliminate, these constraints.

Looking at historicity through *path dependence* establishes the context or background which allows analysts to identify trajectories of decision-making. In most cases, the failure to adapt knowledge to evolving conditions creates additional impediments to subsequent decision-making. Decision makers need to quickly adapt to the dynamic flow of conditions, and the failure to do so may lead to outdated decisions. This implies that gaps between the initial purpose of past decisions and the evolved purpose of current decisions may have caused further inefficiencies. The dependence of current decisions on past outcomes that are now

considered to be self-evident assumptions increases the complexity of decision-making significantly.

Although the notion of path dependence has attracted several publications since the end of the 90s, particularly among organization scholars (see David 1988; Arthur 1994; Sydow et al. 2009) and political scientists (see Pierson 2000; Page 2006), no clear definition of path dependence is shared among the scholarly community (Djelic and Quack 2007; Morgan and Kubo 2005). This is commonly attributed to the lack of consensus around what constitutes acceptable empirical evidence for path dependence. Some scholars argue that path dependence is purely a theoretical artifact (P. Hirsch and Gillespie 2001; Liebowitz and Margolis 1994a) and is therefore not applicable to the real world. Path dependence is therefore confronted with theoretical and methodological hardships particularly when irreconcilable gaps exist between theory and empirical evidence. Arguing that "history matters" is intuitively correct. Nevertheless, when looking deeper, it manifests theoretical and empirical shortcomings that provide doubt around its scientific validity. As Liebowitz and Margolis (1995a, 33) suggest:

> Welcome to the world of path dependence, a world governed not by our stars, not by ourselves, but by insignificant accidents of history. In this unpredictable world, small seemingly inconsequential decisions lead inexorably to uncontrollable consequences (. . .). The Invisible Hand does not work in the world of path dependence.

Put simply, the dependence of outcomes on small decisions has led to "accidents" or "coincidences" that determine events of the present. Attributing accidents to "small decisions" suggests that the identification of these small decisions may be merely a matter of interpretation. As an "accident" is uncertain or contingent, and cannot always be anticipated by decision makers, it is impossible to clearly evaluate the effectiveness of "preventive measures" that may have halted the chain of events leading to a particular accident. However, as this research project argues, although decision makers cannot foresee accidents, an awareness of the ways in which accidents regularly arise may enable decision makers to commit to contingency provisions (such as insurance or early warning systems) and adapt to the ramifications of possible accidents.

One major critique of any historical analysis refers to flaws to the universality (or generalization) of knowledge derived from any type of "learning from history" (see David 2001; Calhoun 2013). The difficulty of assessing the scientific value of historical knowledge is partly attributed to the methodological "dominance of the positivist conception of natural sciences" (Stueber 2004, 1) in climate science discourse. For instance, objectivity, as a criteria of scientific inquiry (Daston and Galison 2007), has been often cited as a significant weakness of historical analysis. The positivist outlook rejects the validity of introspective knowledge, that is, of knowledge derived from "individual experience" (Danziger 1980). The scientific value of historical knowledge is seen as tainted by how "stories are not lived but told" (Mink 1998, 135). Therefore, historical representation cannot be separated from the subjective experience of the individual exploring it. Historical knowledge

is "thus similar to fiction in that it constructs its own reality instead of truthfully describing a past that exists independently of its representation" (Stueber 2004, 2).

Nevertheless, as the French sociologist Pierre Bourdieu argues, "every social object is historical" (Charle and Roche 2002). No content can be free of human judgment, which is invariably based on social values. Any phenomenon that requires any form of evaluation of its (real or imaginary) importance, potential consequences as well as any type of theoretical conception is historical. Human judgment requires information, and information is itself historical. Scientific knowledge, including scientific laws of natural sciences which have been used to formulate evidence and assumptions, has followed various trajectories throughout its evolution. Scientific laws defined by a collection of "facts" have been regularly overturned or further expanded and complemented in the past by "new" information. It remains an open question as to whether specific information, which is presently and consensually considered obsolete, should be categorized as "false" when this specific information was formerly categorized as "correct" based on existent knowledge at the time. Information changes with material conditions, and knowledge and notions of 'truth' fluctuate accordingly.

Contextualization does not aim to produce universal or generic assumptions in order to predict future development, and assumptions are only valid in individual cases. Nevertheless, it can be scientifically useful to examine the contexts of the processes leading to decisions. Reductionism, or the simple reduction of causes, motives or effects to a single event, is commonly referred to as the 'cardinal sin of historical analysis' (Dupre 1993; Jones 2000) as it limits the formulation of "natural" rules.

Contextualization cannot produce general scientific laws, as this is not its purpose. This reproach against historical analysis can be rebutted by arguing that the main purpose of historical analysis is not to reproduce the past in the future, but rather to understand how trajectories have developed from specific decisions made in the past. For instance, understanding how oil-fueled car motors were able to assert themselves over electric motors at the beginning of the twentieth century may provide insights into the difficulties of a number of present transitions, such as the movement from reliance on fossil fuels to a "green" economy. Was it efficiency that gave oil fuel car motors the advantage? Was it because the "first mover" used fossil fuel motors? Or was it merely coincidence?

More importantly, path dependence is only able to provide useful insights if the appropriate methods of inquiry or research designs have been chosen. For instance, using historical case studies to verify or falsify certain conditions may not always provide empirically robust results: some conditions can only be analyzed in retrospect or through their positive or negative externalities, and therefore may be merely speculative. Moreover, several external factors or sets of aggregates may be responsible for certain outcomes, which are not reproducible in other cases. Case studies can only prove limited generalizable correlations. For this reason, in accordance with the recommendation of Vergne and Durand (2010: 737), this research project opts to primarily use experimental simulation games (see Chap. 4) in evaluating and interpreting conditions. Simulations allow researchers

to make explicit assumptions about a limited amount of variables, enabling researchers to control them and to verify causalities. Simulations can be re-run to assess the verifiability of results by analyzing the generalizability of mechanisms and processes that produce such histories. As Zott (2003) suggests, a case study relies on the observation of one historical path.

Deriving from the above mentioned critiques on the empirical value of path dependence and other means of historical analyses, several theoretical flaws are seem to limit the conceptual applicability of path dependence. Theory as a type of generalized thinking aims to understand and explain how a phenomenon works. One flaw of path dependence refers to the question of whether path dependence can be considered a theory at all. Vergne and Durand (2010, 736) claim that path dependence is "not yet a theory since it does not causally relate identified variables in a systematized manner." They observe that existing literature tends to "conflate path dependence as a process (i.e. history unfolding in a self-reinforcing manner) and as an outcome (i.e. a persisting state in the world with specific properties, called 'lock-in')".

Scientific theories as explanations of "nature" are subject to various criteria such as its verifiability or falsifiability (see Davidson 1971). Although it is easy to identify allocations, technologies, or institutions that are path dependent, it remains very difficult to establish criteria to identify those which are not path dependent. Historical analyses are exposed to verification problems simply because no researcher can personally and systematically observe historical processes or causal relationships between various factors. This problem of immeasurability is seen to limit the theoretical value of events. Nevertheless, as presented above (and in Chap. 4), this immeasurability problem of path dependence is to be distinguished according to the method of inquiry.

Conceptually, path dependence is confronted by sets of fallacies that should be appropriately addressed. These fallacies are however not to be attributed to the value of path dependence, but rather to the various assumptions taken by several researchers in establishing their own concept of path dependence. As there is still no consensus on the definition of path dependence, this research project requires "edge-sharpening" of this concept.

History is assumed to be the process whereby agents move according to their predetermined ultimate goal (see Danziger 1980; Thelen 1999). History as a developmental and evolutionary process involves a "destination" where the "path" to this destination serves as a subject of analysis, in order to facilitate other processes moving towards their own ends. This theory is however dependent upon two assumptions: that agents are already aware of their goals before they start their historical journey and that there is only one "optimal" and "rational" end to this journey. These assumptions are highly problematic, because there is still no criterion based on consensually accepted empirical evidence for path-dependent *inefficiency*, *non-optimality* and *irrationality*. Theories need to be falsifiable to be considered scientifically valid. Historical processes seldom involve the same actors or maintain the same dispositions, priorities and perspectives among generations, because historical processes tacitly assume "changes". Terminologically speaking,

there can be no developmental or evolutionary process without the notion of "change". The notion of change means however that the final cause or purpose, the *telos* (Rosenblueth et al. 1943), will not always be sustained in the course of the historical process. Because historical processes cannot have an a priori final purpose, path dependence is rather a study of "junctures" (*Augenblicke*) or moments, and not necessarily of continuums.

The following section introduces the concept of path dependence and how this concept offers ways to understand how history actually matters in decision making.

2.2 Path Dependency: Building the Context

Decisions are determined by context. European politicians may not understand why their African counterparts are unable to establish stable democratic systems. Western NGOs may not accept the Chinese government's approach towards "universal" human rights. In some occasions, present day decision makers may see decisions made several decades ago as highly inefficient. An inability to produce "effective or optimal decisions" is mainly attributed to incompetent policy makers in need of "enlightenment" and other capacity building measures. As this research project argues however, this perspective is the product of misjudgment.

Decisions of this kind are usually based on context—available knowledge, existing power configurations, prioritization of issues, *Zeitgeist*, etc.—and as such may be 'ex ante non-optimal', that is, ideas that are retrospectively revised as less optimal than previously considered. As such, understanding the contexts within which decisions are made has become increasingly important; however this requires the suspension of normative judgement and acceptance of the idea that optimality and context are not mutually incompatible. This research project argues that path dependence as an analytical approach can provide comprehensive understanding of how and why decisions are made.

Path dependence is originally an economic concept suggesting that certain outcomes depend on the path of previous (transitory) outcomes, rather than simply on current conditions (Arthur 1994; David 1988). For example, technical standards are very often determined by the company that first introduces a new technology or innovation, enabling it to gain a sustained comparative advantage over its peers. Competitors then mimic and perpetuate this innovation, such as in the case of the "QWERTY" standard typewriter (and computer) keyboard (P. David 1985) and the standard width between the rails (Puffert 2000).

The formation of large-scale institutions is shaped by a series of developments and regressions as it competes with other systems and networks (Katz and Shapiro 1994). It is this dynamic process that determines the current system (Eichengreen 1996). Eichengreen (1996) argues that the emergence of international monetary systems, such as the classical gold standard of the late nineteenth century, was based on 'externalities', or the perceived benefits in adopting a common monetary system. Such institutions provide sets of rules to ensure predictability and stability

in the interactions conducted within them. Members tend to adhere to the rules of an institution when they can be held accountable for their actions; as such, many institutions are governed by direct and indirect sanctions (negative externalities). Other institutions however, such as the probable climate change regime, depend on a paradigm where not adhering to the rules will bring further costs to individual non-participating actors. Non-adherence is here itself a sanction. In this situation, institutions are regarded as improvement on the status quo, as actors are worst off in the absence of such institutions.

The current level of economic development in countries is a result of policies and how decision makers have responded to external shocks (e.g., international competition or post-war reconstruction) (Charles Kindleberger 1964). For instance, the success of the German industrial revolution is perceived to be highly dependent on the policies of the regime as well as on technological advancement and changes achieved at the end of the nineteenth century (Veblen 1915). Veblen argued that Germany's industrialization did not draw on the "*logic of manifest destiny*", but instead on deliberate policy reforms (Veblen 1915, 5). It attempts to explain how one set of actual decisions is limited or promoted by decisions that have been made in the past, regardless of whether or not past circumstances remain relevant.

Other disciplines that pursue further perspectives on decision making—such as political science and organizational management—have attempted to extend the usability of the concept of path dependence beyond investment decision-making to other fields such as private and public governance (David 1994; Pierson 2000; Sydow et al. 2009). Path dependence may explain how inefficiencies in current institutional structures may have been direct consequences of purportedly optimal decisions made in the past. In a similar manner, current policies can be formulated that would smoothly allow future modifications needed to adapt to changing conditions, or enhance the availability of remedies for future unsatisfactory situations (Liebowitz and Margolis 1995a). This research on the interdependence on private and public governance spheres may provide precise insights into how to facilitate climate change negotiations by providing answers to existing unresolved questions in climate change regime research.

2.2.1 Path Dependence: Definitions and Basic Assumptions

Deconstructing constructs involves critically evaluating the way they are self-evidently understood. Path dependence can be defined through its meaning, its concomitants and through its function. Liebowitz and Margolis (1995b) define path dependence through its meaning of path dependence when manifesting the sensitivity of outcomes to starting points (*first-degree dependence*). Furthermore, as they suggest, because decision making is accompanied by uncertainty due to lack of information, efficient decisions may not always appear efficient in retrospect. In such situations, the dependence of outcomes on initial conditions (e.g., availability of information) may lead to outcomes that are regrettable and costly to change

(*second-degree dependence*). Nevertheless, as Liebowitz and Margolis argue, inefficient outcomes caused by past decisions are "remediable" (see Williamson 1993, 140). Decision makers can address inefficient outcomes by establishing feasible arrangements.

Focusing upon the randomness of a dynamic system, Paul David (2001, 20) defines path dependence as a "*stochastic process* (...) *whose asymptotic distribution evolves as a consequence* (function of) *the process's own history*." Looking at the dynamic of systems as a concomitant of path dependence, he suggests that probabilities of transition among states are functions of the sequence of past transient states that the system has encountered. This implies the irreversibility of transitions as the evolutionary process unfolds.

In a later publication, Liebowitz and Margolis (1995b, 210) define path dependence through its use in economics: "... *allocations chosen today exhibit memory; they are conditioned on past decisions* ... (whereas) *past allocations exhibit a controlling influence* .... *In such a case, "insignificant events" or very small differences among conditions are magnified, bringing about very different outcomes*." Important to their definition is the relevance of memory, of a learning process that evolves from past decisions.

This research project argues that the best way to determine the definition of path dependence is by knowing its functionality. Therefore, this project formulates its own definition as the following:

Path dependence is a property of a stochastic process leading to an outcome

Properties of a process refer to conditions determining dependency on structures, actors and other processes and outcomes. It is however to be distinguished from the conventional understanding of historical process as it does not assume that the outcome is a priori determined by the actors. It is a dynamic process: one departure point will not automatically lead to one specific "predestined" outcome. As a stochastic and dynamic process, path dependence is inherently unpredictable, because as the "process unfolds, the outcome distribution changes—that is, the likelihood of obtaining a certain outcome varies with time" (Vergne and Durand 2010, 743). It is an outcome-dependent process as the outcome in a period depends on past outcomes or upon the time period (Page 2006).

This unpredictability is attributed to the tendency of the process to reinforce itself. Once the process has selected a specific path, various (predictable and random) mechanisms can lead to its self-reinforcement, such as positive network externalities or increasing returns (Arthur 1989; Pierson 2000). For instance, as the number of countries participating in a scheme to reduce greenhouse gas emissions increases, the more mitigation costs can be distributed across a larger number of parties. This means fewer burdens for individual countries, which may prompt increased willingness to commit to more ambitious mitigation goals.

The process inevitably leads to an outcome. As discussed above, this outcome is not necessarily the *telos*, or the predetermined ultimate goal of the actors perpetuating the process. As Vergne and Durand (2010, 743) note, "*when a process possesses the property of path dependence, then lock-in will occur on one of the*

possible outcomes if no exogenous shock disturbs the system." "Lock-in" is a state of equilibrium where the potential for change or further movement remains low (David 1988). It involves equilibrium with unattainably high switching costs. When parties are "trapped" in a certain path, they cannot easily "escape" endogenously as alternative options have already become too costly, particularly when lock-in has happened quickly, and before the pay-offs could have been foreseen.

Lock-in is not always attributed to the optimal path. Lock-in can happen on any path depending on self-reinforcing conditions and random variables. In most cases, initial conditions will not always determine which equilibrium will later prevail (Vergne and Durand 2010). What determines the state of equilibrium is not always the superiority or technical optimality of paths, but more often the costs of a remedy, that is, the costs of switching to another path. It is difficult to predict which of the competing technologies or ideas will prevail as the standard is based of initial conditions and is therefore unpredictable and highly dependent on how the process runs. As increasing returns will only develop in the course of the process, it may depend on the learning capability of the actors and how these actors draw lessons from their experiences. It may also depend on positive externalities: when one path appears more attractive it raises the value of this option and the total number of followers increase, leading to the convergence of standards (see Katz and Shapiro 1994).

Another basic assumption of path dependence refers to the notion that information should be differentiated from its consequences. Certain phenomena, such as the impact of climate change on food scarcity, may be addressed differently by theorists in different countries, and diverse responses to climate change will be eventually observed. Path dependence looks at how information is used by actors to come up with decisions. However, although in retrospect other paths may have yielded more gains, the "lock-in" path should not be considered inefficient in light of the assumed limitations on research.

Nevertheless, as Liebowitz and Margolis (1994b) argue, if path dependence simply means that decisions sometimes appear inefficient when new information is revealed, then path dependence is nothing but an inter-temporal propagation of error caused by information incompleteness. However, the question remains whether the actors would have chosen otherwise if certain information was known beforehand. The actors' response may both involve change of behavior and maintenance of status quo. To claim that other paths would have yielded more gains is highly speculative: different contexts create different externalities and alternative paths, and the lock-in outcome may actually produce fewer gains.

Furthermore, as the climate change negotiation process shows, several perspectives and therefore several conflict cleavages are involved in the decision making process. As such, no technically optimal path can be chosen. If a technically optimal path disproportionately allocates costs to one actor, it is more likely that the affected actor will reject this path. Technical optimality cannot always be taken as a justification for decisions, as it does not always correspond with justice and fairness. The only optimal path is the one chosen through consensus-building.

2.2.2 *Path Dependence and the Regime Building*

Path dependence identifies sequences of decisions through which mechanisms are established to facilitate future decision-making. Actors may, intentionally or not, produce norms and routines of actions which are ultimately "institutionalized" to coordinate future social behavior. As conflict is a characteristic to the international system, actors may seek decision-making mechanisms that foresee cooperation, particularly when the resolution of the conflicts require consensus (see Axelrod 1984). Regimes are therefore institutions that intend to resolve conflicts through norms, decision-making rules and procedures which facilitate a convergence of expectations (Krasner 1983a). Nevertheless, these subsequent institutional mechanisms will shape actors' interest and participation in these processes, as such institutions may mean increasing or decreasing returns for them. In this regard, actors will tend to assert their influence on this regime-building process in order to maximize their gains.

In the course of this regime building process, actors can observe that the path taken by the process depends upon which norms and standards are effectively asserted. While some actors will defend this path, others will continuously challenge this. When actors perceive that their negotiation capacity is constrained by the path chosen, they will be more likely either to argue that alternatives are more efficient, or to actively look for additional resources to enhance their capacities within this path. In this sense, the regime building process, as it unfolds, will host various conflict cleavages. This research project argues that the manner in which these conflict cleavages are addressed during the course of a process influences the level of legitimacy subsequently gained by the regime.

Path dependence, without explicitly identifying it, looks at regimes. It focuses on how increasing returns (the faster a decision is made, the greater its benefits), self-reinforcement (how a decision encourages sets of forces or complementary institutions to sustain the decision made) and positive feedback (gains arising from other actors adopting the same decision) leads to mechanisms that promote or defer decisions. Path dependence offers insight not only into how regimes are established, but also how lock-in outcomes may still be modified to accommodate changes. Regimes as institutions inevitably involve various power struggles as the social relationships between actors are influenced by diverse interests. Nevertheless, these power struggles are highly sensitive to the conditions created by the path or process selected. Minor shifts in the process may mean significant changes in the power status of each actor. Therefore, path dependence can explain actors' reticence about institutional changes (Collier and Collier 1991; Thelen 1999; Pierson 2000). Increasing returns are for instance for some a strong motivator for preserving the status quo, whilst others expect when selecting a specific new path.

Nevertheless, encouraging membership to the regime incurs costs. In ideal situations, as proponents of hegemonic stability argue, a dominant actor (Gupta and Grubb 2000; Malnes 1995) (also called "leader" in the climate change context), establishes and maintains the regime (see Keohane 1984). The "hegemon"

shoulders the costs because it expects to expand its power through this regime. It may expect more gains as the membership of regime grows. It may also expect more gains when membership is limited; therefore, it may be in the interests of the hegemon to control membership in order to isolate potential adversaries. For instance, the dominant actor may demand that a veto against new recruits is included in the rules and procedures. High recruitment barriers such as higher membership costs may also be set by the hegemon to ensure that only members with genuine intention of cooperating bare able to gain membership, minimizing opportunities for a 'free-ride'. However, path dependence is also able to look at the regime-building process in the absence of hegemons. This will be later discussed in the climate change regime building process (see Chap. 8).

The regime building process is accompanied by a complementary process of cognitive thinking. The regime building process with its rules and decision procedures implicates "patterned sequences of learned behavior involving multiple actors who are linked by relations of communication and/or authority" (Cohen and Bacdayan 1994, 555). Actors are then subjected to routine behaviors as they seek to familiarize themselves with the rules and decision procedures in an effort to build "institutional memory". This tendency is a result of efforts to reduce transaction costs. Actors may also opt to coordinate their strategies with other actors to enhance their negotiation leverage. Nevertheless, actors are confronted by "mental overload" as they cannot comprehensively translate the complexity of the conflicts.

2.3 Initial Conditions: Advocacy, Science and Multilateral Climate Change Negotiations

The path of the climate change regime building process is sensitive to initial conditions. This research project looks at a specific sequence of events in order to explain how institutional generation and reproduction has determined the evolution of the process. Because decisions related to climate change are highly dependent on science and research, several initial conditions including some conflict cleavages are to be attributed to the conventions of scientific thought, and how such conventions have been used to influence decision-making.

The historical role of science in climate change negotiations has two dimensions depending on how agents use science to bring forward a specific agenda in a decision making process. The first dimension involves ideological divisions between advocacy groups that use science to advocate their ideas before policy-makers. This dimension assumes that there is a clear boundary between advocacy and policy-making. Furthermore, it is assumed that advocacy groups actively employ empirically sound and academically reputable resources to persuade decision-makers to conform to their own interests. The second dimension involves epistemic communities providing knowledge to policy-makers through consultations and background studies. In this dimension, it is assumed that epistemic

communities or groups of scientists provide information relevant for policy-making, without actively pursuing personal agendas. In this way it is assumed that these communities not only to preserve their independence but maintain self-restraints.

Power is an important subject of any historical analysis. Science has provided legitimacy to various stakeholders and legitimacy has been proven to be a significant source of power. In this regard, accepting that science plays an important role in climate change negotiations requires the analysis of how science has provided power to agents and how it defines the current structure of decision-making. Decision-making about climate change, as with other environmental issues, requires the production of knowledge to reproduce power configurations that drive decision-making. As Michel Foucault has argued, any deployment of knowledge always sets into motion a particular set of power relations: "*Power and knowledge directly imply one another;* (...) *there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations*" (Foucault 1979, 27).

2.3.1 Environmental Activism: Public Awareness and Advocate Groups

Environmental activism is accepted as a significant force behind decision-making on environment-related issues (Wapner 1996; Sutton 2000; Chasek 2001). Paul Wapner (1996) suggests that transnational environmental groups such as Greenpeace, the World Wildlife Fund and Friends of the Earth use transnational social, economic and cultural networks to politicize the global civic society aiming to alter norms and practices by educating vast numbers of people and providing institutions with the pressure to shift standards that are compatible with the ideals of these transnational groups. Pamela Chasek (2001) documented the role of a wide range of actors in shaping the global environmental negotiation process. She notes the importance of non-governmental actors in consensus building. Independent of research communities, environmental activists have regularly used science to convince policy-makers of the need for policies to address the increasing problems posed by environmental threats such as climate change (Epstein 2005; Eyerman and Jameson 1989).

Historically, the partnership between science and activism can be traced back to the campaign to save whales from extinction, which led to the collective 1982 declaration of an international ban on commercial whaling (Epstein 2005; Aron 2001). Raising awareness around environmental issues as well as providing a platform for the expression of legitimate public concern in the political realm are necessary for effective and legitimate policy-making (Dong Wei 2010). This partnership was eventually broadened to incorporate other environmental issues

such as ozone depletion (Litfin 1994), trans boundary movements of hazardous wastes (Kempel 1993) and climate change (Andresen and Gulbrandsen 2003).

NGOs and other environmental groups have been increasingly acknowledged as important stakeholders and participants in the current climate change negotiations. To a certain degree, their inclusion has become inevitable in climate change negotiations given the high degree of public interest in, and concern over (Depledge 2005) the issues involved. Public interest in global environmental negotiations, as Depledge (2005, 10) recognizes, tends to be more intensive in comparison to other issues such as trade or security. In cases such as these, NGOs and other environmental groups can help translate public concern into tangible change in policy by raising awareness among policy-makers.

The June 2011 survey (*Special Eurobarometer 372: Climate Change*) conducted among Europeans shows that 68 % of those polled considered climate change a very serious problem, while 89 % saw it as a serious problem (either 'very serious' or 'fairly serious'). Furthermore, 78 % of the respondents believe that addressing climate change by improving energy efficiency can boost the EU economy and increase employment (European Commission 2011).

Not all societies acknowledge the imminent threat of climate change, however. According to the 2011 polls conducted by the Pew Research Center (2011), although 63 % of Americans say there is solid evidence of global warming, only 34 % believe it is occurring. Those that acknowledge climate change attribute it to human activity (such as the burning of fossil fuels) or natural disasters, and the greater proportion of the sample surveyed refrain from expressing an opinion altogether. Furthermore, only 38 % of Americans see global warming as a very serious problem. In the political sphere, while 77 % of Democrats say there is solid evidence of global warming, only 51 % of members see human activity as its cause. This discrepancy is wider among Republicans: while 43 % of Republicans agree there is global warming, just 19 % say rising temperatures are largely attributable to human activity. More than half of Democrats (55 %) compared to 14 % of Republicans see global warming as a very serious problem (Pew Research Center 2011).

On the global level, the results of surveys on public awareness about climate change and its causes suggest the necessity for increased efforts in public education around the imminent threat of climate change. The Gallup Polls conducted in 127 countries in 2007 and 2008 claim that more than a third of the world's population has never heard of global warming. The percentage of respondents who report knowing "something" or a "great deal" about global warming ranged from a low of 15 % in Liberia to a high of 99 % in Japan. Across these 127 countries, the median percentage of people who report knowing about global warming is 62 % (Pelham 2009).

Furthermore, the Gallup Polls postulate that public knowledge of the concept of global warming does not always reflect a belief that global warming is a result of human activity. The percentage of the respondents who attribute climate change to human activity ranges from 15 to 92 % in South Korea. The following figures summarize global public awareness of climate change (see Fig. 2.1), the proportion

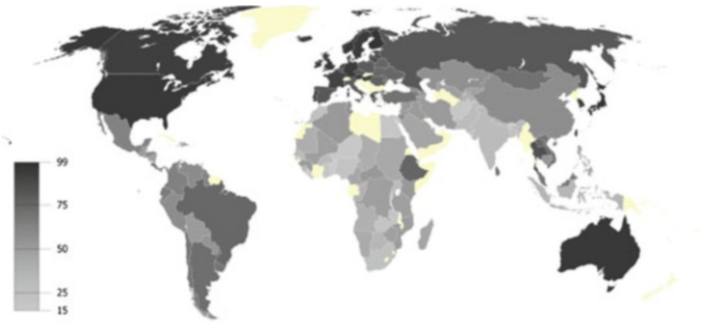

Fig. 2.1 Climate change awareness by country 2008–2009 (Proportion of respondents reporting knowing "something" or "a great deal" about global warming in 2007 and 2008. *Darker areas* indicate a greater proportion of public awareness. *Source*: Pelham 2009)

of the world's public attributing climate change to human activities (see Fig. 2.2) and the proportion of the international community who see climate change as a personal threat (see Fig. 2.3).

Nevertheless, utilizing scientific data is not the exclusive domain of NGOs and environmental groups. Corporations and other actors may for private goals seek to impede the movement of the climate change negotiations (David 2006; Sandell 2007). These groups have supported and presented studies that deny climate change or pointed out the weaknesses of existing scientific studies acknowledging climate change. They have questioned the qualifications of experts and suggested the falsification of research results (see Booker 2009), and argued that certain "extreme" NGOs such as Greenpeace may also exaggerate research results (National Post 2010). For instance, a survey suggests that 35 % of Americans believe that it's very likely some scientists have falsified research data to support their own theories and beliefs (Rasmussen Reports 2009).

The partnership between science and environmental advocacy may undermine the quality of scientific findings. However, these "shortcomings" of climate change science as mentioned in the previous paragraph can rather be attributed to the tendency of advocacy groups to use science to support their claims and not directly to see science itself as the final cause. Scientific findings, in general, will have limitations and concerns. Science itself has no universal and "dogmatic" claims, but those using science in conducting their advocacy often do.

One way to solve this dilemma is to guarantee the independence of science from advocacy and politics. The relevance of scientific findings to the formulation of policies and decisions, as von Storck and Stehr (2010) argue, leads to distortion of the essence of scientific inquiry. The policy-relevance of scientific findings may unintentionally reduce methodological quality. The supremacy of methodological quality is undermined by the required degree of social acceptance as the quality of scientific findings is no longer determined by the methods and approaches applied, but rather whether findings are coherent to the public, consistent with existing knowledge or "useful" to policy-makers. For instance, there is the tendency for

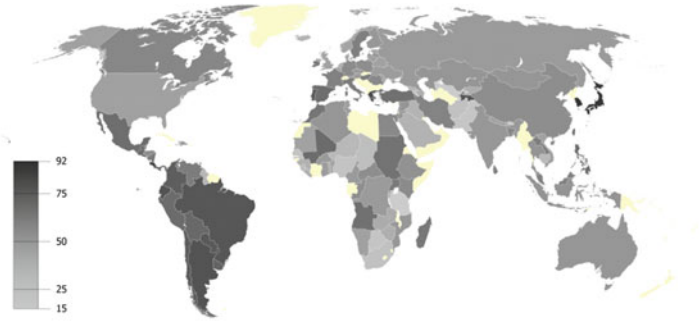

Fig. 2.2 Climate change opinion cause is human by country 2008–2009 (*Source*: Pelham 2009)

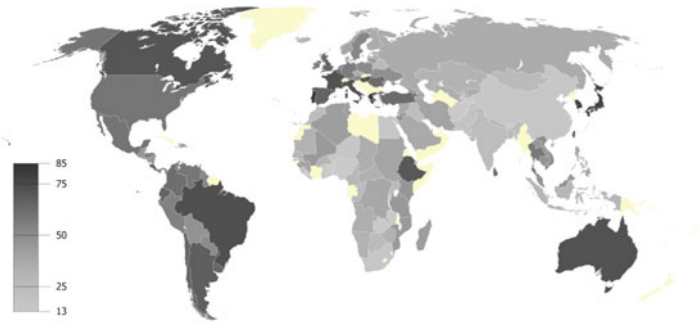

Fig. 2.3 Proportion responding that global warming is a serious personal threat (2008–2009) (*Source*: Pelham 2009)

governmental agencies to selectively support scientific institutions which are relevant for policy-making, while others regarded as irrelevant will need to seek other funding channels. The resulting bias in competition between different research institutions may lead to the alteration of methods and approaches in order to meet the expectations of policy-makers, thus compromising their independence.

By focusing on "output" generation and service delivery, these institutions remove the distinction between scientific/research institutions and think tanks/consultation firms. With this kind of orientation, the "knowledge consumers" (e.g., government agencies, NGOs and other stakeholders) are in better positions to dictate what areas the research institutions should explore. What follows is a failure to look at issues considered unpopular or unimportant by consumers. Thus, researchers lose flexibility and creativity. Furthermore, research institutions may deliberately seek more media attention to promote their "market value". This may lead to rather short-term oriented studies to consistently supply findings to consumers. Finally, their credibility is distorted by efforts to ensure their constant media presence rather than the quality of their scientific findings.

One way to prevent the abuse of science is to mark a clear separation between science and advocacy. Science should be able to transparently provide knowledge without taking sides (neutrality), and should rather take all sides ("*Omni partiality*") without being normative, still being policy relevant and allowing policy-makers to independently decide which specific areas of knowledge are needed. Science has no mandate to accede decision making. When scientists assume political authority, instead of basing their decisions on absolute scientific facts, then the ("scientific") regime does not really differ from totalitarian regimes that use scientific data to limit discourse and control all aspects of society through officially declared ideologies or dogmas. With this, many scientific communities, or the so-called epistemic communities, have declined to follow the advocacy-path. By doing so, they decide to not actively advocate their own scientific findings, nor claim the validity of their scientific results.

2.3.2 The Power of Knowledge: Epistemic Communities and Policy-Making

Epistemic communities are networks of knowledge-based experts who help decision-makers define the problems they are confronted with, identify the various policy solutions available and assess the outcomes of such policies (Adler and Haas 1992; Haas 1992; Haas 1990). Policy support is not the primary purpose of these communities. Nevertheless, because members of epistemic communities have various socio-cultural, academic or professional backgrounds, scientific findings presented by epistemic communities are often plagued by diverging problem perceptions, worldviews, views of humanity, and scientific approaches. While some of these findings may actually complement each other, others are mutually exclusive. Furthermore, it may not be possible to find a consensus among the members of these communities and any consensual knowledge may be useless in dealing with contextualized problem issues.

Global environmental issues are complex and are confronted by uncertainty (see Chap. 5). Policy makers are therefore highly dependent on external expertise to understand the technical aspects of the issues they are regulating (Haas 1990). They demand the structuring of uncertainty to give them some basis for decision-making by seeking expert knowledge and advice. Expert consultations are very often used by policy-makers to legitimate their decisions and to ensure that aims are met as they are accountable to their decisions. In many cases, experts from various epistemic communities do not have unitary recommendations, as will be described below. What occurs is a form of knowledge diplomacy—a competition among ideas and approaches—where the consensus reached is diffused and forwarded to policy-makers (Haas 1992, 23), defining the path of decision-making.

Nevertheless, as this research project aims to provide an answer, epistemic consensus is usually detached from the social context and power relations in

which it is embedded (Lidskog and Sundqvist 2002). As the COP 15 meeting in Copenhagen shows, epistemic consensus cannot fully guarantee that there will be a consensus on policies among national governments. In spite of specific scientific findings of several assessment reports of the Intergovernmental Panel on Climate Change (IPCC), national governments find it difficult to reach policy consensus, because political contexts define how scientific consensus is interpreted and used.

Moreover, epistemic communities are confronted by other actors seeking to influence policy-makers: NGOs and other advocates who may also be using scientific data to corroborate their advocacy (Klotz 2002). As discussed above, while NGOs can raise public awareness on climate change, they may also undermine the independence of science. In addition, the direct influence of epistemic communities in decision-making exposes these experts to rigorous scrutiny, as this influence is seen to provide power which requires legitimization. Actors who seek to compromise decision-making may undermine the whole process by problematizing the legitimacy of experts from epistemic communities or by accentuating the IPCC's own statement that scientific "estimates have spanned such a wide range that they have been of limited value to policy-making" (IPCC 1995, 303).

In the late 1970s and early 1980s, scientific concern about the potential severity of increased CO_2 emission first entered the political sphere when the 1978 Carter administration sought to use domestic coal to solve the energy crisis (Oppenheimer and Petsonk 2005). Since 1958, CO_2 has been directly measured in Mauna Loa, Hawaii, and experts have noticed the continuous increase of CO_2 in the earth's atmosphere (Kommission für Reinhaltung der Luft 2005). Several environmental problems such as the smog problem in London,[1] the Minamata-sickness in Japan[2] and the "Waldsterben"-Case (death of forests)[3] have led to increased public awareness of environmental issues.

The politicization of climate science became evident after two 1979 reports from a group of physicists from the JASON defense advisory panel (MacDonald et al. 1979) and the ad hoc National Academy of Sciences (NAS) (Charney et al. 1979) paved the way for changes in policy. These reports directly influenced the declaration of the Energy Security Act of 1980 and the foundation of the Carbon Dioxide Assessment Committee (CDAC).

In 1987 and 1988, James Hansen and his co-author Sergej Lebedeff published articles claiming that human-caused warming had already measurably affected

[1] Smog related deaths in London were reported to have increased from 2,062 to 4,703 in just a week in December 1952. Deaths resulting from bronchitis and lung infection was reported to have increased sevenfold (Lamb 1989).

[2] The "Minamata sickness" was discovered between 1950 and 1960 in Minamata, Japan. The sickness, which involved the partial and total paralysis of inhabitants of Minamata, was caused by the mercury contamination of the sea through the company Nippon Chisso. Until 1997, 1,246 inhabitants died following this sickness. The subsequent legal processes in the 60s and 70s received huge public attention not only in Japan but also in the world (Gunnarson et al. 1974).

[3] The death of European forests was highly controversial in the media leading to its inclusion in the political agenda (Kommission für Reinhaltung der Luft 2005).

global climate through their analysis of the surface air temperature at meteorological stations from 1880 to 1985. According to Hansen, a global temperature rise of 0.5–0.7 was found to have occurred in both hemispheres (James Hansen and Lebedeff 1987; Hansen and Lebedeff 1988).

On the other side of the Atlantic, the Working Group of the German Physical Society published in 1983 a statement emphasizing the carbon dioxide problem and the greenhouse effect, linking these with increased CO_2 emission (Deutsche Physikalische Gesellschaft 1983). In this statement, they introduced not only the potential consequences of higher global temperatures due to increased CO_2 concentration, but the measures available to minimize anticipated negative effects. In 1987, German Physical Society and the German Meteorological Society jointly released a statement warning of the threat of global climate change caused by human activity (Deutsche Physikalische Gesellschaft and Deutsche Meteorologische Gesellschaft 1987).

The two initiatives served as groundwork for the *Basel Manifest* achieved by European natural scientists in May 1989. The *Basel Manifest* demanded that European conventions be found by policy-makers to ensure that basic human needs can still be provided in light of the warnings made by German meteorologists and physicists as well as the findings of the World Conference "*The Changing Atmosphere*" in Toronto in 1988 (Rollnik 1995).

To create an overview of the various climate change-related studies, and to enable a systematic generation of information for policy-makers, the United Nations Environmental Programme (UNEP) and the World Meteorological Organization (WMO) jointly established in 1988 the Intergovernmental Panel on Climate Change (IPCC). This is an international scientific body designed to provide necessary assessments of up-to-date findings within fields and disciplines relevant to climate change, as well as the potential environmental and socio-economic impacts of such information (IPCC 2013a). The IPCC produces assessment reports and special reports relevant to policy-making by collaborating with thousands of scientists and experts worldwide. These scientists contribute to the work of the IPCC on a voluntary basis as authors, contributors and reviewers.

The following Fig. 2.4 illustrates the organizational structure of the IPCC. The three Working Groups (WGs) and the Task Force are assisted by Technical Support Units (TSUs), which are hosted and financially supported by the government of the developed country Co-Chair of that Working Group/Task Force.

The IPCC does not conduct its own studies. Its assessment reports are constituted to reflect the standard of scientific knowledge within a given time period by providing a synthesis of available literature. It summarizes the debates and findings of various scientific studies conducted by various scientific agencies and institutions. While these assessment reports concentrate on peer-reviewed materials, non-peer reviewed materials such as reports and data from international organizations (e.g., United Nations, IAEA) as well from governments and their agencies, and international non-state organizations (e.g., International Petroleum Industry Environmental Conservation Association and American Petroleum Institute) are

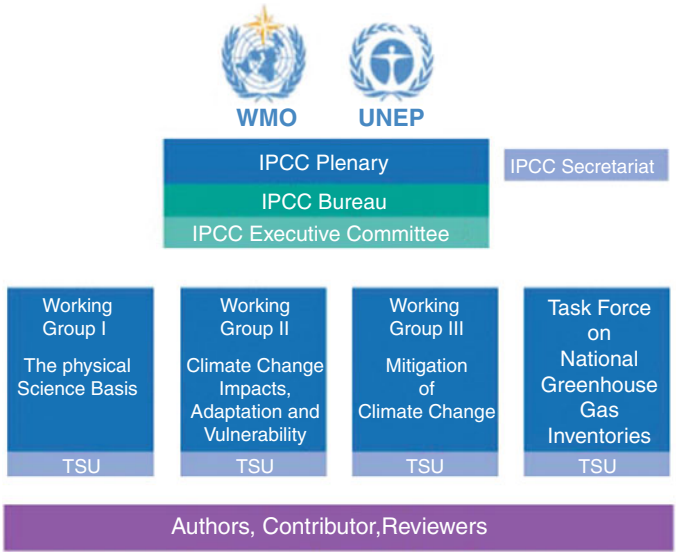

Fig. 2.4 The organizational structure of the IPCC (*Source*: IPCC 2013b)

included in IPCC reports if these materials are deemed to meet the high standards of quality demanded by the lead authors of the reports.

To guarantee credibility, assessment reports and other publications undergo a rigid multi-stage review process from experts not participating as authors in the reports (see Fig. 2.5). During the first review by experts, First Order Drafts (FODs) are circulated to experts that have significant expertise and/or publications in particular areas of the report, and to experts nominated previously by governments and participating organizations. Authors of FODs are required to respond to the review of the external experts and in case of disagreement, are required to justify their decision to reject the review comments of the external experts. Second Order Drafts (SODs) and a First Draft of the Summary for Policymakers (SPM) are then produced and distributed through government focal points to all governments, all authors and to the reviewers involved for further review.

IPCC Assessment Reports are widely accepted by national governments. Not only are authors of IPCC reports nominated by national governments, assessment reports also undergo governmental review processes where national governments establish national focal points to review the various drafts of the reports. The First IPCC Assessment Report formed the basis of the November 1990 Ministerial Declaration of the Second World Climate Conference, where negotiations on a framework convention are recommended to begin without delay. The United Nations General Assembly launched negotiations on a framework convention on climate change to provide foundation for a global climate change regime. The United Nations Framework Convention on Climate Change (UNFCCC) was

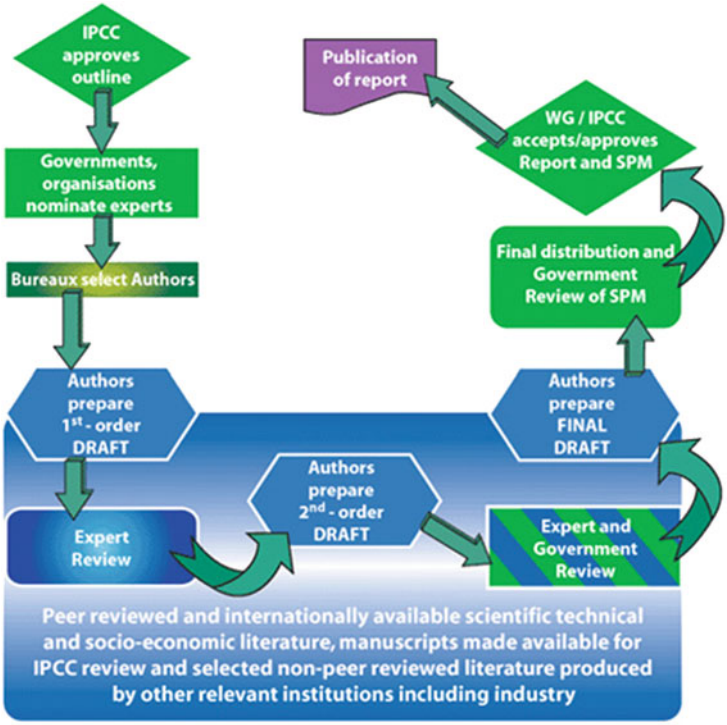

Fig. 2.5 The IPCC review process (IPCC 2013c)

eventually signed by 154 countries during the Earth Summit (UNCED) in Rio de Janeiro in 1992.

Climate change and other environmental issues have garnered more public attention after environmental advocacy groups and epistemic communities used scientific findings to legitimize their claims. National and international policy-makers reacted by establishing institutions and mechanisms such as commissions to assess the validity of presented scientific findings. These were later used as the basis for international negotiations leading, for example, to the UNFCCC coming into force.

While there can be no absolutely clear separation between environmental advocacy groups and epistemic communities, measures can be developed to ensure the independence of scientific findings. Furthermore, because policy-making will not always reflect the recommendations made by environmental advocacy groups and epistemic communities, a third group of expertise should be called in—that of negotiation/decision-making experts, to reconcile the gap between scientific knowledge and policy-making. Bringing forward the climate change agenda requires using a systems analytical approach to identify and address the stumbling blocks to the translation of scientific knowledge into policy.

2.4 Interim Conclusion: Implication for Negotiations

Path dependence confirms not only that history matters, but that history may matter differently to different interest groups. Path dependence acknowledges the unpredictability of the regime building process by drawing attention to the context, or the initial conditions, of decision-making. However, the outcome is not completely dependent on these initial conditions, as self-reinforcing events and externalities may also occur. Path dependence shows how norms and procedures have been institutionalized through various learning processes to facilitate future interactions between actors. Path dependence confirms that institutions aim to manage cooperative processes, and to enable contingent decision making.

Analyses of the scientific community and of advocacy groups seeks to understand the initial conditions of the climate change regime building process, as well as the path of this process. Using knowledge diplomacy to understand how the scientific community and advocacy groups reach consensual knowledge will help determine the path of the climate change regime building process. As discussed, the regime building process depicts various conflict cleavages that directly and indirectly pose stumbling blocks to decision-making.

Although modifications or a total change of the regime will be costly, path dependence suggests that regimes are still in a dynamic state. For instance, paradigms may be altered by providing exogenous externalities that modify the behavior of actors. This ultimately determines the conditions of the context. However, it should be noted that alterations may be resisted by certain actors as changes will mean increasing or diminishing returns for these parties. Knowing how incentives and other useful resources may be used, will facilitate current climate change negotiations.

Path dependence legitimizes "negotiated outcomes" by its assumption that there cannot be a technically optimal path. It asserts that the course of any path depends on self-reinforcement through increasing returns and externalities, and how a path will eventually manifest these gains and liabilities. Optimality is therefore moderated by what is "politically feasible", that is, what is achievable under initial conditions. As it is impossible to unproblematically predict the path of decision-making processes and the impact of issues involved, paths remain the subjects of constant deliberation among actors.

Furthermore, this chapter serves as a point of departure for this research project's assessment of the evolution of power by looking at how power has evolved in the course of the climate change negotiation process. Focusing on power as a subject of analysis offers a useful perspective on previous decision-making processes, and how these mechanisms have constrained subsequent decision-making efforts. While looking at how power has defined decision-making, this chapter also briefly examines how the *North* and *South* identities have crystalized. The North-South divide will be a major theme in subsequent chapters.

Chapter 3
Negotiation Re-visited: Understanding Decision-making

"By nature men are nearly alike; by practice, they get to be wide apart" (Confucius)

Integrating a review of the negotiation literature into a comprehensive analysis of how negotiation is intertwined with decision- and policy-making processes aims to strengthen the theoretical foundation of the whole research project by providing the context for analysis. Negotiation is a communication mechanism that allows actors with a common goal to meet to solve a problem or to find a strategy to address an issue that affects all (see Raiffa 1982; Benedict 1993). Negotiation deals with a non-linear process as it is seen as a sequence of stages that may witness significant developmental breakthroughs as well as delays or set-backs over time (see Zartman 1978; Dupont and Faure 2002). Negotiators prepare for upcoming negotiation rounds through preliminary contacts, either directly with their counterparts or through back-channels (see Iklé 1964; Kissinger 1979). Negotiation is therefore an endeavor that is not left to coincidence.

The literature on negotiation promotes the *Weberian* understanding ("Verstehen") of interdependencies, feedbacks, inertias and self-driving dynamics enabling the identification of profound dilemmas which complicate negotiation as a joint decision-making process. It involves exploring the structure and process through the identification of agendas and finding a formula for agreement over contentious issues (see Zartman and Berman 1982). Various works in negotiation literature focus on the cognitive and psychological processes (see Spector 1977) that unfold as actors engage in bargaining behavior, including perceptions and expectations that can be modified to enhance the convergence of interests in a way that is conducive to decision-making. Dean Pruitt (1981), for example, argues that negotiation as a psychological process may also be understood by looking at it as a combination of goal-expectations influenced by a multiplicity of demands and concessions. Similarly, Rubin and Brown (1975) focus on the process of logic behind motivations and interpersonal orientation within a social context.

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Defining negotiation as a decision making process within a social context implies that negotiation involves efforts to adjust to the preferences and expectations of bargaining peers in which concessions are exchanged according to the principle of reciprocity. As a reactive process, a negotiator will regularly compare her or his actions to those of the others. In this situation, a particular negotiator evaluates the costs that each party has to pay, and actions will most likely be based on these costs (see Zeuthen 1930; Shakun 1988). When expectations are linked with the evaluation of costs, it is implied that the outcome of a negotiation depends on the strategic choices made by actors (Luce and Raiffa 1957; Raiffa 1982) following a stringent learning process (see Cross 1996).

In many cases, conflicts about specific objects that involve allocation principles inevitably shift the focus of decision making from objects to procedures. Negotiations over procedures, in turn, touch upon relational issues, particularly under conditions of power asymmetry and contentious dynamics. Relationship dynamics in conflicts are prone to various biases that may easily escalate out of control (see Allred 2005). A negotiation process trapped in a "relationship premise" will be more likely to focus more on issues of fairness and trust.

Understanding and explaining the reasons behind the intractability of climate change negotiations requires an analysis of the dynamics and processes that inhibit policy-makers from reaching decisions in a social context. Most of the literature on climate change has remained focused on technical issues (Weaver 2004; Lieberman et al. 2007). Although it can be assumed that the physical science of climate change can provide objective information, it is how this climate science is related to decision-making that should be closely analyzed. The COP15 meeting in Copenhagen has shown that it is the political preconditions, particularly in decision making, that largely determine how climate change is addressed (Penetrante 2010a; Penetrante 2012).

3.1 Building a Context: Decision Making and Negotiation

Strategies can be found to improve political preconditions in order to facilitate human decision making. The negotiation perspective on decision making provides tools for analyzing the behaviors of actors and organizational structures under the premise that actors are not always rational. This contrasts with the assumption of game theorists, who posit the full rationality of actors. Howard Raiffa's 1982 book, *The Art and Science of Negotiation*, is a landmark text in the field of negotiation and decision making. It explicitly claims that developing accurate descriptions of negotiation counterparts with regards to their positions, interests, behavior, goals and actions is more useful than assuming each counterpart is fully rational.

The term 'negotiation analysis' was first introduced by Raiffa (1982), who also described possible methods to assess negotiations by integrating elements of game theory and multiple criteria decision analysis. He introduced a systematic method to analyze actors, issues, procedures, utilities, and values. Raiffa argues for the

necessity of preparation before negotiations are conducted. He warns that "negotiators who neglect preparation do so at their peril" (Raiffa 2002, 195). For Raiffa, this means more than simply gathering information; negotiators must also know how to use available information to improve their bargaining position while simultaneously facilitating negotiation. Raiffa evaluates various strands of inquiry such as the 'game theoretical approach' in relation to decision making, in order to provide ideas around how "people might negotiate better" (Raiffa 2002, 3).

However, Raiffa's negotiation analysis needed a framework for analyzing problems arising through conflicts. This was offered by several game theorists, including Thomas Schelling, in his *Strategy of Conflict* (Schelling 1960). The game theoretical approach of Schelling and other authors such as John Harsanyi (1977) and John Nash (1953) suggests a systematic framework for analysis involving rational incentives in social systems allowing predictability of decisions. For instance, Schelling's main concept of "strategy"—which is taken from the theory of games—focuses on the "*interdependence of the* (. . .) *decisions and* (. . .) *expectations*" of parties (Schelling 1960, 3). His theory of interdependent decision-making calls for the reorientation of game theory, and a re-examination of how rationality itself should be interpreted. He claims that information and the timing of decisions are crucial to the (in) ability of actors to make firm commitments, arguing that actors will commit if they see potential to "win" the conflict through such commitments. Furthermore, the introduction of multiple "focal points" enables actors to behave rationally, as these focal points are expected and can be considered points of equilibriums.

James Sebenius (1992), in his journal article, de-emphasizes the application of game-theoretic solutions, particularly when the purpose of negotiation analysis is to provide prescriptive advice for negotiators. While he draws on Raiffa's ideas around the prescriptive purpose of analyzing negotiations, he shifts his focus to how perceptions around possible agreements or processes can be changed. By looking at the underlying interests of actors, values can be created and identified, and unrealized joint gains can be discovered.

Raiffa's book has indeed opened a Pandora's box. It has inspired several experts to formulate more questions and find alternative answers. This research project does not intend to enumerate the various tracks and developments of negotiation research constellating from Raiffa's work, however. Instead, this project uses Raiffa's initial thoughts as points of departure for its theoretical foundation, and is based on three analytical (theoretical) assumptions: (a) Rationality, Bias and Dilemmas, (b) Negotiation as a Process, and (c) Consensus Building and Cooperation as a Learning Process. These are expanded below:

3.1.1 Rationality, Bias and Dilemmas

Contrary to the perspective of game theory, which suggests that every actor is always able to maximize utility (see Mele and Rawling 2004), this research project

assumes that actors are not and cannot be fully rational. As will be discussed later, the three main drivers: *context, complexity* and *uncertainty* inhibit rationality. For instance, context tends to limit the validity and applicability of results of game theoretical analyses. The historicity and path dependence of a negotiation system such as climate change accentuates the uniqueness of such a negotiation system. Rationality ignores the impact of experience and of learning processes. Completely rational actors are assumed to have learnt and to be in possession of all available knowledge. However if actors have different learning stages, this would mean that some actors are more "rational" than the others. Game theory requires that all actors have the same level of knowledge, which the historicity and path dependence of negotiation systems negate.

Bazerman and Neale (1992), as well as Thompson (2001), ask what kind of errors negotiators are likely to make when acting in an irrational manner. They have brought the analysis of cognitive processes to the realm of negotiation research by focusing on deviations from rationality. Several biases have been identified to "help negotiators anticipate errors in their counterparts and take steps to avoid making these mistakes themselves" (Bazerman and Shonk 2005, 53). One of these biases is referred to as "egocentrism," the tendency for perceptions and expectations to be biased towards self-service (Babcock and Loewenstein 1997). Information and its interpretation are selected according to their perceived benefits. A specific principle of fairness is chosen which could best justify the negotiator's preference. Certain qualities that may contradict the negotiator's behavior are in the same manner downplayed. Nevertheless, while it is more likely that egocentrism will contribute to the intractability of decision making conducted through negotiation, it should be analyzed in a more sober way, that is, its negative connotation should be removed. As Gerrett Hardin's "*tragedy of the commons*" (1968) describes, negotiators are confronted by "social dilemmas" produced by discrepancies between collective and individual optima. Actors who favor individual optimum are usually reproached for displaying "egoistic" behavior, while for example state negotiators sacrificing individual optimum will likely lose the mandate from their constituency. Decision making involving dilemmas is complex and should be addressed axiologically neutrally.

3.1.2 Negotiation as a Process

Aside from the renunciation of rationality, another major concern for theoreticians of negotiation research refers to the methodological approach of analyzing negotiations. Zartman's (1978, 1988, 1994) earlier works enabled more systematic approaches in analyzing negotiation processes, and introduced methodological typologies of bargaining analysis: *deductive, constructed,* and *inductive* (1994, 25–26). Furthermore, the conceptualization of various phases, stages or sequences that constitute a single negotiation process invites more accurate analyses of the underlying forces behind dynamics, feedbacks and interdependencies in order to

identify more social dilemmas. This is particularly useful because each phase, stage or sequence employs specific rules and values as the negotiation process proceeds, and modifications of actors' behavior during negotiation becomes inevitable. Tensions may arise when a specific chosen behavior does not fit with the conditions set by the following phase, stage or sequence. Moreover, some sets of terms are needed as prerequisites to facilitate the subsequent stage. For instance, a consensus over the agenda of a negotiation process will most likely facilitate an exchange of positions among negotiating parties. Without a clear agenda prior to structure discussions, negotiators will most likely stray from the agenda or progress through the discussion points in an aimless or illogical manner.

An understanding of negotiation as a process recognizes additional complexities. It allows the combination of short and long term analyses as well as modifications of strategies and adjustments of measures as the process proceeds. Methodologically, it summons various perspectives and outlooks of analysis as well necessitating a more contextual orientation, thus emphasizing reality. Functionally, the concept of negotiation as a process implies that there is a common goal among parties, that is, to reach a mutually acceptable outcome. Finally, the process orientation of negotiation analysis accentuates the historicity and path dependency of negotiations and decision-making in general. Decisions that are to be made at the negotiation table are often limited by the decisions made in the past.

3.1.3 Consensus Building and Cooperation as a Learning Process

An actor who intends to participate in negotiations will expect to meet one or more counterparts in negotiation (Crump and Zartman 2003; Zartman 1994). These actors assume that there is an existing conflict between them that needs to be managed, and that any mutually acceptable outcome will lead to a situation superior to the status quo. Thus, the decision to engage in negotiations requires first a consensus among conflicting parties: that negotiation is the appropriate instrument to settle differences.

As the negotiation process proceeds, the negotiating parties are confronted by diversity of understanding and of definitions: of problems, rules of the game, and of organizational issues. These will ideally be addressed systematically through consensus. Very often, negotiators define various terms depending on how the definition serves their interests. Therefore, the negotiation process employs sets of various consensual agreements. As the negotiation process proceeds, the negotiating parties may find it easier to reach consensus. For example, the negotiation parties may find it initially difficult to agree on the agenda, which may impact upon participation. A party may not be willing to talk about a specific "toxic issue" and will refrain from participation until they are assured that this specific topic will not emerge on the agenda. In the pre-negotiation rounds, conflicting parties make initial

assessments about the viability of negotiations. For instance, governments conducting "exploratory talks" with separatist rebel groups tend not to tolerate an agenda including independence. In addition, a conflicting party may demand the exclusion of certain actors from the table, exacerbating the difficulties surrounding the commencement of negotiation. Therefore, the very act of negotiation already implies a certain level of consensus among parties. At the same time, negotiation promotes further consensus building processes by providing the platform for cooperation.

3.2 Negotiation Analysis as Conceptual Framework: Explaining the Rules of the Game

The context implies assumptions, necessitating a further analysis of behavior, actions, structures, dynamics, interdependencies, and feedbacks occurring within the negotiation system. It enables the understanding of the rules of the game during negotiation. The next step involves the introduction of a conceptual framework that allows a more systematic and accurate analysis of dilemmas or impediments confronting negotiators. This framework intends to provide an analytical tool to formulate strategies to cope up with these "rules of the game". The negotiation literature provides generic methods to analyze negotiations (Schelling 1960; Raiffa 1982, 2002; Young 1991), however this research project introduces an alternative analytical framework where drivers are connected with actors, issues, structures, processes, and outcomes. It looks at the forces behind the interactions between drivers and elements and how dilemmas are created by interactions, dynamics, inertias and feedbacks.

The following illustration (Fig. 3.1) summarizes how negotiation can be conceptually framed to allow a more systematic analysis of various processes, feedbacks, interdependencies, and dynamics to enable a more accurate understanding of dilemmas and the resulting stumbling blocks.

3.2.1 Drivers/Brakers

In the outer layer are the three major drivers and/or breakers that define the boundaries of the negotiation system. The context provides the "rules of the game", and ensures the uniqueness of a negotiation system. Uncertainty limits the sets of possible decisions that can be reached, and ensures the dynamism of the system. Complexity determines the feasibility of instruments in assessing options, and rebuts claims of rationality. Complexity prevents the establishment of rationality mechanisms as it disables the clear and distinct processing of information.

Fig. 3.1 Negotiation analysis

Complexity that results from interdependencies, feedbacks and multi-causations of structures and actions is regarded as given.

Context determines the feasibility of procedures as well as the availability of resources. It determines the legal, historical, cultural, professional and social codes of conduct that ultimately constitute the institutionalization of those norms and measures reached to structure contingencies. The historicity and path dependency of decisions should not be ignored, and are drivers of decision-making in a negotiation system. The contextuality, for example, of the legal framework of one specific country limits its applicability to other countries. Although there may be commonalities among legal frameworks, its historicity makes it unique. In addition, political systems that for instance define how the legislative body counterbalances the executive body are the product of a historically deliberative process unique to each country. Analyses of negotiations should therefore address the contextuality of negotiation systems.

Uncertainties may complicate decision making during negotiation. Uncertainty about future events or the future implications of a current decision may significantly alter preferences, and this impedes the negotiation process. Assuming that path dependency is valid, a current decision may limit future decision-making. When the stakes are high negotiators are more likely to seek plausible scenarios based on their own experiences than to introduce uncertainty and probe potential contingencies. Nevertheless, scenario-building highly depends on the availability and verifiability of information.

3.2.2 Elements

The second layer of the negotiation system employs the five elements of negotiation: *actors, structures, issues, processes* and *outcomes*. These elements are five various perspectives through which negotiation can be analyzed. Chapter 5 identifies the impediments categorized based on these five elements.

Actors

An analysis of negotiation can be conducted by focusing on the actors. It includes the question of who can and will participate in negotiation. It is also equally important to ask how actors adapt themselves to the conditions set by the negotiation system, such as coalition-building as a possible response to power asymmetry. A look at the underlying goals sought by the parties involved may provide insights into how the negotiation process will proceed. Are actors participating with a view to reaching a mutually acceptable agreement, or are they participating as *bad faith* negotiators (Zartman 1994; Bazerman and Shonk 2005), pretending to seek agreement with the covert intention of using negotiations to block agreement or achieve other goals (such as winning time or gaining information)? Furthermore, in some cases, it may seem obvious which actors should be present at the table; however it is often more useful to identify influential players who may have refused to participate but could still influence the process (such as spoilers and hard-liners).

Structures

Structures are features of the "environment" that shape formulation of strategies. Structures can be defined as the specific institutional and political environments facilitating and constraining the abilities and opportunities of actors to pursue their goals (Wang 2010; Marsh and Smith 2000). Features such as information and power distribution, networks, institutional or organizational settings or even ideological principles may influence how alternatives and options are weighted by actors in their pursuit of outcomes. These features may pose barriers and/or provide opportunities to negotiators. Some conditions created by certain structures may inhibit or facilitate the decision making process. For instance, the given structure may allocate specific roles to the actors and set distinct set of rules (Marsh and Smith 2000). The analysis of negotiations from the structural point of view focuses on conditions determining the behavior and actions of negotiators, which to a certain degree may imperatively change the course of decision making. With the absence or presence of certain structural features, the actors are anticipated to decide otherwise.

Issues

Analyzing negotiations from the perspective of issues underlines not only their technical aspects, but also their important linkages to other issues both within and without the negotiation system. Such a perspective also explores how information changes as the negotiation proceeds, and probes the contextual meaning of specific issues. Equally important is the question of whether adding or eliminating issues to the discussion will promote negotiations. While some actors defer 'toxic' issues, others may want to see specific issues included in the agenda.

Forwarding several issues at once ('bundling') may offer additional resources to enhance negotiations. Issues tend to become intertwined as negotiators struggle for bargaining leverage. Issues may be prioritized differently and provide opportunities for concessions, especially when a combination of issues enhances opportunities to create value. Nevertheless, bundling issues may also lead to problems, particularly when the diffusion of issues prevents commitment to a decision. Certain issues may complicate the settlement of other issues; therefore, unbundling them may sometimes prove more useful.

Often missed in analyzing decision making processes is the relationship between actors. Relationships are themselves issues. For instance, when antagonism is an issue, negotiating actors are very often impelled by the urge to harm the other side even at personal cost (Rubin et al. 1994). Feelings of unaddressed grievances or victimization distort perceptions and complicate negotiations. When actors see the other participants as the problem rather than the issues involved, decision-making becomes intractable.

Processes

The process perspective in analyzing negotiation accentuates the chain of steps leading to the conversion of inputs to outputs. The identification of steps, phases, sequences, stages, and parallel processes requires defining the starting points of discord as well as ascertaining the end points of convergence. Both the commencement and completion points are predetermined values based on the long-term goals of the negotiating actors. Therefore, a negotiation process requires several consensual conditions to reach its conclusion. Negotiation is the ideal instrument to reach specific individual goals through the operationalization of a mutually acceptable collective goal. The steps linking individual to collective goals (concretized through a settlement) is the subject of analysis from the process perspective.

Assessing processes include the evaluation of forces behind dynamics and how these dynamics can be addressed. Dynamics including escalation and momentum arise through linkages between actors, issues, structures, expected outcomes and parallel processes. These linkages are correlated with latent interdependencies that can potentially determine how the negotiation proceeds. Furthermore, negotiation systems are open systems where past, present and future parallel negotiations can

directly or indirectly impact upon other negotiation systems (Watkins and Passow 1996). For instance, climate change negotiations are affected by decisions made in other negotiation systems such as sustainable development, energy security and biodiversity. In a similar way to the bundling of issues, linkages between negotiation systems can create barriers or opportunities. Therefore, the process perspective of negotiation analysis seeks ways to de-link actors, issues, structures, processes and outcomes in order to relax constraints.

Outcomes

Analyzing negotiations using potential and anticipated outcomes does not merely aim to establish predictability. Decisions to participate in negotiation as well as whether to commit to a specific agreement are made by comparing values of anticipated outcomes with the values of alternatives, variously termed as 'best alternative to a negotiated agreement' (BATNA) (Fisher and Ury 1981), 'reservation values' (or 'walk aways') (Raiffa 1982), 'reservation prices' (Lax and Sebenius 1986, 51), 'damage' (Harsanyi 1977, 179), 'security points' (Zartman 1987, 12–13), 'threat potentials' (Rapoport 1966, 97) and 'resistance points' (Walton and McKersie 1965a, b, 41). The acceptability of negotiation outcomes highly depends on the value of alternatives.

The direct comparison of the values of anticipated outcomes and alternatives encompasses the 'zone of possible agreement' (ZOPA) (Walton and McKersie 1965a, b; Lax and Sebenius 1986) or the 'zone of agreement' (Raiffa 1982). Nevertheless, this comparison can only effectively occur during negotiation, where parties have the opportunity to explore their interests and options. Options depend on the availability of information and, as the negotiation proceeds, upon the disclosure of previously unknown or unclear information. Equally significant is the possibility for negotiators to bridge discrepancies between their measurements of values.

3.2.3 Negotiation Management

At the center of the analytical framework is negotiation management. This encompasses the core of the system that ensures coherence in the negotiation system. Negotiations are dependent upon existing governance mechanisms or institutions which regularly formulate strategies to facilitate negotiations within the system. Beset by constant threats from within and without (e.g., spoilers, bad faith negotiators), this "invisible hand" needs to adapt to the changing conditions set by drivers and the forces behind dynamics, feedbacks and inertias.

Negotiation "managers" can be international organizations (e.g., UN), regional organizations (e.g., EU, ASEAN), NGOs (e.g., Centre for Humanitarian Dialogue), single states or groups of states (e.g., Norway, G20) which may or may not have

vested interests in ensuring that negotiations between stakeholders proceed. They may employ "good offices", mediation, arbitration, facilitation or moderation. Negotiation management is not an exclusive endeavor. A single negotiation system may witness several "managers" who may complement each other or compete against each other. Part Four of this research project deals with negotiation management.

3.3 Interim Conclusion: Relating Negotiation Analysis to the Research Project

Negotiation and decision-making are inter-related subjects, which this research project assumes are interchangeable. Negotiations lead to consensual decision-making performed in a social context. When decision-making is analyzed in a social context, it requires exchanges of perspectives. In some cases, even a single person may conduct decision-making in a social context as he or she considers various sides and perspectives in an attempt to reach an optimal decision. His or her various past experiences, competing among themselves, may emerge as "negotiating actors" within the "I-Me-Myself" ('Ich') system. In global climate talks, decision making is conducted through negotiations as no single country can shoulder the costs of confronting climate change alone. As all countries are affected by the consequences of climate change—although with diverging vulnerability—it benefits individual countries to involve others.

As discussed in the previous chapter, context limits the validity and applicability of results. Nevertheless, this does not mean that the empirical results of studies involving highly contextualized cases such as climate change cannot be valid. On the contrary, highly contextualized cases may enrich the study of negotiation by providing insight into how to manage the decision-making process by employing a solution-oriented approach. Through the understanding of how issues and actors are contextualized, and of how processes and paths of decision making are taken, strategies can be found to enable negotiators to cope with dilemmas and other types of stumbling blocks. For instance, knowing that consensus and cooperation implicate learning processes allows negotiators to trust current decision frameworks, and to accept regressions and set-backs as normal parts of the consensus building process.

Chapter 4
Simulation as Method of Research: Learning from Experiences of the COP15 Games

"I hear and I forget. I see and I remember. I do and I understand" (Confucius)

Climate change negotiations are highly contextual. Each meeting features unique dynamics, which may not be repeated again in any other meeting. For example, the Fifteenth Conference of the Parties (COP15) followed a yearlong pre-negotiation process and was highly affected by various parallel negotiations, such as European Union summits and APEC summit, as well as who or which political party currently sits in the government administration in each participating country. The highly contextualized nature of climate change negotiations presents methodological challenges for scholars intending to look on interdependencies of various factors (Penetrante 2012).

Researchers are confronted by the inaccessibility to information. Researchers may not be allowed to be present in the actual negotiations or may not have access to important "confidential" documents. Several important factors at the climate meetings are not documented in any form such as protocols or official legal documents. "Missed information" may be intuitively known to researchers; however, there are no ways for them to capture all necessary factors that may have significantly affected the outcome of the negotiation process. For example, when analyzing the negotiation process, it is important to look at informal communications between parties and where actual bargaining takes place. Are concessions directly made at the plenary? If not, where? What are the options available? Do actors negotiate directly with their counterparts or do they use the assistance of backchannels?

Furthermore, climate change negotiations do not allow testing of hypotheses. Once the climate meeting has concluded, researchers are limited to questionnaires given to participants of the meeting. Although retrospective reflections of parties may be useful in describing the process, these questionnaires are however limited in providing additional analytical insights. For example, answers to the question what went wrong in the negotiations are usually prone to subjectivity and the lack of a

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meta-level perspective. Individual insights of parties may be biased or distorted, and therefore, causality may not always be firmly established. In addition, answers to the question about what could have been done to change the course of the negotiations to come up with a more favorable outcome are highly speculative. It is impossible to test and re-test hypotheses, because there is no way of testing how they would have worked as it is impractical to ask the parties to repeat the whole negotiation to see if the negotiation process would react positively or negatively to specific interventions. As the real system of the climate change negotiations cannot be engaged, a different methodological design is needed.

The limitations in researching on the climate change negotiation process can be countered by employing a laboratory approach. Simulation of negotiations offers a more flexible mode of generating knowledge. Simulation enables researchers to manipulate both strategies and structures, not only to test causality, but also to ensure that the analysis is comprehensive enough to ensure the validity of the findings.

4.1 Research Methodology: Modeling Social Processes Through Simulation

Simulation is a particular type of problem-oriented data gathering, which allows the testing of models to better understand a specific "social world" or community (Gilbert and Troitzsch 2005). The relevant model summarizes the key features of the selected system, in the case of this research project, of the negotiation system. The simulation itself represents the operation of the system within a specific given time (Banks et al. 2010; Hoover and Perry 1989). Simulation games comprise interactive representations of a specific social world and how this world is perceptive by participants. These participants behave according to the conditions set by the environment including the self-inducing dynamics arising from interactions between actors, feedbacks brought by expected outcomes, as well the inertia or resistance of participants to the conditions set by the environment.

The first step in conducting a simulation is to abstract a model from the real world by choosing social processes that researchers anticipate in the targeted environment. Models are based on simplified approximation and assumptions with regards to the key structural characteristics of the system. A model is one or a series of scenarios or snapshot constructions of reality and, therefore, cannot claim universal generalizability. The simulation as the operationalization of the modeled system can be executed many times while varying conditions to explore various parameters (Gilbert and Troitzsch 2005), thus, creating various scenarios.

The second step involves the comparison of the data generated through the simulation (simulated data) to the data generated from the real-life setting that is being studied. In several cases, limitations to usability of comparisons should be identified and assessed. It is not the primary aim of the simulation to reproduce the

real (negotiation) system and to come up with the same results of decision-making processes that have occurred in both cases.

The third step is to evaluate the differences and similarities between the actual sets of results. For example, the reasons why actors in the simulation saw the chair as inhibiting the negotiation process may be similar among various games. This evaluation enables the researcher to develop new theories, to expand or question existing ones, and to draw some conclusions and later offer recommendations about effective negotiation strategies.

The following Fig. 4.1 illustrates how simulation and modeling can be used as a tool for scientific inquiry. A model can be directly used to predict data by employing parameter estimation. The same model can be operationalized or "experienced" through a simulation process where the researcher may actively control the parameters of the negotiations. As the simulation runs, the actors adapt themselves to shifting parameters and structures. The researcher observes the impact of manipulations on the actors, which generates data. The next step is for the researcher to abstract the actor's behavior and decisions to come up with conclusions (collected data). The collected data is then to be compared with the predicted data produced directly through the model that did not undergo simulation. The value added of this is to enable the researcher to adjust the specific model when deemed necessary. A new model arises.

Often, no set of mathematical or statistical equations exists that can be used to predict the characteristics of a given social system (Gilbert and Troitzsch 2005). Because researchers are not capable of collecting all the relevant information and because social relations are never linear in nature, no model can reliably predict future developments. The model aims to provide a "Gedankenexperiment" (thought experiment) by formulating possible scenarios of what has already occurred in the past.

A model developed via simulation can help researchers to better understand causal relationships and the effect of interdependencies precisely because it limits the number of interacting components and enables a more precise focus on the impacts of specific variables. Furthermore, the simulated model captures the identified historicity and contextuality of the (negotiation) system by introducing historical and contextual parameters in the course of the simulation.

Researchers can enter "inputs" that were drawn from formal theories and assumptions. Such inputs which serve as cognitive limitations for actors are communicated to the participants. For example, simulation participants playing very powerful countries received the instruction that they prefer bilateral over multilateral negotiations. This contextual input is based on the dominant theoretical assumption in the negotiation literature with regards to calculation of actors whether a bilateral or a multilateral mode of negotiations would promise more returns (Crump and Zartman 2003; Zartman and Rubin 2000; Zartman 1994). Examples of historical parameters included in the instruction sheet (profile) for participants are cultural ties between countries and traditional allies during negotiations.

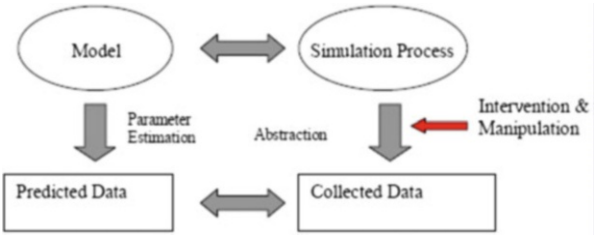

Fig. 4.1 Simulation and modelling as tool of scientific inquiry (Penetrante 2012, 285)

"Outputs" are dependent variables that describe how actors behave as the simulation runs (Gilbert and Troitzsch 2005). The statistical correlation between variables is not the primary focus of the simulation games. The researcher looks closer on the social processes and dynamics arising from the aggregation of selected actors (e.g., from different cultures, and professions), issues (e.g., multiple causation), structures (e.g., power asymmetry), processes (e.g., long-term orientation and coalition-building), and (expected) outcomes (Penetrante 2012). The outputs are collected data that further require abstraction to come up with insights for the eventual modification or confirmation of existing theories and assumptions used as parameters in the simulation games.

4.2 The Climate Change Negotiations as Simulation Game: Reproducing Complexity and Uncertainty

Climate change negotiation simulations are not intended to reproduce the actual climate change negotiation system. Rather, they seek to create simplified scenarios that replicate specific discrete structures and interactions using (historical and contextual) parameters. These parameters based on theoretical assumptions define the cognitive limitations for the participants. These parameters are identified in the section below that describes how the simulation games were conducted (see the word "assumption" in parentheses).

This research project has chosen the Fifteenth Conference of the Parties (COP15), which was held in Copenhagen in December 2009. The COP15 to the UNFCCC met to develop a mechanism for tackling rising GHG emissions after the Kyoto Protocol expires in 2012, but no binding agreement was reached at Copenhagen. At the final plenary session on December 18, 2009, the delegates did, however, agree to "take note of" the so-called Copenhagen Accord, drafted by the U.S. and a group of countries known as the BASIC bloc (Brazil, South Africa, India and China).

The outcome of the Copenhagen meeting underscored the complexity and uncertainty of the future of climate talks. The COP15 was supposed to be the end of a long road that started at COP11 in Montreal and was concretized by the "Bali Road map" at the COP13 in Indonesia. The failure of COP15 to finalize a binding commitment raised the question whether the contradictory interests and opposing

objectives among parties can be reconciled at all or whether it is more feasible to start looking for alternative channels that would equally serve the purpose of stabilizing GHG concentration in the atmosphere.

Because of the important questions that COP15 has raised, it serves as an interesting analytical subject for negotiation scholars. It raises the important question whether climate negotiations need to be conducted more effectively and if yes, how could a "better" process produce "better" and more far-reaching results. Would adopting measures and strategies to make the climate negotiations more effective be a valuable investment? If yes, what kind of investment is appropriate?

4.2.1 The Parameters of the Simulation Games: The COP15 as Learning Curve

The COP15 negotiation was simulated on 20 occasions in 2009, 2010, 2011 and 2012; 10 of which are described as representative samples (Table 4.1).

Simulation participants were primarily given roles representing states. This is based on the assumption (*assumption 1*) that states are the primary decision-makers in the climate change negotiations. All state parties also received confidential instruction sheets (profiles) that contained their positions, background information, and recommendations on how the negotiator might choose to behave during the simulation (see Appendix for samples of profiles). Each negotiator remained free to choose his own methods to fulfill the interests of the national government he or she was assigned to represent, but these choices are somewhat constrained by the facts listed in this confidential information sheet. This practice is based on the assumption that state negotiators are constrained by "national interests", which are formulated, interpreted, maintained, and defended by national governments (*assumption 2*).

The information provided to participants described the session's goal, which was to produce language for the draft resolution focused on the mitigation of climate change (assigned amounts, percentages, year of level, and commitment period). The state negotiators were charged with determining the percentage reduction of GHGs that their governments would agree to reduce nationally to reach global targets (e.g. 20 %). They were also required to determine whether this percentage reduction would be applied only to developed countries or to developing countries as well, which year would be the base year for determining acceptable levels (e.g., 1990 levels), and within what time frame (e.g., by 2020), the reduction should take place. The negotiation agenda allows negotiators to structure their decisions (*assumption 3*). Nevertheless, other agenda items such as adaptation fund, capacity building, etc. are not generally prohibited to depict the inter-linkages of issues (*assumption 4*).

In profiling more than 30 countries, both primary and secondary sources were used, as well as "hypothetical" assumptions made by the game designer. A

Table 4.1 List of simulation games

Location	Date
International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria	June 24, 2009
De la Salle University, Manila, Philippines	July 4–16, 2009
Webster University, Vienna, Austria	May 26, 2010
IIASA, Austria	June 21, 2010
Lviv Technical University, Ukraine	September 24, 2010
University of Cologne, Germany	November 27, 2010
University of Leipzig, Germany	December 17, 2011
University of Frankfurt, Germany	January 21, 2012
University of Cologne, Germany	January 29, 2012
University of Leipzig, Germany	May 13, 2012

disclaimer was included in the profile sheet noting that some information in the confidential sheet may not represent the "real" preference of the specific national government. The profiles included the best alternative to a negotiated agreement (BATNA) for each country to enable the participants to decide for themselves whether a proposed agreement was acceptable or not. This parameter (*assumption 5*) is based on the theoretical assumption that negotiators will accept a specific agreement if this is "better" than what will happen if there would be no negotiation at all (Raiffa 1982; Zartman 1989).

For example, the Bangladeshi negotiator was instructed to prefer bilateral negotiations in contrast to the preference of the majority of developing countries (*assumption 6*). Some countries may have opted to delay the negotiation process because the government anticipated that it will be in a better position at the later stage (*assumption 7*). In addition to the confidential instruction sheet, the state negotiators also received confidential "memos from the capital" through which the game master intervened in the running process to introduce additional parameters. The distribution of the "memos from the capital" is itself based on the theoretical assumption that decision-making is a dynamic and non-linear process (*assumption 8*). In several occasions, the national government may opt to change its policy during the course of the negotiation, possibly as a result of domestic pressures, and this is communicated to the state negotiators (*assumption 9*).

In four test groups (IIASA 2009 and 2010, De la Salle, Lviv), participants were also given roles representing non-governmental organizations (NGOs). Although NGOs have not been engaged in actual negotiation, in these roles as stakeholders, they manage to positively and negatively influence the decision making by various means (*assumption 10*) such as providing information or bestowing legitimacy to the whole process. NGO role players were encouraged to use media and protest actions to bring their message to the attention of negotiators for example via written notices and posters. This element was added to the simulations so that participants

would experience how NGOs manage to pressure negotiators, although they are not present in the plenary sessions at all. In one occasion (Lviv), senior scientists were assigned the role of NGOs who were regularly consulted by country representatives when specific information was needed. In Copenhagen, NGOs were present in the Bella center where the talks were held; however, they did not generally have access to the negotiating room.

Furthermore, "inside" and "outside" rapporteurs were assigned in each of the simulation groups. Inside rapporteurs were participants who played stated roles. Prior to the game, they were given a list of questions on their subjective experience during the game. Outside rapporteurs were nonparticipants to the negotiation. Their only task was to observe the meta-level of the negotiation process without being part of it. They were not allowed to communicate with any negotiating party (more concrete description of the rapporteurs is provided below).

In addition, one person was assigned to represent just one state actor, because the focus of the games was decision-making in an international context. It was assumed (*assumption 11*) that assigning two or more persons to one state party would unnecessarily increase the complexity of the process. However, in all test groups, the Danish chair was always played by two participants to avoid too much burden on one person (*assumption 12*).

The information provided to participants described the session's goal—to produce language for the draft resolution focused on the mitigation of climate change (assigned amounts, percentages, year of level, and commitment period) (*assumption 13*). This agenda was chosen, because this represents the most contested item in the COP15 negotiations.

Although almost none of the participants were native English speakers, the simulations were conducted in English. Unlike in the real negotiations, no simultaneous translation was provided for the participants of the game. Supporting materials and documents such as the Summary for Policy Makers of the IPCC's Fourth Assessment Report as well as the country profiles and instructions were in English, which created communication challenges for many of the participants (*assumption 14*). The debriefings at De la Salle and Cologne (2010), however, were conducted in Filipino and German, respectively. Furthermore, students were allowed to write their negotiation journals, which are their personal reflections about their negotiation experience in either English, or German, or Filipino.

The following table summarizes similarities and differences between the ten games analyzed here, as well as the initial structural conditions (parameters) that define the simulation design, and the conditions that were added and manipulated in the course of the game (see Table 4.2).

Table 4.2 Simulation design

Venue	Profile and no. of participants	Game duration	Level of technical	Actors	Procedure/ structure	Process-related modifications	Outcome
IIASA, 2009	32 PhD candidates and 18 IIASA scientists (from 20 countries)	4 h	Medium to high	26 countries and 18 NGO groups	Facilitation (moderation)	Active participation of NGOs, clear membership to coalitions	Almost agreement
De la Salle University, 2009	88 B.A. students (all Filipinos)	6 h	Low	22 countries and 24 NGO groups	Chairmanship (by college instructors)	Three parallel test groups, test group 1 involving "best" students (in terms of academic performance)	Test group 1: almost an agreement, test group 2: far from agreement, test group 3: agreement (binding reduction)
Webster University, 2010	16 M.A. students (from 10 countries)	3 h	Low	16 countries	Mediation	Use of the Harvard principled concept of negotiation	Almost agreement
IIASA, 2010	28 PhD candidates and 21 IIASA scientists (from 18 countries)	4 h	Medium to high	28 countries and 8 NGO groups	Facilitation	Strong intervention in the process ("memos from the capital"), limited autonomy of negotiators, enhanced communication channels between parties	"Chaos", far from agreement
Lviv Polytechnical University, 2010	21 scientists and 8 PhD candidates (from 12 countries)	4 h	High	25 countries and 4 NGO groups	Chairmanship (active)	Support from "stand-by" scientists including one person from the UNFCCC secretariat	Almost an agreement

University of Cologne, 2010	5 B.A. students (from 4 counties)	2 h	Low	5 countries	Chairmanship (game matter as chair, passive)	No coalition, no intra-coalition negotiations	Far from agreement
University of Leipzig, 2011	6 M.A. students (from 4 countries)	4 h	Medium	6 countries	Facilitation	No coalition, no intra-coalition negotiations	Far from agreement
University of Frankfurt, 2012	24 M.A. students (from 12 countries)	6 h	Medium	23 countries	Chairmanship (passive)	Strong intervention in the process ("memos from the capital"), limited autonomy of negotiators, enhanced communication channels between parties	Far from agreement
University of Cologne, 2012	15 M.A. students (from 7 countries)	5 h	Low	14 countries	Chairmanship (passive)	Strong intervention in the process ("memos from the capital"), limited autonomy of negotiators, enhanced communication channels between parties	Far from agreement
University of Leipzig, 2012	28 B.A. students (from 6 countries)	5 h	Low	27 countries	Chairmanship (passive)	Strong intervention in the process ("memos from the capital"), limited autonomy of negotiators, enhanced communication channels between parties	Far from agreement

4.2.2 *The Debriefing and Evaluation: Collecting Data from the Game*

The evaluation of the simulation games was conducted using various methods. The assigned "inside" and "outside" rapporteurs answered questions they received on paper. During the debriefing round, they shared their insights about their experiences either as negotiator or outside observer. The inside rapporteur evaluated the game from inside the process as they themselves have played the role of state negotiators. Inside rapporteurs aim to initiate discussion among participants during the debriefing round. Samples of the questions "inside" rapporteurs have answered are the following:

- How did you feel about the other players? Did you dislike someone in particular? Did you like someone in particular? Did you feel that your voice was heard?
- Which actors dominated the negotiation? What resources were available to them to enable them to dominate the negotiation?
- How did you see the NGOs influencing the negotiation process? Did you welcome their intervention?
- How did you cope up with the dynamic decision making? Did you find the "memos from the capital" useful? In case you have made a prior commitment which a subsequent memo from the capital seeks to negate, how did you manage to take back your previous concession?

The "outside" rapporteurs were asked to answer questions that dealt with their experiences of the game as impartial observers. They shared their insights during the debriefing round. Questions included:

- Did you witness bias in the negotiation? Was the negotiation system favoring specific countries? Were the chairs favoring specific actors?
- What were the difficulties in the negotiation? Were these difficulties identified by the actors? If yes, how did they cope with these difficulties? If no, were these difficulties inhibiting the decision making process?
- What do you think could have been done to reach a consensus? Which actors or resources could have been tapped to promote the decision making process?

Finally, all participants, including those who played the role of NGOs and observers, were invited to join the discussion. Protocols were written to document the most important issues presented during the discussion. Furthermore, students from the Universities of Cologne, Frankfurt and Leipzig were asked to reflect on their experiences and write them down in their negotiation journals, which they were required to submit (in total 78 journals) as part of the course curriculum. Questions asked during the evaluation round of the game included:

- What different notions of justice and fairness were you able to recognize in the negotiation? Please give some examples of relevant statements formulated during the negotiation. To what degree do you think different types of burden-

sharing rules (e.g., egalitarian rule, ability-to-pay rule, and polluter-pays rule) should guide the distribution of GHG reduction targets. Do you think it is useful to introduce a minimum participation clause to achieve a meaningful GHG reduction agreement?
- Do you think that gender played in the negotiation? If yes, give some observations that according to your understanding indicate stereotypical masculinity and femininity at the negotiation table?
- Which countries seem to be delaying the negotiation process? What specific examples were you able to observe in the negotiation?
- Which countries are seeking to alter the status quo and which countries want to maintain it? What do you think is the motivation behind such a preference? Please give an example based on the negotiation?
- Do you think emotionality played a role in the negotiation? Could you give a specific situation from the negotiation that shows the significance of emotions?
- Are you able to find a situation in which Denmark as chair acted as a mediator between parties? Is there a situation where the Danish chair was biased?

The insights of the inside/outside rapporteurs and participants summarize various perspectives and scales. Some of these insights confirm some theoretical assumptions while some undermine existing dominant understanding of specific actors, issues, structures, processes and outcomes. The assessment of these insights is presented in the following sections.

4.3 The Game Analysis: Identifying Stumbling Blocks

The results of the games are presented by identifying stumbling blocks to the negotiation process that have occurred during the simulation.

4.3.1 Negotiation Episodes: Lack of Institutional Memory and Structure

The duration of the game ranged from 2 to 6 h. The game has an abbreviated nature and began at the midpoints of the negotiation. There were no preliminary and pre-negotiation meetings. During the debriefing, the participants in all groups mentioned that they needed time to "warm up" in the negotiation game. Some reported that they needed time to get into the role and that they lacked "institutional memory" of the negotiation. Several participants argued that preparatory meetings are needed, before (especially new) negotiators could fully participate in the COP meetings. For example, they needed time to get to know the personal traits of their counterparts ("reputation" of negotiators) as well as the countries' individual positions.

The truncated nature of the simulation—participants "jumped in" without the benefit of participating in the pre-negotiation activities that their "real-world" counterparts were involved in—was disorienting for participants. This situation was predetermined in the game design not only because of the impossibility of providing all necessary "memory" or organizing pre-negotiation, but also to allow participants to learn one of the major challenges new negotiators are confronted with when they participate at the climate change negotiations for the first time. In the real negotiations, while some negotiators have been in the "scene" for decades, others may have joined just recently, for instance, after the current government administration has won the last elections. Furthermore, while some negotiators may have been participating in preparatory meetings to prepare for the COP meetings, others, particularly those from developing countries, may not have the financial resources to send representatives to all relevant meetings.

The simulation game made the assumption (*assumption 15*) that not all negotiators can always be prepared for the COP meetings. In several test groups, the lack of institutional memory was common among all participants. In the test groups in IIASA (2009 and 2010) as well as in Lviv University, some participants themselves were either members of their national delegation to the COP meetings or were familiar with the COP meetings through their own research. The asymmetry on institutional memory was obvious; however, this was not seen as highly problematic. On the contrary, (game) negotiators who were not familiar to the unwritten norms and features of the COP meetings welcomed the active role that negotiators with institutional memory have taken to push forward the negotiation process.

The game was not primarily designed to reproduce the real negotiation but rather to shed light on specific difficulties that negotiators experience in the negotiation process. Negotiators need to undergo and understand the various phases to effectively structure the negotiation process. For example, pre-negotiation can help open up communication channels between negotiators or build consensus knowledge (both on scientific and on political issues) to reduce contingencies. Preparatory meetings provide information needed to the negotiation process to allow negotiators to decide. However, pre-negotiations are not always inclusive to all countries. For example, while COP meetings require preparatory meetings to clarify issues and coordinate policies between members of a coalition, not all such meetings are mandated by the UNFCCC and therefore, representatives from certain countries are not able to participate because of the lack of financial resources.

Furthermore, the games showed that tactical considerations with a short time frame cannot sufficiently address the needs of a long-term regime-building process. This process is a continuing recursive process with backward and forward loops. COPs and other climate talks are interconnected and interdependent. A well-known example is the connection between the 1992 UN Framework Convention on Climate Change and the 1997 Kyoto Protocol. The negotiation process to create the post-Kyoto mechanism for mitigating climate change builds on the norms and rules established by the Kyoto protocol. For example, negotiators at the COP15 used the language of the UNFCCC to defend their positions. During the simulations, participants (similar to new negotiators at the real negotiations) had limited

opportunity to refer to other climate talks or to appeal to specific unwritten norms established in the previous climate meetings. On one hand, the simplified model of the simulations circumscribed the influence of linkages. On the other hand, it is impossible to ensure that all negotiators have all necessary information they needed. In all games, the participants felt that they could have used information from past rounds which could have supported them in their arguments at the negotiation table.

4.3.2 Anchoring and Constraining Expectations

In all test groups, the intended collective outcome of the negotiation was to produce emission reduction commitments through a resolution that would replace the Kyoto Protocol. All negotiators of all test groups were shown a draft resolution and negotiators were asked to produce language to the following clause:

> *3. Encourages Parties to limit their greenhouse gas emissions by [X], with emissions to be calculated to a baseline year of [X] within the years of [X].*

This clause has purposely created "bargaining anchors". The clause that set the agenda for the negotiations implies that countries should come up with specific numerical values to reduce greenhouse gas emissions. Anchors are the first values (e.g., 20 %, 1990, by 2010) thrown to the bargaining table that function as reference points for negotiators in the course of the negotiation process (Galinsky and Mussweiler 2001). Anchors, when not addressed appropriately by negotiations, may lead to the so-called "anchoring effect" which refers to the assimilation of following numeric estimates to a previously considered standard (anchor) (Tversky and Kahneman 1974). Anchors are particularly the "first offer" made by a specific party, which then influences the type of counter-demands and outcomes in negotiations (Benton et al. 1972; Chertkoff and Conley 1967). It then defines the direction of the negotiations. Thus, a specific positional value becomes the means to the outcome.

Simulation participants representing national governments are asked to come up with specific numerical values to be included in the resolution. While some of participants have predetermined numerical values in their profile sheets, others did not receive concrete instructions from their national governments to test how the values presented by the others would dictate their own "value-portfolio". When other countries came up with a proposed set of values for the clause, they felt that they had no other choice but to accept these values as their own reference points. This accentuates the necessity for negotiators to come up with their own values prior to the negotiations to counter anchoring bias.

Furthermore, anchors are intuitively compared to one's own values. When the specific anchor seems to be too high compared to one's own value, the proposal is seen as very ambitious. When the anchor is too low compared to one's own value, the proposal is taken as unambitious. One's own value is itself the numerical

calculation of one's own expectation to the outcome of the negotiation process. In all games, European countries were instructed to begin with ambitious, high anchor positions (e.g., 40 % carbon emission reductions with a base emission level year of 2000 to take place by 2020). In the first five test groups (De la Salle 2009, IIASA 2009, Webster Uni 2010, IIASA 2010 and Lviv 2010) in which the first value proposed by the first negotiator (EU) was very ambitious, other participants reported that it presented credibility problems and therefore generated intense resistance by other parties. This suggests that setting an anchor at negotiation table may be disadvantageous to the offering negotiator, particularly when the first value is too far from the expectations made by other parties.

With this angst towards anchoring bias in mind, the game master (researcher) has understood why it usually took time for the negotiators to dare to present a proposed language to the draft resolution, when some profiles clearly stated numerical values. Negotiators first conducted "information-seeking" consultations with other countries to "smell the air" and calculate the expectations of the others. They later sought further meetings with countries which they see as having similar expectations and they jointly came up with numerical values through bilateral meetings. Other negotiators who very early dared to propose (either too high or too low) numerical values without preparatory consultations with other parties were party or completely ignored in the later stage of the negotiations as they may have easily lost credibility.

Not only proposals with too ambitious values were problematic. When the initial proposal was less ambitious (Leipzig 2012, Cologne 2012), where Canada and Japan respectively threw the first value to the table, which implied that the proposing parties had low expectations of reaching consensus, the bargaining was less intense; however, reaching an agreement was still not easy and deadlock was just as likely. Low expectations that an agreement would be reached created an environment that was similarly not conducive to an agreement.

Different sets of strategies are required depending on whether negotiators' expectations are optimistic or not. In the game, EU countries were instructed to begin with high expectations. When it became evident that the interests of the countries were too divergent, the participants began to show their frustration. In all test groups, the participants playing the European countries felt the need to formulate and coordinate new set of strategies as prospects for a favorable outcome for COP15 began to wane. At this point in the game, European negotiators called for more informal breaks for further consultations. In the real COP15 negotiation, the EU countries had been optimistic for so long about the outcome of the Copenhagen talks and realized just too late that their expectations have become too unrealistic that they did not have enough time to change and adjust their negotiation strategies.

Extreme pessimism is at the other end of the expectation spectrum. Low expectations about the conference's capability to reach a global agreement led participants to be less willing to compromise. In the game, the participants playing negotiators from such countries as Canada, Japan, and the U.S. expected that there would be no binding agreement at the end of the negotiation because of

"irreconcilable" differences among countries and stated that this diminished their motivation to cooperate and compromise.

4.3.3 Framing of Issues: Seeing Negotiation as Power Game

The negotiation agenda (to agree on the percentage of carbon emissions to be reduced) abets keeping the negotiation on tract. As mentioned above, the negotiation agenda was predetermined in the game design to provide boundaries to what negotiators should talk about. Nevertheless, to increase issue complexity, the game design also foresaw some countries which through the profile sheets diverged from the agenda and discussed other issues such as technological transfer. This parameter intends to reflect the complexity of climate change negotiations brought by inter-linkages of issues leading to various spill-overs and co-benefits of sets of decisions. The outcomes of negotiations on other issues may define the decision-making on the agenda issue. For example, the willingness of some developing countries to accept binding commitments was made dependent on how much financial assistance they would get from developed countries in terms of mitigation technologies. In some test groups, several participants representing developing countries whose profile sheets did not include concrete mitigation targets, tended to bring non-agenda issues to the table. Spoilers such as Canada and to a lesser extent Japan saw this as an opportunity to slow down the negotiation process and they jumped in the discussion. European countries, on the other hand, appealed many times to stick to the agenda.

The chairs and negotiators were particularly confronted by the difficulties brought by the inter-linkages of issues, which are usually negotiated as separate agenda. By tolerating non-agenda issues at the negotiation table, the flow of the discussion was seen in most test groups as trapped in a loop with no clear forward direction. However, when chairs (e.g., IIASA 2010, Leipzig 2012) interrupted some (particularly developing) countries, they had to deal with accusations of being biased. As shown by the test groups, in general, the chairs are confronted by a dilemma where sticking to an agenda may on one hand promote the speed of the negotiation, but on the other hand may bring missed opportunities and unsustainable outcomes. The more they intervene, the more they ensure efficiency, but at the same time, the more they intervene, the more the legitimacy of the whole process is undermined.

In the game, the inter-linkages of issues defined the structure of the negotiation process in various ways. In Group One and Group Three at the De la Salle University as well as in IIASA 2009, the negotiators often strayed away from the agenda and became entrapped in discussions relating to non-agenda issues, because the chair, in an effort to unduly influence the negotiation process, failed to keep them focused on the agenda. Meanwhile, the negotiators in Lviv thought that they have profited from the predetermined agenda (percentage) and they found it easy to stick to the agenda. They felt that the negotiation process was more effective

because a clear agenda gave them more resources to concentrate on technical aspects of mitigation. The Lviv participants were primarily scientists who had a higher level of climate change expertise. The lack of confidence-building pre-negotiation activities seemed less detrimental for this test group because scientists viewed the climate change negotiations as a technical problem. This was in contrast to other participants, particularly in Frankfurt (2012), Cologne (2012) and Leipzig (2012), who seemed to view the negotiation process as a power game. The majority of the participants in these three test groups were political science students.

The difficulties brought by the inter-linkage of issues, therefore, may be perceived less problematic depending on how negotiators perceive bargaining. Negotiators who see bargaining as a power game may easily see the inter-linkages of issues as reason for rejecting concessions. A power-game negotiator is careful to give in to concessions in one agenda because, anticipating a domino effect, she may fear to lose in other issues as well. While other negotiators with a problem-solving orientation may take the same inter-linkages as tit-for-tat opportunities to provide incentives for concessions, a power-game negotiator may tend to see the agendas as territories that should be defended.

Furthermore, the participants with a problem-solving orientation were more likely to see other parties as part of the solution and to understand why some issues were regarded as toxic. Power-game negotiators tend to see the others as competitors and part of the problem. The game foresees that negotiators have a common goal (global warming), but with diverging national problems and threats relating to the achievement of this common goal, many negotiators found it almost impossible to agree to instruments to attain the common goal if their national interests were undermined. Nevertheless, the Lviv negotiators easily came up with a common goal (2 °C as maximum temperature rise) that gave each negotiator the feeling that they were "in the same boat." Their more integrative, value-creating approach at the bargaining table contrasted that of the participants in Group Two at the De la Salle University and, to a lesser extent, of the participants at the University of Cologne (2009) who were more likely to perceive negotiation as competition. In these two test groups, the regional competition between India and China was clearly manifested at the negotiation table. The participant playing the role of the negotiator from India found it uncomfortable to sit beside the participant who played the role of the dominant Chinese negotiator. In several occasions, the relationship between the two country negotiators has become obviously toxic. In power game negotiations, the bargaining orientation was distributive with Country A perceiving that Country B's win was automatically its loss.

4.3.4 The Chair and the Chair's Dilemma

The chair fulfills an important role in the negotiation process. Chairs in various COP meetings may understand their role differently. While others are reluctant to

intervene in the process, others may see it as their responsibility to bring forward the process by manipulation. All test groups problematized the role of the chair. In one group (University of Leipzig 2012), the chair was totally blamed for the failure to reach an agreement. Interestingly, it did not matter whether the chair was non-manipulative or manipulative; they were (with the test group at the Webster University as exemption) still generally seen negatively. This dilemma needs to be conceptualized.

The highly facilitative mediator took part in the simulation game at Webster University. In mediating, she attempted to use some of the concepts of "principled negotiation" as developed by Roger Fisher and William Ury (1981), carefully documenting, visualizing and interpreting both the positions and the interests of the negotiating parties. She helped the parties effectively communicate these interests so that all parties would better understand each other's concerns, which nurtured a more collaborative environment. As the mediator was the professor of the participating students, she was seen by them as legitimate and authoritative. Although this test group failed to reach an agreement, the participants thought that they were on the verge on reaching an agreement and it was just a matter of time.

In the test group IIASA 2010, the Danish chair, played by two participants, was regularly criticized by several participants who perceived them as partial to certain countries. The chair moderated the plenary debates and often failed to give representatives from specific nations the chance to speak. This was not intended in the game design. The two participants representing the chair argued that it was not their intention to overlook certain states, but that they intentionally gave some countries more speaking time than others in an effort to constructively advance the negotiation process. When asked about what specific criteria they were using in determining who could speak, they said that it depended on whether they perceived the content of the talk was likely to bring the negotiators nearer to the agreement.

In the games at the University of Frankfurt (2012), University of Cologne (2012) and University of Leipzig (2012), the participants argued that the chair should have fulfilled the role of a more active facilitator and should have been prepared to take over more control of the negotiation and be resistant to the sabotage of spoilers. Interestingly, the chair's reluctance to intervene more actively led to her loss of credibility, although the participants did acknowledge how difficult it was for the chair to manage a comprehensive overview of all the negotiators' complex positions. The participants representing the chair were aware of what they were supposed to do but were hesitant to actively facilitate the negotiation process because they feared that doing so would precipitate the withdrawal of some countries, particularly because Denmark was itself pursuing its own position.

Interestingly, the chairs in all test groups experienced this dilemma. Both manipulative and passive chairs were highly criticized and were partly held responsible for the failure to reach binding agreements. Nevertheless, as the results of the simulation at Webster University (2009) indicated, a facilitative and "principled" chair may be highly appreciated particularly when representatives of leading industrial countries fail to display political leadership.

In the real COP15 negotiations, the Danish chair had a fixed plan that a final agreement would be in place before the end of the conference, which led to inherent inflexibility in managing the process. For example, to save time, there were insufficient consultations with countries outside the inner circle of the leading nations. When the "Danish text" was leaked, several countries protested, and this appears to be one of the reasons that the developing countries (primarily African) walked out on December 14 (Greenbang: The Smart Technology Network 2009; The Guardian 2009), which delayed the negotiations for almost a day. With the background of Europeans facing open distrust in the developing world, the leaked "Danish text" led the developing countries to accuse the developed countries of working behind closed doors to make an agreement without their consent.

4.3.5 Negotiation Setting: Formal and Informal Sessions

During each simulation, discussions unfolded in both formal and informal sessions. Plenary sessions were formal, while informal negotiating took place during breaks in the plenary sessions. Agreements made during the formal sessions required consensus. While negotiators could come up with agreements in informal sessions, only agreements reached at the plenary are documented. Agreements made at informal sessions did not require consensus. State negotiators may request for a break at the plenary to hold informal meetings. For this, a simple majority vote was needed. However, parties also sometimes left the plenary and spoke informally with other parties without asking for an official break (informal–informal). However, this was done with the knowledge of maybe missing important issues or losing credibility at the plenary. For example, at the IIASA (2009) simulation, the participant playing the role of the U.S. representative regularly invited the participant playing the role of the Canadian representative to leave the room to discuss proposals while the plenary discussions continued. Other negotiators criticized this behavior, arguing that it undermined the multilateral nature of the COP meeting. Therefore, when the American and Canadian negotiators proposed a language for the draft resolution, the majority of the states opposed it, not because of the substance but mainly because they did not like the way the two countries came up with the proposal, as the participants explained during the debriefing and in their journals. In this case, the procedure determined the outcome. The participants who played representatives of the smaller countries conveyed during the discussion that they believed that the American and Canadian negotiators were not interested in hearing their statements, and thus any decision made by the two countries lacked credibility.

Some of the simulation participants argued that they found bilateral talks to be more efficient and less ambiguous than multilateral talks because it was easier to immediately ask for clarification to compare how specific terms are understood and to establish personal trust between negotiators. They also reported that the important issues were usually discussed in informal talks, where it was easier to avoid

strict protocols, and countries retained the option to back out afterwards. In the games, several negotiators were only willing to make concrete pledges during breaks. In addition, one participant at the University of Cologne (2012) reported that it was easier for him to collect necessary information and to distribute information through informal talks because he could choose negotiators whom he thought would be most helpful.

4.3.6 Coalition-Building and Complexity of the Process

Most of the simulation games comprised participants representing more than 15 countries to replicate the complexity of multilateral negotiations. In these games, coalitions often emerged. In the two simulations at IIASA, Universities Frankfurt (2012), University of Leipzig (2012) and University of Cologne (2012) the predetermined coalition configuration was outlined in the confidential instruction sheet. However, they were still free to test other coalition configurations as they may deem necessary. On the other hand, there was no instruction regarding predetermined coalitions for the three test groups at the De la Salle University. The participants in these three test groups had to figure out themselves in which coalitions they would want to be part of. After hearing out the positions of the others through their initial ministerial statements of the country representatives, they have to confirm their relationships through bilateral meetings. This parameter may have led to more informal breaks to meet potential coalition partners (more than 75 % of the time).

Furthermore, the simulation held at IIASA in 2009, University of Frankfurt (2012) and University of Leipzig (2012) similarly needed more than 75 % of the total negotiation time for intra-coalition negotiations because of the perceived diversity of the interests of the members of the coalitions. For both developed and developing countries, they thought that they needed more time to find common goals and strategies within the coalition. During the debriefing round, the participants of the three test groups mentioned that they found intra-coalition meetings very helpful to prepare for the plenary negotiations, particularly to address extreme positions of some countries such as Saudi Arabia and the United States.

At the Webster University simulation, more than 75 % of the total negotiation time was spent at the plenary because that was the preference of the facilitator. The simulation at the University of Cologne (2009) and University of Leipzig (2011) involved only six countries (Denmark, the U.S., United Kingdom, Russia, China, and Sudan), with each country representing a major bloc and the chair. In these test groups, intra-coalition negotiations were disabled, but there was no explicit prohibition against forming coalitions. These five countries did not form obvious coalitions because of the huge differences among their interests. More than 75 % of the total negotiation time was spent in one-to-one (bilateral) talks. The simulation at the University of Cologne (2009) involved a less structured negotiation session. In that game, there was a shift from multilateral talks to a series of diffuse bilateral

negotiations. Countries bilaterally consulted with their counterparts and were successful in finding mini-agreements.

It became clear in the simulations that coalitions fulfill specific roles in the negotiation process. At the University of Frankfurt (2012), the participants noted that coalition building was issue-oriented. One group was the "spoilers" (Sudan, Nigeria, Japan, U.S., and China), another was the "willing" (European countries), the other group was the "newcomers," including India and Brazil, and the "stand-alone" Grenada who chaired the Association of Small Island States. The participants agreed that one reason for the failure to reach an agreement was that coalition formation was carried out only during the negotiation, and not before it. Thus, coalition members did not have the opportunity to develop personal relationships. During intra-coalition talks, countries spent more time presenting and elaborating their interests among each other than formulating common strategies. Because of this, most of the countries resorted to "partnerships" instead (e.g., China with the U.S., India with Brazil, Germany with Sweden, and Nigeria with Sudan).

Interestingly, several participants displayed the same preference for partnerships over big coalitions during a simulation at the University of Cologne (2012) and University of Leipzig (2012), but these partnerships changed several times depending on the issue. For example, when the topic was intellectual property rights, China and Brazil formed partnerships because of their common interests. In terms of binding reduction targets, China felt more comfortable partnering with the United States. Furthermore, in three test groups (University of Frankfurt 2012, University of Cologne 2012 and University of Leipzig 2012), China did not use the G77 group of developing countries coalition at all to pursue its interests, compared with the test groups in IIASA (2009, 2010) and Lviv. Nevertheless, in the three test groups, while partnerships were generally accepted, the partnership between China and the U.S. generated protests from other countries.

In most test groups, there was a general acceptance that coalitions were helpful in the negotiations. Without coalitions, parties must know all the issues at the negotiation table. This is a huge financial and capacity challenge particularly for developing countries. Coalitions enable negotiators to focus on specific issues that are most relevant to them while still having access to knowledge in other areas when needed. Coalitions can be used to gather information and to coordinate the distribution of knowledge among members. Although most of the countries had prioritized issues beforehand, they were still keen to gain information about issues they had not prioritized because some information could still be useful to formulate strategies. Coalition building is thus a capacity-building mechanism, especially for developing countries.

Furthermore, coalitions functioned as mechanisms for moderating some of the parties' more extreme positions by channeling discussion of extreme positions from the plenary to the coalition meetings. While some countries in a coalition presented extreme positions on a specific issue, others within the coalition maintained more "pragmatic" positions. The participants at the University of Cologne (2012) and Frankfurt (2012) agreed that coalition meetings served as preparation for the formal

meeting. They realized that their interests were at first too diverse and too many for a plenary negotiation.

For each of the three simulations at De La Salle University, coalitions were not predetermined, and participants were able to form coalitions according to their own preferences. Different sets of coalitions emerged during the simulation of the third group than had emerged in the first two groups. Group Three formed coalitions comprising both developed and developing countries. The North–South divide as a coalition paradigm (Penetrante 2010a) was not present in this simulation at all. Instead, the participants formed coalitions based on regional locations and historical connections. Southeast Asian countries including China, South Korea, and Japan established their own coalitions. African countries presented a unified position as well as European countries. While regional coalitions may reinforce a North–South divide, the issues presented at the negotiation table did not focus on historical fairness aspects of reducing emissions. One reason may be that the negotiators did not have a general overview of the interests of the others. Therefore, they opted for regional and historical ties as determinants of coalitions. The coalition-forming process was dynamic, and some countries changed membership many times during the simulation.

4.3.7 The Ambivalent NGOs

The role of NGOs in either promoting or hindering the international negotiation processes has been a subject of scientific analyses (see Andresen and Gulbrandsen 2003; Dong Wei 2010; Princen and Finger 1994), because of their significant impact to the negotiation process. The participation of civil society groups is inevitable in the climate change negotiations given the "high degree of public interest in, and concern over" the issues involved (Depledge 2005, 10). Pamela Chasek (2001, 29) has written that NGOs are "increasingly serving as a catalyst" to initiate environmental negotiations. Global environmental negotiations tend to be more open to the public than negotiations on other issues such as trade or security (Depledge 2005).

The participation of NGOs is formally recognized and institutionalized in the climate change negotiations. As described in Chap. 2 of this research project, epistemic communities and environmental advocacy groups have led the environmental policy-making to its current path. The UNFCCC (Article 4, Paragraph 2, Section i) describes the role of the NGOs and other civil society groups in the climate talks. The modes of engagement of NGOs include *activism, advising, observing, legitimizing, monitoring*, and *indirect negotiation*. NGOs can advocate on behalf of the issues they want policy makers to address. They may actively frame domestic public opinion and thus influence the position of countries by providing legitimacy to specific policies; they may also seek to delegitimize negotiators. For instance, the Climate Action Network's (CAN) 700 member organizations regularly judge the "Fossil of the Day" award and give them to countries who have

"performed badly" in the climate change negotiations (Climate Action Network (CAN) 2012). However, the range of issues can be broad and even mutually exclusive. In addition, NGOs may provide knowledge to policy makers (e.g., epistemic communities) especially when NGOs have proven technical expertise to the issues. NGOs may have either regularly contracted scientists to conduct studies or conducted studies themselves to support their claims establishing a huge pool of knowledge. In addition, NGOs may have better knowledge to local conditions through their grass root activities. As observers, NGOs can address processes and establish early warning systems. NGOs may conduct monitoring to ensure the implementation of reached agreements and to promote transparency and accountability in the whole process. Furthermore, individual NGO members may be official members of national delegations, thus indirectly participating in the negotiations.

Not all NGOs act in support of a specific negotiation process. Some may actually seek to obstruct the climate change negotiation process, such as those representing industrial sector interest groups, who may seek to delay the implementation of emission reduction targets that could adversely affect their revenues. Some NGOs may generally agree on the common goal of limiting global temperature rise, but they may disagree on how burdens are to be distributed among the various sectors (e.g., energy, transportation, tourism, agriculture).

NGOs do not actively participate in COP meetings, but they have organized for instance during the COP15 meeting exhibitions and side-events, distributed written materials, and invited negotiators to lectures delivered by such prominent individuals as South African civil rights activist Reverend Desmond Tutu or former U.S. vice president and environmental activist Al Gore. NGO representatives also have the opportunity to speak to negotiators in the exhibition area of the Bella Center.

In designing the simulations, different kinds of external pressure were planned which are to be exerted by NGOs and other advocacy groups. For the 2009 and 2010 simulation at IIASA and the three test groups at the De la Salle University. NGOs were given a very active role, which significantly influenced the dynamics of the game. At IIASA (2009; 2010), both students and scientists were given profile instructions similar to country negotiators. The game involved NGOs such as Greenpeace, the Centre for Science and Environment, the World Wildlife Fund, the International Air Transport Association, Migrante International, The Women's Environment and Development Organization, and the International Chamber of Commerce, which were heterogeneous in terms of interests. These NGOs actively advocated for their own and sometimes mutually exclusive interests such as human rights, protection of industries, sustainable development, and environmental justice.

In the test groups, NGO representatives took the opportunity to communicate with state negotiators by directly engaging in conversation during informal breaks or by distributing "notes" to the negotiators during plenary sessions or even by sabotaging the talks leading to the delay of meetings (e.g., hacking of the chair's computer in the IIASA 2009 test group).

The acceptance of NGOs in the decision-making process was different among test groups. The state negotiators at the IIASA (2009) simulation were more open to

the lobbying of NGOs than were the negotiators at the De la Salle University, where NGOs were generally "ignored" as they were generally seen as opposition to state policies. The IIASA scientists playing the role of state negotiators in particular communicated actively with NGO representatives. They stated that they had felt pressured by receiving the "Fossil of the Day Award" given by NGOs belonging to the CAN—particularly because of their personal involvement in environmental research.

On the other hand, because the simulation at the Lviv Polytechnic University employed other types of NGOs: epistemic communities, they enjoyed a different kind of acceptance. The game involved scientists playing the role of "experts on stand-by" available to answer technical questions and to provide additional information to the already knowledgeable negotiation parties. In this game, the role of the NGO participants, who represented research organizations such as the IIASA or the Energy and Resources Institute, was to provide scientific information to negotiators. They were instructed to avoid active advocacy and influencing decision makers. The state negotiators in this simulation focused on finding a "technical formula" to resolve the conflict between developed and developing countries and reported that they felt less pressure from the outside than did participants in other simulations in which the outside pressure was more overtly political. These "experts on stand-by" refrained from any form of advocacy or pursuing self-vested interests and just provided scientific output to the negotiation process and only when they were asked to by negotiators.

4.3.8 The Multi-level Game: Process Interventions at the Negotiation Table

Global negotiations are conducted to reach decisions on global issues. As there is no world government with a clearly legally or politically defined world constituency, global agreements are forged in the context of policy-making in the national level. Therefore, one of the biggest challenges for international negotiations is to accommodate national interests of all parties in the subsequent global agreement, if this agreement is to be sustainable.

Global decisions are made by national governments representing the interests of their domestic constituents. Representatives at the table are usually agents of national governments which in turn are accountable to their local constituents. National governments need to undergo legitimization through various possible processes such as election or by guaranteeing socioeconomic stability. Governments need to accommodate the interests of various societal groups to ensure stability. In this context of varying legitimating processes, national governments employ different political calculation methods and political rationales in weighing options. For example, when the main legitimacy of a specific regime lies in economic development, then this regime will like tend to prioritize policies

ensuring economic development over other policies on other issues such as the environmental protection.

The multi-level nature of decision-making is reflected in the simulation games. Nevertheless, how and especially when this multi-level nature affected decision-making varied among the test groups. While each participant in all test groups received "confidential country profile" which summarizes the national perspective on climate change, the level of process intervention varied among the different test groups. The negotiators at the De la Salle University, IIASA 2009, University of Cologne 2010, University of Leipzig 2011, University of Cologne 2012 and University of Leipzig 2012 simulation received instructions beforehand. In the games at the De la Salle University, IIASA 2009, and University of Leipzig 2011, the game master refrained from intervening during the game. Once the negotiation started, no additional changes were made to the country profiles. At the University of Cologne 2010, the game master assumed the role of the chair, whereas a rather passive role was taken.

The simulations at Webster University, IIASA 2010, Lviv University, University of Leipzig 2012, University of Frankfurt 2012 and University of Cologne 2012 involved a process with constant intervention as the game master regularly changed the parameters during the negotiations. The negotiating parties received "memos from the capitals" every now and then. These are instructions to the negotiators sent during the negotiations. In real negotiations, negotiators are usually in constant communication with their national governments to consult concessions. Some of the memos are descriptions of some domestic event that may influence the behavior of negotiators. Others are instructions to the negotiators on how to behave at the negotiation table. Examples of such memos are the following:

- The opposition party in your country received a huge support from the workers' union who fears that they will lose their jobs if your government will agree to scrap coal plants.
- More than 100,000 demonstrators staged a violent protest in your capital to protest against plans of your government to increase tax on gasoline intensive transportation system.
- Your government criticizes many governments, particularly Europeans for pressing to include any climate funding as an Official Development Assistance (0.7 % of GDP) which will inevitably further lessen the pie intended for poverty alleviation in least developed countries.
- As many as 50,000 people took part in a number of marches in Australia, calling for leaders to create a strong and binding commitment. Developing countries such as China and India must accept that they are as well responsible for the contamination of the environment and should therefore commit.
- Your government argues that "any outcome must recognize the voice of developing countries." Any agreement reached by marginalizing the developing countries is unsustainable because it is against justice and fairness.

- Your government supports bilateral agreements between China and the United States, but all bilateral agreements should be transparent and be compatible with existing international norms.
- Your government says that to meet the climate change challenge, the international community must strengthen confidence, build consensus, make vigorous efforts and enhance cooperation.
- Your government wishes that you mention that it is unfair for the future generation of your country if your government will commit to any scheme that will place future generation of your country in a disadvantageous position in the future. It is unfair for your citizens that their government distorts future benefits in favor of citizens of developing countries who may be richer in the future. You do not know what your signature in an agreement will mean for future generations.
- Your government wishes that you mention that the North owes from the South the environmental space it has contaminated in the last 100 years; therefore, there should be a scheme of compensation for the developing countries particularly because they are the most vulnerable to the adverse effects of climate change. Funds to be given to developing countries are NOT actions of goodwill from developed countries, but as compensatory responsibilities.
- China: your government thinks that negotiating on a formula how to distribute commitments must consider your country's huge population and high population growth rate (or the so-called historical share). While your country (China) has high absolute emission rates, your per capita emission is much lower compared to all developed countries. In 2006, China's per capita emission (metric tons CO2) is 4.58 compared to 19.78 (US), 12 (Russia), 9.78 (Japan), 10.4 (Germany), 10.53 (South Korea) or 14.22 (Belgium).
- Philippines: your government thinks that negotiating on a formula how to distribute commitments must consider your country's huge population and high population growth rate (or the so-called historical share). While your country (Philippines) has high absolute emission rates, your per capita emission is much lower compared to all developed countries. In 2006, the Philippines' per capita emission (metric tons CO2) is 0.81 compared to 19.78 (US), 12 (Russia), 9.78 (Japan), 10.4 (Germany), 10.53 (South Korea) or 14.22 (Belgium).
- Australia: Your government thinks that negotiating on a formula how to distribute commitments must consider the current levels of emissions. For instance, the total emission level in 2008 (in billion metric tons) is dominated by China (23.33 %), US (18.11 %), EU (14.04 %), India (5.78 %) Russia (5.67 %) and Japan (4.01 %), compared to Australia's emission of 1.32 % of the world's emission.
- Germany: Your government thinks that negotiating on a formula how to distribute commitments must consider the current levels of emissions. For instance, the total emission level in 2008 (in billion metric tons) is dominated by China (23.33 %), US (18.11 %), EU (14.04 %), India (5.78 %) Russia (5.67 %) and

Japan (4.01 %), compared to Germany's emission of 2.61 % of the world's emission.
- Many members of your government are skeptical that the climate change is actually caused by human activities.
- Your government wants you to evaluate whether the Danish chair has been biased in allotting speaking time to delegations. In case you think there is a bias, you should complain in the plenary about this.

The distribution of the memos was conducted to reflect the dynamic and multi-level nature of decision-making. Furthermore, as conducted at the Webster University, the interventions were in response to participant's obvious lack of relevant background knowledge where participants did not really know the consequences of the concessions they were making at the negotiation table. The memos intended to bring them in line to the policies of their national governments. For example, the negotiator representing the U.S. made an early statement supporting binding emission reductions to show leadership and goodwill. Immediately, she received a memo stating that the U.S. Congress would not ratify any agreement involving binding commitments. She eventually backed down from her previous statement.

The distribution of memos exposed interesting dynamics and provided the opportunity to conduct a more analytically motivated intervention in the negotiation process. At the 2010 IIASA game and in other test groups with process intervention, for example, the memos divested one aspect of the complexity of the negotiation: the dynamic flow of information and policy-making. Some of these memos instructed participants to change positions during the source of the negotiation, limiting their bargaining flexibility and increasing their need for ambiguity (to prevent risking credibility when relayed concessions need to be taken back). Some of these interventions reflected changes in domestic public opinion.

In addition, participants experienced the situation when they need to back out from early statements to follow the instruction from their national government. In some cases, they do no personally agree to this decision, but because they are accountable only to their national government, they had no real choice but to obey.

Negotiators who become aware that they may need to shift direction in response to such interventions may feel the need to develop alternative strategies or "escape routes." Anticipating possible shifts in directions, negotiators may opt to be ambiguous, particularly in the early stages of negotiations. For example, the participant in the role of the Indian representative at the IIASA 2010 game made a concrete commitment at the plenary at a very early stage. Immediately, the game master gave the Indian negotiator a memo instructing him to drastically reduce India's commitment because of the reversal of the national government's policies. The Indian negotiator then secretly convinced the Brazilian negotiator to make a proposal that reflected the "new commitment" from the Indian government without obviously changing the Indian position at the plenary to save India from losing its credibility. The Indian negotiator also became more careful in expressing commitments at the later stage of the simulation.

4.3.9 Negotiator's Dilemma, Information Overload and Knowledge Asymmetry

The analysis of how information is managed by negotiators remains in the periphery of negotiation research. Information is needed as basis for decision-making. Decision-makers need information to know whether negotiation is the appropriate approach to pursue one's interests, to weigh their alternatives to a negotiated agreement, to determine options when assessing concessions, to know whether they are better off when the negotiation collapses, to calculate or estimate potential implications of a specific outcome as well as to implement reached agreements.

Information can be attained by regular consultations with experts or nominating experts to represent the government in the first week of the COP meetings who will be then eventually replaced in the second week (ministerial round). Information can be exchanged by negotiators with other country representatives. It remains a matter of discretion how much information can be relayed to the others without compromising one's own negotiation position. The "negotiator's dilemma" (Lax and Sebenius 1986, 158) refers to the situation where creating value through the exchange of information may be detrimental in the subsequent claiming of value as a specific information may boost the negotiation power of other parties. This dilemma may lead to negotiators withholding information through which the negotiation process can move forward.

Negotiator's dilemma can be accommodated when negotiators have established resilient confidence structures which are outputs of several learning processes. In a highly cooperative and collaborative negotiation environment, negotiators see absolute gains rather than relative gains. The gains that the information provider receives outweigh the loss in its negotiation power. Furthermore, in this environment, negotiators trust that the others will reciprocate by relaying further information that may enhance the benefits of the negotiated settlement.

The participants of all test groups were given "confidential information" in the role profiles. It was to their discretion which information they would relay to the others during the negotiations. While some participants were very open in giving out information, others were very secretive. During the debriefings, some participants argued that to solve the negotiator's dilemma, there is a need for negotiators to establish collegial and amicable relationships. Test groups (De la Salle University, University of Cologne 2010 and 2012, University of Leipzig 2011 and 2012, as well as University of Frankfurt 2012) where participants were classmates and where they already established personal friendships prior to the game, the negotiator's dilemma was less intense compared to other test groups where they did not know the others personally.

A huge load of information can be detrimental to the negotiation process, particularly, when negotiators need to manage and structure this huge load of information. During the simulation at IIASA in 2010, parties exchanged a flurry of notes. In addition to all their face-to-face formal and informal sessions, the parties were in constant communication via these notes. This enhanced

communication proved detrimental to the negotiation because it distracted the negotiating parties from the plenary discussions. Furthermore, the regularly distributed memos from the capital dramatically increased the load of information they need to structure in a very short period of time. This result suggests that communication channels need to be coordinated to prevent "information overload" among negotiators. Particularly in the climate change context, negotiators are confronted with huge loads of information, not only about the climate issues but also about such linked issues as security, trade, economic development, and health.

The participants' level of climate change expertise varied from test group to test group. The participants in the simulations at the De La Salle University (students of B.A. Global Studies), at the Webster University (students of M.A. international relations) at the University of Cologne (2009, 2012; B.A. students taking units in Political Science) and at the University of Leipzig (2012; B.A. students taking units in Political Science) were undergraduate students with limited knowledge of climate change; they were given information and reading materials such as the Summary for Policy Makers of the IPCC's WG3 Fourth Assessment Report from 2007 one month before the simulation.

The simulation at the Lviv Polytechnic University, at IIASA (2009 and 2010) and to a lesser degree at the University of Leipzig 2011 (graduate students of M.A. Sustainable Development) involved scientists and graduate students with expertise on GHGs and mitigation technologies. Particularly at the Lviv Polytechnic University, where participants had similar level of high expertise, they believed that they were "speaking the same language." Because the agenda of the negotiation was predetermined, they were able to develop more concrete proposals than were participants in the other simulations.

The students from the De La Salle University ranged in age from 16 to 18 and lacked expert knowledge on the technical issues involved in the climate talks. But it seems that this lack of expertise was not a huge stumbling block as expected because there was symmetry and they were able to communicate with each other. Although the discussion was less technically sophisticated than at the Lviv game, the decision-making process was still clear. The focus of the debate was not on technical issues, which were creatively disregarded by the participants, but on socio-political issues such as justice, fairness, and trust.

During the simulation games at the University of Frankfurt (2011) and University of Leipzig (2012) in which non-experts participated, a more classical bargaining was observed. These participants seemed to view the negotiation as a political problem, thus, a power game. Some participants applied the classic "tit-for-tat" method in bargaining.

In the two IIASA games, while there was medium to high level of expertise, some have been directly involved in climate change science, others have more specialized knowledge in other related issues such as health, energy, urbanization, forestry, and governance. In the games, particularly IIASA scientists, who have been regularly involved in the assessment reports of the IPCC, have guided the negotiations and in some occasions they have explained to the others the scientific aspects of certain decisions. And still, they found it difficult to speak the same

language, although most of them are connected in some way with environmental science. This underscore that there is little homogeneity among environmental scientists.

Nevertheless, in the voting rounds, the lack of full knowledge of what their decisions would mean in the future, the less knowledgeable parties opted for "no." Without knowledge about the consequences, these negotiators are not able to calculate their BATNA or reservation value, that is, the point where engaging in negotiations does not promise more gains compared to the loss produced by maintaining the status quo (Mnookin and Susskind 1999; Zartman 1989). Therefore, the participants chose stalemate. Their reason for rejecting proposed solutions was not that they saw those proposals not bringing payoffs, but because they were uncertain what the outcome would mean to them.

4.4 Interim Conclusion: Systematic Learning from Experience

The effectiveness of climate change negotiations depends on how negotiators cope not only with the complexity of the substantial scientific and technical issues involved but also with the complexity of the negotiation process as the chosen method to find a global agreement. The simulation games have identified several possible reasons for the failure of the negotiators to find a mutually acceptable agreement. Except for the third test group at the De La Salle University, no proposal achieved consensus. Given the short time period, it was not expected that the test groups will actually produce an agreement; the participants nonetheless hoped that they might do so and in many occasions, the participants have asked for time extension when the game master announced the end of the game.

The first test group at the De La Salle University reported that they were close to agreement and blamed the lack of time for their failure to reach a consensus. Like the participants in the 2009 IIASA, Webster University, De La Salle University (test group 1 and 2) and Lviv simulations, they reported that if given more time and perhaps more negotiation rounds to play, they would have reached a consensus. The participants from the University of Cologne (2012) reported that they were so close to reaching agreement that they repeatedly ignored the instruction that the game had ended. They were proud that although they did not reach a global agreement with binding commitments, they were able to reach several bilateral agreements.

The participants in the University of Cologne 2010, IIASA 2010, University of Frankfurt 2012, and University of Leipzig 2011, 2012 simulations reported that they were far from reaching an agreement. When asked why, they cited the following factors:

- *Their lack of knowledge and expertise about climate change issues*: While it cannot be expected that students will have the same level of scientific and technical expertise as real negotiators, the main factor inhibiting them to reach

decisions was their uncertainty of the implications of proposals which has prevented the negotiating parties from making commitments and prompted them to say "no" to everything that they could not understand. Real negotiators, both with high and low technical expertise, are equally confronted by uncertainties for instance in the various aspects of mitigation technologies. Uncertainties cannot be fully eliminated, and therefore, mechanisms are needed to help them "structure" uncertainties so that they can make decisions comfortably.

- *Too many parties at the table*: Participants stated that they thought it would have been possible to reach an agreement if the number of parties had been drastically reduced.
- *Coalitions that took the negotiation "hostage":* Framing the climate change negotiations as a North versus South (developed countries versus developing countries) conflict is detrimental to the process. Although coalitions such as the G20 and G77 were partly helpful as "negotiation vehicles," focusing the question on who should shoulder the cost of emission reductions based on historical responsibility for past injustices creates a win-lose paradigm.
- *Lack of shared goals*: The negotiating parties did not share a common goal because each mainly pursued the interests of their states. The elevation of national interests at international talks led to stalemate.
- *Chair impartiality*: On one occasion, the chair was seen as partial. The Danish chair at the 2010 IIASA simulation was seen as biased against certain countries, which precipitated such disruptions as, for example, a walkout from the plenary led by the Nigerian representative.
- *Position-taking*: The representative of developing countries stated that they had the feeling that they were not allowed to express "positions" by demanding specific concessions from the developed countries. This position making was highly criticized by the participants representing the developed countries. It was labeled as "egoistic" and counterproductive to the negotiation process. The participants identified a bias. When developing countries linked development to their positions on mitigation, developed countries responded by referring to these as outside the negotiation agenda. But when developed countries linked their mitigation commitments to the willingness of developing countries to mitigate, there was no discussion that this conditionality was outside the agenda. But both positions are equally driven by notions of justice and fairness.

As described in the introduction, the simulation games serve as departing point for the identification of stumbling blocks which are to be found in the negotiation process. When the chosen solution (multilateral negotiation) has become part of the problem, alternative approaches should be found to address dilemmas.

Departing from the various experiences from the simulation games, these stumbling blocks are to be conceptualized in Chap. 5. Furthermore, the games have given some insights on how conceptual principles can be formulated that could guide negotiators in the climate change talks. As the real negotiators are currently assessing whether the "common but differentiated responsibilities" principle can be more useful when conceptually linked to sustainable development, Part III of this

research project, suggests a meaning for the new principle “equitable access to sustainable development” (Chap. 7) which could guide negotiators in forging a global agreement. Finally, based on the simulation games, strategies are identified to help negotiators cope up with stumbling blocks (Part IV).

Chapter 5
Complexities in Global Climate Talks: Stumbling Blocks to Decision Making

"By three methods we may learn wisdom: First by reflection, which is noblest;
Second, by imitation, which is the easiest;
and third, by experience, which is the bitterest" (Confucius)

Global decision making is highly complex not only because of the intricacies of the scientific and technical issues involved, but also because of the various features of negotiation. The intractability of negotiation is evidenced by the contentious nature of relations between parties. Negotiation presupposes a condition where several conflict cleavages frame how actors behave. Failing to systematically address these conflict cleavages is likely to either hinder decision-making or reduce the efficacy and specificity of decisions reached. Complexity limits the analytical capacity of causal analyses. When dynamics are self-enforced and when the multidimensionality of causalities is rather imposed, without adequate preparation, decision makers may easily be overwhelmed by the volume of information leading to either resignation or inefficiency.

Dilemmas are manifestations of complexity, and are reinforced by the multiplicity of perspectives. The multi-track inter-linkages of actors, issues, structures, processes, and outcomes hinder the effectiveness of one-dimensional solutions, which usually consider only causalities when providing solutions. For instance, the resolution of a problem requires the identification of those variables causing the problem. However, in a complex context such as climate change, variables cannot be clearly linked to the causes of a problem, particularly when problems result from the aggregation of variables. Moreover, various time gaps (near, middle, and long-term) limit strategic calculations. Occasionally, the resolution of one problem can directly or indirectly create others. When various problems (resulting from the externalities of the solution measures conducted) were unintentionally created in the last decades, the reactionary resolutions offered debarred long-term strategic solutions.

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Climate change is a highly complex issue. Its complexity builds on various factors that together produce both positive and negative externalities and feedbacks, which reduce the institutional feasibility and public acceptability of proposed solutions. Although some policies may have co-benefits, such as the creation of employment opportunities, policy-makers often concentrate on the short-term costs of climate protection investments. In a similar manner, government policies may be perceived as unfair when specific sectors of society consider themselves to be disproportionately shouldering the costs, as has been the case with a number of energy reform policies. Although global climate talks mainly build on scientific and technical knowledge (Lieberman et al. 2007; Weaver 2004), it is the political preconditions that, for the most part, determine how climate change is addressed (Penetrante 2010a, 2011).

The high degree of uncertainty in climate change science is nothing new: not all relevant matters can be measured, nor can they be measured with absolute accuracy. Climate change discussion raises questions around which variables are relevant, how correlations and interdependencies are to be measured and interpreted, which methods and data should be used and how results can be reliably validated. For example, there is considerable uncertainty regarding emission estimates and projections of the effects of greenhouse gas (GHG) emissions on the global climate. The sheer breadth and range of these projections undermines their usefulness. The following illustrates the huge range of projections of various scenarios existing in scientific literature (Pachauri and Reisinger 2007) (Fig. 5.1).

Climate science is inextricably linked with uncertainty, and skeptics and detractors of climate protection strategies can easily undermine the credibility of climate science claims. Thus, climate science, as the discussion on knowledge diplomacy in Chap. 2 argues, is and should be maintained as a negotiated entity.

What is interesting about the climate change context is that decisions can still be made despite the high degree of uncertainty. Because inaction may lead to an increase in long-term damages and costs, policy-makers may opt to settle for "preliminary" actions based on incomplete knowledge. Policy-makers are confronted with political pressure to act with immediacy in order to prevent larger problems in the future, without actually knowing what will occur if no decision is reached. As such, policy-makers require provisions to prevent the exacerbation of the problem or the creation of additional problems.

In several cases, policy-makers may delay decisions, or make hasty "lock-in" decisions leading to situations where the 'transition costs' of reversing these ineffective decisions become higher than the costs of the original damages. In the latter situation, future policy-makers may become more willing to accept the original damages rather than paying the transition costs. This can prove highly problematic when other actors, such as developing countries, are more affected by the damages. Present policy-makers find themselves in a situation of a "decision vacuum" in which actors are not able to manage decision-making. This may eventually lead to 'legitimacy gaps' and accountability problems as they cannot be held fully accountable for decisions made earlier.

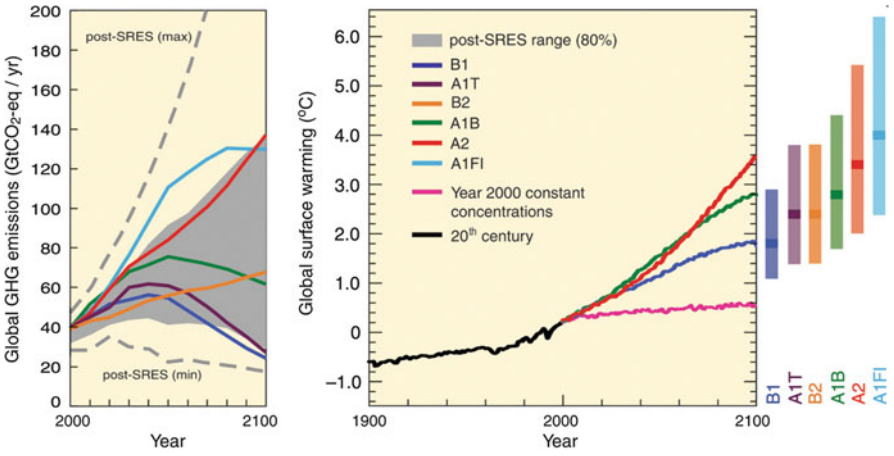

Fig. 5.1 Ranges of scenario projections (For a colored version of the figure, see Pachauri and Reisinger 2007)

Nevertheless, as this research project argues, although decisions can still be made in spite of the high level of uncertainty and complexity, policy-makers should be conscious of "locking-in" (see Chap. 2) these decisions. Policy-makers need to be aware of the various types of complexities in the climate change decision making process. This research project presents these typologies of complexity as stumbling blocks to decision-making.

A 'stumbling block' is an impediment to the decision making process (see Penetrante 2010b; Sjöstedt and Penetrante 2013). It has a negative impact on the process by preventing or delaying the attainment of satisfactory agreements ('process effects'), or by hampering the quality of such accords ('outcome effects'). It may distort relations between actors by shifting power configurations and by increasing contingencies ('actor effects'). A stumbling block may increase various transaction costs, convoluting calculations of positive and negative externalities and leading to structural deficiencies ('structure effects'). A stumbling block may paralyze or create gaps in the decision-making process ('issue effects'), by sending false messages about purposes and goals.

Identifying and classifying stumbling blocks to the global climate change decision-making process is a major part of this research project. Classifying these stumbling blocks through typologies allows the understanding (*Verstehen*) of the various types of complexities that impede decision-making. The next step in this process is the formulation of strategies to cope with these stumbling blocks and to make complexities manageable (see Chaps. 8 and 9).

5.1 Typologies of Stumbling Blocks

'Typologies' (also called 'ideal types' and 'prototypes') are systematic and detailed classifications of entities that allow a comprehensive understanding of complex social realities and interdependencies (Bohnsack 1991; Gerhardt 1991). Each typology is the product of a classification process, through which characteristics are allocated to specific groups or types, highlighting internal homogeneity on predetermined levels (Bailey 1994; Sodeur 1974). The classification of complexities influencing global climate talks follows the 'negotiation perspective'. This perspective asks the question: *which types of delay or distortion that impede decision making are exhibited in the following analytical levels: actors, issues, structures, processes and outcomes?* Collecting information from simulation games (see Chap. 4), the following typologies of complexities can be introduced (see Table 5.1).

5.1.1 Actors

The performance of actors during negotiation may be distorted by sets of actor-related stumbling blocks. Under the influence of these stumbling blocks, the performance of actors becomes unpredictable and volatile, further increasing contingencies in the relations between actors. The preferences of the actors themselves are not stumbling blocks *per se,* as it is inevitable for actors to have preferences. These preferences only become problematic when actors are influenced by specific factors and act differently to how they otherwise would, leading to diffused behavior patterns.

Multiplicity and Diversity of Actors: Identities and Interests

The pool of actors for climate decisions is heterogeneous. As Bercovitch et al. (2009) state, the parties involved in a conflict may refer to a diverse group of entities ranging from individuals to international organizations. These parties are either directly or indirectly mandated by specific constituencies to formulate decisions. Indirect decision mandates involves actors whose approval is not necessary, but nevertheless need to be integrated in some form into the decision-making process. For instance, some governments conduct consultation rounds with experts before producing proposals for legislation.

Furthermore, there are either state actors or interest groups that put forward different proposals, with diverging stakes that they seek to protect. While some actors may want to push forward the decision-making process, others may hinder the process during negotiation as they follow their own sets of interests. Some actors who do not perceive the outcome of negotiations as advantageous may even

Table 5.1 Taxonomy of complexities—stumbling blocks to decision-making

Stumbling blocks—dilemmas through complexity	
Actors	Multiplicity and diversity of actors
	Institutional memory
	Delegation size
Issues	Multiplicity and diversity of issues
	Inter-linkages and interdependencies of issues
	Securitization and politicization of issues
	Immeasurability of values and stakes
	Public goods and global commons
	Trans-boundary externalities of climate issues
Structures	Power and power asymmetries
	Institutional linkages
	Diffuse authority structures
	Diversity of principles
Processes	Time gaps of issues and externalities
	Process inter-linkages and sectoral arrangements
Outcomes	Variation of expectations
	Outcome externalities
	Immeasurability of stakes and costs of outcomes
	Compliance and verification

refuse to participate. Actors employ different types of influence depending on their available resources. The diversity of issues at stake in global climate talks inevitably means that there is a large range of different interests to present, discuss and reconcile.

The identification of the actor-related sources of various conflict cleavages requires the distinction between actors and the externalities arising through their participation in the decision-making process. Assuming that actors are exposed to various kinds of interdependencies (e.g., among themselves, among the actors and structures, and among the actors and processes), self-enforcing dynamics create dilemmatic situations that overwhelm the capacities of individual actors. Through the concept of path dependence, it is possible to look closer at various contextual conditions and how unplanned externalities are inhibiting decision-making.

In climate talks, government representatives may consider themselves coerced into allowing non-state actors participation in the bargaining process. Non-state actors such as NGOs, International Government Organizations (or IGOs, that is, de facto groups acting independently of their members' states), banks, sectoral associations (e.g., the International Air Transport Association) and business groups may be involved in the decision-making process both at a global and national level. Groups such as these can provide valuable expertise, but may also delay or block decisions by using national legal frameworks (particularly when they are required to share the costs of implementing decisions). State negotiators may attempt to induce non-state actors to adjust their preferences and to accept the negative effects of decisions in exchange for some concessions.

Furthermore, national governments are usually highly dependent on their domestic constituents, relying upon the approval of their electorate to maintain governmental legitimacy and power. Additionally, national governments may be

confronted by highly organized and mobilized lobby groups. Representatives from such groups are regularly invited to participate in various government-sponsored expert committees in order to produce recommendations for policy-makers. As climate protection strategies may affect various sectors, sectoral groups may participate in intense lobbying of individual government departments, ministries and agencies, blocking or delaying governmental climate policies. Ultimately, environmental ministries and agencies may find it difficult to assert themselves against other ministries and agencies acting as proxies for these sectoral groups. Lobby groups may also challenge policies in a legal context.

Further, when confronted with a large number of negotiating parties with many divergent views and proposals, some more powerful countries, may be tempted to ignore their less powerful counterparts or present pre-drafted agreements which do not welcome further debates. Behavior such as this undermines the legitimacy of global climate talks, as the COP15 meeting proves.

Institutional Memory: Between Experience and "Fresh Blood"

Delegations in global climate talks regularly change their profiles as negotiators are usually appointed by national governments following electoral periods. The asymmetry of institutional memory among various participants at conference of parties (COP) meetings is a huge challenge to negotiation. Institutional memory is a collection of facts, norms, concepts, principles, experiences and know-how that actors collect within a specific course of time. However, while it can be very useful to draw from the experiences of "veterans" or those negotiators who have been participating since the inception of climate change negotiations, the negotiation process may need new participants to provide innovative and contemporary ideas, This is particularly useful because "*future changes in climate are likely to be outside the range of institutional memory or lived experience*" (Adger 2010, 342).

Negotiators need a certain level of institutional memory to optimize their behavior during negotiation. Institutional memory is not merely limited to memorizing the large amount of abbreviations and acronyms required for participation, but it also includes familiarization with the personal traits and negotiation styles of the participants. If government representatives are familiar with what their peers prefer and how they conceptualize ideas, they may formulate proposals accommodating to the others' preferences. Moreover, it is important to be familiar with the norms and procedures involved in the negotiation process to both conserve administrative resources and to gain legitimacy and acceptance from their peers.

Negotiators who claim to have the "best" institutional memory may have the best understanding of documents drafted in previous negotiation rounds, and may therefore focus on substantial issues rather than merely familiarizing themselves with the documents in the archive. Nevertheless, as path dependence suggests, institutional memory may also create inflexibility when actors find it difficult to escape specific frameworks of cognitive thinking.

Delegation Size: Reproduction of Power Asymmetries

Government delegations to global climate talks usually consist of more than one person, who may themselves have different preferences, visions, negotiation styles and professional expertise. As Lang (1991) argues, the personalities of negotiators can be as important as the substantial issues up for negotiation. The size of the delegation can both enhance and inhibit the negotiation capacity of an acting party, causing difficulties during negotiation outside of the heavy financial costs incurred by larger delegations.

Depledge (2005, 10) notes that a large delegation means that more personal resources are available to cover the many issues involved in the negotiation process. Larger groups are in a better position to build relationships with other parties, and to participate in unofficial talks. While some members of the delegation actively negotiate with their peers, others can focus their attention on reviewing proposals and developing responses based on the interests of the national government they are representing.

However, while countries with a huge delegation size can send representatives to various parallel meetings, larger groups pose other challenges. Besides the financial resources needed, the coordination of interactions among delegation members can pose huge problems, particularly when delegation members come from various ministries and agencies in their home countries. More intense internal preparations as well as more structured inter-ministerial cooperation are required in bigger delegations.

As there are no formal restrictions on the delegation size, countries at global climate talks determine the size of their delegations at their own discretion. Nevertheless, this practice reproduces the existing patterns of power asymmetries which may reduce the legitimacy of the negotiation process. The legitimacy of the negotiation process and the acceptability of the decisions may be compromised if procedures are not perceived as fair. A negotiation process that suffers from legitimacy gaps is likely to be obstructed by more actors, ensuring that negotiations make little progress (IPCC 1995, 117). This practice may enhance procedural inequity due to the resulting asymmetrical capacity of certain countries to participate in negotiation. Although countries enjoy *de jure* sovereign equality expressed through a 'one-state-one-vote' system, they are confronted by variations in negotiation capacities.

5.1.2 Issues

Stumbling blocks may also pertain directly to the complexity of climate change, and the way in which relevant issues are framed for negotiation purposes. This subsection focuses on the effects of this complexity on the decision making process, the dilemmas surrounding this process, and the kinds of approaches needed to

address climate change. Science, through various epistemic communities (see Chap. 2), has abutted against normative judgment about what is valuable and significant to society (Oppenheimer 2005), and this idea is worth exploring in more detail.

As Pachauri (2006, 3) argues, climate change "*is no doubt a question that must be decided on the basis of value judgment: what is dangerous is essentially a matter of what society decides*". Climate issues, which usually build on science, are inevitably subjects of normative inspection, as their identification, the assessment of their impacts and their resolution requires the use of non-material values. For example, the method of estimating emission projections requires emission baselines (e.g., 1835 or 1970 or 1990). This choice of baseline has latent conflict cleavages, as each baseline affects one of the inherent notions of 'justice' and 'fairness' (see Chap. 6).

Multiplicity and Diversity of Issues: Coming Up with Priorities

The issues presented, discussed and reconciled during negotiation epitomize the diverging interests of the actors involved. The large number of state and non-state stakeholders both at global and domestic levels reflects the number of issues that need to be addressed within a given decision-making framework. As issues are embedded in various conflict cleavages, they are inevitably linked to various social circumstances. This implies that the social components of decision-making will determine how these issues are perceived and prioritized. Issues will to a significant extent define how actors behave, and how they interact with each other. For example, as the issue of greenhouse gas emissions is understood differently by different parties, and actors may need to first discover commonalities before coming up with agendas. While some may see the clarification of the technical aspects of emissions as prerequisites for future talks, others may focus more on settling the issues related to the distribution and allocation of emissions.

The issues relevant to climate change talks can be classified in terms of their contents (Sjöstedt and Penetrante 2013, 20). They include 1) resource issues (e.g. adaptation funds or mitigation technologies), 2) sovereignty issues (e.g. verification measures), and 3) security issues (e.g. migration). Nevertheless, delegations of national governments tend to prioritize some issues over others, and this prioritization differs among countries. This variation in the perception of the importance of issues may equally hinder or promote the decision-making process.

Inter-linkages and Interdependencies of Issues: Multidimensionality Dilemma

The huge number of actors and issues in the agendas of global climate talks inherently implies inter-linkages and interdependencies between various issues. The diversity of perspectives and interests has become self-evident, as issues cannot

be discussed and resolved without considering their juxtapositions. Various self-enforcing mechanisms are attributed to the multidimensionality of issues. The multitude of different causes, externalities, feedbacks, manifestations and effects may, depending on various conditions, serve as stumbling blocks to decision making. They may also, however, create opportunities for agreements.

The multidimensionality of climate issues requires comprehensive resolution strategies. While it is important to resolve as many issues as possible with a single strategy, there needs also to be compensatory mechanisms for "unacceptable" negative externalities and for forging allocation mechanisms for co-benefits. This multidimensionality manifests a dilemma, and brings with it challenges. It requires higher costs for coordinating policies as well as for public deliberations, as more actors and issues are involved. Particularly because linkages exist between climate change issues and other non-environmental issues (such as sustainable development, poverty alleviation, public health, food security, and international trade), climate policies will eventually substitute, complement and even compete with different policy issues (see Toth et al. 2001).

The inter-linkages between issues mean that there could be various possible causes for a given event. Theodorson and Theodorson (1979) explain that, in the case of multiple causation the given effect may occur in the absence of all but one of the possible sufficient, but not necessary, causes. Conversely, the given effect would not follow the occurrence of some of the various necessary but not sufficient causes. It may be the case that a specific cause of a given event is itself an externality, that is, an unintentional effect of other factors. This is relevant for example when costs of compensatory mechanisms are to be distributed among those responsible for the cause. It becomes difficult to decide how something should be compensated when the cause and the circumstances are not clearly attributable.

Furthermore, a specific resolution may have both positive and negative externalities that may require further normative decisions. As these externalities may produce both rewards and costs, acceptable modes of allocation need to be found. In addition, the distribution of positive and negative externalities will not always be balanced among the actors. Some countries may be more affected by negative externalities while others may disproportionally receive positive externalities. In the absence of compensatory mechanisms, countries may reject or promote propositions that cause these externalities. In other cases, positive externalities may transform into negative externalities in subsequent years, so that allowances are needed to accommodate these externalities over time.

The multidimensionality of climate issues may further complicate agenda-setting in the decision making process. As externalities and other feedbacks may themselves become issues, multidimensionality may be interpreted as the source of an endless cycle of issue generation. As some externalities may only occur after decisions have already been implemented, the negotiation process will be regularly transformed by new agenda during the bargaining process. This may delay decisions, as the resolution of some issues will be seen as requiring the resolution of others. Finalized decisions may be regularly subjected to re-negotiations, and

resolved issues may be revived as new agendas come to light. Thus, multidimensionality may lead to a perpetually self-inducing issue generator.

The inter-linkages of issues necessitate new forms of coordination. They may produce new network effects that result from newly found groups of actors. They require coordination of actions and policies across international organizations and (national) governmental agencies. They may blur institutional boundaries or even call for the establishment of new institutional bodies that require new legitimization processes. Thus, multidimensionality is a characteristic of the issues that further produce dynamics in the decision making process. The question "*how much change should be allowed to adapt to new situations without compromising coherence and structure?*" therefore becomes highly relevant.

Nevertheless, multidimensionality has the potential for providing mutually acceptable solutions, as it allows "package deals" between governments depending on how issues are prioritized. Package deals offer more areas for cooperation, increasing social capital among actors over time. Issue-linkage may broaden incentives for participation (Carraro et al. 2006; Barrett 2003, 2010), particularly because it provides an exclusive advantage to members, and imposes negative externalities on outsiders (Adger 2010; Adger et al. 2011).

Securitization and Politicization of Issues: Consensus and Security Dilemmas

As environmental issues are generally perceived as highlighting human vulnerability, issues such as livelihood, health and food security are easily securitized and politicized. Environmental issues cut across many categories of policy-making, and are subject to various political processes. In many cases, because some climate protection strategies require a more comprehensive overhaul of existing policies, as they may be challenged legally and politically by various societal actors. This is often the case with national energy systems, where actors such as corporate groups may see themselves as occupying a disadvantageous position. Policies undergo a political ripening process through societal consensus building (I. M. Young 2000; Stevenson and Dryzek 2012), as governments require the democratic legitimization of policies to ensure their effective implementation (J. Cohen 1998; Habermas 1988). What follows is extensive public deliberation, and this requires time and appropriate management.

Nevertheless, framing environmental issues as security (see Shindell et al. 2012) and political issues impels them to follow the logic of a 'threat game', which may ironically exempt them from public discourse. Strategies that are intended to safeguard constituents seek the identification and elimination of threats. As threat games are power games (the less threat there is to materialize, the more powerful an actor becomes), they are likely to involve responsive and preventive measures that will most likely limit the "liberties" of actors. Unlike in a public discourse where consensus serves as the guiding principle, securitized issues become zero-sum (what one gains the other loses). Particularly when caught in a security dilemma, that is,

for example if a specific low CO_2 energy policy means competitive economic disadvantages, the classification of environmental issues as "national interests" may limit bottom-up processes and be deemed 'too important' to be subjects of public deliberation.

On the other hand, as their classification as national interests may lead to a more profound political will to act, these issues may move further away from the private realm (see Prins 1990). Furthermore, the securitization and politicization of environmental issues may lead to conceptual inflexibility, particularly when the definition and conceptualization of these issues has been monopolized by security experts. Decisions may become less inclusive, entailing increasingly secretive and rigid modes of participation from non-governmental actors. Securitization involves prioritizing human security over other participatory rights, and this is the normative judgement often taken by the appropriate institutions, albeit concealed behind security policies. Although securitization does not need to limit freedom and political liberties, as Rothschild (1995) suggests, security is usually linked to the dominant approach to state security in Europe, where the 'legitimate' use of force is monopolized by the state (Weber 1988).

Immeasurability of Values and Stakes: Diffusion of Rewards and Costs

Decision-making is highly dependent on the values at stake. Decision-makers consider the purportedly 'best' alternatives to their decisions by analyzing the values behind costs and rewards. The dominant assumption based on rational choice theory sees actors as comparing their needs, preferences and values to the outcomes of the decisions they make. This approach is believed to allow actors to maximize benefits and minimize costs. Nevertheless, decision-making in the climate change context involves diffused values of rewards and costs.

The multidimensionality of climate issues complicates the calculation of values at stake. It obliterates the boundaries between rewards and costs. Some actors are usually willing to accept the costs of climate protection projects when they anticipate rewards from such decisions. However, without clear and reliable information about the rewards and costs, decision-makers may not be motivated to fund such projects, and may opt instead to delay their decision.

In the climate change context, the rewards of such investments are not exclusively reserved for those actors financing these projects. In the same manner, the rewards for some actors may be anticipated to be higher when no climate protection policies are committed. Others may anticipate no reward at all, but instead predict only costs and competitive disadvantages. For example, many specific climate protection measures incur immediate and future costs for governments. At the same time, governments may perceive their own rewards as mutualized among all actors, minimizing individual gain. In this case, anticipated rewards do not legitimize the costs they need to bear, leading to delayed decisions.

Furthermore, the time dimension of climate issues leads to situations where the rewards for climate projects are often passed to future generations, and these

generations may be considerably better off than the ones preceding it (see Schelling 1995). Inter-generational exchanges of rewards and costs inevitably calls for equity deliberations, further complicating decision-making. Postponing income for the sake of future generations, which, as Schelling claims, is the primary goal of emission reduction, may in fact unfairly put the current generation in a disadvantageous position. The lower marginal utility of consumption in the future (due to higher average levels of consumption) needs to be factored into calculations of this kind and the distortion of the values at stake in climate issues, when subject to generational transfer mechanisms to the future, are distorted.

In addition, the "internationalization" of rewards and "nationalization" of costs complicates decision-making on climate change issues. Tax payers may not always be willing to "subsidize" costs that would benefit other countries. It becomes a question of kinship, particularly when tax money allotted to climate protection measures is seen to compete with the welfare of fellow citizens ('kinships') (Schelling 1995) and other national priorities. Furthermore, it demands new forms of accountability. As costs are shouldered by "national" tax payers, the climate change regime becomes accountable not only to an international constituency but to individual national constituents, which may further complicate the climate change regime building process.

Moreover, the securitization and politicization of climate issues distorts calculations of costs and rewards. Securitized climate issues follow power game rationales where the calculation of rewards and costs is relative to the gains and costs of other players. This relativity of values often creates oppositional relationships, where one's costs are another's reward. This undermines cooperation between actors.

Public Goods and Global Commons: Rivalry Dilemma and Free Rider

Issues presented at the climate change bargaining table usually involve benefits that are considered to be part of the 'public good'. Many of the rewards of climate protection strategies, such as a limit on global temperature increases to 2 °C over the pre-industrial level, represent a *public good* that actors cannot be effectively excluded from reaping. Paul Samuelson (1954), one of the first economists to develop a theory of 'public goods', defines a "collective consumption good" as "[goods] *which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtractions from any another individual's consumption of that good*." This property of '*non-rivalry*' leads to another property, that of '*non-excludability', where* it is impossible to exclude any individual from consuming the public good.

The mitigation of climate change through emission reductions, enhancement of sinks, and introduction of new technologies produce rewards from which no actor can be excluded (public goods). However, the costs of mitigation and other climate protection measures, translated as "carbon space" or the amount of GHGs a specific actor is allowed to emit in the future, have relativity components. This implies that

the climate change decision making process also deals with *(global) common goods*.

The availability of carbon space becomes limited for the others, especially as the "climate regime" has started to institutionalize the goal of limiting the global temperature increase to 2 °C. This temperature goal can be translated to an atmospheric CO_2 concentration of 450 ± 100 ppm (350–550 ppm), which was the boundary condition between an ice-free planet and one in which large scale glaciation occurred 35 million years ago (James Hansen et al. 2008; IPCC 2007). Assuming 350–550 ppm as target, one country's consumption of carbon space competes with the other country's consumption of carbon space. As the amount of consumption of carbon space moves away from the principle of non-rivalry, the behavior among actors becomes zero-sum.

The "*relative consumption*" dilemma in global public goods increases the complexity for decision making. Open access to carbon space, where compliance to any allocation scheme is likely to be arbitrary, increases the incentives to free ride (Gordon 1954; Stavins 2011). Under the condition of non-rivalry, public good problems may be addressed through policies that incorporate external costs and benefits into prices (e.g., carbon pricing), providing incentives to reduce external costs and increase external benefits (Baumol and Oates 1988). Other measures include legal remedies, such as compensatory payments and injunctive relief (Gupta 2007; Faure and Peeters 2011; Haritz 2011).

Furthermore, as carbon space consumption involves a zero-sum game, a coordinated collective action becomes highly problematic, particularly when mitigation costs vary and the impacts of climate change are uncertain. Efforts to internalize external costs become futile as incentives to free ride increase under the condition of rivalry. As cooperation necessitates a positive sum environment for decision making (Zartman 1987), global climate talks need to address how to reframe carbon space consumption.

Trans Boundary Externalities of Climate Issues: The Democratic Mandate and State Sovereignty Dilemma

Dealing with trans boundary environmental resources and trans boundary externalities and feedbacks entails addressing the difficulties of climate policy creation. Creating climate policies, such as internalizing external costs, involves national and international levels of decision-making. Because externalities are trans boundary, decisions will cut not only sectoral but national political boundaries. These decisions will require trans boundary modes of political legitimacy to ensure participation and cooperation of stakeholders.

At the national level, incentives can be found to encourage cooperation, such as encouraging interest groups to accept carbon pricing to complement mitigation policies. In other cases, legal barriers can be established to prevent free riding (Olson 1971; D. G. Victor 2011). A clearly identified constituency at the national level allows policy-makers to draw a democratic mandate through electoral

processes in order to legitimize decisions. Furthermore, allowing public deliberations on climate issues increases public trust in climate policies, motivating various coalitions of constituencies (see Wiener and Richman 2010) to refrain from free riding.

At the international level, climate policies, such as the internalization of external costs, can be more challenging. The large scale of decision-making, the heterogeneity of actors and diversity of interests and perspectives complicate climate policy development. Under the principle of state sovereignty as implied by the absence of a world government and of a clearly defined "world citizenry", cooperation is rather tedious (see Barrett 2003; Schmalensee 2010). Although international environmental action groups have been active in promoting climate protection measures, decisions are made through the national lens. The democratic mandate that legitimizes climate policies such as the internalization of external costs at the international level only can be derived from national "citizenries", and this leads to various legitimacy gaps, particularly when rivalries exist between countries over global common goods.

The trans boundary characteristic of climate issues and of their externalities require trans boundary modes of participation to ensure that both substantive rules and decision-making procedures are legitimate and fully understood (see Scharpf 1999). The "nationalization" of decisions over issues with trans boundary externalities complicates the introduction of new participative and deliberative arrangements (Stevenson and Dryzek 2012). This needs to be addressed in the current global climate talks.

5.1.3 Structures

Stumbling blocks may have a structural character. They are not tied exclusively to one single person, event or situation (Sjöstedt and Penetrante 2013). There is something in the environment that manipulates the decision-making process. For instance, a person not fulfilling the requirements for good chairmanship at a particular meeting does not necessarily represent a stumbling block; however, if this specific person is prevented from assuming good chairmanship or is, despite goodwill and concerted effort, still unable to satisfy expectations, then something structural is responsible for this incapacity.

Structural stumbling blocks may pertain to frameworks of decision-making that regulate the behavior of actors. They may also pertain to the social interactions between actors when norms, rules and procedures of conduct are established in order to address various types of contingencies. As interactions require space, it is important to analyze how this space reveals the presence of consensual relationships (see Adler 1994; Carlnaes 1992; Wendt 1987).

Power and Power Asymmetries: Assessments Gaps

Social interactions are defined by power relations. Actors have distinct perceptions of their own power and bargaining strength. Furthermore, they develop strategies for how to deal with others based on the perceived strength of their counterparts. If, for example, a group perceives themselves as occupying a weaker position, they prepare for the negotiations and formulate strategies in a manner in line with the "structuralist's' paradox". This addresses the issue of how weaker actors can negotiate with stronger parties and still pursue their interests (Zartman and Rubin 2000). In some case studies, as Zartman and Rubin argue, weaker parties often emerge with sizeable results.

The perception of power serves as a framework for preparations and strategies in reaching anticipated outcomes. Various studies have examined power asymmetry and provided recommendations on how weaker parties should negotiate with their more powerful counterparts (Fox 1959; Habeeb 1988; Kritek 1994). If one actor sees itself in a more powerful position, as Olson (1965, 1971) claims, it tends to exploit the weaker actor. Meanwhile, if an actor sees itself in a weaker position, as Waltz (1979) argues, it tends to focus more on small items beyond the concerns of the stronger party. Assuming that stronger parties, no matter how strong they are, still have stakes to lose when no agreement is to be reached with weaker parties, weaker parties can prepare for and cope with the existing power asymmetry.

The social scientists' working definition of power identifies power with its effects and argues that perceptions determine actions (see Dahl 1957; Simon 1953; Thibaut and Kelley 1959; Morgenthau 1948). It suggests that power is *the ability of one party to move another in an intended direction* (Clausewitz 1984; Tawney 1931), where the other party is unable resist (Weber 2005). Here, power is embedded in a social context, where the relations between actors determine their behavior. Power serves as a structural framework through which pressure leads to outcomes. Furthermore, power is embedded in the context of those decision making processes directed toward a mutually acceptable outcome. It implies that behavior is generally modified to satisfy their expectations.

Power relations involve situations where decision makers are confronted by differences among their capacities, which define their bargaining strength. Bargaining power refers to the capacity of certain parties to have greater influence on the procedures and outcomes of the negotiation process. In global climate talks, power is the capacity to persuade others to change their initial positions, or to maintain their original position when it coincides with one's own position. Nevertheless, negotiation power does not always mean having more resources than the others. An actor can also have more bargaining power with less, particularly when having less enables them to delay or veto the decision making process (referred to as 'negative power') (Larson 2003; Hardy 1985).

The incapacity of actors to make accurate power assessments is itself a stumbling block, because it prevents them from developing appropriate strategies to deal with their counterparts and to modify the structural conditions. Inaccurate

assessments may be the result of diffuse power structures brought by the shifting implications of power. For instance, in global climate talks, several developed countries, particularly the BASIC countries, have made the participation of developing states a precondition for their own participation. President George W. Bush announced during his term in office that the United States would not return to climate change negotiations unless developing countries also formally accepted the same or "comparable" responsibilities as the countries in the North (Penetrante 2013, 252). This development shifts the assessment of the bargaining strength of purportedly weaker parties.

Asymmetries in bargaining strength imply stronger parties having greater influence on procedures and outcomes (Miller 1995). Furthermore, as Carraro and Sgobbi (2008, 1490) argue, asymmetries may lead to differing preferences over negotiation setting and design. For instance, a weak player (high discount rate/high uncertainty) prefers to negotiate simultaneously, while a stronger player (low discount rate) prefers to negotiate in sequences to signal its bargaining strength (Penetrante 2012). Further, weaker parties prefer multilateral settings where coalition-building can increase their bargaining strength. Stronger parties, in comparison, prefer bilateral negotiations. As shown by COP15 in Copenhagen, bilateralism is perceived by weaker parties as an attempt to marginalize and exclude them from the negotiation system, and this perception slows down the negotiation process (Penetrante 2013, 257–258).

Furthermore, a weak party may seek the separation of issues, while a stronger party may seek package deals. This is a question of capabilities. As such, individual weaker parties prioritize and select certain issues where they consider their interests to be more affected, and allot their resources to the advancement of these preselected issues. This also implies that weaker parties tend to avoid linking their selected issues to issues where they lack expertise and resources. However, as described above, the multidimensionality of issues prevents their clear separation. One implication is that weaker parties become more cautious about committing to decisions where externalities are still uncertain. They are more likely delay the negotiation process while seeking other ways to compensate for this weakness.

Institutional Linkages: Efficiency Loss Through Networks and Coordination Effects

The above inter-linkages, and the linkages of policies that accompany them, imply connections between institutions and regimes. Global climate talks involve a wide variety of issues, such as emission-reduction targets, technology transfer, flexibility mechanisms (e.g. Clean Development Mechanism), food security, trade, land use, land-use change and forestry, governance, human rights, public health, gender specific issues and so on. Aside from the constraints in setting the agenda for talks, these inter-linkages blur institutional boundaries and require comprehensive modes of coordination between institutions, agencies and regimes at both international and national levels.

Assuming that institutions have their own set of shared norms, rules and decision procedures (Pierson 2000), imposing a set of rules onto other institutions may constrain behavior (Brinton and Nee 1998) and decision-making in general. As the discussion on path dependence suggests, when an institutional template has been able to assert itself (for example, through immediate power conditions), it leads to a situation of lock-in. This means that shifting to other templates will most likely lead to unacceptable costs. Particularly when 'switching costs' (or 'transition costs') are politically unbearable, the efficiency of alternative institutional templates becomes less relevant. This efficiency loss distorts competition of ideas during deliberations, as decision frameworks depend on lock-ins instead of efficiency.

For example, actors in global climate talks seek to find institutions that collect sets of rules and procedures. These institutions require specific codes of conduct, which the actors need to reflect in their actions. Choosing institutional templates should be based on deliberations around which template would best serve the decision-making process. Network effects arise when institutions with their own codes of conduct complement those of other institutions. However, the high degree of diversity among institutions in the climate change context usually complicates network effects.

Conflict cleavages are especially common when a lock-in of an institutional template has occurred, as this lock-in template will be regularly challenged by other institutions. The resulting defensive mode of the locked-in institutional framework will further delay the decision-making process. Especially in highly dynamic settings such as those of global climate talks, with changing priorities and shifting power structures between both actors and institutions, coordination of institutional linkages becomes a very important aspect of global climate talks.

Under the condition of lock-in, coordination problems arise. Optimal coordination becomes a huge challenge (see Ochs 1995; Farrell and Klemperer 2007) to global climate talks as actors usually do not know what others are doing. Leadership is required to coordinate collective actions, however in climate change negotiations leadership is seen as problematic (see Chap. 8). Furthermore, a lock in of a specific institutional template may lead to a situation where coordination is evolving around a possibly inefficient focal point. Institutional templates of the kind described above may produce inefficiencies: wrong incentives may arise that distort interactions, lead to new conflicts, and complicate the coordination of actions. Specific institutional templates functioning as a focal point of coordination are more likely to be challenged as the negotiation process unfolds. This often sees coordination focusing on "defending" the template rather than actually coordinating actions.

For example, global climate talks have evolved around the United Nations multilateral system, particularly around the United Nations Framework Convention on Climate Change (UNFCCC). As this institutional template serves as a focal point for climate change negotiations, coordination problems in issue- and regime-inter-linkages arise due to variations in the code of conduct. Other UN intergovernmental organizations such as the IPCC, UNDP, UNEP, International Civil Aviation Organization and the International Marine Organization, as well as

Non-UN international organizations such as the World Bank and the World Trade Organization are called in by the UNFCCC to participate in and complement the climate change decision making process.

The UN-based institutional template is increasingly challenged by actors as more inefficiencies are perceived, which further delays the process. Calls for alternative coordination efforts are becoming louder (Orr 2011; D. G. Victor 2011). Some experts argue that the United Nations should be complemented by other institutions such as the International Monetary Fund and World Bank in implementing or managing measures (Keohane and Victor 2011; Bulkeley et al. 2012). Such outsourcing of issues to other institutions may increase efficiency and help resolve various problems related to these issues.

Other experts do not directly propose the substitution of the United Nations by other institutions, but rather call for the translation of the norms, procedures and rules of other institutions to the UN system. This means for example the application of the structural design or policy models of other institutions to the "new" climate regime within the framework of the UN. For example, Samara Spence (2011) sees the World Trade Organization (WTO) model as a possible alternative structure for incremental mitigation. In an interview with Scott Shuffield, Tom Schelling proposes that some aspects, such as communication between developed and developing countries, should be managed by the World Bank or another institution. These institutions can provide mediation services to help countries address their differences in climate change issues (Shuffield and Schelling 2009).

Public deliberation of global climate policy architecture includes recommending alternatives to the United Nations, and embedding other policy architectures into the United Nations system (see Keohane and Raustiala 2010; J. Aldy and Stavins 2010). Some see the parallel usage of regional organizations such as the EU, ASEAN, MERCOSUR as well as of other multilateral "clubs" such as the Major Economies Forum on Energy and Climate, G20 and Asia Pacific Partnerships on Climate and Energy as possibly more effective in dealing with climate change issues (see CROP 2013). Regional structures, including ministerial conferences and sub-regional inter-governmental initiatives, are increasingly encouraged to take ownership in managing environmental issues. For instance, the United Nations Office for Disaster Risk Reduction (UNISDR) demonstrates the opportunities that regional organizations can provide by improving coordination among national stakeholders during risk reduction activities (UNISDR 2013).

Some experts call for "experimental" systems of governance that involve alternatives to the traditional top-down governance approaches of the UN (Hoffmann 2011). These experimental systems including 'carbon rationing action groups' and 'social network platforms' imply modifications to authority structures in the decision-making process. Such approaches require a broader system of participation at grass-roots level, and that basic needs are recognized by authorities. The institutionalization of the participation of climate NGOs may mean that these groups are not limited merely to lobbying, but that governments allow these groups to directly address climate issues.

Diffuse Authority Structures: Quality Reduction Through Public-Private Partnerships

The intractability of decision-making in global climate talks may be partly attributable to diffuseness of authority structures. The afore-mentioned tendency towards creating global policy architecture involving a broad variety of institutions may ironically produce further intractability. Climate issues inevitably cut across various areas, from the international to the community level, from institutional politics to grass roots activism, and from the public to the private realm. Nevertheless, the degree of participation among these institutions varies, which becomes highly problematic when they are directly or indirectly in competition among themselves. More importantly, this web of interlinked institutions may further delay the decision-making process by diffusing authority structures. This is not only a question of political accountability and democratic legitimacy, but also of the reduction in the utility of these institutions.

Competition among institutions occupying various functions within the climate policy framework may block or delay efficient decisions on climate issues. While some specific issues are necessarily outsourced to institutions like the World Bank, other issues may be subjected to various forms of private-public partnerships (PPPs), for example, the *Methane to Markets, the Adaptation to Climate Change for Smallholders of Coffee and Tea* (AdapCC), as well as *Renewable Energy and Energy Efficiency Partnership*. This private-public partnership involves a contract between political authorities and private companies, and can lead to new distortions in the decision-making process when public and private actors follow different paths of logic. Moreover, political authorities and private companies pursue diverging goals.

Private actors in the business sector may only choose segments (e.g. carbon trading) that anticipate the highest profits, while the segments that do not promise profits (e.g. disaster management, climate related health issues) may not attract the attention of private companies, remaining instead under the authority of political institutions mandated to ensure welfare. This situation, as Hirschmann (1974) and Titmus (1970) argue, may lead to a decrease in the quality of services in the remaining segments, as actors in these segments usually have limited political weight (see Crouch 2008).

Addressing the social impact of climate change, such as the creation of environmental refugees, may not be attractive to private companies and investors. This means that national and local governments will need to confront these issues. Market logic suggests that efficiency can only be reached when issues are privatized (Crouch 2008). As such political institutions, when unable to provide quality health services, may end up resigning. Government agencies frequently run into difficulties in finding leverage for private equity funding to enable investment in the kind of infrastructure that addresses climate change related problems. This may give rise to the impression that those actors are operating in an irrational manner.

Internalizing the market logic may easily lead to the "criminalization" of social risks arising in areas that cannot attract private investment (see Wacquant 2009, 19 ff.)

When affected actors lack the political weight to influence the actions of political institutions, they may resort to exercising negative power and block the decision-making process. Without the means to substantially participate in the decision-making process as peers, these actors are left with only the powers of rhetoric and vetoing.

Diversity of Principles: Contradictions in the Storyline

Global climate policy architecture, as defined mainly by the UNFCCC, facilitates the behavior of actors through sets of the principles and (written and unwritten) norms. As a final cause, a principle serves as the end or goal which guides actors to take the necessary steps to obtain it. The ultimate aim of the UNFCCC is to prevent dangerous human interference with the climate system, and the operationalization of this requires guiding principles by which actors can orient themselves. In order to accommodate a complex set of actors, institutions and issues, global climate policy architecture inevitably builds on a diverse set of principles. At some points these principles complement and reinforce each other (Cao 2010a, b), however at other times they can be mutually contradicting.

The diversity of principles that frame negotiations is itself not a stumbling block as diversity can also bring opportunities to address climate change. The stumbling block to the decision-making process is the framing of these principles within questions of fairness and justice. This framing of principles leads to a situation where differences in perspectives are more easily identifiable than their commonalities. As Chap. 7 discusses, fairness and justice are concepts that require an a priori consensus on what is fair and just. The absence of consensus will trap these principles in various conflict cleavages and lead to some principles competing with and contradicting each other. The global climate policy architecture, with the UNFCCC (1992) and the Rio Declaration on Environment and Development (UNEP 1992) as foundations, is guided by various principles. These include the principles of "equity", "common but differentiated responsibilities and respective capabilities" (Article 3(1)), relative needs, vulnerability, burdens in countries of differing wealth (Article 3(2)), "precaution" and "cost-effectiveness so as to ensure global benefits at the lowest possible cost" (Article 3(3)) and "sustainable development" (Article 3(4)).

The UNFCCC employs various categories of principles. The notion that efficiency should be maximized by looking at aggregate costs and benefits (Stern 2007; Nordhaus 2008) evaluates measures according to the logic of cost-effectiveness, allowing comparison of policies by looking at aggregate costs (Gupta et al. 2007), including social costs (Fankhauser 1993). This is expanded by the principle of sustainable development that emphasizes the need to address the needs of future generations when formulating present climate policies (see World Bank 2010a, 39–

48). However, high cost-effectiveness may contradict sustainable development if cost-effectiveness is calculated on a short 'time horizon' (van Asselt and Gupta 2009).

The historical dimension of climate change is addressed by the principle of "common but differentiated responsibilities", and looks at diverse needs and capabilities (Jonas 1984; Dellink et al. 2009) when referring to the historical responsibilities of countries with regard to climate change (Jacoby et al. 2010; Penetrante 2013). However, historical responsibility may be seen as a subject of fairness, particularly when current generations are obliged to pay for the actions of past generations. Another issue for debate is why current generations in developed countries should sacrifice their affluence for the future generations of emerging countries which are expected to be better off than the future generations of present developed countries (Schelling 1995).

Meanwhile, the Rio Declaration sees human beings as the center of sustainable development (principle 1), and confirms the jurisdiction of national governments (principle 2) and their right to development (principle 3). The identified aim of environmental protection (principle 4) should be materialized through cooperation (principle 5) between governments while addressing the special needs of developing countries (principle 6).

These principles do not need to contradict each other as they coherently follow a trajectory that has undergone a political process supported by public deliberation. Nevertheless, as interpretations of these principles vary, contradictions may be perceived which would lead to delays in the decision-making process. Other principles, such as the notion of "polluter pays" and more recently, "equitable access to sustainable development" further complicate the situation. A more in-depth analysis of contradicting principles of equity and justice is pursued in Chap. 7.

Principles, as path-dependent entities, undergo historical development, in which conceptualization and usage may evolve. Principles and how they are understood and operationalized can be modified by actors and by self-enforcing dynamics. For example, following the developments of the COP15 meeting, the call to reassess the interpretation of the principle "common but differentiated responsibilities" has become louder. Developed countries (particularly Annex I) criticize its interpretation as an excuse for non-Annex countries not to have binding and quantified GHG reduction goals.

5.1.4 Processes

Stumbling blocks may also be linked to how decisions are actually made. Decisions as outcomes of various developments are reached through patterns of interactions between actors as well as between actors and structures. These impediments may mean that interactions between negotiating parties are "unnecessarily ineffective, time-consuming and costly in terms of human, technical, financial, or other

resources" (Sjöstedt and Penetrante 2013, 19). For example, stumbling blocks may produce gaps between the initial purpose of the process and the instruments chosen to achieve it. When a process has been given a democratic mandate to achieve a specific goal, and the goal achieved is ultimately very far from the initial goal, accountability deficits result.

The global climate policy architecture hosts various processes. The interdependence of actors, issues, and structures implies complementary and competing processes, as pursuing one specific end may interfere with other processes. This interdependence of various decision-making processes necessitates the effective management of collective action (see O. Young 1997). Furthermore, as an analysis of process-related stumbling blocks focuses on how processes enforce or inhibit others, the distinction among physical- or time-related stages of processes may provide interesting insights into interdependences.

Time Gaps of Issues and Externalities: Time Frame Paradox

The decision-making process as it unfolds involves various generations. The global climate negotiation process commits a specific generation to shoulder externalities produced by past generations in order to prevent known and unknown consequences for future generations. Global climate talks deal with various issues that cut across various generations. Thus, decisions should accommodate challenges brought by time factors, and distinctions should be made between various time perspectives.

The political processes in national policy frameworks, such as the electoral process, limit decision-makers to short-term solutions. Particularly when uncertainties are involved, policy makers tend to delay their decisions and forward the burden of decision-making to future generations. Furthermore, where decisions on mitigation costs are concerned, negotiations and other types of public deliberation concentrate exclusively on short term costs. As costs are calculated in the short-term, and benefits in long-term, decision makers cannot always justify decisions. The short-sightedness of climate policy development is a stumbling block, especially when long term policies are required.

The "time frame paradox" refers to the situation where long-term consequences of climate warming require short-term policy action. According to the 2007 IPCC Fourth Assessment Report, many long term impacts of climate warming may be reduced, delayed or avoided by mitigation if appropriate measures are undertaken in the shorter term. Delayed emission reductions significantly constrain opportunities to achieve lower stabilization levels, may require inacceptable negative emissions in the future, and increase the risk of more severe climate change impacts (IPCC 2007).

The distinction between short- and long-term perspectives elucidates political problems. For example, it is difficult to mandate and legitimize a decision made in the present that affects future generations. How can this policy-maker responsible be held accountable, if it subsequently becomes evident that poor decisions were

made? It is difficult to ensure that the decision-making process upholds legitimacy and acceptability.

Public scrutiny is a serious challenge when considering time factors. Given all that's at stake for future generations, the degree of public interest may not always reflect the real importance of the issue, as public deliberation is limited to present generations. This requires coming up with new modes of accommodating the "voice" of future generations.

Process-Inter-linkages and Sectoral Arrangements: Reducing Contingencies

Inter-linkages are evidently not limited to actors, issues and institutions (structures). They also encompass interdependences between various processes within climate policy architecture. The various issues represent the diversity of problems that need to be addressed. A process leads to one or more outcomes in the form of agreements or norms. Processes may complement or contradict each other and may unfold in various time lines.

The multidimensionality of processes motivates decision-makers to come up with alternative avenues to cope with complexity. One approach is subdividing complicated climate issues in order to simplify decision-making. The intention here is to decrease contingencies, for example by decreasing the number of actors or by simplifying agenda-setting. A recurring policy avenue is to address climate change on a sector-by-sector basis. While the UNFCCC has adopted a comprehensive approach, encompassing GHG emissions and sinks from all sectors, sectoral approaches, seen as the second best option, have been regularly welcomed as possible avenues for future climate policies (Baranzini and Thalmann 2004; Samaniego and Figueres 2002; Schmidt et al. 2006).

Sectors can be defined in many ways, at various levels of specificity. Furthermore, sectors can be subdivided. Sectors related to climate change may be categorized as transport (including freight and passenger transport), industry (including manufacturing and mineral extraction), services (e.g. tourism), buildings (including commercial, residential and public buildings), land use and land use change (including agriculture and forestry) and energy systems (including electricity supply and consumption).

Distributing issues according to sectors may allow parallel sectoral agreements which may lead to a comprehensive outcome. Sectoral arrangements can help prioritize policies where climate protection strategies promise co-benefits, and where capital investments in the short-term may lock in high-emitting technologies in the long-term (Bodansky 2007). For instance, the energy sector is the largest and fastest growing source of GHG emissions. In 2010, it contributed 35 % of total anthropogenic GHG emissions and with the continuing economic growth of countries with emerging economies, the acceleration of GHG emissions growth is expected (Edenhofer et al. 2011). Embedding emission reductions into sector-

wide energy efficiency measures may prove to be easier than introducing economy-wide legally binding emission reductions.

Furthermore, some countries could jointly enter into a sectoral agreement through which reduction goals within a given sector are committed. These parallel sectoral agreements, which may stand independently of each other, could be embedded in an overarching framework, potentially producing benefits for other areas of climate policy. As sectoral arrangements would affect a limited number of countries and other actors, relevant actors can be easily identified leading to the decrease of players (Bodansky 2007). While a sectoral arrangement limits the number of actors, it may still broaden participation. Reluctant parties to economy-wide reduction schemes may see this alternative approach as more attractive and effective, particularly when a smaller number of actors would have tipped the balance, and be more likely to adopt new technologies. Moreover, parties may see flexibility opportunities through complementing climate protection goals with other goals, such as energy efficiency and industrial safety.

However, as the COP meeting in Copenhagen recalled, issue inter-linkages are generally so dense in the climate negotiations sphere that separate sectoral agreements would be almost impossible to attain and implement. Furthermore, there is no guarantee that an agreement made in one sector will be fully accepted by the others players, particularly when these others were not part of the negotiation process. In addition, the problem of double counting and undercounting has been identified by the IPCC as an impediment to sectoral arrangements (Eggleston et al. 2006; De Klein et al. 2006). For instance, industrial process emissions are produced in combination with fuel combustion emissions. Some countries may be unclear on how to assign these emissions to a specific sector.

Political interests may limit the opportunities sectoral arrangements can offer to the overarching climate policy architecture. As the regulation of sectors depends highly on how they are protected by states, sectoral arrangements may require some states to give up their protective stance on specific sectors. For instance, energy security is seen by many countries as a matter of national security. Therefore, sectoral arrangements may compete with sovereign rights leading to further delays. In addition, the way in which sectoral arrangements can address regional differences remains a huge challenge, particularly if some developing countries, despite being minimally affected by sectoral arrangements, are still interested in preserving inclusive procedures in decision-making.

5.1.5 Outcomes

'Outcome-related stumbling blocks' refer to what can be achieved and how the outcome would eventually change the behavior of the parties before the said outcome has even materialized. As Underdahl (2002, 110) argues, the term 'outcome' is "ambiguous". As Fig. 5.2 illustrates, negotiation can produce an *agreement, norms* or *the maintenance of the status quo*. In all these cases, a negotiation

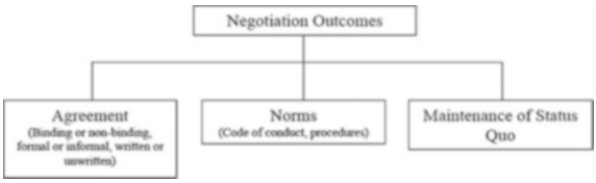

Fig. 5.2 Negotiation outcomes

process leads to a specific outcome. A situation of 'non-outcome' is not possible. All three forms are possible outcomes, whereas none of these outcomes are superior to the others.

Underdahl (2002) states that negotiation outcome is frequently used to refer to an "exchange of conditional promises" (Iklé 1964, 7), that is, a formal contract (like a treaty or convention) or at least a mutually recognized exchange of tacit commitments. This research project assumes the following definition of an agreement:

> **An agreement is a formal or informal statement (oral, written or even merely assumed) of an exchange of declared intentions that directly or indirectly results from a process of a cooperative (and therefore independent) relationship-building to follow a specific course of conduct.**

The absence of an agreement at the end of negotiation is usually perceived as a failure. Nevertheless, the absence of an agreement does not mean that the negotiation has collapsed. The failure to reach a formal agreement merely means the maintenance of the status quo (although this could also be the provision of formal agreements). Even though no agreement has been reached, the disputing parties may be subsequently capable of understanding the interests of the others. Furthermore, the mere achievement of a formal agreement is not a guarantee that it will indeed be implemented in the future. In some cases, a formal agreement may actually constraint future negotiations.

A negotiation process, though not concluding with a formal agreement, may still reach favorable outcomes in the form of norms. While an agreement may also inhibit future agreements, norms may facilitate the negotiation process. Norms for example may pertain to the acceptance of the negotiation process as the best way to reach decisions. It may also pertain to a more inclusive decision-making process where weaker parties are provided with additional capacity-building resources to enhance their bargaining leverage.

This research project follows the distinction made by Easton (1965) and Sharkansky (1970) between the "output" of a decision-making process—that is the negotiated agreement—and the set of consequences in implementing and adapting this decision ('output'). This distinction answers the question of how some actors have succeeded in concluding an agreement ('input') following several negotiation rounds, but still failed to implement the provisions of this agreement.

When the decision-making process has itself become the "end" of the process, agreements may fail to address the real issues that need to be confronted. The difficulty of predicting where global climate talks are heading influences the course of negotiations. Anticipating outcomes is a typical behavior of decision-makers

seeking to weigh their options, and to see whether negotiations will provide desired results. Expectations may be either too high or too low, further impeding the negotiation process.

Particularly diffuse in climate change talks is what the outcome will be. The negotiation process may lead to an international regime with binding regulations and a strong verification system. The process may also lead to fragmented and less centralized regimes with various independent sub-regimes dealing with specific issues. It may also be concluded that under current conditions the status quo should be maintained unless new, significant information is brought to negotiation.

Anticipated outcomes define how countries negotiate. In the COP15 meeting, the European Union, expecting the outcome to encompass a legally-binding emission reduction framework, pursued a multilateral approach, while the United States, which has used bilateralism, for instance, with China, India, Brazil and South Africa, expected other types of agreements. Ultimately, what countries expect to achieve defines how countries behave, how issues are framed and how cooperation is coordinated.

Variation of Expectations: Self-Fulfilling Prophecy and Anchoring

Expectations of what the negotiation process will produce may impede agreement. Expectations are predictions that may become true due to positive feedbacks between what is expected and those behaviors involved. They may inhibit the negotiation process and dictate the ultimate scope of the agreement, limiting flexibility and creativity in the process.

Expectations set too high may lower the threshold of frustration. They may reduce the willingness of actors to accept less favorable agreements. A highly anticipated outcome may experience lock-in, not because of efficiency or cost-effectiveness, but merely because of expressed expectations. In this lock-in situation, alternative outcomes become unattractive because so much effort and resources have already been allotted to the favored outcome (‘sunk costs’). High expectation may thus result in efficiency loss.

Furthermore, excessively high expectations may lead to less contingency provisions. The process then lacks alternatives (e.g., Plan B, Plan C), as actors were not expecting to prepare for contingency provisions. Before the COP15 meeting, there were high expectations that the meeting would produce a legally-binding agreement that would continue to exist after the Kyoto Protocol expired. The previous meetings had generally paved the way for a post-Kyoto agreement, and policy-makers expected no other outcome. However, as COP15 approached, expectations were lowered when preparatory meetings, notably in Bangkok in September/October and in Barcelona in November lacked progress. The 15th of November, 2009 Leader’s Statement, issued at the Asia-Pacific Economic Cooperation (APEC), did not confirm the high expectations of the first half of 2009. This shift of expectations caught the parties by surprise, and countries were not able to adjust their strategies appropriately, having been locked into previous strategies.

Expectations set too low may equally impede the negotiation process by underestimating the effects of the expected agreement so that less resources and efforts are allotted to the negotiation process. Robert Merton (1968, 477), one of the first scholars to introduce the concept of a 'self-fulfilling prophecy', argues that "*a false definition of the situation*... [evokes] *a new behavior which makes the originally false conception come true*." When an actor believes that the negotiation process will not produce an outcome that it deems acceptable, it may reduce its preference for cooperation.

Expecting no substantial agreement in Cancun, Mexico for the COP 16 meeting, most countries reduced their delegation size. Fewer heads of state arrived at the meeting, implying low expectations for the outcome (Osborne 2011). In August 2010, Ban Ki Moon stated his doubts around whether parties would reach a "globally agreed, comprehensive deal", and suggested instead that smaller steps should be taken (MacFarquhar 2010). After Yvo de Boer, the Executive Secretary of the UNFCCC at that time, expressed low expectations for the final outcome, it was suggested that delegates should instead focus on the next negotiation round in South Africa in 2011. Low expectations lead to lower ambitions. They limit the pool of possible outcomes, as smaller steps and further delays are subsequently proposed.

Outcome Externalities: Agreements as Parts of a Puzzle

As global climate talks are composed of various phases, stages and sequences (see Chap. 3), various outcomes may be reflected through various types of negotiated "mini-agreements", with both binding and non-binding elements. Unwritten norms can also be produced in each of these phases, stages and sequences: *pre-negotiation or initiation agreement, working-bond agreement, procedural agreement, agenda-setting agreement, issue clarification agreement, formula agreement, norm-setting agreement, detail-agreement, implementation agreement and post-negotiation agreement*. Moreover, these types of mini-agreements are non-linear. Although they are designed to follow a specific sequence, negotiators may at any time recap a specific agreement or go back to a previous stage.

For instance, following the COP11/MOP1 in Montreal, negotiators settled the agenda and reflected on the development of a framework for action once the Kyoto Protocol's first commitment period ended in 2012 (IISD 2006). The subsequent COP meetings adopted various agreements, such as the "Bali Road Map", to guide the 2-year process toward the finalization of a binding agreement in Copenhagen 2009. The road map included an Action Plan that identified the issues that needed to be settled. In addition, it dealt with norms by setting up two new negotiation institutions, the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP), and the Ad Hoc Working Group on Long-Term Cooperative Action under the Framework Convention (AWG-LCA).

Negotiations on the details took place in Bangkok in March 2009. It further specified the work program for post-Kyoto talks, focusing on the five main

components of the agenda: adaptation to climate warming, mitigation of emissions of GHGs, technology, finance, and the vision for long-term international cooperative action in the climate area (Sjöstedt and Penetrante 2013, 7). Preparations for the subsequent implementation agreement were made during the COP14 meeting in Poznan, and negotiation parties decided "to shift into full negotiation mode in 2009." The COP15 was expected to produce the implementation agreement; however, the expected agreement was not reached. It became evident that a new formula agreement was needed to settle the issues between developed and developing countries. It also became obvious that some procedural questions were still open, which were eventually discussed in the following COP16 meeting in Cancun.

Negotiation outcomes are parts of a bigger puzzle. An outcome may set the framework for decisions; it may introduce the formula or the institution that would coordinate actions. It may clarify the agenda and the issues that need to be addressed. It may concretize solutions to identified problems and may set up provisions for compliance and verification. Furthermore, outcomes (in all possible forms) from other domains such as international trade and security can be directly or indirectly embedded in global climate talks, further increasing the complexity of decision making.

Equally, individual negotiation outcomes may prevent the negotiation process from moving forward when agreements reached in various stages lack full legitimacy, particularly when groups of actors have been excluded in the process. Some actors may demand the replacement of an existing agreement before agreeing to anything. As power structures shift and new governments gain power as time passes, existing outcomes may be challenged, further delaying the process.

Immeasurability of Stakes and Costs of Outcomes: Dealing with the Unknown

Uncertainty accompanies negotiations when reaching outcomes (see Underdahl 2002), and should be addressed in the negotiation process (Israelsson 2003; Susskind 1994). Decision-makers attempt to "structure" uncertainty to a level where decisions can be pursued. Under uncertainty, decision-makers require the guarantee that they can still withdraw their approval if the agreement does not correspond to their interests ('exit provisions'). They then formulate provisions to allow them to adapt to unknown circumstances. As no actor can predict with great precision and confidence the impacts of an agreement (Winham 1977), outcomes need to include concrete contingency provisions (e.g. insurance) when facing unknown circumstances in the future.

The achievement of an agreement may require several years if not decades of negotiations. By the time an agreement is enforced, decision makers may find that the nature and severity of the problems has changed and that the agreement has become useless (Susskind 1994). Negotiators therefore need to create either contingency provisions within an agreement or parallel contingency agreements, such

as institutionalized reviews and regularly occurring assessments of problems. An existing agreement should allow periodic re-negotiations to address the unknown.

Contingency provisions in an agreement and contingent agreements may identify re-negotiations as the best action when confronted with the unknown. Negotiators may also decide that periodic reviews should regularly determine whether re-negotiations of specific issues are needed. Examples of such contingent issues include distribution of allowances, or the re-classification of countries as 'developed' and 'developing' on a per-capita basis. Other possible contingency provisions may include transition or 'grace periods' for emission reduction, or adjustments in the amount to be allocated to the Adaptation Fund.

Dealing with the unknown remains a huge challenge for decision-making. Decision-makers tend to postpone their decisions when they do not have sufficient information. In addition, there are some problems that cannot be anticipated. Specific provisions in an already existing agreement would need to be re-negotiated, implying certain clauses or possible exits, further complicating negotiations. Agreements that do not accommodate contingency provisions will not be implemented. Nevertheless, an agreement that provides exit plans and contingency measures should still be conceivable. There should be a debate around how many exit channels a specific agreement can tolerate without undermining its effectiveness and legitimacy. The agreement should insist upon a base-level of commitment to prevent free-riding among negotiation parties.

Compliance and Verification: Legally Binding Targets and Legitimacy

The establishment of a specific regime as the long term goal of the overall negotiation process is prepared by various agreements. Concluded by an implementation agreement, which refers to concrete procedural steps that parties should follow in resolving various conflicts, the negotiation process has produced the framework to resolve problematic issues that have been previously identified. The implementation of the agreement, however, may still be postponed or may even collapse if no appropriate compliance and verification measures complement implementation. Christopher Moore (1996, 301) argues that insufficient consideration of implementation may result in the achievement of settlements that "create devastating precedents", promoting reluctance to negotiate in the future.

Moore (1996, 303) suggests negotiators should consider eight factors in implementing agreements:

1) A consensual agreement about the criteria used to measure successful compliance.
2) The general and specific steps required to implement the decision.
3) Identification of the actors (also those outside the negotiation process) who have the means to influence the necessary changes.
4) An organizational structure (if applicable) to implement the agreement.

5) Provisions that will accommodate both future changes in the terms of the agreement and changes in disputing parties themselves (here identified as 'contingency provisions').
6) Procedures to manage unintended or unexpected problems, or violations of the settlement, that may arise during implementation ('additional contingency provisions').
7) Methods to monitor compliance, as well as the identity of the monitor (s) ('verification measures').
8) Determination of the monitor's role.

These eight factors involve the identification of actors (the role of monitors and stakeholders who have power to influence the necessary changes), issues (those to be implemented), structures (procedures of sanctions and rewards), process (methods to monitor compliance and transition periods), and outcomes (criteria to be used to measure compliance).

While it is still premature to focus on compliance and verification, global climate talks already require concrete ideas as to how the implementation of the provisions of the agreements can be ensured. Some countries, for example, need to suggest ideas which ensure that compliance measures are acceptable to them and are in keeping with their sovereignty rights. The current global climate talks have yet to settle the issue of whether reduction targets should be legally binding. This issue determines the features of compliance and verification (Werksman 1999, 2010).

Any system of compliance and verification is likely to suffer deficits in participation, and mechanisms for ensuring participation are important for the effectiveness of the regime. If no strong compliance and verification system is implemented, agreements are often susceptible to violation, in comparison with approaches that have strictly defined implementation procedures (Moore 1996, 304). In such cases, countries may doubt the effectiveness of the regime and eventually prefer the collapse of the negotiation process.

If it is clear that a strong compliance and verification system is to be expected, countries may delay their decisions or demand more exit provisions. Some countries, especially those expecting to be the most affected, may not consent to the limitation of their freedoms and may eventually opt out. Furthermore, a stronger compliance with legally binding measures may require a more detailed negotiation process, which may eventually limit contingency provisions.

In addition, strong compliance can challenge institutional feasibility. As there is no authority that can genuinely impose sanctions upon national governments, a strong compliance and verification system may require further limitations on sovereignty rights. This would entail additional complementary processes ensuring democratic legitimacy and accountability. The institutions, procedures, and mechanisms designed to monitor, review and sanction or reward parties require a more rigid legitimization at national level (see Bodansky 2003).

Irrespective of the strength of compliance systems, countries may treat norms as binding and enact the domestic legislation required for implementation and enforcement. In the same manner, binding agreements may lack binding domestic

enforcement mechanisms (Boyle 1999), particularly when the provisions of the agreement have not been subject of extensive public deliberation. Therefore, the adherence of countries to any agreement depends significantly on the desirability of the outcomes, on its formal and material legitimacy.

5.2 Interim Conclusion

The introduced typologies of complexity that produce stumbling blocks to global climate talks provide insight into how decision-making is directly or indirectly impeded, delayed or even vetoed by various factors during negotiation. Negotiation analysis provides various perspectives by examining the elements of negotiation (actors, issues, structures, processes and outcomes), and allows a more systematic and concrete conceptualization of the factors inhibiting effective decision-making. These elements reveal the various conflict cleavages determining the dilemmas that may overwhelm negotiators during the bargaining process on climate change.

Understanding how complexity determines decision-making allows negotiators to develop strategies to cope with its ramifications. Deriving conceptual insights from path dependence and from negotiation literature, this chapter is able to provide a robust conceptual background to finding the means to facilitate decision-making (see Part IV). Comprehensive knowledge of these stumbling blocks informs the prescriptive part of this research project. Complexity would not prove such a problem if negotiators knew how to cope with it. Complexity should be seen pragmatically, as an inevitable feature of climate change. The next step involves conceptualizing tools and instruments to prepare and assist decision-makers in handling these various types of complexity. For instance, strategic facilitation through leaders, chairs and threshold states has been identified by this research project as enhancing the negotiation process (see Chap. 8). Furthermore, flexibility measures such as coalition-building, issue-sequencing and sectoral bargaining are introduced to manage the bargaining process (see Chap. 9).

Part III
Understanding the Conflictual Relations in the Global Climate Talks

Chapter 6
The Entanglement of Global Climate Talks in North-South Relations: Identity Politics in the Trajectories of Relations

"A man who has committed a mistake and doesn't correct it is committing another mistake" (Confucius)

The prevalent divide between developed and developing countries has been regularly blamed for the incapability of governments to forge an international agreement that would effectively confront global problems such as climate change. The divide is not unique to climate change negotiations, but rather defines international relations in general, where hierarchies reflect structures of global decision-making. The divide is attributed to the lack of consensus between developed and developing countries on various contemporary issues of concern (Penetrante 2011, 2013; Najam et al. 2003; Sjöstedt 1993). The complexity of climate change and of the procedures and institutions chosen to address this global challenge (see Chap. 5) further expands the discord between developed and developing countries to other fields beyond climate change.

Furthermore, situations of lock-in and potentially politically unacceptable alternatives to existing global climate decision frameworks limit potential outcomes that could effectively address climate change (see Chap. 2) without "betraying" domestic constituents and endangering national interests. In the same manner, global climate talks have evolved as a surrogate for various conflicts from other (environmental and non-environmental) domains (see Chasek 2001; Chasek et al. 2006; Prum 2007), bringing in a complex web of conflict cleavages.

The expression of North-South relations in global climate talks is the inevitable result of the current configuration of the talks. The simulation games (see Chap. 4) conducted for this research project have helped to conceptualize the behavior of countries by providing modeled experiences of the COP15 meeting. The games proposed the idea that although the North-South divide as a concept already existed in other contexts—such as international trade and international security—it is only during the course of climate change negotiations that countries have identified the self-enforcing implications of the differences between developed and developing countries in global climate talks. This explains for instance why old coalitions such

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as the Umbrella Group (JUSSCANZ) have been seen as fragmented and how new coalitions such as the AOSIS, Kyoto light and BASIC have emerged in the negotiation process. Countries under constant pressure to learn from the negotiation process need to prepare and come up with strategies to adapt to the conditions at the bargaining table.

A one-to-one application of the traditional concept of the North-South divide is incapable of explaining and understanding the various hardships involved in the global climate talks. The climate context requires (as a first analytical step) a North-South concept that embodies the paths that the "developed-developing-countries-relations" have taken that may have led to the current hardships in the global climate talks. This concept focuses on the existing conflict cleavages brought about by the various types of complexity (see Chap. 5), as well as on the implications of these conflict cleavages for the behavior of actors when producing decisions. Insights can be gleaned from how the North-South divide can be resolved by strategically facilitating the decision-making process (see Part IV).

6.1 The North-South Divide as a Conceptual Tool and a Political Label: A Question of Relevance

The North-South divide is referred to as a concept or a paradigm of the geographical, political and economic division that exists between the developed (North) and developing (South) countries (Hayes and Smith 1993; White 1993; Zartman 1987). The socio-economic development gap between countries, as defined by the Human Development Index (HDI) and by Walter Rostow's (2000) model of development, has defined the interests of countries in various decision-making processes. As this research project assumes, these interests have crystalized only through the social context of the negotiation process, which determines the behavior of countries in policy-making.

The conceptualization of the North-South divide is a popular subject in academic literature, and it requires an analytical category to critically understand it, and the politics involved. It was initially referred to as the "Third World", first used by Alfred Sauvy in August 1952 (cited in Holm 1990, 2). The term was used to classify many newly independent and non-aligned states among former colonies (Lyon 1984) during the ideological confrontation between East and West. The concept is a collection of experiences of colonialism and imperialism that forge socio-economic structures in various countries (see Miller 1992, 1995). In the course of history, this theoretical construct has helped these countries gain legitimacy from the major actors in the international system (Holm 1990, 3), and this label has been accepted and adopted by 132 countries that now comprise the Group of 77 in the United Nation system.

The fall of the Berlin Wall and the subsequent collapse of Soviet Union have motivated a new round of debates on the relevance of the Third World as a distinct

grouping in world politics (Cammack et al. 1993; Haynes 1996). From one perspective, the notion of the Third World both as a theoretical construct and as a political label is "outdated", "deceased", "discredited", and "misleading" (Hardt and Negri 2000; Hoogvelt 1997; Randall 2004; Harris 1986). Vicky Randal (2004, 41) argues that while the notion of the 'Third World' retains relevance in the context of geopolitical analysis, "generalizations about Third World politics are no longer helpful or justifiable." Taking a more extreme view, Nigel Harris (1986) announced in his book *The End of the Third World: Newly Industrialized Countries and the Decline of an Ideology* that the 'Third World' as an economic reality and ideological representation had disappeared, as many Third World countries such as Singapore and South Korea have attained comparable economic development. In addition, the issue of internal heterogeneity problematizes the ability of developing countries to come up with a united voice, "masking major dissimilarities among (developing) countries" (Head 1991, 71).

Conversely, some authors suggest that while the Cold War is over, the structural differences between former groups still exist. This means that the political label of 'Third World' has not yet lost its relevance (Najam et al. 2003; Najam 2004). To the contrary, as Broad and Landi (1996, 7) claim, the conflict cleavage between these former adversaries continues to widen "in all but a dozen Third World countries." Robert Keohane (1986) and Moon (1987) argue that the main function of political category 'Third World' is to mobilizing interest groups, and it will continue to depict policies of developing countries, although with a shift of mobilization in regional groups. Moreover, Jean-Philippe Thérien (1999) contends that the end of the Cold War did not eliminate the "Third World" as a category. Instead, the tendency has been to replace the First-Second-Third World categories with a simple North-South dichotomy. It was merely relabeled.

The North-South distinction, with regards to climate change, remains contentious and highly politicized (Williams 2005, 49). Williams (1993, 10) asserts that internal heterogeneity may pose a "problem of management," but should not be taken as a "sign of irrelevance or disintegration." Moreover, while generalizations about Third World politics may not be helpful, it can be argued that the Third World, like the First and Second World, was never a homogeneous entity. Nevertheless, membership to coalitions does not mean that one country will always support the one specific position of the majority of the group. Third World countries continue to find similar interests in ending post-colonial structures, and in resisting patterns of dominance from of developed countries by exerting "*efforts to bring about a new international economic order* (NIEO)... [which] *have failed abysmally*" (Khalid 1989, 85).

While some countries of the Third World such as Singapore, Saudi Arabia, South Korea and China were able to break patterns of uneven dependence for instance by forming strong coalitions such as the OPEC or lately the BASIC, this does not mean that all post-colonial structures of dominance have been completely eliminated for the remaining developing countries. While, as Nigel Harris (1986) argues, the experience of newly industrialized countries—such as South Korea, Singapore, Hong Kong, Taiwan Brazil and Mexico—may disprove the assumption

that coherent and self-enforcing development and growth is impossible in the Third World, this experience still does not negate economic and political inequalities, nor reject structures that maintain dependence on the policies of the First and Second World.

This research project aims to contribute to the debate around the relevance of the notions of 'Third World' and 'North-South dichotomy' in understanding relations between countries. The term 'North-South' is indispensable as an analytical concept in order to understand political contexts. This term, from the perspectives of negotiation and path dependence, enables the analysis of political alignments, coalition-building, cooperation and coordination. This research project pleads for contextualization of the North-South in the global climate talks by focusing on the trajectories that are responsible for identity formation and expression. It is argued that the North-South dichotomy in a climate change context is not primarily based on the formal criteria of development, but rather on identity narratives and the related behavior of actors. For instance, as the simulation games have confirmed (see Chap. 4; Penetrante 2012), while some countries like South Korea, Turkey and Singapore may be classified as developed, they act as if they are developing countries. Some of their political tendencies of alignment and solidarity do not always reconcile with how the other developed countries expect them to behave. This necessitates a more comprehensive approach to analyzing the interdependencies and behavior of countries.

6.2 The North-South Paradigm and Path Dependence: Historical Context of North-South in Global Environmental Politics

This section aims to present a new approach to using the concepts of 'Third World' and 'North-South' in analyzing patterns in the international system through which countries orient their preferences and behavior. The contextualization of the North-South divide in the global climate talks, as has been discussed in Chap. 4, shows how formal criteria of development such as per capita income and human development have ceased to distinguish membership. Countries, based on their experiences during the negotiation process, have assumed identities that correlate with their preferences and behavior during negotiation. This section argues that the North-South divide can be understood through the negotiation context.

Fig. 6.1 The trajectories of the North-South divide

6.2.1 Identity Trajectories: From Colonies to the Third World to the South

To understand this identity-building process, it becomes necessary to look at the political and socio-economic forces that determine the policy trajectories of developing countries. This subsection looks at the historical context of North-South identities, allowing a more detailed analysis of the behavior of these countries. Figure 6.1 (see above) illustrates the three interrelated trajectories that determine identity-building processes. These trajectories describe various experiences that, although inter-related, should be initially analyzed as separate entities. In this research project, trajectories are understood as paths with respect to climate policies, through which the related identity-building process unfolds.

What needs to be highlighted is the differering trajectories that developing countries may take. Each developing country has its own cultural-historical specificities which determine conditions and policies. However, while sharing similar experience as colonies, developing countries will reflect this experience differently in their policy-making. For example, Johnson (2006) notes the marked difference between the trajectories of the former colonies of France and those of Britain. Former colonies may have adopted for example educational transfers from their former colonizers, shaping their specific educational policy choices. One reason for this may be the expected high costs of initiating transition periods and switching traditional standards and norms.

The North-South divide is composed of three paths of identity-building: *political, ideological* and *socio-cultural*. It is important to highlight that actors may have followed a combination of paths as the identity-building process unfolds. For instance, the Philippines, as a former colony of Spain (1565–1898) and the United States (1898–1946) has adapted among other things authority structures similar to those of Spain and the United States. The former colonizers have already established (lock-in) institutions including political authority structures that the newly independent Philippine state was essentially forced to adopt due to high costs and the risks of switching to alternatives.

Similarly, although a member of the Non-Aligned Movement (NAM) since 1993, the country's ideological identity has been aligned with the United States since its independence in 1946. This is manifested by various mutual defense treaties and annual joint military training exercises (*Balikatan*). Perhaps because

the Philippine national government is challenged by the world's longest communist insurgency through its 17 communist rebel groups, as well as being engaged in territorial disputes with the People's Republic of China, it maintains close ties with the United States.

The Philippines' socio-cultural identity is denoted by its cultural, political and economic dependence on the United States. For example, the Philippine capital Manila holds the third position in the business process outsourcing (BPO industry) hierarchy (Garcia 2013). It maintains almost one million full-time employees, and has revenues reaching US$ 16 billion in 2013 (4.5 % of GDP), with 80 % of the BPO serving the US market (Bajaj 2011; Garcia 2013).

Political Trajectory: Power Structures

Political trajectory refers to the path that depicts the legacies and consequences of imposed power structures inherent the interdependence between dominant (colonizers or imperialists) and weaker parties, which this research project labels as *spheres of interests*. As contemporary developing countries have experienced various types of direct or indirect colonialization, each developing country has developed its distinct political identity (Kusno 2000; see Said 1993).

The political identity of a former colony is constantly modified by the policies of their former colonial masters. As several members of the academic community for post-colonial studies claim, in the period after decolonization, it becomes clear that although colonial armies and bureaucracies have officially withdrawn, former colonial powers still hold their "spheres of interests" by maintaining indirect control over erstwhile colonies (see Childs and Williams 2007; Said 1993; Dirlik 1997). Such control can be seen in economic, cultural, social and military ties between former colonies and former colonizers, particularly in former colonies containing significant number of settlers such as South Africa, the Philippines, Namibia and Zimbabwe.

The political identity of former colonies is on one hand framed by authority structures that former colonizers have established in the past, such as elite structures, and on the other hand by power vacuums that have emerged immediately after colonial powers have withdrawn their combatants. Some former colonies received independence through a negotiated (or imposed) settlement, in which introduced constitutions and other political architecture were significantly influenced by former colonizers. Other colonies were left with armed insurgent groups determining how the transition period should unfold. In various cases, the transition of insurgent groups from political parties still remains a huge challenge. Former colonies have undergone power struggles between various internal societal groups, and while some actors were able to swiftly monopolize power, fill the power vacuum and establish legitimate authority mechanisms, others are still experiencing intense power competition between groups, eventually leading to their classification as "failed states" (see Ignatieff 2003; Stewart 2007).

Nation-building, as a process towards the establishment of a cohesive community, is highly affected by existing power structures that enable actors to use violence to eliminate potential competitors including the assimilation of ethnic minorities (see Tilly 1985; Kreuzer and Weiberg 2005; Arendt 2009; Penetrante 2010b). Post-colonial nation-building however involves distorted power relations, particularly when colonial powers have used the method of "divide and rule" to maintain their authority over their colonial subjects, whereas privileged groups may seek to maintain their privileges through coercion. Furthermore, as several colonies have gained independence through armed insurgencies and armed revolutionary movements, power has been concentrated on these armed groups, which have then established mechanisms to ensure their monopoly of force. This development is very often perceived as a reason for political instability in several former colonies, as other groups have come to challenge these former insurgent groups by staging the so-called "new wars" (see Kaldor 1999; Münkler 2004).

The political identity of a specific developing country is determined by the historical path it has taken in its nation-/state-building process. After an analysis of the global climate talks, it becomes clear that many developing countries confronted by political instability are unable to build capacities to effectively formulate climate protection policies (see Najam 2005), especially not if there are still various political actors contesting their political authority.

Ideological Trajectory: The "Third Way"

The ideological trajectory pertains to the path that developing countries take as two worldviews (Weltbilder) compete for domination in the international system. It refers to how countries have attempted to create a "neutral zone" moving away from the conflictual dichotomy of East (communist bloc with the Soviet Union, the People's Republic of China, Cuba and their allies) and the West (NATO member countries and other allies). The countries of the Third World did not primarily seek to discard alignment with the United States or the Soviet Union, but rather to establish a "third option". The 'Third World' is a label for those neutral and non-aligned countries seeking to find their own paths forward rather than emulating the capitalist West or communist East. While most of the Third World countries are poor, some neutral and non-aligned countries such as Switzerland, Austria, Finland and Sweden are highly developed. Nevertheless, the Third World has been used interchangeably with developing countries or with the *Global South* (see Tomlinson 2003; Wolf-Philips 1987).

Various meetings between Third World countries have helped them to institutionalize the *Non-Aligned Movement*. The *Bandung* Conference, also known as the *Asian-African Conference* that took place in Bandung, Indonesia on April 18–24, 1955 was organized to promote Afro-Asian economic and cultural cooperation and to oppose any form of colonialism by either the United States or the Soviet Union. This meeting is seen as an important step leading to the foundation of the

Non-Aligned Movement (NAM) (see Choucri 1969; Mackie 2005; Finnane and McDougall 2010).

While the Cold War has ended, various conflict cleavages remain as many Cold War norms and procedures are still being practiced. With this, the Non-Aligned Movement has expanded its membership to include some countries which once belonged to the Second World. It has also continued to demand change in the current UN structure, which is presently prone to abuse by powerful states, particularly from the 'Big Five'. Believing that the international system has failed to create conditions conducive to the development of many developing countries, the movement has publicly committed to the tenets of sustainable development and the attainment of the Millennium Development Goals. The movement calls for instance for more transparent and democratized financial institutions such as the World Bank and IMF (NAM 2013).

As some developing countries may use procedures and rhetoric, and apply the principles of the NAM to the global climate talks, understanding one country's ideological trajectory may provide insights into its behavior during the bargaining process. For instance, after the COP15 meeting, countries such as the Sudan, Nicaragua, Cuba and Venezuela were highly criticized, and their behavior perceived as a "*demonstration of how Copenhagen was about old-fashioned anti-Americanism, not the environment*" (The Australian 2009). Bolivia's president, Evo Morales blamed the lack of political will by a small group of countries led the United States as the reason for the failure of the COP15 meeting to produce an international agreement (Vidal 2009).

Socio-cultural Trajectory: Development in a Convergent International System

The socio-cultural identity trajectory builds on the path a country has taken under a condition of an increasingly integrated world. Globalization as a process of global socio-economic convergence is not isolated from existing power structures in the international system and thus it reproduces or even multiplies existing inequities and power asymmetries. The international system is now an interlocked system, "*whether for its people, its ecology or its resources*" (The IDS Bulletin 1981, 33). While globalization may produce various types of pressure, countries face different kinds of challenges to which they need to respond. Globalization, as it flows through existing economic and power structures, is a process that denotes an imbalance in economic and political power.

The term *South* initially connotes countries in the Southern hemisphere that with few exemptions are lagging behind those countries in the Northern hemisphere in terms of socio-economic development and political weight in the international system. Compared to the North, the South faces poverty-related issues such as food shortages and political instability (Thérien 1999; Oluwafemi 2012). The North, in economic terms, with only one quarter of the world's population and 30 % of the world's landmass, controls 80 % of the world's income and employs

90 % of the manufacturing industries (Oluwafemi 2012). Therefore, the term North becomes synonymous with economic development and industrialization or with the OECD, while the South as a "development project" (McMichael 1995) that needs constant international aid (Preece 2009).

Developing countries, labeling their group as the 'South', see themselves disadvantaged in terms of access to benefits, opportunities and globalization through existing power configurations in the international system. The poverty of the South is seen as a product of the wealth of the North (Krasner 1983b, 239). The homogenizing label 'South' provides an important focus for social identification (see Randall 2004). With this, developing countries often decide to group with similarly disadvantaged peers to form a force that would challenge the existing principles, norms and rules that underpin international economic order and power structures (see Krasner 1983b). Political alignments and solidarities mobilize the South and determine how they interact with peers and those countries in the North) (Thérien 1999; White 1993; Najam 2004). The identity of the South is however evolving and as Berger (1994), Randal (2004) and other globalization theorists argue, and the South is becoming more of a social identity than a geographical one.

The social identity of the South is a focal point that determines the behavior of specific countries during negotiation. This identity leads to the prioritization of sustainable development issues in international negotiations. However, it also seems to entail the inclusion of (sustainable) development on international agenda, and in all negotiations where the South emerges as a negotiation partner. The interlinkages and the resulting negative externalities of issues that have been included in the global climate agenda have motivated developing countries to assume the 'South' identity at the bargaining table.

For instance, as the South has been institutionalized by the UNFCCC through the Annex listing, development issues are considered to be of equal importance in environmental issues, which further complicates the negotiation process. For example, agenda-setting among others becomes more complex, particularly when development issues are subjects of other UN conventions. It puts stress on the capacities and mandates of the UNFCCC, as developmental issues are subjects of negotiations in other conventions. For some countries, this may be a great challenge, as this situation requires a more comprehensive and integrated approach in order to reach climate policies. During the COP15 meeting, African countries were criticized for their behavior in turning the COP15 into "*a platform for demands that the world improve the continent's standard of living*", which is out of place in environmental talks (The Australian 2009).

Nevertheless, as will be discussed in the next sections, the institutionalization of the South has given developing countries opportunities to increase the group's political leverage at the negotiation table. The South, through its various coalitions such as the G77 + China, BASIC, AOSIS, etc. is used as a "negotiation vehicle" to ensure equal footage with developed countries. Therefore, it increases the chance that an agreement achieved through negotiations will be more legitimate than an agreement reached by employing the usual exclusive practices of decision-making.

6.2.2 *North-South Identity Politics as Conflict Cleavage: A Concept of Contestation*

The North-South divide was reinvigorated as a political axis in the global climate talks when issues to be resolved touched upon already existing conflict cleavages between the North and the South. This divide became more obvious at the COP15 meeting, where developed countries insisted that developing countries, especially China and India, participate in al legally binding post-Kyoto emission reduction mechanisms, or at least make efforts to reduce GHG emissions to levels comparable with those of developed countries. Developing countries, conversely, defend the exemptions they were granted in the UNFCCC and the Kyoto Protocol.

Developing countries have also re-discovered new political leverage not only in determining the agenda of the talks, but also more importantly in setting the framework for future talks (Penetrante 2010a, 2011). Through the complexity of the climate issues, developing countries are in the position to effectively exercise negative power, that is, to delay or block the decision making process. Therefore, it becomes apparent that a new and contextualized understanding of the dynamics of the North-South divide is necessary to the strategic facilitation of global climate talks.

This subsection aims to conceptualize the contestation process between the North and the South. The following Fig. 6.2 illustrates a model of the identity-building process, and illustrates various conflict cleavages that need to be addressed. These cleavages determine relations between the North and the South, and particularly how these two blocks can cooperate. Any outcome of global climate talks will be determined by trade-offs across the various cleavages, reflecting the notion that where one goes depends on where one is coming from (Munton and Castle 1992; Cutler and Zacher 1992; Penetrante 2010a).

The North and the South are divided by the "Hegelian fault line" in which the two find themselves in opposition with each other. This line is the rallying point for the mobilization of bloc members. On one side, the South calls for full participation in the social interactions (claim for superordination or recognition) as peers (Fraser 2003). However, this claim for recognition is confronted by efforts of the North to subordinate weaker parties, under the label of leadership and hegemony. Claims for leadership is exerted for instance to reduce transaction costs or to increase efficiency of decision-making.

According to Mark Anstey (2006), perceptions of "relative deprivation" or "unfair discrimination" offer fertile grounds for the mobilization of communities or groups. The community of common sentiments assumes a specific social identity, which sees itself in opposition to those actors or structures that have caused deprivation. The struggle for recognition, which is conceptualized by Friedrich Hegel (1977) as a circumstance where full participation is not only assumed, but actually implemented, becomes the driving force behind the mobilization of the South. The relations between actors, as defined by the master-slave dialectic, become a relationship of dependence and struggle. The figure suggests that to

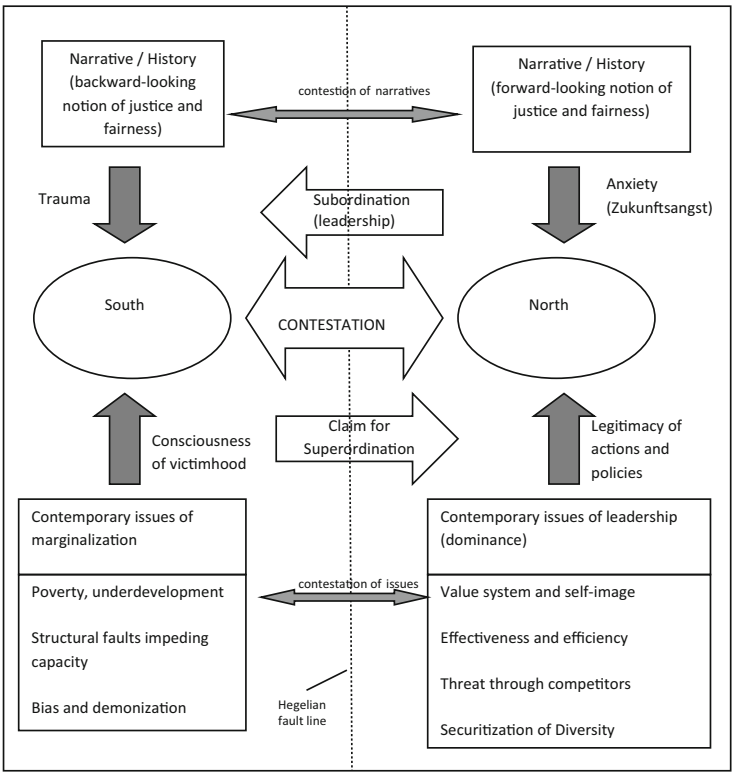

Fig. 6.2 Dynamics of identity contestation in the north-south divide (modified from Penetrante 2010a, 1360)

overcome the Hegelian fault line there is a need to move from the master-slave dialectic to full partnership.

The North-South divide spilled over to the climate change negotiations as the South's past experiences of subordination ('trauma'), and the North's future anxiety seemed to be reproduced in the post-Kyoto GHG reduction mechanism. Contesting narratives, which move around opposing notions of justice of fairness, serve as departure points for how countries see themselves ('consciousness') and others (see Buchner and Lehmann 2005). These narratives may also serve as a legitimizing force for future actions and policies.

The Identity of the South

The narratives of the South are "backward-looking" as these are linked to the "historical atrocities" of developed countries towards the environment. It should be noted that using the term 'backward-' or 'forward-looking' does not imply a negative or positive evaluation of such a notion. It is merely a time reference

through which factors are considered. Present generations in developed countries have benefited from the decisions and actions of their forebears and should therefore carry the associated costs of climate change (Penetrante 2013, 251). The North owes the South the environmental space it has contaminated in the last 100 years (see White 1993; Huq and Sokona 2001; Najam 2005).

Various measures proposed by developed countries are highly criticized by the South as unacceptable. As La Viña (1997, 65) argues, historical data shows that industrialized countries of the North have utilized more than half of the world's fossil fuels over the past 120 years. Many developing countries find it further unacceptable that their traditional agricultural practices are blamed for the increase in methane emissions. As these practices support the subsistence of billions of people, they should be distinguished from energy-wasteful agriculture, animal husbandry, and industry in the North (Penetrante 2013, 251).

In the COP15 meeting, the G77 chief negotiator Lumumba Di-Aping compared the behavior of developed countries to the holocaust, particularly because climate change has intensified the suffering of the population in the South. This narrative from the South calls for schemes of compensation for the "victimized", developing countries particularly because they are more vulnerable to the adverse effects of climate change (see South Commission 1990; IPCC 2001; UNFCCC 2007a).

The narratives about past issues of marginalization create mistrust and general suspicion of developed countries. The South learns to identify and resist subordination by using rhetorical or delaying tactics to further delaying the process. Mistrust under the condition of uncertainty is a huge obstacle in reaching agreements, as more detailed contingency provisions are needed to convince developing countries to agree to specific measures. This mistrust may be regularly confirmed by the present actions of developed countries, which may not always reflect the real intentions of developed countries.

These narratives encompass the identity of the South. Identity reflects the existence of a collective group, both in terms of how the group sees itself and how it is perceived by the others (see Meyer 2002; Penetrante 2013, 260). Identity is regarded as an entrepreneur of social norms which are attributed to the process of inclusion and exclusion (see Jenkins 1996; Penetrante 2013, 261). This process of inclusion and exclusion still allows the existence of some actors, here called as "threshold states", with no clear classification leading to distorted expectations of the behavior of these "mixed" states.

In global climate talks, the analogous logic of primordial ties and kinship connections (see Shils 1957; Geertz 1963) among states is not the driving force behind the construction of the South's identity, but rather their common real or imagined experience of marginalization as the subject of narratives. Identity is ascribed through memories (Lowenthal 1985; Alexander 2004), and experiences of injustice and unfairness lead to an internal status-evaluation process and a common understanding with peers with similar experiences (Penetrante 2013, 261). This explains why although countries belonging to the South are seen as too heterogeneous to be included in one collectivity, these countries still see themselves as tied with the others. The self-definition of the South, as the South Commission (1990, 1)

states, is a definition of exclusion: these countries believe that they have been "bypassed" and view themselves as existing "on the periphery."

The South's identity is therefore a process defined by social interactions. This implies that the Southern identity is only explicable in a social context and should therefore be understood as an open bargaining process between self-perception and the image defined by the social partner (Meyer 2002, 41), the North. The South as a collectivity then identifies the "others," and this event can lead to the further securitization of the differences, as threats coming from each side can be perceived (Penetrante 2013, 261).

The Identity of the North

The North pursues a "forward-looking" notion of justice and fairness in formulating climate policies and options for the GHG emission reduction regime. According to the North, present generations should not be punished for "crimes" they did not commit and "crimes" that were not crimes when the actions in question were carried out by earlier generations (Caney 2009). Furthermore, their is an assumption that future generations of developing countries will be better off in the future, and in some cases will even surpass the affluence of those from developed countries (Schelling 1995); therefore any measure that would further favor these generations will lead to distortion of sound competition between future generations from developed and (formerly) developing countries (Posner and Sunstein 2010; Meyer 2004; Penetrante 2010a, 1361). It is therefore seen as unfair for future generations of developed countries that developing countries, especially the BASIC countries, are exempted from GHG emission reduction regimes. Thus, the identity of the North, similarly to that of the South, rallies behind principles of fairness and justice. Like the identity of the South, it also aims to confront "social pain" (Alexander 2004, 1). Its identity is also a process defined by social interactions with the South, implying that the North identity (similarly to that of the South) is only explicable in a social context.

The behavior of the North is the expression of its "anxiety on the future" (Zukunftsangst) which is based on the fear that giving in today could lead to disadvantages for the future generations of developed countries (see Penetrante 2010a). The idea of giving advantages to increasingly formidable competitors is "*politically toxic in many developed countries*" (Wirth 2010, xxxvii). This anxiety may then often legitimize certain policies which may be seen by developing countries as marginalizing.

These contesting narratives frame the debate around who should shoulder the costs of mitigating and adapting to climate change. Any effective facilitation of global climate talks needs to address the various conflict cleavages that frame the behaviors and preferences of developed and developing countries. For example, bringing in revised narratives with fewer contesting implications can help facilitate trust between the North and South.

6.3 The North-South Divide in the Global Climate Talks: A New Old Paradigm from the Negotiation Perspective

As pointed out by Gunnar Sjöstedt (1993, vii) and Robert H. Pry (1993, vii), international negotiations around environmental issues is a relatively recent phenomenon. The 1972 UN conference on the environment held in Stockholm is considered as a major landmark, which served as departure point for the following conferences over the next decades (Sjöstedt 1993, 1). By 1992, the UN Conference on the Environment and Development (UNCED) in Rio de Janeiro produced a specific approach towards addressing environmental issues that promotes the North-South divide (see Najam 2002).

The Rio conference, seeing it from the perspective of path dependence, has led to a lock-in situation where environmental issues are negotiated using the North-South paradigm. Bringing alternative approaches, for instance, through which environmental issues are addressed separately from other issues, will be difficult or impossible, as negotiators will need to establish new and costly decision-making frameworks. As decisions on environmental issues are equally framed as developmental issues, typical principles and standards of negotiation processes related to the international economic order are used in addressing global environmental issues such as climate change.

Nevertheless, it is not the intention of this research project to move environmental negotiations away from "developmental frame". However, understanding how the developmental frame influence decision making, for instance, how it maintains the North-South divide, may lead to new ideas on how to facilitate relations between countries through cooperation and joint problem-solving. This requires increasing awareness of the importance of negotiations in achieving decisions, and the analysis of how countries adapt their behavior to the North-South contestation.

6.3.1 Coalition-Building Through Common Interests

The North-South divide is manifested through coalition-building. As coalitions are built according to the interests of negotiation parties and as these interests are formulated within the North-South premise, coalition-building is subjected to identity-building as the negotiation process unfolds. Coalition-building is an integral element in a multilateral system, where a number of countries adapt to existing power structures and asymmetries (Hampson and Hart 1995; Raiffa 1982; Zartman 1994). Coalitions enable individual actors to manage the complexities of the issues and the procedures involved in the negotiation process (see Williams 1991).

Moscovici (1963) refer to coalitions as collective elaboration in his social representation theory. He points to a community with a stock of shared values, ideas, beliefs and practices that function as orientation for behavior and

communication. Furthermore, coalitions do not only affect the resource pool available to coalition members (Polzer et al. 1995), but may also change the positions of states. In several cases, extreme positions of some countries are moderated during internal coalition meetings, increasing the probability of a mutually acceptable agreement in the bigger plenary as rapprochement of positions become more feasible.

In the global climate talks, coalitions are the products of strategic calculation on the part of the actors. Coalitions are temporary entities created to achieve a common purpose or engage in a joint activity (Yarn 1991, 81). Actors may leave existing coalitions or form new ones as the negotiation process unfolds. Coalitions respond to asymmetries, enabling weaker parties to combine their resources and become more powerful than when acting alone. Stronger parties may also establish or support a coalition, particularly in a setting where consensus among all parties is required in the decision-making framework such as the UNFCCC.

6.3.2 The South at the Negotiation Table

In the global climate talks, the South is mainly represented by the so-called "G77 and China" coalition which consists of more than 130 countries and China, and functions as a negotiation vehicle for developing countries. This coalition acts as a forum for coordinating positions among member countries to increase political leverage during negotiations. It has a long-term planning approach, and the group does not limit its focus to specific issues, but also looks to maintain influence in the various phases of negotiation particularly in agenda and norm-setting (Penetrante 2010a, 1359). The G77 + China coalition and the resources available to its members spilled over into the global climate talks, as environmental issues have been equally framed as developmental issues as well as the institutionalized classification of Annex I and Non-Annex countries, drawing the North-South conflict cleavage into climate change negotiations.

The Group of 77 (G77) was established on 15 June 1964 by 77 developing countries through the "Joint Declaration of the Seventy-Seven Countries" signed at the end of the first session of the United Nations Conference on Trade and Development (UNCTAD) in Geneva. Beginning with the first Ministerial Meeting of the Group of 77 in Algiers in 1967, which adopted the Charter of Algiers, a permanent institutional structure gradually developed. The G77 with 133 member countries is the largest coalition within the UN framework. The G77 has for instance succeeded in bringing the UN General Assembly to adopt the legally non-binding Declaration on the Establishment of a New International Economic Order (NIEO), and demands measures to overcome injustices in the existing international law system (Beyerlin 2006, 259). In the climate change context, the G77 + China has identified the continued widening of the gap between developed and developing countries and that structures and norms placing developing

countries in a disadvantageous position have been adapted in climate change negotiations (Penetrante 2013, 263).

The G77 + China coalition is complemented by other groups that act within the South premise, but focus on specific issues. These groups include the AOSIS, BASIC and OPEC, among others. While some of these groups have emerged only in the course of the climate negotiations (e.g. AOSIS, BASIC) and have subsequently extended their work to other domains, some groups such as OPEC have already existed before the global climate talks and have passed the agenda-setting phase of the negotiation process. Furthermore, while some member countries have forged groups such as AOSIS and Coalition of Rainforest Nations focusing on common issues of concern, some members of the South are pursuing a more regional approach—such as the African countries—in coordinating positions among themselves. The Caribbean countries are also rallying together, and Southeast Asian nations are using existing regional forums to forward the climate issue (Penetrante 2010a, 1359). Groups such as the *Comisión Centroamericana de Ambiente y Desarollo* (CCAD) and the Bolivarian Alliance for America (ALBA) have used existing regional ties to confront issues that are of common concern.

A major issue coalition of developing countries is the Alliance of Small Island States (AOSIS), which is a coalition of small islands and low-lying coastal countries, and functions as an *ad hoc* lobby and negotiating voice for Small Island Developing States (SIDS) in global climate change negotiations. Similar to other issue coalitions, AOSIS—with the exception of Cyprus and Malta—is composed of developing countries. This coalition is not seen as a competitive alternative to the G77 + China coalition, but rather a complementary negotiation bloc for the 27 developing countries (Penetrante 2013, 264).

Another important group within the South is the Least Developed Countries (LDCs). Although the group is not considered as a *de jure* coalition, as LDCs is merely a categorization used within the United Nations system, this group of 49 member countries is given special status under the UNFCCC to address their limited capacity to adapt to the effects of climate change (UNFCCC 2011). Nevertheless, the group, similar to OPEC and BASIC, has regularly helped the G77 + China coalition to identify developmental and technical issues that it needs to put forward during negotiation.

6.3.3 The North at the Negotiation Table

The UNFCCC has classified counties according to various groups. The *Annex I* parties are composed of 41 industrialized countries and 14 economies in transition (EITs), which are the formerly centrally-planned economies of the countries of the former Warsaw Pact. The *Annex II* parties are the 24 countries which are usually members of the OECD, that are required to provide financial and technical support to the EITs and developing countries in mitigating climate change and adapting to the impacts of climate change (UNFCCC 2011). The parties classified to the *Annex*

B of the Kyoto Protocol are countries classified as Annex I with first- or second-round Kyoto GHG emission targets. The parties to the UNFCCC that are not listed in Annex I (*Non-Annex I*) are developing countries with mostly low-income.

The UNFCCC distinction between developed (Annex I and II) countries and developing (Non-Annex) countries does not always reflect the development status of these countries. The so-called "threshold states" such as South Korea, Singapore, Israel, and Saudi Arabia are countries with higher per capita income, but are not listed in the Annex list due to political considerations. Interestingly, Mexico, Chile and South Korea, as members of the OECD should have been listed as Annex II countries. Similarly, Brazil, Argentina, China, India, Indonesia, Mexico, Turkey, South Africa and South Korea are members of the G20, which is the bloc of leading industrialized nations of the world. These countries follow different preferences and expectations as to how they should participate in shouldering the costs of mitigation. Some of these countries do not explicitly classify themselves as members of the South, but in the global climate talks, their alignment and solidarity are in many occasions directed towards developing countries.

The North, like the South, is a heterogeneous entity. While they share high per capita income and advanced economic development level, they do not always pursue the same interests. For instance, the so-called "Kyoto light" countries which consist of the United States, Australia, Japan, and Canada push for an agreement that includes flexibility mechanisms which are for them politically viable. Other countries such as Norway and Switzerland, which are listed as Annex I parties, and are not members of the G20 or of the OECD, coordinate their actions through the so-called "Umbrella Group" (often referred to as JUSSCANNZ, which excludes the Switzerland). This group which first emerged at COP3 in 1997 is a loose coalition of largely non-European developed countries formed following the adoption of the Kyoto Protocol. It currently includes Australia, Canada, Iceland, Japan, New Zealand, Norway, Russia, Ukraine and the United States. The group aims to ensure cost-effectiveness and flexibility in the Kyoto Protocol. In addition, it advocates that developing countries should participate in future emission reduction schemes. Nevertheless, the Umbrella Group is seen as far from homogeneous. Some members such as Iceland, Japan, New Zealand and Norway enjoy much lower emissions per capita than other members such as the United States and Australia. There is also a huge difference in the approach of the members regarding the concerns of developing countries such as China and India (Yamin and Depledge 2004, 45–46).

Developed countries usually use existing decision platforms such as the EU, G8, G20, and the OECD to coordinate their positions before and during global climate meetings. Environmental ministers from the EU member countries meet at the Council of the European Union to decide EU climate policy and the EU's common negotiation positions (see Gupta and Grubb 2000; Wettestad 2000; Jordan et al. 2010). The EU sees itself playing a double role as far as climate policy is concerned. It seeks leadership (see Chap. 8) in global climate negotiations and it commits to internal climate protection measures including carbon trading (to legitimize its leadership in the climate talks).

Other groups such as Central Group 11 (CG11) may have been formed to confront immediate issues. These short-lived coalitions reflect the dynamic flow and changing structures of the negotiation process. The CG11, which was active from 2000 and 2003, was the group of ten economies in transition—Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovakia and Slovenia (Annex I EITs), as well as Croatia (non-Annex I party). The group was eventually dissolved following the conclusion of the 2002 negotiations on their ascension to the European Union (Yamin and Depledge 2004, 47).

In the post-Kyoto negotiations, the North seeks to change existing norms that allow the free-riding of developing countries, which under the principle of common but differentiated responsibilities sees their rights of development undermined by legally binding GHG emission reduction schemes. The North, while addressing the concerns of developing countries, calls for developing countries to commit to concrete comparable efforts and/or suggest timelines for future commitments to ensure the effectiveness of GHG emission reduction schemes. Furthermore, many developed countries call for more flexibility mechanisms allowing them to decide on commitments without jeopardizing their economic competitiveness.

6.4 Interim Conclusion: The North-South as Relations

The North-South divide as institutionalized in global climate talks limits the pool of possible institutional arrangements in any global climate regime. The sensitivity of this regime towards starting points motivates a more comprehensive analysis of the North-South divide as an inherent feature of the negotiation process. Understanding the contestation processes behind the North-South divide in climate change negotiations provides opportunities to identify strategies to push forward the decision-making process. The wider participation in the process may lead to a more sustainable solution to the common problem as the probability that an outcome is challenged is lower than in a situation where the majority of the affected countries are excluded from the process out of efficiency concerns.

Signs of rapprochement between the North and the South are observable. China, which together with the United States produces 37 % of global GHG emissions, is seen by the report *The Critical Decade: Global Action Building on Climate Change* of the Climate Commission of the Government of Australia (2012) as being on track to meet its international commitments. Framed as enhancing its energy security, China made significant investments in clean energy including its US$ 65.1 billion investment in 2012 which match 30 % of the entire G-20 investment in 2012.

Such rapprochement between the North and South is a direct implication of a learning process. Embedding the North-South divide in a negotiation process allows its transformation from a ‘divide’ to ‘North-South relations.’ Negotiation

allows cooperative approaches between countries in a process hallmarked by contestation. While identities are formed by past experiences through narratives, the negotiation process allows the substitution of past experiences of marginalization with new experiences of genuine and productive cooperation and partnerships between countries.

Chapter 7
Rethinking Paradigms in Global Climate Talks: Conceptualizing Equitable Access to Sustainable Development (EASD)

"To go beyond is as wrong as to fall short" (Confucius)

One of the most challenging activities when identifying stumbling blocks (and finding ways to cope with them) is that these stumbling blocks are usually obscured by human subjectivity. Academic debates on principles such as equity, fairness and justice inevitable touch on experiential values, whereas attempts to quantify such values may produce further negative consequences that would delegitimize any "noble" goal. As national governments are represented by humans, policies are consequently determined through various individual cognitive processes, which follow specific experiential trajectories. Paradigms, as historical constructs, build "mental anchors" which continuously produce, maintain and enhance perceptions (see Cedarbaum 1983; Kuhn 1996). Perceptions, in turn, define preferences and expectations that subsequently frame actions.

As the theory of path dependence suggests, norms, rules and procedures slip away from the awareness of actors as the decision-making process unfolds, and escape any form of self-criticism (see Chap. 2). Such mental anchors are "paradigms" that may "paralyze" cognitive processes leading to the inability or refusal to look outside the current model of thinking (see Kuhn 1996). A mental anchor is a lock-in situation where the potential for change or further movement remains low (P. David 1988). The internalization of these norms, rules and procedures determine cognitive thinking to the point that it may hinder flexibility.

Paradigms or "cognitive constructs" have the purpose of containing contingencies to enhance decision-making. They allow the development of expectations and incentives through which goals and actions are precisely constituted. These paradigms involve routines that enable actors to focus resources on other important areas; thus, paradigms enhance efficiency. For example, the concept of 'territoriality' is a paradigm developed after the *Westphalian* peace that purports state sovereignty, elucidating independent decision-making within that specific territory. As a paradigm, territoriality/sovereignty is close to becoming a quasi-dogma or even a legal doctrine: the sanctity of the current boundaries in Africa, for example,

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has determined international foreign policy around civil unrest in the region. Challenges to existing boundaries, whether through rebel groups or neighboring countries, tend to be considered pejorative to the principle of sovereignty, leading to various sanctions being implemented.

That a paradigm can be shifted is not a new idea (see Handa 1986; Kuhn 1996; Hoyningen-Heune 2011). Paradigm shifts are necessary when mental anchors no longer serve the contingencies they are supposed to address. In some cases, actors may realize that existing (and dominant) values and social institutions are no longer efficient, and no longer fit the changing conditions of that time. Although paradigmatic shifts may cause enormous transition costs in order to move from one paradigm to the next, and although they may face fierce objection by powerful societal actors, actors may still manage to shift the way they think. As paradigms are frequently established within existing power structures and reproduced by power asymmetries, initiatives to change such paradigms may be easily regarded as threats to the entire system and to the powerful groups that sponsor them. A "paradigm economy"—where specific actors actively profit or enjoy positive externalities from existing phenomena—is understood to imply contestation processes when paradigm shifts are sought. Shifts will be most likely challenged by actors profiting from the status quo. In similar cases, actors may realize that it is impossible to shift paradigms as there is no credible alternative available, and that shifting may materialize unknown risks, such as unanticipated power vacuums ("paradigm shift dilemma"). Therefore, they may merely resort to the transparent identification of such paradigms and the development of strategies designed to prevent "paralysis", rather than attempting to genuinely resolve the conflicts caused by obsolete ways of understanding social subjects. Nevertheless, shifting paradigms is not done for the sake of shifting. A paradigm, as described above, has a distinct purpose particularly in decision making.

In various complex cases, such as in the global environmental context, actors may realize that there is a plurality of paradigms among them. Ideally, deciding on specific problems such as climate change requires that decision makers think the same way, especially when looking at various conceptual issues. The plurality of paradigms may, for example, lead to the failure to reach consensus on what the real problem is. As the complexity of climate change (see Chap. 5) leads to the multidimensionality of rationales and perspectives, climate policy makers may be confronted with complementing and/or competing paradigms. In this matter, no paradigm shift is needed, but rather a "consensus" on which paradigm should be employed at all.

The diversity of models of thinking leads to great diversity in how the problem is viewed. This may inhibit decision making as deliberations may not come up to consensual solutions. As paradigms may determine negotiation formulas or formulate the agenda for the talks, multilateral negotiation processes should start by ascertaining whether there is consensus on paradigms—they should *deconstruct the construct*. Because global climate negotiation is confronted by the lack of consensus on paradigms, particularly on justice and fairness, a kind of "consensus diplomacy" becomes indispensable.

The Parties to the United Nations Framework Convention on Climate Change (UNFCCC) introduced the notion of *equitable access to sustainable development* in the Cancun agreements, in the context of a timeframe for global greenhouse gas emissions. They have identified the overarching priorities of developing countries as being social and economic development and poverty eradication; in light of this developing countries will need more time to reach their peaks than developed nations (UNFCCC 2012).

The centrality of the principle of equity is not new to the UNFCCC. It deals not only with conventional issues relating to mitigation and adaptation, but it also involves the decision-making process itself. The difficulty of reaching consensus can be attributed to the lack of agreement on which analytical level equity should be defined. An example of this is equitable burden-sharing, that is, resource-sharing or sharing the available carbon budget in accordance with the principles of equity vs. effort sharing, or sharing the necessary effort (costs) in accordance with the principles of equity (UNFCCC 2012). At the Conference of the Parties (COP) 17 in Durban, South Africa, the UNFCCC secretariat and related bodies started conducting informal consultations on EASD. This led to a workshop at the 15th session of the Ad hoc Working Group on Long-term Cooperative Action under the Convention, which was held on 16 May 2012 in Bonn, Germany (UNFCCC 2012). The workshop initiated a public discourse on EASD; in particular, the context for equity and EASD, the definition of equity and the application of the equity principle. This chapter intends to contribute to this academic discourse and seeks to deliver insights into how equity and EASD can be defined, operationalized and implemented from the perspective of the negotiation process.

7.1 Notions of Justice and Fairness: The North-South Consensus Diplomacy

The entanglement of the climate change negotiations in the North-South divide is an immediate implication of competing interests between developed and developing countries (see Chap. 6; Penetrante 2010a, 2013). The definition of relations between the "North" (developed countries) and the "South" (developing countries) inform not only which results are viable, but also which procedures are acceptable, particularly when existing decision-making structures are perceived as favoring developed countries and inhibiting the equal participation of developing countries. The North-South conflict cleavage moves along the contestation line of how countries understand justice and fairness (Penetrante 2010a, 2013). Focusing on perspectives provides insights into the differences between how justice and fairness are defined by actors.

While academic literature tends to use 'justice' and 'fairness' as interchangeable, this research project makes a clear distinction between these two terms. The notions of fairness and justice among countries are attributed to past experiences

(backward-looking) and to future expectations (forward-looking). Thus, relating narratives to the negotiation process provides the distinction of fairness from justice. While fairness pertains to the procedure by which decisions are made, justice refers to whether an outcome satisfies the needs of the actors and whether it addresses their capabilities. Cecilia Albin (2001, 264) follows a similar distinction between what is just and what is fair. She notes that agreements (as the outcome of the negotiation process) are just if these agreements are based on principles that the parties themselves consensually agreed. An agreement is fair, she continues, if the circumstances leading to the agreement are reasonable. If, for example, the parties to the UNFCCC have agreed to the principle of sustainable development, an agreement is just if it does not undermine sustainable development. However, this just agreement can be unfair when the methods applied to reach this agreement do not consider the various diverging capacities of actors.

Negotiation studies looks at the negotiation perspective of decision-making, wherein accurate descriptions of negotiation counterparts (with regards to their positions, interests, behavior, goals and actions) are considered useful in formulating strategies to resolve conflict cleavages (Luce and Raiffa 1957; Schelling 1960; Fisher and Ury 1981; Raiffa 1982). The entanglement of climate change negotiations in the North-South divide implies conflicts, making the negotiation perspective highly useful. Negotiation studies is usually concerned with methods of dispute resolution, and focuses on three types of justice: *procedural justice, distributive justice* and *retributive justice*. Procedural justice is concerned with fairness in the dispute resolution and resource-allocation processes, such as the equal participation of developing countries in all parallel meetings. Distributive justice, in contrast, focuses on fairness in the distribution of rights and resources, such as basing emission rights on levels of economic development. Finally retributive justice is concerned with fairness in the rectification of wrongs, for instance, through compensation payments to countries highly affected by climate change (see Rawls 1971; Bone 2003; Müller 2001; Albin 2001; Vanderheiden 2008).

The simulation games on climate change negotiations (see Chap. 4; Penetrante 2012) confirmed the tendency of these various types of justice and fairness—procedural, distributive and retributive—to compete among each other. The author of this paper has conducted several simulation games, both with students and scientists between 2009 and 2012. The results of the games are preliminary interpretations of various concepts that may be relevant in the global climate talks. The games showed that these types of justice may actually undermine each other, which raises questions around, which kind of justice should be prioritized. Nevertheless, prioritizing one type of justice over the others might unintentionally produce new injustices, as this prioritization is itself a decision that requires normative assessments. Furthermore, a fair procedure can diminish the effectiveness of a potential outcome. It cannot always be assumed, for example, that the democratic process is always the fairest, as involving all countries in a decision making process for the mere sake of comprehensive representative democracy may disproportionately affect specific countries.

For instance, developing countries, particularly those with the largest emerging economies such as China and India, may demand retributive justice by seeking exceptions from legally binding GHG emission reduction schemes by arguing that developed countries are held historically and morally responsible for the current concentration of GHGs in the atmosphere. This demand may however be in opposition to the distributive justice demanded by developed countries, particularly when certain developing nations such as China and India are projected to bypass developed countries in terms of GHG emissions in the next few years or decades. Efforts to reconcile these two positions may however undermine procedural justice/fairness, as LDCs with very low emissions may opt out of negotiations over this issue in favor of bilateral negotiations.

When the negotiation process deals with the distribution of benefits and costs, it tends to create power struggles, as the negotiation process has become zero-sum. This tendency has been confirmed by the participants of the simulation games (see Chap. 4). The participants who played individual countries noted that it was almost impossible to understand the perspectives of the others in a competitive (distributive) negotiation process. This implies that pursuing distributive justice inevitably reduces the bargaining process to a power struggle. It suggests that notions of justice and fairness are merely instrumentalized to enhance bargaining power. Therefore, the political instrumentalization of the principles of justice and fairness may effectively inhibit perspective change.

The boundary between the North and the South has been mainly determined by countries' positions around who should pay for the costs of mitigating and adapting to climate change, and how much should be paid (see Beyerlin 2006; Penetrante 2010a, 2013). Such mitigation costs include direct investments into low emission technologies, technology transfer, and the opportunity costs brought by abandoning cheaper, higher emission technologies. These positions are products of how countries understand the concepts of justice and fairness following deliberations on their national circumstances. Nevertheless, as described above, the multidimensionality of climate change as well as the diversity of experiences among actors leads to a diversity of paradigms, implicating, among other things, differences in notions of justice and fairness. As Zartman (2003, 34) notes, "relevant principles of justice [are] likely to be loose, contentious, tentative, and fluctuating".

For the North, a fair and just mitigation measure employs mandatory cuts that would not distort sound competition between future generations of actors from developed and (formerly) developing countries (Schelling 1995; L. Meyer 2004; Posner and Weisbach 2010; Posner and Sunstein 2010). Therefore, mitigation should not be shouldered by developed countries alone, and developing countries, must also adopt concrete GHG emission reduction policies. It is of particular importance that those emerging economies projected to be responsible for future growth in the level of emissions (such as China and India), should employ GHG emission reduction policies, which may or may not be complemented by various flexibility mechanisms.

For the South, a fair and just mitigation measure addresses historical responsibilities and diverging vulnerabilities as well as capabilities (Agarwal and Narain

1991; Najam 2005; Müller 1999). Compensatory actions should complement global climate policies to ensure that historical wrongs are addressed (Müller 2001). Reduction schemes should be complemented by capacity building and technology transfer, which does not compete with the Official Development Assistance (ODA). Developed countries are obliged to provide concessional assistance of at least 0.7 % of their Gross National Product (GNP) to developing countries as affirmed by several international agreements reached in various meetings (such as the 1970 General Assembly, the 2002 International Conference on Financing for Development in Monterrey, Mexico, and the 2002 World Summit on Sustainable Development in Johannesburg (UN Milliennium Project 2013)). With only five countries—Sweden (1.12 %), Norway (1.06 %), Luxembourg (1.04 %), Denmark (0.88 %) and the Netherlands (0.82 %)—currently fulfilling their ODA obligations, additional subtractions from the ODA for climate funds is seen as inequitable, as climate projects tend to favor developing countries with emerging economies (see Silayan 2005; IGES 2011). Furthermore, fairness and justice should be reflected in the processes through which decisions are made. Therefore, institutional capacity building that would allow weaker parties to effectively participate in various parallel meetings should be considered part of any fair measure that aims to address climate change.

The diversity of paradigms on equity, fairness and justice requires the apparent bridging of competing notions and the recognition that each conceptual understanding is legitimate. However, the terms 'fairness' and 'justice' may be abused to legitimize one's position and increase one's bargaining strength. In this perspective, an agreement is fair and just if it serves one's own interests. Such an attitude renders fairness and justice useless. Nevertheless, as this research project argues, while global climate change negotiations presuppose a consensus on how justice and fairness should be understood, the concerns of each individual country should be recognized and adequately addressed. If individual concerns are taken as legitimate, countries may relax their defensive mode, allowing global climate talks to move forward.

While justice is directed to the outcome and fairness to the procedure, *equity* pertains to participation. **Equity demands that the various background conditions and diverging departure points confronting each actor are appropriately addressed when assessing the "quality" of one actor's participation at the negotiation process.** As the global climate change context shows, focusing on allocations of resources through the negotiation process requires complementing the notion of fairness and justice with the notion of equity. The preference to participate is determined by one actor's assessment of equity during the negotiation process. Any sustainable outcome of global climate talks will need not only to adhere to fair procedures and just outcomes, but should also adequately recognize different contributions of individual countries, as well as the differing benefits and rewards under conditions of uncertainty and diminishing resources.

The following section provides a focused analysis of equity in the global climate change negotiation context.

7.2 Equity in Climate Change Negotiations: Questions of Compliance and Global Common Goods

There is consensus among developed and developing countries that issues of equity are of central importance in global climate talks (see Grübler and Fujii 1991; Herrmann Ott et al. 2004; Buchner and Lehmann 2005; Heyward 2007). Any climate regime must reflect the equity concerns of all countries if the regime is to be resilient and sustainable. As Katherine Richardson et al. (2011) note, response strategies to deal with climate change will invariably confront equity issues. These include the allocation of emission rights and emission reduction obligations, as well as the responsibility for funding adaptation and distribution of adaptation funds. The principle of equity has been most frequently applied to the allocation of mitigation costs among countries. Furthermore, dealing with the equity aspects of climate change will depend on the relational structures in the decision making process, whereas power asymmetries will tend to reinforce existing power relations.

The perceived abandonment of equity principles of the UNFCCC and the Kyoto Protocol, as claimed by many experts in developing countries (Najam 2005; BASIC Experts 2011), requires the reconsideration of equity questions. The UNFCCC does not clearly articulate the quantified meaning of equity, but rather has identified only the categories of developed and developing countries. 'Equity' has become a diffuse term, and its interpretation has been subordinated to national interests (see Heyward 2007; Kals and Maes 2011). In light of this, the UNFCCC secretariat has openly invited the academic community to participate in a discussion around equity, to initiate attempts at specifying possible standards of equity, and to explore how equity issues should be pursued in global climate talks. This deliberation should complement current climate talks, particularly if post-Kyoto mechanisms to reduce GHG emissions are to be achieved. From the negotiation perspective, questions of how equity can ensure compliance should be additional topics of public deliberation.

Equity is a theoretical concept through which actors orient their own behavior when interacting with the others. John Stacey Adams (1965) suggests that actors seek equity before and during contacts with others. The equitable condition is considered as the optimal situation (equilibrium), as actors will no longer experience distress in situations where they are convinced that the ratio of what they contribute (input) and what they earn (output) is generally acceptable. Inputs are each participant's contribution to the relational exchange, which entitles one actor to rewards or benefits. Examples of inputs are time, effort, resources, ability, commitment and various forms of liabilities (see Walster et al. 1978). Outputs are positive and negative externalities incurred as a consequence of this relational exchange when achieving a common goal. Examples of outputs are financial gains, recognition and the achievement of predetermined goals (see Walster et al. 1978). It is assuming that actors seek to maximize outputs, and that a failure to do so brings distress. As such, when actors encounter distress (for instance, when

negotiating with the others), efforts are conducted to restore equity within that relationship.

The theory of equity is only applicable in a social context, as the acceptability of a specific situation or of a specific outcome highly depends on one's assessment of how much input the others have contributed. Equity is measured by comparing one's ratio of inputs and outputs to that of others. Similar ratios manifest equity, whereas actors do not need to contribute equal amounts of inputs in absolute terms, nor do they need to receive equal rewards (see Guerrero et al. 2010). Equity also covers individual capacities in contributing inputs. Distress occurs when one actor sees another actor with similar capacities but lower contributions receiving similar or greater outputs from the common project. More distress arises when non-contributing free-riders harvest common benefits. Distress inevitably leads to actions.

The social component of equity delivers the identification of equity issues as actors constantly compare their actions with those of the others (see Adams 1965; Guerrero et al. 2010). Additional efforts are needed to restore equity in global climate talks, where differentiated inputs are expected among countries—depending on their level of economic development (capability) as well as their historical responsibility—and where benefits and rewards (stabilization of GHG emissions leading to the achievement of 2 °C) are considered global common goods (under conditions of non-exclusivity and yet rivalry) (see Chap. 5).

Actors, when seeking equity in their relationships, establish institutions and mechanisms that "equitably" apportion rewards and sanctions among members (see Walster et al. 1973, 1978) to allow alterations of inputs and outputs in order to restore "actual equity" (Walster et al. 1973, 6). Various issues of equity are embedded in the UNFCCC (1992) as well as in the Kyoto Protocol to ensure that the outcomes of these rigid and tedious compromises will remain robust against future challenges. The principle of common but differentiated responsibility (as highlighted in Article 2 of the convention) recognizes that while all countries should protect the climate system, developed countries should take the lead in combating climate change, because they bear the greater burden of historical responsibility and possess a superior capacity to respond (see Oppenheimer and Petsonk 2005).

Nevertheless, the presence of some forms of equity was quickly abandoned, particularly by developed countries (see Huq and Sokona 2001; Najam et al. 2003; BASIC Experts 2011) raising the question of whether equity can ever be achieved. Doubts become imminent around whether inputs and outputs of countries are in any way commensurable, particularly when the expected output is calculated in relational terms (for example, when dividing the benefits of stabilizing GHG emissions in the atmosphere among all countries). For instance, if the United States would accept legally binding mitigation targets as its input, can it compare this input with that of smaller countries with very low emissions (such as the Fijian Islands or Mali), especially when the preferences for equity between these countries are very different? As the vulnerabilities to climate change are different, the stakes at the negotiation table and the expected liabilities when doing nothing are also different.

While for some countries, it is a matter of ensuring economic competitiveness in a globalized world, for others, it is a matter of national survival and the continued existence of their citizens.

Especially when it is not possible to exclude other big polluters from harvesting benefits (the non-exclusion principle of global common goods), and when emission reductions may even encourage emission growths among developing countries through various forms of leakage effects (Finus 2001; IPCC 2007, 53) undermining just outcomes, equity is only possible under four conditions. These are: 1) **when inputs and outputs are comparable**, 2) **when fair procedures are present when establishing mechanisms for compliance and verification**, 3) **when equitable behavior is more profitable than inequitable behavior**, and 4) **when there is no free-riding to ensure just (and therefore effective) outcomes**.

In addition to looking for insights into how inputs and outputs are comparable, the next step for the analysis of equity is to find strategies to increase negative externalities of free-riding compared to the benefits of doing nothing (or "business as usual"), while ensuring fair procedures and just outcomes. The following section introduces a concept of equitable access to sustainable development, wherein countries realize that non-compliance (or non-equity) is less profitable than compliance.

7.3 Internalizing Externalities in a Power Game: Call for Lock-In Climate Standards

As the secretariat of the UNFCCC and its parties prepare for the upcoming COP meetings, with the intention of putting in place a post-Kyoto emission regime, international experts have been asked to come up with ideas around how the newly agreed principle of "*equitable access to sustainable development*" (EASD), which would be used by parties to guide their climate policies and their preferences in the next negotiation rounds, should be conceptualized in a way that parties can overcome various North-South conflict cleavages without undermining the effectiveness of the outcome in addressing climate change. This research project argues that any principle of equity should fulfill the above mentioned conditions: *commensurability of inputs and outputs, procedural justice (fairness), and profitability of participation through additional negative externalities for free-riding*.

The reconciliation of tension between "*global climate optimum*," and the "*national climate optimum*," is a huge challenge for the global climate talks (see Endres 2008, 350–352). The global climate optimum refers to a situation where the total marginal costs of preventing global temperature change from surpassing 2 °C correspond to the total marginal costs caused by climate damages. The national climate optimum, in contrast, is a situation where the marginal costs of national climate protection measures match the total marginal costs of climate damages in one specific country. Due to the asymmetrical distribution of vulnerabilities to

climate change, as well as the proposed asymmetrical allocation of emission targets dealing with global common goods, formulating global decisions within the global climate optimum remains a huge challenge.

As global decisions are made through a national lens, the national climate optimum dominates the bargaining table, as the paradigm of sovereignty has been locked into the negotiation process. Moving from the national to the global optimum requires, besides the unknown amount of transition costs, an increase in the benefits of committing to a global climate optimum. As climate is a global common good, some national governments are convinced that their total marginal costs for climate protection measures are higher than the total marginal costs of preventing climate damages, not only because they may be less vulnerable, but because they have the capacity to free-ride. As the expected costs of rejecting a contribution for global protection measures are often less than complete participation in the global emission regime, free-riding behavior flourishes. Therefore, a country seeking a global climate optimum expects deterioration of welfare as well as of economic competitiveness, for example through the relocation of high emitting companies to countries with more relaxed climate policies (see Finus 2001). In instances such as these, free-riding is the most rational behavior.

There are already existing propositions to bridge the gap between marginal social costs and marginal private costs (see Barthold 1994; Varian 1994; Farzin 1996). Internalizing negative (and positive) externalities is seen to prevent this free-riding problem by allocating (monetary) values to common goods, through which the attractiveness of doing nothing diminishes. Examples of internalizing externalities include Pigovian tax directed to the actors either causing the externalities or positively affected by externalities, combined with direct and indirect forms of subsidies to actors affected by negative externalities, where subsidies are shouldered by tax revenues. Internalizing externalities primarily aims to increase the marginal private costs and to compensate those shouldering social costs. Other forms of internalization include environmental pricing schemes such as ecotaxes and trading pollution permits.

Nevertheless, internalizing externalities is confronted by various challenges. For instance, it is not always possible to convert externalities to monetary values. When the value of carbon permits is too low, participating actors may be discouraged from changing their behavior, as the internalizing measure may not really increase marginal private costs and polluting may promise more dividends. Internalizing externalities can only be effective if the measures taken would increase marginal private costs to a level that surpasses marginal private benefits under the 'business as usual' scenario, and that they are made to shoulder more marginal social costs.

Another challenge refers to the exact attribution of costs to those actors causing the externalities. Under conditions of complexity (see Chap. 5), externalities may not always be relatable to those actors causing externalities. The attribution of externalities becomes the subject of fairness, justice and equity deliberations when a specific externality is caused by a collectivity within a specific (long) time period, and that this externality is only materialized after a specific number, degree or level has been reached.

For instance, several experts claim that European countries have regularly contributed up to 80 % of the global GHG concentration in the last centuries (Müller 1999; Pachauri and Reisinger 2007). However, when global temperature rise surpasses 2 °C, and the 'tipping point' is reached by additional emissions from developing countries, the damages may be easily attributed to the latter emitting countries. Particularly, when past emissions are considered as sunk costs, there is tendency to over-value present costs and disregard sunk costs in the calculation of marginal private costs. This leads to an imbalance of attribution. Additionally, in order to internalize externalities through legally binding measures, a government, legal framework and legislation must already exist at a global level in order to ensure effectiveness. This is presently not the case.

Because the internalization of externalities has a compensatory character, it may be a subject of political interest, moving it away from an economic to a political paradigm. In contrast to an economic paradigm, where decisions are made according to costs and benefits, political paradigms foster power struggles, which may favor powerful parties. When powerful parties are considered as the "entrepreneurs of externalities", an underestimation of externalities may occur. Further, when powerful parties are considered to be "recipients of externalities," compensatory payments may be overestimated. This power game debars the logic of internalizing externalities, as the matching of marginal private costs with marginal social costs will more than likely be distorted.

Nevertheless, the profitability of free-riding may be diminished by using the insights of path dependence (see Chap. 2). According to path dependence, the adoption of a specific standard becomes more attractive to the participants when alternative standards become more expensive, for instance, through network effects. When the majority of participants adhere to a specific standard, this standard becomes "locked-in" and this is then reflected in other technologies and future decisions. A locked-in standard implies that other (competing) standards become more expensive, for instance, when opportunity costs arise by not adopting the lock-in standard.

In the climate change context, when the majority of countries have adopted climate protection standards, other (high-emission) standards (e.g. business as usual) will eventually be more expensive, particularly when standards related to low emission technologies have been asserted in subsequent technological development. For instance, when adhering to the climate protection standard produces additional and niche markets such as the carbon market, or when this standard leads to the type of technological development in related fields that could not have been reached in a 'business as usual' situation, countries are motivated—if not forced—to rethink their paradigms if they are to prevent further loss in competitiveness. As countries realize that unacceptable opportunity costs are arising and that their economic competitiveness is undermined by missed opportunities, they will be motivated to follow the majority in adopting the climate protection standard. New pressure groups that benefit and support energy policies and that promote climate protection measures may later on outweigh those that hinder climate protection policies. Groups of this kind represent companies in the renewable energy sector,

and forward proposals such as increasing the share of renewables in a country's energy portfolio. With new environmental standards inevitable, governmental agencies and business communities may be more readily prepared to commit to further climate friendly investments. Free-riding becomes irrelevant, as business as usual is translated into diminishing economic competitiveness when the lock-in standard is not adopted. In this case, compliance becomes optimal as non-compliance means unacceptable additional costs and additional economic disadvantages.

A fundamental question then arises: How can most of the countries be motivated to adopt climate protection standards, particularly when adoption causes short-term economic disadvantages as caused by various leakage effects? As path dependence (see Chap. 2) argues, these short term economic disadvantages when adopting new standards are merely transition costs, that is, the costs of changing pathways. For example, leadership can be tapped in order to facilitate this transition when leaders are willing to shoulder short-term transition or switching costs. This is however only feasible when leading countries see long-term benefits under conditions of uncertainty. By anticipating long-term benefits, including economic advantages as "first movers", major countries may be motivated to initiate ambitious policies and investments that only yield rewards in the long-term.

7.4 A Principle of "Equitable Access to Sustainable Development"

After resolving the question of how a specific paradigm or a principle may ensure compliance, the next step involves finding an understanding of the principle "equitable access to sustainable development" that can be locked-in. Resolving equity issues is just one face of the "trinity" of the principle of "equitable access to sustainable development." Besides equity, the principle deals with "access" and "sustainable development" which are, similar to equity, loose concepts with diverging possibilities of understanding and operationalizing. The EASD principle involves various conflict cleavages that are identifiable as moving within the North-South relations (see Chap. 6). The various definitions of sustainable development as well as many divergent interpretations and practical applications (Gibson 2005) make public deliberation necessary. Comprehensively understanding the EASD principle may lead to insights into possible strategies, and to designs for a future climate regime by exploring opportunities created by synergies between equity, procedural fairness (access) and sustainable development.

Relating the EASD principle to the global climate talks moves the focus not only to the fairness of procedures but to the providing the basis for just outcomes. Equitable access builds on the distribution of means that enable actors to use available resources to achieve a specific goal that may or may not correspond with collective goals. As the IPCC Second Assessment Report (SAR) (1995) has

maintained its focus on equity and sustainable development, the report noted that a climate regime cannot be equitable in its structure and implementation if it does not follow a legitimate process that empowers all actors to effectively participate as social peers (see Chap. 6; Fraser 2003). The capacities of weaker parties should also be enhanced through compensatory mechanisms. Access to resources is equitable when individual conditions that inhibit inclusions are identified and remedied in a compensatory manner.

'Sustainable development' is a concept that incorporates the understanding that an optimal (sustainable growth) policy is a policy that seeks to maintain an "acceptable" growth of income without depleting the natural environmental stock (Turner 1988, 12; see Gibson 2005). It asserts that "*development that meets the needs of the present generation* [is possible] *without compromising the ability of future generations to meet their own needs*" (WCED 1987, 43). The analysis looks at how climate protection measures such as GHG emission reduction can produce benefits for sustainable development, particularly when tensions between sustainability and development arise. It also addresses how the link between sustainable development and climate protection can become self-evident (see Jabareen 2006).

The global climate talks have been confronted by developmental concerns of parties when climate and developmental agendas have been merged (UNEP 1992; see African Development Bank 2003; UNDP 2007; World Bank 2010b). Recent calls to decouple emissions from development (UNFCCC 2012) have become prominent as a feasible strategy to resolve some North-South issues. However, insights are still needed how such a decoupling could and should be conducted in a very complex and interdependent system. Further, the classification of developed countries to the Annex list and of the developing countries to the Non-Annex list may have institutionalized the North-South conflict cleavages in the negotiation process. Climate issues, dealing with questions of population (human settlement), (urban) lifestyles and resource demand and consumption (agricultural and industrial production) involve economic and social activities that are confronted by limits on environmental resources (Ehrlich 1968; Meadows et al. 1972; Jackson 2008). Any climate regime that would allocate carbon limits would need to include stringency provisions that would equitably distribute limits among countries.

As Chap. 2 discusses, the drafting of the UNFCCC is part of a process following calls for putting environmental and developmental issues into the political area of international policy making. In 1984, the UN commissioned an independent body, the so-called *World Commission on Environment and Development*, that published a report entitled "Our Common Future" (1987). The deliberation initiated by this commission has been used as the basis for other conferences, including the UN Conference on Environment and Development in Rio de Janeiro in 1992. This "Earth Summit" has resulted in various agreements including the 1992 Rio Declaration on Environment and Development, Agenda 21 and Forest Principles. Complementing these agreements are the three legally binding agreements: The UNFCCC (1992), the Convention to Combat Desertification (1992) and the Convention on Biological Diversity (1992). Subsequent agreements including the UN's Millennium Development Goals (2000) and Outcome document—Future We Want

(2012) reached during the UN Summit "Rio+20" held in Rio de Janeiro in 2012 have secured further political commitment for sustainable development.

While there is more likely a consensus among countries that poverty is a major cause and effect of global environmental problems such as climate change, and that sustainable development is a central concern of both developed and developing countries, national governments still need to define allocation mechanisms. These would allow equitable access to resources and capacities—including carbon emissions in the case of climate change—that enable, maintain and enhance sustainable development. National governments are furthermore uncertain as to how many emission limits are tolerable to guarantee sustainable development. Because climate change poses threats to the ecosystem upon which economic, social and environmental activities of both present and future generations rely, the goals of the UNFCCC, that is, the stabilization of GHG emission concentration that prevents surpassing 2 °C, have become closely linked to the goals of sustainable development. This has led to the coupling of emissions to sustainable development.

As carbon emissions are linked to industrialization and manufacturing, as well as to agricultural outputs (see Stern 2007), setting up a carbon budget that aims to stabilize GHG concentrations is assumed to have negative effects on economic growth, the driving motor of sustainable development. Economic growth is then translated to four main areas. These include: increases per capita income that drives private consumption (Lucas Jr. 1988; Barro 1997; Pokrovskii 2011); modernization processes including enhancement of human and social capital that ensure social cohesiveness (Bourdieu 1983; Becker 1993; Haq 1996; Dasgupta and Serageldin 2000); legitimacy of governance and political structures that ensure political stability (Kooiman 1993; Fisher and Green 2004; Ostrom 2010); and finally technology innovation through investments and financing, which promotes the global competitiveness of individual countries (Jonas 1984; Carraro and Siniscalco 1994). Economic growth is therefore the foundation of human well-being.

In this sense, trade-offs between climate protection strategies and sustainable development goals may lead to grave concerns in distributing emission cuts among countries, as emission reductions may impose limitations on economic growth and development. Equally, reaching the goals of sustainable development may generate co-benefits for climate protection strategies, particularly when enhanced economic capacities may lead to diminishing vulnerabilities or to increasing adaptability to climate change. A principle of EASD should address complex trade-offs co-benefits between climate protection strategies and sustainable development.

Table 7.1 simplifies the distribution of shares and entitlements of GHG emissions. It shows the gap between the share of developed and developing countries in historical emissions (1850–2000). The UNFCCC asserts that emissions should be calculated from the beginning of the Industrial Revolution, something that has been recognized by most participating countries. It confirms that developed countries account for 878 Gt of cumulative global emissions between 1850 and 2008, with 310 Gt considered as their fair share (overuse of 568 Gt) (Khor 2012). This poses a huge challenge for any future emission reduction regime when distributing entitlements for future GHG emissions (2000–2049).

Table 7.1 Analysis of Shares and Entitlements

		Developed countries (Annex)	Developing countries (Non-Annex)	Total
Actors (countries)	Number of countries (percentage to total no. of countries)	41 countries	154 countries [BASIC: 5 countries (3.2 % of all developing countries)]	195
	Percentage to total no. of countries	21	79	100
	Share of population	25 %	75 %	100 %
Issues	Historical emission (1850–2000) in accumulated numbers,[a] in GtC	210	55.44 [BASIC: 27]	265
	Historical emission (1850–2000), contribution in percentage to total concentration	80	20 [BASIC: 50 % of developing countries' historical emissions]	100
	Cumulative global emission per capita (1850–2008)[b]	878 Gt (72 % of total) (fair share with 25 % of global population: 310 Gt)	336 Gt (28 % of total) (fair share with 75 % of global population: 904 Gt)	1,214 Gt
Structures	UNFCCC (legal framework)	Parties	Parties	192 parties (191 countries and 1 regional organization)
	Industry norms and standards on environmental protection	Medium or highly advanced	Low or highly advanced	
Processes	Negotiation mode (bilateral and multilateral)	No clear preference on negotiation mode	General preference on multilateral negotiation mode. Tendency for BASIC to conduct bilateral negotiations	

(continued)

Table 7.1 (continued)

		Developed countries (Annex)	Developing countries (Non-Annex)	Total
	Coordination	Regional organizations (e.g. EU), coalitions (G8, G20)	Regional organizations (ASEAN, MERCOSUR), coalitions (G77 + China; BASIC, AOSIS)	
Outcomes (emission reduction, carbon budget)	Achievement of 67 % probability of limiting temperature rise to within 2 °C (2010–2050)	21 % entitlement: 157.5 Gt 25 % entitlement: 187.5 Gt	79 % entitlement: 790 Gt 75 % entitlement: 562.5 Gt	<750 Gt
	Achievement of 67 % probability of limiting temperature rise to within 2 °C (2010–2050)	21 % entitlement: 126 Gt 25 % entitlement: 150 Gt	79 % entitlement: 474 Gt 75 % entitlement: 450 Gt	<600 Gt
	Cumulative total CO_2 emissions. 2000–2049 (with 25 % probability of exceeding the 2 °C temp. increase limit)[c]	21 % entitlement: 210 Gt 25 % entitlement: 250 Gt	79 % entitlement: 790 Gt 75 % entitlement: 750 Gt	1,000 Gt
	Cumulative total CO_2 emissions. 2000–2049 (with 50 % probability of exceeding the 2 °C temp. increase limit)[d]	21 % entitlement: 302.4 Gt 25 % entitlement: 360 Gt	79 % entitlement: 1,137.6 Gt 75 % entitlement: 1,080 Gt	1,440 Gt
	AWG-KP's wording of the level of its ambition (August 2007)[e]	25–40 % emission reduction below 1990 levels in 2020	"Deviation from baseline"	Emissions peak by 2017–2022 and at least 50 % emission reduction of the 2000 level by 2050

[a]Starting year 1850, excluding historical LULUCF, data source: CAIT (WRI 2009, 2012)
[b]*Source*: Khor (2012)
[c]*Source*: Meinshausen et al. (2009)
[d]*Source*: Meinshausen et al. (2009)
[e]*Source*: den Elzen and Höhne (2008)

The determination of equitable allocation of entitlements in the future carbon budget (2000–2049) between developed and developing countries is not only highly dependent on figures and calculations in the scientific literature, particularly of the IPCC, but is also vulnerable to political conditions. For instance, the identification of 2 °C among possible scenarios (2 °C, 3 °C, and 4 °C) is a political decision which addresses (still) acceptable consequences of climate change with a global temperature rise of 2 °C. The scientific literature notes that there are various probabilities based on not exceeding the 2 °C threshold of GHG concentration. Nevertheless, as political decisions are now oriented towards the principle of equitable access to sustainable development, categories such as historical responsibility, per capita income, and national capabilities are needed to determine entitlements, carbon budget and how efforts/burdens are to be equitably distributed. However, political decisions assume that all countries require the same amount of emissions to achieve industrialization, whereas new technologies tend to produce low emissions, particularly when efficiency is coupled with less energy consumption.

As the table illustrates, entitlements to cumulative total CO_2 emissions (2000–2049) can be equally (in absolute numbers) distributed among countries (the "desert" strategy). However, equality does not always correspond with equity as equality does not always address the individual circumstances that inhibit or promote participation at the decision making process. Allocation of emission rights to countries, as several countries demand, should address the relative share of the country's population in the global population in a given specific base year. This allocation scheme is however rejected by smaller countries with smaller populations. Qatar, Kuwait and Bahrain belong to the five highest per capita emitters as a result of small populations producing high emission commodities for export. Similarly, a number of small-island states rank relatively high, including Trinidad and Tobago, Antigua and Barbuda Singapore, Palau and Nauru (Baumert et al. 2005, 21). Therefore, a formula that focuses on per capita emissions will be unjust as it distorts environmental integrity. Furthermore, entitlements for future emissions as conveyed by the UNFCCC will need to include not only current emissions, but also historical emissions (Grübler and Fujii 1991; Smith 1991). Developing countries are also expected to have large positive entitlements as a result of the negative entitlements of developed countries for the period of 2000–2049 (BASIC Experts 2011). Developed countries are then expected to have negative emissions (baseline 1990), which to date remain politically unacceptable.

Negative entitlements for developed countries remain a highly contested issue as developed countries are not likely to find it equitable that current generations are to be "punished" for the actions of older generations (see Chap. 6). In addition, as negative entitlements for developed countries would mean positive entitlements for developing countries, contra-productive leakage effects may take place, overturning all gains from climate policies and leading to "unjust" outcomes that undermine the environmental integrity of the agreement. In addition to business companies using high emitting technologies, and relocating to (developing) countries with more relaxed climate policies (a leakage effect of 100 %) (see Gerlagh

and Kuik 2007), developing countries may be motivated to increase their use of high emitting fossil fuels (more than the initially intended level) due to falling world prices following more ambitious climate policies in developed countries, thus, further increasing emissions from developing countries (see Endres 2008). In addition, sinking prices for fossil fuels may actually inhibit investment in renewable technologies, delaying the development of more efficient and less costly renewable energy technologies. With such leakage effects, estimated by IPCC (IPCC 2007, 53) to range between 5 and 20 % (with Kyoto Protocol in place), the benefits of ambitious climate policies may be less than the mitigation costs. These are similarly legitimate concerns that need to be addressed.

While developed countries have contributed the most emissions in the past, developing countries are projected to produce most of future emissions, while their per capita emissions are projected to stay below the levels of developed countries (IPCC 2007). In addition, future emissions vary in how they translate to responsibility, as various types of emissions—"survival emissions", "developmental emissions" and "luxury emissions" (Agarwal and Narain 1991; Shue 1993; Rao and Baer 2012)—are to have different meanings, leading to more integrated and comprehensive political assessments. Therefore, the financing of low-emission technologies as well as the means to increase energy efficiency should become priorities for developing countries. The UNFCCC (2007b) estimates that at least $65 billion is needed in additional mitigation investments by 2030 to enable developing countries to maintain their entitlement. In addition to the question of how this considerable amount for investment is to be shouldered (and by whom), additional hidden costs such as transition costs in choosing a low emission technology path may not be bearable for individual developing countries, particularly when a significant amount of financial resources are already needed to cope with the damages brought on by climate change.

Furthermore, measures are also needed to equitably distribute emission rights among developing countries, particularly when the five BASIC countries are expected to contribute the most to the increase of emissions (IPCC 2007). This raises the question of how national conditions are to be considered in any allocation mechanism. While some countries—such as Australia, Canada and China—are highly dependent on certain high emission technologies (including coal and shale gas), others possess natural resources favoring low emission technologies, such as Norway and Russia. Thus, national conditions favoring or hindering low emission technologies should be subjects of allocation calculations.

7.5 Interim Conclusion

That developed countries have consumed four times their equitable share for the entire period of 1850–2049 (see Müller 2001; BASIC Experts 2011) is comprehensible. It is understandable that developing countries demand that historical responsibilities be embedded in any equitable formula when allocating entitlements

to future emissions, particularly when various emission projections suggest that developed countries have already exhausted its "equitable" carbon share. Exhausted carbon share without anticipated negative emissions would mean that developing countries would need to shift its peak of emissions to an earlier period of time, implying shorter development trajectories.

It is however equally understandable that developed countries, although they recognize their historical responsibility, are having difficulty accepting that sacrifices must be made, particularly in a highly competitive global world with several developing countries projected to surpass the economic development level of current developed countries. Present concessions may potentially lead to future unfair advantages for some developing countries. When decision makers derive the legitimacy of their decisions from their national constituents, more efforts are needed to "sell" the idea that although an individual country can only manifest minimal impact (e.g. <0.5 %) on a global scale, this should not prevent countries from pursue global climate protection. Mechanisms are for instance needed to reward "first movers" who are expected to shoulder higher costs as they find themselves at the beginning of the learning curve for low emission technologies.

Historical wrongs are to be corrected, especially when these have contributed to structural imbalances that favors certain countries while undermining the capability of others to genuinely participate in the decision making process. The Indian government claims that the "*over-occupation of the global* [carbon budget by developed countries] *is so severe that most developing countries will not be able to attain their fair entitlement to carbon space*." Nevertheless, opportunities may be found behind corrections of historical wrongs (BASIC Experts 2011). For instance, when compensatory mechanisms are understood as flexibility mechanisms to upgrade one's own emission profile, or when efforts are linked with technological learning, developed countries may be motivated to do more; however, this would only be feasible when free-riding has been excluded as a viable option.

(Low emission) Technology transfers from developed countries to developing countries may lead to a situation of lock-in of standards that promote climate protection, when non-adoption of (low emission) standards becomes unattractive. Global climate negotiations should be complemented by sectoral level bargaining whilst new low emission standards are sought, and the resulting transaction and switching costs should be shouldered by a global climate fund. The UNFCCC and national governments should come up with concrete reward mechanisms for first movers (e.g., the first 50 countries to implement a specific standard).

A "pure" technical formula for distributing emission rights is not possible. The optimal formula can only be the negotiated formula, because the issues involved deal with values and experiences (see Penetrante 2010a). This negotiated formula must be complemented by establishing climate protection standards (irrespective of the outcomes of the current global climate negotiations) that are adopted by the majority of countries to make alternative, ('business as usual'), less-environmentally-friendly standards less profitable. A global climate agreement to regulate emissions will more likely fail when it does not match existing (locked-in) sectoral standards. Accounting for the path dependence of paradigms allows

adequate preparations for paradigm shifts and transitions, while diverging switching or transition costs for individual countries are identified and equitably distributed among actors.

Both developed and developing countries would learn in a cooperative negotiation process to regularly "close one eye" when reaching compromises. Because the benefits of cooperation would in any way surpass the benefits of free-riding, compliance is no longer a matter of goodwill, but of rational calculation. Nevertheless, cooperation is influenced by various learning processes. Cooperation is almost impossible when countries have (bad) narratives that further legitimize zero-sum bargaining positions. New narratives in the public discourse are needed to maintain a cooperative stance between countries. These should be complemented by a "formula-plus" approach, whereas national conditions such as population, per-capita income, and dependency on certain technologies manifest the advantages of the formula. Particularly when structures and processes are generally accepted as fair and when the pursued outcome will not lose its environmental integrity in the maintenance of its just character, it would be easier for countries to focus on common goals, participate as peers in the decision making process and negotiate mutually acceptable decisions.

Part IV
Strategic Facilitation of Global Climate Negotiations: Opportunities and Intervention

Chapter 8
Strategic Facilitation of the Climate Decision Making Process: Leadership and Coordination as Basis for Long-Term Cooperation

"Learning without thought is labor lost; though without learning is perilous" (Confucius)

The complexity of climate change determines not only the pool of possible outcomes, but also limits the number of ways in which outcomes can be achieved (see Chap. 5). The multiplicity of actors, issues, structures, processes and outcomes in the climate change context unleashes self-enforcing political dynamics that debar traditional means of decision-making. As Peter Haas (2008) observes, general models of global decision-making are not likely to work for climate change leading to rather disappointing diplomatic efforts so far. Conventional means of decision-making, such as through leadership and multilateral diplomacy, seems to need a general overhaul, and at worst should be replaced. As the failure to re-assess generically applied decision-making instruments may cause even further problems, new commitments and innovative means of cooperation should be found to push forward the negotiation process.

The climate change context offers a precedence in which solution-making to global problems should always be made dependent of contexts. That is to say, existing decision-making frameworks and response systems should not be merely "recycled" to solve problems in other areas, and should be constantly redesigned to solve problems on a case-by-case basis. By understanding that specific paths taken in the past may effectively promote or inhibit future actions, decision-making is able to take a rather pragmatic approach. While lessons can be learned from other areas such as trade and security, existing conceptual constructs and paradigms should be de-constructed, followed by a re-assessment of the applicability of assumptions, and the validation of interpretations of principles such as justice, fairness and equity. Furthermore, a focused analysis of conflicts and related conflict cleavages is needed to effectively identify stakeholders, interests, and perspectives. One of the problems in global climate talks is that conflict cleavages in others areas are generally assumed to be similarly valid in the climate change context.

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This chapter deals with a prescriptive analysis of global climate talks. It attempts to provide, after identifying the factors inhibiting the decision making process, focused solutions to promote the negotiation process. While it is not the main purpose of this research project to find alternative means of decision-making, providing some insights into how to cope with the introduced types of complexity may actually push forward the negotiation process and may help produce sustainable agreements. As the simulation games have proven (see Chap. 4), the establishment of new mechanisms, the drawing of new actors to the process and the invention of new (institutional) arrangements are not always necessary to address the dynamic nature of the climate problem. In several cases, the international system may already have existing hidden resources and opportunities that they may not be aware of. Solutions may simply involve modifying existing structures to adapt to certain complexities, or giving certain groups of countries a new understanding of their role in the process. The applicability of these resources and opportunities often depends on paradigms. Merely shifting how issues are understood, if complemented by appropriate procedural solutions, may be enough to enable just outcomes.

8.1 Interventions in the Decision-Making Process: Strategic Facilitation as an Analytical Concept

Strategic facilitation, as understood by this research project, involves deliberately planned coordination of various measures to enable states to cope with the complexity of the negotiation process (see Penetrante 2010b; Sjöstedt and Penetrante 2013). Deliberate planning pertains to various deliberative processes of consensual diplomacy between policy-makers, (advocacy) NGOs and the scientific community. Strategic facilitation seeks to create conditions conducive to reaching (and complying with mutually accepted agreements by providing countries the resources necessary to manage and overcome existing conflict cleavages. Often, facilitation involves various forms of third party intervention to enable parties to reach agreements (see Hopmann 1996; see introduction, Sjöstedt and Penetrante 2013). As such this research project identifies existing resources that can be tapped to coordinate actions between actors, to enable actors to adapt to structural conditions, and to empower weaker stakeholders to influence the process as peers in order to come up with just outcomes.

There are various types of external intervention discussed in the literature including mediation, conciliation or arbitration, moderation (also referred to as facilitation), dialogue, and "good offices" (see Moore 1996; Schwartz 2002; Nye 2010; Cede 2009; Saunders 2009). These various means of conflict resolution employ differentiating methods to resolve conflicts between parties, enabling them to reach mutually acceptable agreements. There have been various calls and initiatives to use a conflation of these types of external interventions to bridge the

gaps between countries in global climate negotiations. For instance, mediation, which is a method that involves a neutral third party who manipulates the communication process to enable conflict parties to focus on their interests (Carnevale 1986; Moore 1996; Jacob Bercovitch 2009), is proposed: if not between national governments, then between sectors (e.g., transportation, energy, agriculture) and other non-state stakeholders to climate change.

The concept of strategic facilitation is similar to moderation or facilitation, in which a third party, an individual or an organization, acts as administrator of communication in a concrete negotiation round. Strategic facilitators do not dictate the path of the communication process, but merely deliver information from one side to another. The concept of 'strategic facilitation' leans towards the United Nations' definition of facilitation. The UN refers to a 'facilitator' as an actor that provides any form of assistance—such as providing neutral facilities or transportation—in an effort to assist parties to advance their conflict resolution efforts (Spangler 2003). This "behind-the-scenes" approach enables parties to come up with their own initiatives to reach an agreement with their peers. Alexis Gensberg (2003) has proposed the creation of a corps of United Nations facilitators who as "process managers" could assist conflicting parties through identification of important issues, and enable parties to compromise on those issues of lesser importance while making gains on those of greater magnitude (Gensberg 2003, 80).

Strategic facilitation, however, involves a whole intervention process involving a pool of various actors, structures and coordination processes that are already internal to the conflict cleavages. For example, by shifting paradigms actors may be able to redefine their roles, and an awareness of this would enable them to adapt to the conditions of the negotiation process. Strategic facilitation then involves the identification of the means to shift paradigms, such as, through public deliberation. Joseph Nye (2010) has identified transnational institutions such as the IPCC as being able to develop new narratives by providing scientific knowledge. This allows countries to better understand their own interests, thus enabling them to shift their policies. In this example, deliberation, as conducted by various groups such as (advocacy) NGOs and epistemic communities, is a strategic facilitator and refers to the whole process of the communicative exchange of knowledge. Therefore, strategic facilitation is a process through which actors are empowered to cope with stumbling blocks.

The concept of strategic facilitation adheres to various assumptions (see Sjöstedt and Penetrante 2013). It assumes that there are existing conflict cleavages that if not adequately recognized and managed may effectively inhibit decision-making. Such conflict cleavages are to be taken as evident ramifications of competing interests and perspectives brought on by the multiplicity and multidimensionality of actors, issues, structures, processes, and outcomes. Therefore, conflicts are not to be understood as abnormalities in the system, as these are directly caused by the sociality of the context. Abnormalities are rather those factors preventing parties from managing conflicts. With national conditions such as vulnerabilities and dependence on specific technologies defining interests, countries, especially when claiming values, are often confronted by a zero sum bargaining situation—what one

gets, the other loses. However, as the concept of strategic facilitation further assumes, although there is diversity of interests among countries, reaching an agreement can occasionally be more profitable than accepting the status quo, when a status quo or stalemate hurts the cause (see Zartman 1989, 1994).

In addition, strategic facilitation assumes that the parallel process of emancipating consensual diplomacy is being conducted to define consensual knowledge (see Habermas 1981). Therefore, various communities and groups are encouraged and empowered to participate in several rounds of public deliberation, integrating their behavior into the system and eventually determining the path of the process. It should be clarified that a deliberation does not always need to dictate decisions, as decision-making requires legitimacy through mandating processes, but that decisions tend to be the results of communicative exchanges. Finally, strategic facilitation assumes that actors are the subjects of various learning processes, through which countries are capable of drawing lessons from the past to develop strategies to resolve present and future problems. Strategic facilitation builds on historical narratives in determining what is possible in the future.

Strategic facilitation is intended to have a positive impact on the decision-making process in order to resolve global problems. As the concept of path dependence confirms, resolution measures may have differentiating impacts on the various phases of negotiation (pre-negotiation, initiation, agenda-setting, issue-clarification, formula negotiation, negotiation on details, decision on a final agreement, and post-negotiation) (see Sjöstedt and Penetrante 2013). This means that facilitation requires careful planning and management. As the effectiveness and weight of a given intervention is likely to fluctuate across phases, interventions need some form of coordination.

The following illustrates a non-linear negotiation process, where regressions and errors are equally necessary to modify interventions in the learning process. While concrete agreements achieved in the various episodes are usually seen as proof of successful negotiation rounds, the absence of any agreement is also easily assessed as a failure of the negotiation process. On one hand, some agreements may pave the way for negotiation to proceed to the next phase, on the other, hastily reached agreements or agreements that are subsequently seen as unfair (and will therefore be challenged in the future) may actually inhibit the achievement of just outcomes. In other cases, negotiation rounds that have failed to produce concrete agreements may in the short-term be evaluated as failures. However, these negotiation rounds without agreements may actually lead to the establishment of norms that would more effectively facilitate the decision-making process. For example, the failure of the COP15 to reach a legally binding agreement on mitigation shocked the policy-making and academic community, leading to deeper deliberations and the re-confirmation of the United Nations framework as the appropriate decision-making mechanism for resolving climate issues. In addition, the COP15 has led to the 2 °C target being taken as the consensual goal (see Chap. 2). After this deliberative process, new climate policies and awareness from developing countries have emerged following a ripening process stimulated by COP15.

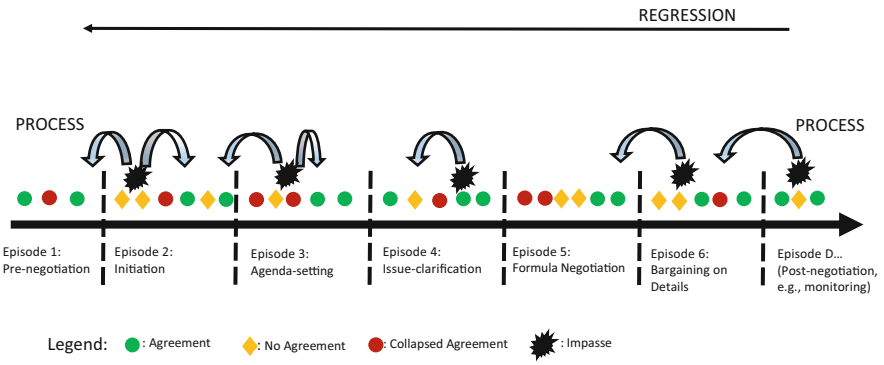

Fig. 8.1 Process outlook on negotiation—episodes and interventions (modified from Penetrante 2010b, 352)

The figure above (Fig. 8.1) depicts the various phases of negotiation in which different intervention measures are needed. For instance, as will be discussed in this chapter, leadership may be highly useful during pre-negotiation, initiation and agenda-setting to reach mini-agreements. However, it may be counter-productive in the next phases, and other measures such as COP chairmanship or third party mediation would be more effective.

The next section pertains to a conventional strategic facilitation process in which relations between actors are guided by leadership. Asymmetries in resources establish hierarchical relations that guide actions among actors. Leadership has been constantly used to orient national governments in determining their climate policies and in their behavior during the global climate negotiations rounds. However, as leadership is subject to the conditions of global bargaining, it may be seen as ineffective and even counter-productive to achieving mutually acceptable outcomes.

8.2 Leadership in Global Climate Talks: Leaders as Losers

Leadership is a functional response to the challenges brought by multilateral negotiations (Tallberg 2010). Multilateralism necessitates that specific means are employed to effectively manage the complexity of the multilateral negotiation process (Touval 1989; Zartman 1994; Crump and Zartman 2003). As it will be discussed in the next section and in Chap. 9, countries are able to cope up with the complexity of multilateralism by employing strategies such as issue-sequencing and coalition-building (Raiffa 1982; Sebenius 1983; Dupont 1994). Other instruments include leadership and chairmanship (see next section).

The concept of leadership has diverse theoretical foundations, particularly in social science (including political science and international relations). Charles P. Kindleberger (1973), a leading historian and economist, argues that leadership is necessary to maintain the stability of the international system. He claims that the lack of a world leader with a dominant economy in the first half of the twentieth century was responsible for the economic depression between the two world wars. Kindleberger, as well as Stephen Krasner (1982, 1983a) are proponents of 'hegemonic stability theory' which suggests that the international system needs a dominant world power or a *hegemon* to lead and enforce the rules of the international system. As the *hegemon* sets the standards to reduce contingencies, it shoulders the transaction and transition costs needed to institutionalize the rules of the process. It also forms institutions and organizations to facilitate switching between transformation pathways, alleviates distributional conflict between parties, and ensures compliance by posing rewards, threats and sanctions.

Other authors have joined discussions about hegemonic stability theory, and focused on the motivation of a powerful state to exercise leadership/hegemony (Gilpin 1981; Keohane 1984, 1986). Assuming that actors rationalize their behavior, they claim that the predictability of actions of states produces stability in the international system. Realists argue that the leader will support the system as long as it serves its own interest. Leadership will eventually cease when advantages are no longer available to the dominant state. Nevertheless, no distinction is usually made between the various areas (economic order, security, and environment) where hegemons can exercise leadership. 'Realism' sees only one international system. On the other hand, neoliberals argue that the *hegemon* has no egoistic interest in providing public goods, as the interests of the dominant actor will likely correspond with the interests of the collectivity under conditions of cooperation (Keohane 1984). The *hegemon* is not always able to abuse its power through the international institutions that it has established. The "neoliberal" leader exercises leadership for the good of the whole system, as its sees its own interests reflected in the collectivity.

Moving from the international system, negotiation scholars have focused their analyses of leadership on how it is relevant to various decision-making processes in solving global problems. Negotiation, as the legitimate tool of reaching global decisions, offers a more functional outlook on leadership without losing sight of the motivations of leaders. While negotiation studies recognize the impact of power when reaching global decisions (Zartman and Rubin 2000), because global decisions undergo consensual and cooperative processes to ensure legitimacy and effectiveness, the most powerful actor is not capable of unilaterally pushing its interests. As well as power, dominant countries need concessions from the others, and the use of force can prove inadequate as an instrument with which to pursue their interests. As such, the interdependence between stronger and weaker states limits the consequences of power asymmetries, which tend to uphold hegemony/leadership.

The asymmetries in resources—including money, information, integrity and credibility, organizational capabilities and technology—define power structures

during negotiation (Zartman and Rubin 2000), leading to a situation where some actors are more able to assume a dominant role than others. 'Leadership' as a concept has been the subject of academic research describing how a specific actor, or a group of actors, can be differentiated according to their capacity to take a more active role and to to craft preferable outcomes at the negotiation table (see O. Young 1989, 1991; Underdahl 1991, 1994; Skodvin and Andresen 2006).

Oran Young provides a definition of leadership that focuses on the intentions of actors assuming leadership. He defines 'leadership' as "the actions of individuals who endeavor to solve or circumvent the collective action problems that plague the efforts of parties seeking to reap joint gains in processes of institutional bargaining" (O. Young 1991, 285). Meanwhile, Arild Underdahl provides a definition of leadership that looks at the differences among actors, and attempts to manage relations among them. He defines leadership as "*an asymmetrical relationship of influence, where one actor guides or directs the behavior of others towards a certain goal over a certain period of time*" (1991, 140).

As Tora Skodvin and Steinar Andresen (2006, 14) note, Underdahl's definition introduces a set of qualifications that identifies leadership. First, leadership assumes that there is a "*relationship between leaders and followers*" (Underdahl 1994, 181). While it is not always essential to define the exact number of leaders, some actors recognize the dominant role of one or a few, particularly when leadership is "*associated with the collective pursuit of some common good or joint purpose*" (Underdahl 1994, 178). With this, rational followers see the liabilities of assuming the role of followers, such as receiving less status than the others, as more attractive than the costs of assuming leadership. Followers choose this role as they see this as the best option available for them to pursue their goals in the process. However, this is only possible, when actors share "*a platform of shared values, interests and beliefs*" (Underdahl 1994, 179), as this gives followers the opportunity to predict the relative losses they will incur in this role. With shared values and interests, it makes little difference whether a specific actor assumes the role of 'leader' or 'follower', as following actors can be assured that any actor assuming leadership will also pursue their common interests (see O. Young 1991, 293).

Arild Underdahl (1991, 1994) and Oran Young (1991, 1998) have classified leadership according to four types: *intellectual, instrument or entrepreneurial, power-based or structural, and directional*. An actor assuming intellectual leadership contributes intellectual capital or ideas that shape the perspectives of those who participate in institutional bargaining (O. Young 1991). Intellectual leaders enjoy legitimacy by having greater access to information than the others. Intellectual capital includes scientific and technological knowledge that may be useful in conducting negotiations. For instance, the United States and the European Union are seen as intellectual leaders in global climate talks. The dominance of US American and European literature in the field of climate change science is partly attributed to the current global academic landscape that tends to favor scientists from these countries. This is further corroborated by the weight of US American and European peer-reviewed journals in the IPCC (see Skodvin 2000).

The instrumental or entrepreneurial leader is able to maximize its dominance by "mastering" the organizational settings and instruments used in the negotiation process, such as through its excellent institutional memory, or its vast bureaucratic resources. This leader assumes control of the negotiation process either by effectively dictating agendas or by identifying issues that need to be resolved. They may also point to opportunities that may resolve problems, or employ effective negotiation skills through which they are able to enhance their dominance during the bargaining process. As Underdahl notes, the main mechanism for entrepreneurial leadership is "*the finding* [of] a *means to achieve common ends*" through political skills or the ability to know which instrument is most effective to reach an agreement (Underdahl 1994, 187).

Power-based or structural leadership depends on the ability of one actor to deploy threats, sanctions and rewards to move the preference of the others closer to that of the dominant actor. A structural leader knows how to employ "sticks and carrots" (Underdahl 1994, 186) to significantly influence the course of the negotiation process. Nevertheless, this type of leadership requires an enormous amount of resources to effectively exercise structural leadership, and one single country is not likely to have these. Particularly in the climate change context, where interdependence between actors is rather high, the costs of assuming structural leadership are seen as much higher than the benefits it promises (e.g. recognition), particularly when future costs remain uncertain or politically unfeasible.

Directional leadership pertains to an actor setting a good example, although the leader may incur additional disadvantages (Underdahl 1991; Gupta and Grubb 2000). The exertion of this leadership is strongly context-dependent, as actors setting good examples expect the others to adopt the standards promulgated by them. They also often anticipate that being the "first mover" will eventually bring long-term advantages (see Sect. 2.2), or that the move will demonstrate the viability of proposed measures, therefore breaking the ice for reluctant actors. Similar to structural leadership, directional leadership requires that an actor is convinced of the viability of the alternative it is suggesting, and that this actor owns a significant amount of resources. This is important not only for absorbing the potential costs of failures, but also for shouldering the short-term transition and transaction costs, especially when new infrastructures are needed to implement the proposed standards.

Hardships during negotiation motivates some actors to assume leadership, as they see themselves as having the appropriate resources to push forward the decision-making process, while simultaneously legitimizing the authority of their position (and the privileges attached to it). These actors, seeing themselves as leaders, are expected by the others to have appropriate resources at their disposal to effectively fulfill their function. Actors may assume leadership not only when the nature of the leader's individual goals correspond with the collective goals, but also when their personal goals differ with those of their followers (Skodvin and Andresen 2006, 15). However, in the latter situation, the goals of the leader should not significantly undermine those of the followers. At the very least, the collective

goals should outweigh the personal goals of the leader so that the leader is able to modify the preferences of the followers and maintain legitimacy.

Countries assume the role of leaders not for altruistic reasons, but because they expect pay-offs in return. On one hand, leaders expect to pursue their interests more effectively through the privileges attached to leadership, thus claiming a larger portion of the values at stake. On the other hand, leaders expect that the marginal costs of leadership, counted as marginal private costs, would be covered by the marginal benefits of any outcome of the negotiation process. Contrary to the claim of Raino Malnes that, although leadership does not "*presuppose self-abnegation and a total disregard of personal purposes*" (Malnes 1995, 94), "*a leader is supposed to look beyond his or her own interests and concerns, to the interests of a wider group, notably his or her followers*" (Malnes 1995, 94). As global climate change negotiations show, the decision to assume leadership must prove profitable, and the benefits of the collective gains must be more than the costs of leadership. As the following discussion shows, because global climate talks require leaders to shoulder more burdens, equitable relationships between leaders and followers are distorted; therefore, some powerful actors are not always willing to assume leadership, at least not in all the phases of negotiations (particularly not in the formula-setting phase).

The political conditions of climate change and how decisions are negotiated involve a situation where leadership is not only expensive, but also brings with it additional burdens that few governments are willing to shoulder (Penetrante 2011, 2012, 2013). Leadership distorts equitable relationships. For example in terms of historical responsibilities, where countries with the best capabilities are expected to sacrifice the most, governments of developed countries need massive political capital to justify a leadership that may require the waiver of claims for equity, particularly in a situation where free-riding remains a profitable option. Sacrificing current economic advantages for the sake of leadership is seen as detrimental in a highly competitive globalized world. Thus, global climate talks are confronted with the withdrawal of (directional) leaders, particularly in mitigation policies, with the intention of shifting resources to adaptation (see Auerswald et al. 2011).

8.2.1 The European Union: The Unchallenged Leader

The European Union as a bloc of countries has usually been nominated to assume leadership in the global climate talks not only because of its existing intellectual and financial capabilities, but also because climate policies have long been the subjects of public deliberation in these countries (Ott and Oberthür 1999; Gupta and Ringuis 2001; Bretherton and Vogler 2006; Elgström 2007; Parker and Karlsson 2010). Independent of global climate agreements, EU countries, following the oil crises in the 1970s, have profited from their past policies of enhancing infrastructures and capacities to reduce their dependence on fossil fuels. The EU's current path is not very far away from the low-emission developmental pathway the bloc is

pushing in the global climate talks; thus, minimal transitions costs are expected. Furthermore, the accession of Eastern European countries, with their "dirty" economies, has provided additional buffers for the EU's overall reduction commitments, enabling the EU as a collective actor to easily meet its reduction commitment of cutting its emissions to 20 % below its 1990 levels by 2020.

The European Union has particularly exerted directional leadership in the negotiation process, that is, by setting up good examples on how to deal with the issue (Gupta and Grubb 2000; Gupta and Ringuis 2001), and by unilaterally committing to climate protection strategies with the expectation that the others will follow (Ott and Oberthür 1999; Groenleer and van Schaik 2007; Parker and Karlsson 2010). EU initiatives include the European Climate Change Programme (ECCP), the EU Emissions Trading System, adopting legislation to raise the share of energy consumption produced by renewable energy sources to 20 % by 2020, as well as increasing energy efficiency by 20 % by 2020 (European Commission 2013). While the directional leadership of the EU may motivate others to adopt these climate protection strategies by determining standards (see Sect. 2.2), the lack of insights into how transition costs are being distributed, especially for those developed countries (e.g. Australia, Canada, United States) and developing countries (China, India, Brazil) that expect the highest transition costs due to their initially chosen high emission development pathways, undermines the effectiveness of this type of leadership.

Several developing countries that have initially chosen high-emission technology paths require funding to enable them to switch technologies, and having received no assurances from the leaders that they will not be left alone with their costs, have refused to follow. Certain existing narratives question the credibility of the European Union's directional leadership. Existing internal conflicts and divisions among EU Member States follow similar conflict cleavages to the North-South divide over long-term climate policies that are seen to hamper economic development, particularly of those countries with economies in transition.

As confirmed by Charles Parker and Christer Karlsson (2010), only four EU member states—Germany, Greece, Sweden and the UK—will meet their Kyoto targets through reductions from existing measures. Most of the EU countries will need to purchase Kyoto units to meet their goals. In addition, several European countries, particularly Germany (with the former GDR), and former members of the Warsaw Pact, which profited from the collapse of their "dirty" economies in the 1990s, are seen as being able to generally meet their reduction commitments through coincidence rather than deliberate efforts (such as reducing GHG emissions by shifts in climate and energy policies representing credible sacrifices) (Christoff 2006, 834–839). Joyeeta Gupta and Lasse Ringuis (2001, 294) claim that the EU's climate leadership is "*losing credibility due to poor implementation*." How can the EU be a credible directional leader, when its good examples are not always attributed to deliberate actions, but rather to coincidentally positive contextual conditions?

The European Union was effective as a leader during the negotiation process, leading to the adoption of the UNFCCC and the Kyoto Protocol. The EU has

exerted a mix of leadership styles during the negotiation process, displaying both 'power-based' and 'structural' leadership (by coercion through rewards and sanctions), and 'instrumental' or 'entrepreneurial' leadership (by bringing in ideas on the agenda). Sebastian Oberthür and Claire Roche Kelly (2008, 37) characterize the EU's leadership as one that follows a "soft" strategy. While relying on its structural weight, the EU has mainly applied directional leadership by setting examples for the others. Setting good examples may also prove coercive when such examples become standards, and the non-adoption of these causes unacceptable disadvantages (see Sect. 2.2).

The EU was successful in integrating climate policies and environmental standards as conditions of EU membership, motivating countries classified as economies in transition (EIT) to follow the leadership of the EU-15. The applications of Poland and other Eastern European countries to join the European Union was considered to suggest that "*environmental issues have been at the forefront of the negotiations between the European Union and the applicant countries*" (Danish Environmental Protection Agency 2001). Expecting positive externalities and co-benefits, Poland and other East European countries have incorporated EU standards in their own environmental legislation, although their obligations may not always reflect domestic priorities. Stanislaw Zelichowski, a former Polish Environmental Minister and now member of the Polish *Sjem*, highlights that adopting EU environmental standards could "*bring about essential political benefits to Poland in the context of European integration*" (Polish Press Agency (PAP) 2002).

Furthermore, the EU was able to change the preferences of other powerful countries by offering package deals through diplomacy. The EU is described as having been able to purchase Russian ratification of the Kyoto Protocol by dropping its veto against Russia's WTO membership following disputes about the government's subsidies to its national gas exporters and import-competing industries, which allowed domestic gas prices to stay below world market levels (see McLean and Stone 2012, 109). In addition, this has led to environmental issues coming to the attention of the Russian national government and legislation bodies, paving way for other climate-related policies (see Bashmakov 2009).

In addition, EU environmental standards have placed pressure on other countries and sectors to adopt similar standards. For instance, the EU passed a law in November 2008 that expanded its Emission Trading Scheme by establishing a scheme that charges for carbon emissions from flights in and out of Europe. This led to changes in the standards of flight carriers from other countries. While China has barred its airlines from joining this EU scheme (Buckley 2012), increasing environmental aviation standards that are both environmentally-friendly and beneficial to the development of the civil aviation sector, especially in developing countries such as China, has been a main issue in the annual meetings of the International Civil Aviation Organization (ICAO) (see Li 2013). Climate protection strategies have been included on agendas in various sectoral or governmental meetings of Non-EU countries and sectors, maintaining close economic and cultural ties with EU countries. These non-EU countries and sectors have become

thereafter more open to adopting comparable environmental standards, as they are increasingly witnessing deliberative processes within their own territories and jurisdictions.

The failure of the COP15 meeting in Copenhagen to come up with a legally binding scheme for emission reduction after the Kyoto Protocol expires has called into question the effectiveness of the EU's leadership. With domestic problems such as the financial crisis, individual EU member countries were not always keen to push a global deal that would again allow developing countries with emerging economies to free-ride. Nevertheless, the EU still sees itself pursuing leadership by being at the forefront of efforts to combat climate change (Wallström 2008). The EU continues to be seen as a directional leader after the COP15 meeting (see Kilian and Elgström 2010; Verolme 2012), particularly during the Durban COP meeting, where conditions were set for a more acceptable climate mitigation scheme.

As no credible, alternative leader is currently at sight, the EU's position as leader is not contested, particularly because other developed countries such as the United States, Canada, Japan and Australia are struggling with domestic constraints preventing them from effectively assuming directional leadership (see Soytas et al. 2007; Sovacool 2009; The Australian 2009; NETL 2010; Nelson et al. 2012). The withdrawal of the United States from the Kyoto Protocol negotiation process provided the EU enough space to exercise leadership (see Falkner 2007, 512; Vogler and Stephan 2007, 410). Meanwhile, other "heavy weight" developing countries such as China and India, focusing on developmental rights, do not only have goals that are partly incompatible with the collective environmental goals, but also cannot credibly provide the necessary resources to set up an effective climate mitigation regime. Nevertheless, BASIC countries are active in identifying important developmental issues for the agenda, the resolution of which would significantly contribute to the robustness of any future outcome.

8.3 COP Presidency: The Power of the Chair in the Global Climate Talks

The simulation games demonstrated the dilemmas confronting the COP president when taking the role of 'formal chair' of the negotiation meetings (see Chap. 4; Penetrante 2012). 'Chairs', also referred to as presiding officers, play a central role in global negotiations (Depledge 2005). The chairs function as "process managers" by identifying the agenda, collecting and prioritizing issues, arraying positions and interests, encouraging parties to brainstorm solutions, brokering agreements, and representing the negotiation body to the outside world (see Mintzer and Leonard 1994; Tallberg 2004, 2010; Yamin and Depledge 2004; Odell 2005).

The presidency (chairmanship) in the global climate negotiations is composed of three layers: the *President of the COP,* the *Chairs of the Subsidiary Body for Scientific and Technological Advice* (SBSTA) and the *Subsidiary Body for*

Table 8.1 List of past COP presidents

Dates	Venue	President	Country	UN region
28 March–7 April 1995	Berlin	Angela Merkel, Minister of Environment	Germany	Western Europe and Others Group
8–19 July 1996	Geneva	Mr. Chen Chimutengwende, Minister for Information, Posts and Telecommunications of Zimbabwe	Zimbabwe	Africa
1–11 December 1997	Kyoto	Hiroshi Ohki, Minister of Environment	Japan	Asia-Pacific
2–14 November 1998	Buenos Aires	Maria Julia Alsogaray, Argentina's Minister for Natural Resources and Sustainable Development	Argentina	Latin America and the Caribbean
25 October–5 November 1999	Bonn	Jan Szyszko, Minister of Environment	Poland	Central and Eastern Europe
13–24 November 2000	The Hague	Jan Pronk, Minister of Housing, Spatial Planning and Environment	Netherlands	Western Europe and Others Group
Part II, 13–27 July 2001	Bonn	Jan Pronk, Minister of Housing, Spatial Planning and Environment	Netherlands	Western Europe and Others Group
29 October–9 November 2001	Marrakesh	Mohamed El Yazghi, Minister of Spatial Planning, Urban Managing, Housing and Environment	Morocco	Africa
23 October–1 November 2002	New Delhi	Shri T. R. Baalu, Minister for Environment and Forests	India	Asia-Pacific
1–12 December 2003	Milan	Miklós Persányi, Minister for Environment and Water	Hungary	Central and Eastern Europe
6–17 December 2004	Buenos Aires	Ginés Gonzáles García, Minister of Health and Environment minister	Argentina	Latin America and the Caribbean
28 November–9 December 2005	Montreal	Stepháne Dion, Minister of Environment	Canada	Western Europe and Others Group
6–17 November 2006	Nairobi	Kivutha Kibwana, Minister of Environment	Kenya	Africa
3–15 December 2007	Bali	Rachmat Witoelar, State Minister of Environment	Indonesia	Asia-Pacific
1–12 December 2008	Poznan	Maciej Nowicki, Minister of Environment	Poland	Central and Eastern Europe

(continued)

Table 8.1 (continued)

Dates	Venue	President	Country	UN region
7–18 December 2009	Copenhagen	Lykke Friis, Minister for Climate and Energy	Denmark	Western Europe and Others Group
29 November–10 December 2010	Cancun	Patricia Espinosa Cantellano, Secretary of Foreign Affairs	Mexico	Latin America and the Caribbean
28 November–9 December 2011	Durban	Maite Nkoana-Mashabane, South African Minister of International Relations and Cooperation	South Africa	Africa
26 November–7 December 2012	Doha	Mr. Abdullah bin Hamad Al-Attiyah, Chairman of the Qatar Administrative Control and Transparency Authority	Qatar	Asia-Pacific

Implementation (SBI). These chairs are further supported by the chairs of informal groups, and the chairs of coalition groups such as the G77 and China. Following the common practice in the UN and rule 22, paragraph 1 of the draft rules of procedures being applied, the office of the President of the COP (linked with the venue of the meeting) is subject to rotation among the five regional groups. Table 8.1 enlists past COP Presidents. The President of the COP coordinates with the subsidiary body chairs of the SBSTA and SBI as well as with the chairs of informal groups in negotiating specific issues. As Joanna Depledge (2005, 39) notes, the subsidiary body chairs usually seek regional balance among informal group chairs by appointing co-chairs for contact groups, one each from Annex I and another from non-Annex I.

Chairs are vested with formal powers derived from the organization, that is, a specific position within the organization allowing certain actors to receive privileges and to effectively administer the negotiation process. Actors assuming the role of chair are given access to organizational and technical support from international secretariats. In addition, countries chairing the negotiation meetings have more access to information, as it is common practice among countries to share information about their individual preferences with negotiation chairs to enable them to match various proposals. The privileges attached to chairmanship is accepted or tolerated by negotiating parties, because they expect the chair using these privileges to construct concessions under conditions set by overlapping proposals as conveyed to the chair. In almost all negotiation meetings, the chair is expected to formulate negotiating texts or drafts of agreements to facilitate the whole negotiation process (Antrim and Sebenius 1992).

The simulation games have confirmed that because of the privileges of the COP president/chair, the country assuming chairmanship receives rigid scrutiny of its performance (Penetrante 2012). For instance, knowing that Denmark (as COP chair) has its own vested interests during negotiations, initiatives to present draft agreements are easily negatively interpreted. In addition, chairmanship may be seen as increasing the power of certain groups in the negotiation process, especially through the common practice of establishing the "friends of the chair." For instance, Denmark, as an EU member country, is often seen as a problematic choice for chair, particularly because the EU has already assumed directional leadership in the negotiations. It raises the question of whether "neutral" countries such as Austria and Switzerland, or other Non-Aligned Movement member countries, should be nominated to assume chairmanship in such international climate negotiations. Another possibility is to find non-state actors to serve as COP presidents, or to completely rely on the UNFCCC as chair.

The negotiation games have shown that COP presidents may be perceived as being partly responsible for the failure of negotiations, no matter what strategy or approach the presiding country chooses to adopt (Penetrante 2012). In the various games, Denmark, depending on the instruction and on the personality of the persons representing the country, was either passive or active/manipulative. In some cases, the chair was passive and took a decidedly "behind the scenes" approach, allowing directional leaders and other coalitions to dictate how the negotiation process should unfold. Passive chairs confined their role largely to ceremonial duties. In other cases, the chair was manipulative and active in giving structure to the negotiation process. They took control over the organizational settings, for example by experimenting with new procedures and practices (Depledge 2005, 44) or by intervening when countries surpassed the speaking time allotted to them or departed from the agenda. In some cases, the chair functioned as mediator or as a shuttle diplomat, by conveying the interests of one group to the other. Interestingly, the chairs in all the test groups were always held partly responsible for the failure to reach binding agreements. Nevertheless, in conditions where leaders are absent from the process, the chair's initiatives may be highly appreciated (Penetrante 2012).

Chairs, when preparing for their tasks, tend to express expectations of possible outcomes. Before the COP15 negotiations, Denmark had expected that a final agreement would be in place before the end of the meeting, which led to flexibility in managing the process. Concrete expectations were voiced by Denmark months before the meeting, following the change of administration in the United States and a willingness expressed by China to constructively participate in the negotiations. However, the lack of progress in the pre-COP15 talks in Bangkok in September/October and in Barcelona in November, and the delays of U.S. legislators in passing a climate bill, as well as the failure of the November APEC meeting to produce a statement on climate issues, created the impression that the high expectations of the Danish chair would no longer be met. The APEC meeting confirmed Denmark's worst case scenario, that is, a mere political framework would be the only possible outcome of the COP meeting (Chan 2009).

As described above, chairs are usually expected to propose draft language on a single issue or even a single phrase in the agreement. The COP President and various other chairs may introduce substantive proposals on their own authority when they think that this may enhance the forging of agreements (Depledge 2005, 44). Nevertheless, this privilege was seen as highly problematic under the conditions of the North-South divide. After 'The Guardian' reported on the leaked, secret "Danish text," Denmark's credibility was damaged, particularly when it became known that this text was purportedly drawn up by some of the developed countries, which aimed to pass effective control of climate change finance to the World Bank. They also intended to abandon the Kyoto Protocol, as it was interpreted that grants of money to help poor countries adapt to climate change would be dependent on those countries taking a range of specified mitigation actions (The Guardian 2009; see Whiteman 2010). Even though chairs are usually permitted to draft texts, in the context of the distrust between developed and developing countries this privilege was questioned. The process was further delayed when developing countries walked out on December 14 (The Guardian 2009).

In general, as global climate talks employ a vast number of actors, issues and processes, leadership is essential. However, because of the complexity of the issues involved (e.g. global common goods, leakage effects), leadership needs to be complemented by effective chairmanship, allowing leaders to focus on substantial issues, rather than squandering their attention on organizational and procedural issues. Delegating some administrative powers to the chairs may allow a more interest-based negotiation process, and solve specific bargaining problems (Tallberg 2010, 242). Given the capacity to affect decision-making, chairs can strategically facilitate the negotiation process by identifying stumbling blocks to achieving agreements.

8.4 Threshold States as Coordination Pivots

With the complexity of climate change and the processes chosen to lead to the effective resolution of climate change problems, leadership and chairmanship, as a means to facilitate the decision-making process, are confronted with various difficulties calling for complementary measures. Interestingly, the negotiation games saw individual countries other than the chair and the major players emerging as effective facilitators. Although these countries did not formally see themselves as mediators or facilitators, because of their membership to multiple coalitions that move beyond the North-South divide, they acted as bridges between interests (Penetrante 2012).

In almost all the test groups, participants representing threshold states formed the core of an invincible cross-cutting coalition without their role profile directly instructing them to do so. Representatives from South Korea (IIASA in 2009, Lviv), Mexico (IIASA in 2010), Singapore (test group 2, De la Salle), and Hungary (Cologne in 2012) acted to bridge interests between developed and developing

countries, seeing themselves as more capable than certain directional leaders and chairpersons. The results of these games (see Chap. 4) suggest that representatives of these so-called "threshold states" such as South Korea, Singapore, Mexico and Malaysia may actually serve as credible facilitators. A threshold country connotes a developing country that is either on the threshold of meeting the Millennium Development Goals (GNESD 2007), or has recently passed the threshold. Two of the Non-Annex countries, namely South Korea and Mexico are already members of the OECD, which is traditionally seen as a "club" of developed countries. Other Non-Annex countries such as Indonesia, China, Brazil, South Africa and Argentina are part of the G-20, the group of the 20 leading industrialized countries.

Threshold countries share values, interests and norms with a multiple of groups representing multiple interests that transcend the North-South divide. As they cannot be clearly classified as 'developed' or as 'developing', their actions tend to be outside the scrutiny of contestation. Threshold countries can be developing countries with a high per capita income, or developed countries that have just recently reached this status and still share values with developing countries. Threshold states do not belong to the BASIC group. Their relative weakness during negotiations may prevent other countries from seeing them as threats or prevent themselves from having extreme positions at the bargaining table (Penetrante 2012).

As an example of a threshold country, South Korea has adopted climate standards comparable to those of the EU, while still maintaining sympathy with the concerns of developing countries. South Korea, although a non-Annex country to the Kyoto Protocol, has recognized opportunities behind climate protection measures such as carbon trading. The South Korean authorities have initiated several legislative measures to institutionalize carbon trading in South Korea (Presidential Committee on Green Growth 2012). In addition, the South Korean government has been pushing to enact the Emissions Trade Scheme (ETS) to achieve its (non-binding) 2020 goal to reduce GHG emissions by 30 % compared to that of the 2009 'business-as-usual' scenario. In 2010, the Framework Act on Low Carbon and Green Growth, which is regarded as the legislative basis for the ETS, came into force (Byun 2010). In addition, South Korea hosted the 2012 Pre-COP Ministerial Meeting on Climate Change ("Pre-COP18") from October 21 to 23, to provide more space for productive discussions between countries. At an international level, South Korea has been increasingly visible in recent environmental negotiations such as the Rio+20 Summit, where South Korea served as co-chair and was charged with the task of helping negotiating parties come up with compromises (Lee et al. 2012).

As membership to coalitions is a product of political calculations (Dupont 1994; Watkins and Rosegrant 2001) addressing various identity-building processes (Jenkins 1996; Penetrante 2010a), threshold states may identify themselves with the position of developing countries while being expected by others to rally behind the positions of developed countries. For instance, while Poland, Czech Republic, Hungary and other Eastern European countries are formally members of the European Union, they share similar concerns with developing countries,

particularly those related to the developmental issues behind climate change mitigation policies. The "in-between-ness" of these threshold states may at first evoke frustration among peers who see their expectations around the behavior of threshold states unfulfilled. This frustration is however a direct result of one's interest not being shared by a supposed peer. This frustration is rather short-term, as these threshold states may prove to be otherwise politically useful. For example, developed countries need additional channels to communicate with those developing countries with more extreme positions (Penetrante 2010a, 2012).

The following Fig. 8.2 illustrates how threshold states (TS) enhance cooperation between developed and developing countries. Threshold countries offer additional communicative resources in the negotiation process. Nevertheless, threshold countries, like leaders and *hegemons*, do not facilitate for altruistic reasons, but because facilitation offers them resources to reconcile their own inner conflicts. They are confronted by negative externalities from both sides. For instance, a specific threshold state may articulate its self-identification as a developed country to ensure social cohesion and legitimacy in domestic authority structures. However, their behavior during global climate talks, including rejecting the sorts of responsibilities that a developed country is obliged to take, may not fit with their self-identities. In addition, although classified as 'developed', a specific threshold country may seek time-allowances or exemptions to the standards required of developed countries. With this 'in-between-ness', threshold countries are able to relate to the concerns of both developed and developing countries.

Threshold countries are able to limit the "negative externalities" that they receive. They are confronted by transition costs as they switch paths (see Chap. 2). In a situation without threshold countries, developed countries may reach decisions that would have negative effects on developing countries (Penetrante 2010a, 2012). In the same manner, developing countries may equally reach decisions (or decide not to do anything) that may pose negative consequences to developed countries. Negative externalities are usually solved through the internalization of costs. However, as externalities cannot be clearly attributed to a specific country (see Chap. 5), it is not always possible for countries causing the negative effects to completely understand why these externalities should be resolved, or why they are held responsible. Particularly in situations where compensatory mechanisms are required to internalize externalities, political concerns tend to outweigh equity considerations.

As threshold countries are in both cases affected by negative externalities (developed to developing—developing to developed countries), the situation arises that "cross-negative-externalities" at last find a negotiating voice. Threshold countries internalize cross-negative-externalities in making climate decisions. Preferences and decisions can be holistically communicated to the various sides. This new negotiating voice may lead to the formation of a "grand coalition" (Penetrante 2010a), in which threshold countries function as the core.

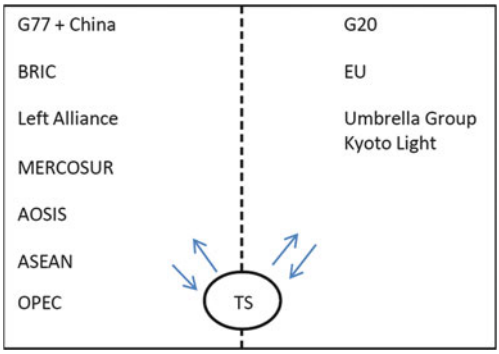

Fig. 8.2 The north-south relations and the threshold states

8.5 Interim Conclusion: Strategic Facilitation of the Process Under Complexity

Strategic facilitation allows coping with the complexity of global climate change negotiations by providing coordination and communication services during interaction and when participating in the negotiation process. Interventions into the process in the international system can only come from within, as non-state actors are usually not seen as capable of hosting large-scale and complex international negotiations with more than 190 participating countries. Interventions are also held dependent on legitimization processes that non-state actors cannot hold. Leaders emerge from this context to use power asymmetries as guidance for which actor should assume leadership. Nevertheless, the climate change context employs other logics, whereas leadership incurs unacceptable liabilities that not all potential leaders are willing to shoulder, or are even capable of shouldering. Leadership in global climate talks may create incremental legitimacy deficiencies at a domestic level, as its leaders are expected to waive various equity claims. The lack of consensus on how climate costs are to be distributed inhibits leadership, as leaders are not altruistic actors. In addition, while incentives for followers may be available, sanctions are not always effective as the benefits of free-riding may surpass the costs of these sanctions.

Negotiations are usually managed by an international secretariat and chairs. While chairmanship may be effective in innovatively pushing forward the negotiation process, it is not only limited to organizational and procedural issues. Deviations between chairmanship styles also limit the predictability of chairmanship. Furthermore, as chairmanship is rather short-lived and follows rotational procedures, chairs are not always able to forge long-term goals, especially in situations where long-term solutions are required after careful planning efforts.

As the negotiation process calls for identity-based facilitation to understand gaps in expectations, alternatives to leadership and chairmanship are sought. This is where facilitation by threshold countries becomes useful. Although not yet formally

identified, facilitation through these countries is already complementing the negotiation process. Threshold countries, with mixed identities and cross-externalities, are more than willing to facilitate between countries, not only to fulfill collective goals, but because facilitation allows threshold states to decrease their own transition costs as more countries overcome the North-South divide and adopt the standards in the envisaged path. By tapping the potential of threshold states, opportunities arise to empower actors to move beyond the North-South divide.

Chapter 9
Managing the Bargaining Table Through Flexibility Mechanisms: The Benefits of Coalitions and Sequencing

"Our greatest glory is not in never falling, but in getting up every time we do" (Confucius)

Progress in global climate change negotiations is inhibited by complicated and diffuse conflict between paradigms (expressed through norms and institutions), and self-enforcing dynamic processes. Paradigms that aim to maintain structure in the relations between actors become subjects for modifications or replacement as dynamic processes unfold, leading to tensions when negotiating decisions. As this research project argues, managing bargaining during global climate talks is conditioned by strategies to make static paradigms and dynamic processes mutually tolerable when not compatible, particularly because both paradigms and dynamic processes contribute to the robust stability of the system. Both the ability to adapt to new dynamics and the capacity to reduce contingencies through norms and institutions constantly exposes actors to complex learning processes when making decisions. Negotiators, frustrated with tedious and time-consuming decision-making—for example during single negotiation rounds—seek both general and mini-agreements, including framework agreements, and implement plans that intend to provide structures to the social relations and frameworks of future decisions. Nevertheless, by the time decisions are made, new political dynamics often arise that challenge reached outcomes, forcing the negotiation process to start anew and increasing frustration during negotiation.

The participation in the negotiation process produces self-enforcing co-benefits that may empower actors to effectively address various types of complexity. Unknowingly, actors are bestowed with resources that need to be discovered as the negotiation process unfolds. Often, they fail to use these resources because of various cognitive restraints: "paralyzed" actors fail to 'think out of a black box' (see the discussion on path dependence and paradigms in Chaps. 2 and 7). As such, the opportunities hidden behind the negotiation process require certain shifts or modifications in how actors understand their role, how they identify, acknowledge and interpret issues, how they recognize their peers, how they move within a structure,

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how they welcome or reject the diversity of processes involved and how they reject and comply with agreements. Harvesting the co-benefits of negotiation requires paradigm shifts.

After understanding how decision making is complicated by path dependence, policy-makers, negotiators and the *academe* can formulate strategies to adopt a specific standard without unnecessarily combining it with enormous future transition costs. Flexibility measures are necessary to address the current transition costs of switching from high-emission to low-emission technology paths without excluding other paths which may be discovered in the future. As will be discussed in this chapter, this is particularly important in global climate talks, where uncertainty demands openness to potential future technologies, and where countries are confronted with diverging national conditions.

The simulation games (see Chap. 4) have provided insights into the conflicts between paradigms and dynamics. The games provided some conceptual ideas around how to manage such conflicts by introducing flexibility mechanisms to enhance exchanges of concessions among parties. Flexibility mechanisms are substantial and concrete solution-oriented measures conducted by parties to meet the problems produced by various dilemmas. Conceptualizing flexibility measures as suggested by these games enables finding approaches that focus on solutions. Interestingly, "flexibility" has been the subject of academic literature in Organizational and Management Science, when looking for ways to optimize planning and implementation of decisions under the conditions of uncertainty and complexity.

As summarized by a cross-disciplinary review conducted by John Evans (1991), flexibility is understood as a desirable property or goal that enhances the generation and implementation of solutions. Flexibility mechanisms are solutions that allow actors to reach their goals. Therefore, creating flexible mechanisms requires prior knowledge of goals and feasible procedures, knowledge that may not always available. It requires a comprehensive assessment of national conditions after extensive public deliberation. In this manner, flexibility is only explicable through contextualization, including an analysis of each actor's path dependence. Moreover, flexibility must be conceptualized in a social context as it may be perceived as undermining the economic advantages of the other parties in the highly globalized marketplace.

In addition, flexibility is anticipatory as it assumes that upcoming hindrances will inhibit the achievement of goals, and that traditional modes of goal attainment are not enough. Flexibility mechanisms assume that conventional sets of choices are limited and ineffective in hosting or facilitating the trade-offs needed to bridge interests between parties. Furthermore, using another perspective, flexibility requires a sequencing of decisions in various stages (Zelenovic 1982; Schneeweiss and Kühn 1990; Hobbs et al. 1994), whereas flexibility mechanisms are applied as late as the second stage, as decision-making becomes significantly constrained in the first stage, leading to a consciousness that flexibility mechanisms are inevitable. Flexibility is therefore a contextual and strategic facilitation of decision-making.

The literature is rich in examples of various ways to understand flexibility. For instance, in banking and finance, flexibility—understood as the notion of

'liquidity'—allows an easy transformation of assets into cash, helping financial institutions make spontaneous investments or to shoulder the costs of unanticipated shocks (see Carlsson 1989; Ku 1995). In business, flexibility is as important as quality and low costs in ensuring market competitiveness, as companies need to identifying market niches quickly and adapt to changing consumption patterns accordingly (see Carlsson 1989; Chandra and Tombak 1992). Furthermore, increased productivity is seen as a direct result of flexible working practices and arrangements, including mobile desk space (see Regus 2012). In labor management, flexibility may mean increased mobility and the use of flexible hours and flexible working practices to attract a wider talent pool, retain highly skilled staff members or to support specific social policies such as reconciling family support with professional career paths (see Pollert 1991; Regus 2012). In psychology, flexibility, is also referred to as 'resilience', and pertains to an individual's capability to cope with stress and adversity through appropriate preparations, including anger management and the enhancement of conflict management skills (see Rutter 2008; Masten 2009). In an environmental context, flexibility, also often used interchangeably with 'resilience', is needed to ensure a functional balance in the ecological system following changes in environmental conditions and other shocks that stress the system (see Holling 1973; Zelenovic 1982). Environmental flexibility develops ways to ensure that the environment is able to recover and re-establish balances. In a climate change context (primarily mitigation), flexibility is understood in terms of strategies such as the Flexibility Mechanisms of the Kyoto Protocol and the inclusion of carbon sinks in policy frameworks to enable governments to meet their emissions reduction targets at the lowest cost to themselves (see Markandya and Halsnaes 2001, 455; Toth et al. 2001, 660). Therefore, flexibility mechanisms in concrete terms are seen as alternative means of expanding participation, thus promoting legitimacy. In general, flexibility provides actors with the ability to deal with all forms of turbulence or uncertainty in a given environment (see Carlsson 1989).

Flexibility mechanisms employ the selection of specific resources that may enable actors to easily and effectively adapt to new arising circumstances (see Hirst 1990; CIGRE 1991; Verter and Dincer 1992). This selection of specific resources, however, requires that problematic conditions are identified beforehand (see Chap. 5). Nevertheless, it should be noted that 'adaptation' simply means that the system yields to pressure or changes triggered by a shift in environmental conditions (Ku 1995) in order to avoid collapse. It pertains to the susceptibility of actors to modify or alter their behavior during the decision-making process through the availability of alternatives or the breadth of choice surrounding a decision (Merkhofer 1977; Toth et al. 2001). It also involves enhancing the capacity of actors or of systems to adapt to new situations through bodies and institutions that produce early warning and immediate response measures. Flexibility is therefore a necessary condition in dealing with dynamics.

The following sections introduce various types of flexibility mechanisms that have evolved as the global climate change negotiation process unfolds. Interestingly, these flexibility mechanisms have surfaced only through the course of

negotiation. It proves that only in the course of negotiations where interests and perspectives are exchanged among actors can solution-oriented approaches for forging flexibility measures be identified.

9.1 Actor Flexibility Mechanisms: Capacity Building Through Coalitions and Engagement

The participants of the simulation games identified that their lack of technical knowledge and expertise about various climate change issues may have prevented them from committing to specific decisions (see Chap. 4; Penetrante 2012). This asymmetry in technical knowledge has produced a degree of intellectual leadership among actors with a higher level of information, including technical expertise and institutional memory. This asymmetry may have led to the situation where interactions between parties are enhanced, particularly because some countries have diverging areas of knowledge. For instance, countries affected by sea-level rise tend to have more technical knowledge on scientific issues that affect this area, while countries with emerging economies tend to have more knowledge on mitigation technologies. Because of this asymmetry in technical expertise, exchanges on scientific and technical knowledge are necessary. Various countries inevitably engage in knowledge diplomacy, leading to other synergies which may further enhance future cooperation.

However, as the simulations games show, countries tend to prefer exchanges only with countries that have similar bargaining positions and interests because of the 'negotiator's dilemma' (see Chap. 5). Fearing that revealing particular information may lessen their bargaining power in the course of the negotiation process, countries are often rather reluctant to share information with the other participants (see Raiffa 1982; Lax and Sebenius 1986). Nevertheless, countries are aware of the need to gain more information and this is only possible when they are in return willing to share the information that they have. As such, without undermining their bargaining power, countries exchange information within coalitions, as coalition members are perceived as pursuing similar interests. Therefore, it can be argued that coalitions offer additional resources to cope up with negotiator's dilemma while at the same time bridging their own knowledge gaps.

In the simulation games, while coalitions were generally predetermined by the game master, countries were free to seek information exchange with other countries outside their coalition. In many cases, individual countries chose to seek information from countries of other coalitions. This is most common when other participants, regardless of coalition membership, have proven highly knowledgeable in the issues involved. The simulation games nevertheless vindicated that one country cannot have all the necessary information, and that coalitions were needed to fill up knowledge gaps and to increase bargaining leverage during the negotiations. Without coalitions, individual countries need to know all the issues at the

negotiation table. They must also send technically knowledgeable diplomats to all parallel meetings, which would further strain their financial and personnel capabilities. Coalitions are used to gather and exchange information, to coordinate the distribution of knowledge among members (who should get information x without reducing their bargaining power) and to present a coordinated position to the outside world. Although most of the countries have prioritized issues beforehand, they were still keen to gain information about issues they have not prioritized, because it may still prove useful to the formulation of strategies. Coalition building is thus a capacity-building mechanism, especially for developing countries (Penetrante 2013).

Furthermore, as the games have shown, coalitions need to engage countries with more extreme positions in the decision-making process. As these countries, if not embedded in the decision-making process, are potential '*bad faith*' negotiators if not outright 'spoilers'. Engaging them through inter-coalition discussions may actually moderate some of these parties' more extreme positions. 'Bad faith' negotiating refers to negotiating for reasons other than finding consensus, such as trying to gain time in order to re-group resources. Assuming that extreme positions are equally legitimate as long as extreme positioning is not a tactic of bad faith negotiating, identifying and recognizing the concerns of these countries with extreme positions is a more pragmatic approach than "shaming and blaming". Particularly when these countries have the genuine intention to cooperate, coalition meetings offer ways of recognizing their concerns. This may be more difficult in the formal plenary meetings where a strict schedule is upheld. In some cases, some of these countries initially intended to "sabotage" the process, but as they gathered more information through coalition meetings, realized that cooperation brings more gains. Participation may bring unanticipated co-benefits leading to unplanned shifts of mind-set. By channeling discussion of extreme positions from the plenary to the coalition meetings, time and other resources can be saved.

Embedding countries with extreme positions into coalitions reduces the probability that a single country will block a decision, as most countries, anticipating future concessions, are very reluctant to prevent their coalition peers from taking action. As Joanne Depledge (2005, 92) argues, if a party does not have the support of its negotiating coalition, it is unlikely to isolate itself by blocking a decision. She exemplifies this through the SBSTA COP6 meeting, where Saudi Arabia strongly demanded to delete a mandate to hold an inter-sessional workshop on LULUCF. However, as the Saudi demand was openly opposed by the G77 spokesperson as well as by more than 20 countries, Saudi Arabia decided to withdraw its objection to avoid frustration within the G77 coalition and to enable mutual gains through cooperation.

Therefore, coalitions that represent a group of states with similar interests may enhance the robustness of international agreements by increasing the capacity of countries to exchange resources and to prepare for negotiations. While current coalitions in climate change negotiations tend to move along the North-South divide, these coalitions reduce the number of positions, thus promoting the manageability of the negotiation process. Coalitions also inhibit the use of negative

power (through veto) by individual countries when countries become more embedded in the negotiation process.

9.2 Issue Flexibility Mechanisms: Package Deals Through Issue-Sequencing and Sectoral Bargaining

The multidimensionality of the issues involved in global climate talks and the subsequent inter-linkages of issues can overwhelm negotiators who are unaware of how issue-linking may influence their negotiation leverage during the bargaining process. Reinforced by the North-South divide, the asymmetrical nature of relationships between countries reduces negotiation to a (zero-sum) power struggle, leading to a situation where countries seek issue-linkages that would increase their power leverage, while ignoring or refusing linkages that diminish their standing. Instead of seeing issue-linkages as opportunities for concessional exchanges through package deals, some countries see only the potential for confrontation. This is however counterproductive when finding an overarching outcome that would address the multidimensional implications of climate change.

Countries are inclined to link climate change with other issues in which they have a direct political interest. They need to recognize that linkages bestow legitimacy on the whole negotiation process by enabling the system to address individual concerns. Particularly when individual issues are the subjects of other international negotiations, procedures and norms of these negotiation systems are implicitly assumed in the global climate talks, leading to a very diffuse and complex web of issues. For instance, as several UNESCO world heritage sites are threatened by climate change, countries with endangered UNESCO cultural sites are forced to put value on intangible cultural objects such as temples, churches and monuments to legitimize its inclusion in global climate talks and to enable negotiators to ensure the comparability of issues. However, linking issues require commensurability of related values. This is highly problematic, particularly as issues of 'world heritage' are better measured but in terms of "experience" than in monetary terms, and placing monetary value on intangible goods may lead to the monetization of other conventions such as the in the World Heritage Convention (WHC).

While linking issues is a legitimate cause that may provide countries new political leverage, sticking to a comprehensive and integrated approach in dealing with mitigation and adaptation may unnecessarily prolong negotiations on procedural agendas. The simulation games have shown the tendencies of countries to build issue-coalitions that may cross the North-South divide to focus on one issue of concern. While established "process" coalitions such as the G77 + China and the EU still play major roles in the process, countries often discover new ways or new platforms to coordinate positions over specific issues with countries with similar stakes, without diminishing their bargaining power.

In real climate negotiations, new *ad hoc* coalitions or partnerships emerge in each negotiation round through the coordinated positions presented. Such "issue-coalitions" include the *Environmental Integrity Group*, which was the first informal group of countries to see themselves as not fitting into any of the groups that came out of the Kyoto Protocol. The group is comprised of both 'Annex' (industrialized) and 'Non-Annex' (developing) countries: Mexico, South Korea, Switzerland, Lichtenstein and Monaco. This group calls for flexibility to enable countries to address national circumstances while maintaining environmental integrity (UNFCCC 2013; Oberle 2012). Another issue group is the '*Cartagena Group*' (also referred to as the '*Cartagena Dialogue*') which was informally created after the 2009 COP15 meeting to elaborate the negotiation texts agreed upon during the meetings in Copenhagen. It consists of 28 developed and developing countries that strive for ambitious (low-carbon) mitigation efforts (Singh 2010; IISD 2010). Other groups that focus on certain issues are *BASIC* (focusing on emission reductions and climate aid) (Vidal 2010; Hallding et al. 2010), the *Coalition of Rainforest Nations* (focusing on the issue of REDD+) (REDD Desk 2013; Pruiatch 2012), the *Comision Centroamericana de Ambiente y Desarollo* (CCAD) (focusing on trans-boundary watershed management in the region) (RIMD 2013; Ferraté 2010) and the newly formed *Climate and Clean Air Coalition* (a group of 17 countries working together with the UNEP to focus on reducing levels of black carbon, methane and HFC) (UNEP 2013).

In addition to these informal groups, global climate talks have rediscovered or produced additional "spaces for deliberation" through forums and consultation groups. An example of one of these forums is the *Major Economies Forum on Energy and Climate* (MEF), made up of 16 member states (including the EU as a single actor) that comprise 80 % of global emissions (WRI 2012). This venue for discussion puts a particular focus on policies for developing and deploying clean energy technologies (Biermann 2010; Leal-Arcas 2011). Other forums include the APEC, World Economic Forum, ASEAN and MERCOSUR where climate change has become a regular topic of discussion.

The emergence of informal groupings that focus on linking certain issues of national interest to the overarching issue of climate change affirms the tendency of actors to sequence issues. Sequencing pertains to a method of problem-solving that focuses on how a triggering event starts a chain of movement (Rowland and Shanks 2006; Rosenbaum et al. 2007). In this sense, governments see a list of preceding elements (or issues) that need to be settled before handling other issues. This implies that actors anticipate a linear process of decision-making. However, this may increase the probability of delays, particularly when the settlement of preceding issues proves intractable. What often follows is that subsequent issues are taken "hostage", having become highly dependent on the resolution of preceding issues. Nevertheless, these succeeding issues may have been resolved independently of these preceding issues as negotiations involve a non-linear process, whereas failures and successes in resolving specific issues may equally promote or inhibit succeeding issues.

Issue-sequencing offers opportunities to build on prior knowledge when addressing succeeding issues. As sequential decision-making involves selecting a sequence of actions to accomplish a goal, as well as the assumption that the resolution of a specific issue will lead to the resolution of the next, decision-making is seen as following a predetermined trajectory, which means that the costs of resolving one issue have a discounted nature (see Bellmann 1957; Bertsekas and Tsitsiklis 1996). For instance, the deliberation of governments over land use, land-use change and forestry (LULUCF) (see FES 2008) has produced a pool of "best practices" that are perceived as promoting the resolution of other issues such as global carbon cycle and biodiversity, which are directly affected by LULUCF. This has also further legitimized the UNFCCC as the appropriate platform for cooperation, instead of forming a new convention only for LULUCF. Therefore, deliberating on LULUCF has effectively reduced the costs of settling related issues, particularly transition costs.

Furthermore, sequencing of issues enables more effective sectoral bargaining. As issues, often understood as sectors, are often asymmetrically important to countries, sectoral bargaining effectively limits the number of deliberation parties to those who have significant stakes in the issue, without undermining the legitimacy of the whole decision-making framework. Constrained by their membership to coalitions, countries without significant stakes will not use this particular issue to "black-mail" concessions on other issues which are more important for them. In addition, countries without significant stakes on a specific issue will more likely focus their participation on the intra-coalition meetings that intend to find a common stance on this specific issue.

9.3 Structural Flexibility Mechanisms: Holistic Approach on Coordinating Negotiation Settings

The results from the simulation games suggest that the multilateral type of negotiation setting that has been institutionalized in global climate talks inhibits finding effective agreements. Having such a large number of actors involved in negotiation is seen as counterproductive to the negotiation process (see Chap. 4; Penetrante 2012). The multilateralism of the UNFCCC is often assessed by individual countries as problematic, as it reduces efficiency by dragging countries without significant stakes and without significant potential for contribution into negotiation. As some of these countries may demand concessions on various issues, a country that fails to get a concession on one prioritized issue may be motivated to block or delay agreements on other issues to blackmail concessions on the previous issue. A multilateral negotiation setting foresees that countries negotiate with each of the parties. This increases the complexity of the negotiation process as each party has diverging sets of preferences.

Under the complex conditions in a multilateral negotiation setting, some major countries such as the United States and China tend to channel important issues into bilateral meetings (or meetings with a smaller number of actors) either before, during or after formal COP meetings. As the constitutive principles of multilateralism presuppose the formal equality of sovereign states, major powers often unsurprisingly prefer bilateral modes of negotiations where power asymmetries have more impact on outcomes (Eckersley 2012). At the COP15 and the events leading to this conference, some major countries such as the United States preferred the bilateral modus of negotiation not to isolate the majority of the countries, but to reduce complexity during negotiation (Penetrante 2010a). For instance, increasing frustration at the slow progress of the talks led to the exclusion of the majority of the developing countries in drafting the Copenhagen Accord. The equally frustrated countries which were left out of the drafting meetings have assessed this method as unacceptable and have refused endorsement, particularly when they were later felt "coerced" into accepting the agreement if they want to have access to climate funds (Bodansky 2010; Cao 2010b; The Guardian 2009). Making access to adaptation funding dependent on developing countries' own mitigation efforts is highly problematic for several developing countries.

Nevertheless, any decisions reached bilaterally or by a small number of states are likely to be rejected by those left out of the decision-making process, regardless of whether these countries have high or low stakes. Particularly with the existing North-South divide, bilateralism is perceived by less powerful states as an attempt to marginalize them, undermining the legitimacy of the whole process. In the games, particularly bilateral meetings between the United States and China as well as between the United States and Canada were seen by the majority of the participants as undermining the legitimacy of the multilateral decision-making framework. Conversely, bilateral meetings between weaker states were not seen as problematic at all. Results from such bilateral meetings are either highly criticized or rejected not on substantial grounds but on procedural issues during plenary meetings. In addition to this (procedural) fairness concern, excluding the majority of countries may not actually guarantee efficiency as this eliminates other "potential sources of information and advocacy", therefore, reducing the quality of such an agreement (Eckersley 2012, 33).

The games have shown that all countries seek flexibility measures in how they can interact with the others. Game participants preferred negotiating with a limited number of peers, particularly in informal sessions. Some of the simulation participants argued that they found bilateral talk (or at least "minilateralism", that involves a smaller number of sets) to be more efficient and less ambiguous than multilateral talks because it was easier to immediately ask for clarification, to compare how specific terms are understood and to establish personal trust between negotiators. They also reported that the more important issues were usually discussed in informal talks, where it was easier to avoid strict protocols, and countries retained the option to back out afterwards (see Chap. 4).

The academic literature has suggested various ways to address the problematic gaps between efficiency (through bilateral means) and fairness (through

multilateral means of negotiation). Critics of the UNFCCC decision-making framework argue that, aside from the absence of clearly defined voting procedures, consensual decision-making among 194 parties on every line of agreement is impossible (Eckersley 2012, 24). This paves way for a range of alternative proposals to the UNFCCC architecture, including more market-driven approaches and bottom-up mechanisms of decision-making, which all intend to limit the number of parties at the negotiation table. For instance, Todd Stern, before he became the US Special Climate Envoy, proposed in 2007 the founding of a new "E8" that would be made up of the eight major emitters, in both developed and developing countries (Franke-Ruta 2009). David Victor (2009) argues that more progress is to be expected from small groups of pivotal countries rather than in a global forum. He suggests engaging the Major Economies Forum on Energy and Climate (MEF) as the platform for negotiations. In addition, Andrew Light (2009) proposes diverting important negotiation issues to the G20 and to the MEF as he observed that these two bodies have produced more outcomes than the UNFCCC.

Robyn Eckersley (2012, 35) recommends the use of "inclusive minilateralism", which combines the idea of critical mass with inclusive representation. She suggests that this approach take the form of a Climate Council that is embedded in the UN negotiation process, which is given the task of resolving the most crucial agenda items that were not resolved in Cancun and Durban. At the end, the Climate Council will present a recommendation to the entire COP for approval. Her suggestion seeks to find a balance between efficiency and procedural fairness; however, it remains to be seen which states will be included in this Climate Council, especially when agenda items include issues beyond mitigation. Would this involve clustering interests in which each cluster is represented by one country? How different would this be from existing coalitions?

In addition to the above mentioned alternatives, this research project suggests clearly identifying the difference between formal COP meetings under the UNFCCC and other kinds of preparatory meetings that may involve bilateral or "minilateral" negotiations either within or outside the coalitions with the intention of preparing for upcoming meetings or elaborating upon reached agreements. In order to understand the twin concerns of fairness and efficiency, countries may accept the need for both negotiation settings especially that they have been engaging in both negotiation settings in the past. It becomes merely a question of when the use of a particular setting is acceptable. The idea that no agreement reached in a bilateral setting would be enforced on the other participants is more likely when bilateral meetings are defined as preparatory or consultation meetings.

9.4 Process Flexibility Mechanisms: Bridging Gaps in Consensus-Building Through Process-Sequencing

That various processes interact, complement and compete is an implication of the complexity of global climate talks. While some processes elicit certain behavior from actors, others inhibit certain behaviors, leading to internal conflicts that need to be managed. The simulation games have pointed out various gaps in reaching consensus in climate change negotiations. These simulation games stressed that tactical considerations with a short-time frame cannot sufficiently address the needs of a long-term regime-building process. Particularly when present decisions are more likely to have long-term ramifications, modifications on how actors reach decisions should be found. The decision-making process is a continuing recursive process, with backward and forward loops. During the simulations, participants had limited opportunity to refer to other climate talks or to appeal to specific unwritten norms established in previous climate meetings. Sequencing of information was missing. In all games, the participants felt that they could have used information from past rounds which could have supported them in their arguments during negotiation. With this, the games confirmed that because of process complexity, decision-making is, apart from being goal-oriented, highly trajectory-oriented. In this regard, decision-makers tend to choose a specific action that will lead to a specific condition in the next step. Thus, costs of future actions are also being discounted.

In addition, the games highlighted the difficulties in various levels of decision-making. As global decisions are made by national governments that derive their mandate from their national constituency, governments are accountable to their local citizenry. Governments usually require legitimization through various processes—such as elections, or 'input legitimacy'—and are required to deliver those services and functions ('output legitimacy') expected of them. In the context of varying legitimating processes, national governments employ different political calculation methods and political rationales in weighing options. For example, when the main legitimizing factor of a specific regime lies in economic development, this regime is more likely to prioritize policies ensuring economic development over policies on other issues such as environmental protection. In addition, as electoral periods are rather short-term, it is usually difficult for governments to make (unpopular) long-term commitments, especially if such commitments are translated through short-term costs, whereas future costs may be exaggerated and future benefits underestimated.

As Robert Putnam (1988) argues, international negotiators are always simultaneously limited by what they can agree on at international level and what can also be ratified at home. The zone of possible agreement for countries at international level is defined by national preferences. These in turn are determined by domestic deliberations between various societal and interest groups, by the legislative structure that ratifies international treaties and by the political dynamics involving resistance from opposing political competitors (see P. Evans et al. 1993; Kroll

and Shogren 2008). For instance, powerful lobby groups may deliberately use available resources and influences to block the ratification of international treaties that they perceive to be obstructive to their interests. In addition, the structure of polities, including the legislative and judicative bodies, may be designed to "check and balance" the national government. In this case, national governments pushing for the ratification of "unpopular" bills may need additional political resources that they may be unprepared to use, particularly when they are saving those resources for other priority bills. Opposing political parties may instrumentalize unpopular international treaties to garner votes and political support from resistive societal groups.

The multi-level dimensionality of decision-making may inhibit global talks when negotiators use these domestic constraints to seek more power during negotiation. As Tom Schelling's (1960) notion of the "Schelling Conjecture" states, a negotiator may intentionally and deliberately restrict his or her own domestic political capital if he or she expects this to strengthen his or her negotiation strength. For instance, expecting difficult ratification processes in US legislation, US representatives at the COP meetings are unlikely to agree to something that the government cannot push through in the US Congress and Senate. Meanwhile, national governments of countries such as Germany, with de facto integrated executive and legislative branches, can depend on their parliamentary majority when ratifying international treaties. Similarly, other countries are confronted by the difficulties of pushing unpopular international treaties through national referendums. Equally problematic are countries with highly polarized political debates, where a competing political party makes a campaign promise of withdrawing from the international treaty.

No less important are coordination efforts between ministries and other governmental agencies, which may represent competing goals in determining climate protection policies. Particularly when government ministries and agencies have not yet established coordination mechanisms to deal with broad issues like climate change, friction may arise when jurisdictions overlap. Significantly, in developing countries which are likely to be confronted by political fragmentation, the influence of national governments may be rather limited. In addition, when national governments are comprised of more than one political party, with one coalition party taking over one ministry and another party the other, additional coordination and consultation efforts are needed. Very often, when climate protection was not included as a priority in the "coalition contract", retrospective inclusions of climate policies in the current political debate may face higher political resistance within the coalition. Furthermore, in countries with very distinct federal structures, such as the United States or Germany, competencies may be distributed between the federal government and the governments of the federal states. In centralized government systems such as in the Philippines, the central government may be highly dependent on *Local Government Units* (LGUs) to implement policies. Furthermore, international treaties may be dependent on various forms of local communities at the grassroot level that are needed to implement, and are more likely to be affected by these

policies (Delmas and Young 2009; Lester and Neuhoff 2009; Richardson et al. 2011).

Several *academes* have resorted to the conceptualization of a "reverse Schelling Conjecture" (Neuhoff 2009; Grodsky 2010). This concept looks at how domestic constituencies are constrained by the *manoeuvres* of their national governments at an international level. Andrew Moravcsik (1993) notes that governments are able to influence the decision-making process at the domestic level by setting the international agenda, joining international regimes, or linking issues in international negotiations. Particularly when agenda-setting enables individual countries to harvest international recognition, national governments may earn additional political capital to push through even unpopular policies. In addition, other national priorities such as regional integration may serve as overarching political principles that may be used to persuade resisting domestic groups. When the benefits of committing to international treaties have been successfully communicated as opportunities, national governments may find it rather attractive to commit to international agreements.

Negotiators representing national governments in global climate talks are confronted by the complexity of decision making. As there is an obvious asymmetry in how countries are affected by various scales and levels of decision-making on climate issues, additional flexibility measures are recommended. As described above, national governments are differently constrained by domestic decision-making processes; therefore, additional knowledge is needed to conceptualize process complexity. National governments should regularly invite or consult with policy experts in determining domestic constraints to prevent "wasting" political capital, as wasted political capital can be simply translated to missed opportunities. International treaties that fail to be ratified in the legislative body may for instance break solidarity and trust in existing party coalitions or exhaust time resources which are rather scarce in short legislative periods, leading to higher thresholds of resistance in pushing forward other priority bills.

Instead of constraining the participation of domestic actors in the decision-making process, they should be embedded in the process as early as possible, particularly when concessions and compensatory measures are needed to "buy out" their support. Understanding that their concerns are equally legitimate facilitates the acceptance of international treaties. In addition, a collection of "best practices" should be institutionalized at the international level, where countries are able to exchange experiences with others to facilitate cooperation between countries with similar domestic constraints. Regional integration such as that propagated in the European Union may provide additional incentives for domestic constituencies to support international treaties.

9.5 Outcome Flexibility Mechanisms: Dealing with Uncertainty Through Contingency Provisions, Trust and Sequential Agreements

Assuming that actors weigh costs and benefits, they are more likely to choose a decision that will lead to receiving maximum total reinforcement or compliance in the future. As discussed in the previous chapters, the possibility of free-riding in the climate change context limits the total reinforcement of an international agreement. Particularly when non-complying actors cannot be prevented from harvesting collective benefits, such as the stabilization of GHG emission concentration in the atmosphere, compliance remains an uncertain issue. With this, present national governments are more likely to commit to international treaties where implementation and compliance are guaranteed. The calculation of total reinforcement can be conducted through discounting cumulative reinforcement (see Bertsekas and Tsitsiklis 1996; Kaelbling et al. 1996), that is, by calculating the costs of future implementation of and compliance to the provisions of the international treaty in present terms.

As discussed in Chap. 7, ensuring that countries have equitable access to sustainable development and that non-participation or free-riding in the international regime is less attractive, compliance is more likely to be achieved. Therefore, flexibility measures that allow countries to address their national conditions are necessary to ensure compliance. Furthermore, compliance should be complemented by clearly defined verification measures, wherein countries are given enough time or additional capacities to comply with the agreements. Sanctions should be primarily perceived as missed opportunities for those who are unable to comply.

As goals have been already identified and institutionalized (and repeatedly confirmed) in the last rounds of global climate talks, decision-makers want to choose specific actions that will lead to the achievement of these goals in the future. As the achievement of each goal is dependent on the compliance of all parties involved, doubts around reinforcement are higher when parties are confronted with unacceptably high costs of compliance after the yet higher benefits of free-riding. With this outcome sequencing, the costs of compliance are equally discounted in present terms. The **costs of compliance** include the direct costs of participation, the costs of containing possible negative externalities of contingency (for instance through insurance mechanisms), transition costs (for example, when switching technological pathways) and the opportunity costs of free-riding or non-participation.

Compliance should bring benefits that would surpass the associated costs. As compliance is a legitimacy criterion for a specific international treaty, mistrust of the other participants is likely to increase the costs of committing to international agreements. Furthermore, international treaties that aim to reduce emissions domestically require contingency provisions that would facilitate implementation at home. Ways are needed of structuring uncertainty by making unknown events and their potential underpinnings easily identifiable, and early response

mechanisms are required to limit possible damage. Without such contingency provisions and early warning/early response mechanisms, the costs of discounted cumulative reinforcement are so high or unpredictable that national governments are rather unwilling to agree in the first place.

With this outcome uncertainty, decision-makers tend to apply temporal-difference methods (see Sutton and Barto 1997), whereas delays of rewards are anticipated when modifying political calculations. Temporal-difference methods are flexibility measures that allow coping with the barriers related to path dependence, such as increased transition costs. 'Flexibility' is here understood as 'favorability'. When a specific action empowers the actors at the bargaining table, enhances the effectiveness of a specific decision or improves the relations between parties, the performance of this action should be strengthened; otherwise, it should be reduced or replaced (see Sun and Giles 2001). Temporal-difference methods allow lower transition costs following modifications of chosen locked-in paths. As the duration of the existence of a specific path positively correlates with transition costs—that is, the longer a mechanism is at place, the higher the costs of replacing this mechanism—reducing the duration of a specific mechanism favors modification and switching to more effective measures as better technologies may be developed in the future.

Negotiators tend to set commitment periods in international agreements accompanied by regular meetings and consultations regarding the future of such commitments. As new knowledge and technology arises, commitments are then changed, modified or replaced. Temporal difference methods are therefore contingency measures assuring actors that when a specific chosen policy proves to be ineffective, switching to other policies will remain bearable. Although current negotiations on establishing a new emission reduction mechanism to replace the expiring Kyoto Protocol is highly tedious, this can be attributed to the lack of experience in the application of temporal-difference methods in the global climate agreement-building process. As norms and practices are still to be found, patience and perseverance are more useful than hasty decisions with high total reinforcement costs.

The current global climate talks are confronted by various learning processes through which negotiators are able to reduce contingencies. Through established norms and practices, negotiators are able to trust the eligibility and legitimacy of existing frameworks. Nevertheless, trust is a product of time and of experience. Particularly with the existing North-South divide in the global climate talks, symbols of goodwill may be highly useful in expressing genuinely cooperative intentions. With this in mind, measures should be found to facilitate learning processes, especially when current narratives are dominated by "bad experiences". Mini-agreements in various segments or in other low-contested areas should be focused on to allow countries to recognize small successes.

9.6 Interim Conclusion: Flexibility Measures at the Bargaining Table

Flexibility mechanisms are products of the negotiation process. As actors exchange interests and concessions in a cooperative manner as the negotiation process unfolds, they acknowledge and recognize the individual conditions that prevent their peers from agreement and adhering to agreements. Flexibility mechanisms allow a more equitable decision-making process as they provide ways to reflect national conditions in global agreements. Nevertheless, as flexibility mechanisms are not absolutely free from the production of further negative externalities, negotiators should be continuously self-critical and aware of the limitations of flexibility mechanisms. Hence, flexibility should be equally structured.

However, flexibility mechanisms, like the sequencing of decision-making (especially temporal difference methods), may enforce existing hierarchies and build on existing power structures and asymmetries. In global climate talks, countries with a very significant share of the GHG concentration may depend totally on flexibility mechanisms such as carbon-permit trading while deliberately not committing to climate policy changes such as the increase of energy efficiency and the use of renewable energy technologies. Particularly when the costs of carbon-trading units are very low, high GHG-emitting countries with a very high per capita income may resort to paying flexibility measures instead of investing in allegedly expensive low-emission technologies. Merely depending on flexibility mechanisms is detrimental to the overarching goal of mitigating climate change, and undermines the effectiveness, quality and integrity of the outcome.

Flexibility mechanisms may also produce new inequities. As countries without "mutually recognized" national conditions may qualify for flexibility mechanisms, international negotiations in global climate talks may be limited to negotiations around how countries revert from emission-reduction commitments. National conditions become the subject of comparison, and in some cases, other countries may not think it is legitimate that a specific national condition should be accepted when this national condition is a direct result of deliberately poor policies in the past. In other cases, flexibility mechanisms may be interpreted as legitimizing 'business as usual' behavior. Although countries are free to identify and pursue flexibility mechanisms, some measures may be perceived as not comparable to the efforts of others. It raises questions around whether flexibility mechanisms are to be regarded in "absolute" or "relative" terms. The incommensurability of national conditions ('inputs') may be ignored when comparing policies ('outputs') between countries.

The combination of flexibility mechanisms and mitigation may constrain mechanisms of adaptation. When one's access to an adaptation fund depends on how one country commits to mitigation efforts, the North-South divide is exacerbated, and the strain on developing countries is deepened. These countries are already highly vulnerable to the implications of climate change, and are now indirectly coerced into adopting mitigation standards that may prove too costly for them.

Part V
Conclusion

Chapter 10
Conclusion: Decision-Making, Global Negotiations and Climate Change—Lessons for Theory and for Practice

"They must often change who would be constant in happiness or wisdom" (Confucius)

The inability of global decision-making to address climate change is attributed to the complexity of climate issues and to the stumbling blocks that confront decision-makers when negotiating with their peers. While this statement may appear obvious, there have been limited studies on how complexity actually hinders effective decision-making. How is complexity translated during the decision making process? Decision-makers may become anxious and incapacitated when the process of reaching decisions involves self-enforcing dynamics that further increase complexity. Thus, decision-makers need to be empowered to cope with complexity. This raises the question: which resources are available to enable decision-makers to make a 'sound' judgement?

Complexity is such a vague term that it requires contextualization and an integrated analysis of the different typologies of complexity in order to allow a more focused, strategic resolution of the various conflict cleavages that define the complex interrelations between actors, issues, structures, processes and outcomes. The acknowledgment that conflicts are self-evident and unavoidable in a social context may lead to the reframing of the North-South conflict from a zero-sum 'divide' to collaborative 'relations'. Moreover, accepting that regressions and set-backs in the negotiation process do not automatically mean the collapse of the negotiation system but that regressions may foster the decision-making process may decrease frustration levels when the process proves tedious.

Conceiving of global climate change as a subject of conflict resolution by identifying various conflict cleavages has proven interesting. The primary intellectual challenge of connecting climate change and conflict resolution has been its practical value. Rather than providing a set of abstract ideas, this research project contributes a set of innovative skills and tools by employing a new methodological approach. Studying climate change from the negotiation perspective is a process that is still in its infancy. More academic debate and public deliberation is required

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to enable advances in this field. Because negotiation is multidisciplinary, various academic perspectives are expected and welcomed. This conclusion also identifies some starting points for further research.

10.1 Summary: The Story Line

Understanding the nature of various self-enforcing dilemmas requires a more pragmatic and perspective-oriented approach to create mutually acceptable and sustainable solutions. In order to answer the main question of this research project, more innovative analytical and methodological approaches were required to cut across the various academic disciplines and traditions. This project bridges theories with practical experiences. Through the four analytical pillars—*historical analysis, negotiation analysis, political scientific analysis* and *game theoretical analysis*—a more systematic and integrated analysis was conducted to understand and explain the complexities of decision-making as it relates to climate change.

A historical analysis contributes to the context of the global climate change decision-making process, sensitizing readers to the various conditions that constrain or enhance decision-making. The main purpose of a historical analysis is not to reproduce the past in the future, but rather to understand how trajectories have proceeded from specific decisions made in the past. Path dependence explains how inefficiencies in current institutional structures may have been the direct consequences of purportedly optimal decisions made in the past. The locking-in of one decision or outcome may entail switching, which produces enormous transition costs, particularly when modifications or replacement of existing paradigms are required. The cost of switching from high-emission technological pathways to low-emission technological pathways may produce new issues of inequity that require clarification, such as how the costs of these transitions should be bourne. Nevertheless, when 'bandwagoning' has occurred (that is, when weaker parties have realized the costs of not adopting a specific standard exceed the benefits of maintaining the status quo), transition costs for each actor may be significantly reduced. This is especially true when costs are now distributed among a higher number of actors.

The complexity of the climate negotiation system is a result of its unique historical process. The high involvement of epistemic communities and advocacy groups in determining the negotiation agenda is unprecedented, at least in terms of its scope and magnitude. The complexity of climate issues has introduced inimitable self-enforcing dilemmas which are observable only at global climate talks. Attempts to apply lessons from other negotiation systems such as trade and security, though useful, are limited in the case of climate change. Nevertheless, elements of the climate change negotiation system are becoming increasingly relevant to other negotiation systems, particularly when inter-linkages and externalities have been observed. For example, shifting legal and political debates on safeguarding and conserving world heritage sites in the context of climate change may produce new

complexities to both the world heritage and climate change negotiation systems as these negotiation processes unfold. Such inter-linkages may lead to synergies that would enhance the environmental integrity of decisions.

As conflicts are determined by contexts including conditions and time perspectives, addressing the value of path dependence allows not only the contextualization of climate change, but also the formulation of solutions that consider the dynamic nature of trajectories. As shown in Chap. 2, understanding how the scientific community and advocacy groups have built consensual knowledge in the past is an integral part of identifying stumbling blocks to decision-making. The means how (and from whom) knowledge about climate change has been generated previously defines the possible trajectories of decision-making in the future.

In addition, negotiation analysis is necessary to understand how countries behave when interacting with their peers, and why specific strategies are applied during negotiation. Parties engage in negotiations when they expect pay-offs that surpass the benefits of non-action, and when they anticipate that their vulnerability can only be sufficiently addressed by the participation of the others. Negotiation therefore assumes interdependence in the context of a learning process. Chapter 3 suggests that the very act of negotiation already implies the existence of a certain level of trust among parties, which is needed for consensus-building. Parties may not be aware that even pre-negotiation talks enhance collaboration by providing valuable experiences of cooperation. The chapter introduces the main drivers behind or impediments to the negotiation process—*context, uncertainty* and *complexity*—which set the rules, limit possible decisions and determine the feasibility of instruments in assessing options. Finally, the systematic derivation of the five various perspectives—*actors, issues, structures, processes* and *outcomes*—summarizes how the negotiation process is differently experienced depending on which lens is being used.

The game-theoretical analysis of the simulation games (Chap. 4) gives preliminary insights into relevant concepts and issues that were explored in greater depth in the later part of this research project. The COP15 meeting in Copenhagen was chosen as a historical case study because it was intended to finalize negotiations of a legally-binding emission reduction regime that would have replaced the Kyoto Protocol in 2013. The COP15 meeting followed a series of preparatory meetings that were initiated after the Kyoto Protocol came into force in February 2005, beginning formally at the COP11 meeting in Montreal in 2005. However, as identified by the simulation games, because of stumbling blocks that were not properly managed, the achievement of the goal through the COP15 was not possible as several unfinished issues still needed resolution.

These simulation games identify diverging dilemmas and self-enforcing dynamics and provide insights into how these dilemmas and dynamics can be managed both from without and within. While the simulation games were not intended to predict the future, the possibility of modifying parameters and including conditions set by various kinds of chairmanship, coalitions and tactics gives the research an experiential aspect, enabling a more focused analysis. The value of simulation games lies in the possibility of modifying parameters to test how actors might

have behaved had conditions been different. It was found that actors were capable of adapting by employing specific strategies. Thus, this research project calls for strengthening negotiation capacities by enhancing adaptive skills during negotiation.

The challenges identified by the simulations games have been conceptualized in Chap. 5. The systematic typology of these challenges has been introduced as stumbling blocks. The following have been identified as stumbling blocks that hinder global climate decision making:

- **Actors:** Multiplicity and diversity of actors; delegation size
- **Issues:** Multiplicity and diversity of issues; inter-linkages and interdependencies of issues; Securitization and politicization of issues; immeasurability of values and stakes; climate issues as public goods and global commons; transboundary externalities of climate issues
- **Structures:** Power and power asymmetries; institutional linkages; diffuse authority structures; diversity of principles
- **Process:** Time gaps of issues and externalities; process inter-linkages and sectoral arrangements
- **Outcomes:** Variation of expectations; outcome externalities, immeasurability of stakes and costs of outcomes; compliance and verification

Finally, completing the four pillars is the political-scientific analysis. Acknowledging that decision making in a social context is confronted by power asymmetries is a prerequisite of any analysis on social relations. Analyzing how identities are crystalized, mobilized, maintained and reproduced, and how identities are related during negotiation offers valuable insight into missed opportunities during the negotiation process. Identities determine their perspectives of problems; how these problems are interpreted and how solutions can be implemented. The comprehensive analysis of the power structures that enhance and/or constrain the specific behaviors and preferences of actors allows for a more systematic and pragmatic understanding of identities. Countries, based on their experiences and the (real or imagined) narratives they have adopted as the negotiation process unfolds, assume identities that correlate with their preferences and behavior during negotiation.

The understanding of the ramifications of the North-South identity building processes in Chap. 6 was initiated by the conceptualization of the three interrelated trajectories—*political* (developing countries as spheres of interest), *ideological* (developing countries as the Third World), and *socio-cultural* (developing countries as the South)—that determine the course of identity-building processes in developing countries. While developing countries share some common denominators in their experiences, each developing country has its own trajectory of subordination in the process of colonization and decolonization. Therefore, it is important to recognize that the identity of the "South" is a response to power structures, and ways to empower developing countries must be found during negotiation. Only when developing countries are empowered can the negotiation outcome be sustainable and effective. Developed countries need to understand that

the enhancement of the negotiation capability of all negotiating actors is also to their interest, because it ensures the legitimacy, effectiveness and robustness of all agreements reached.

Both developed and developing countries should furthermore understand that reservation towards or refusal of commitment is not a sign of "irresponsibility" to the environment and to future generations, as it is commonly described in the rhetoric of governments, NGOs and other advocacy groups. Mutual "compassion" is necessary to understand the national contexts that confront each national government. Ultimately, national governments are primarily accountable to their national constituency. The national context of one country should not be compared in relative terms to that of the others. It is not the negotiator itself that is problematic, but his or her concerns.

The prescriptive part of the research project highlights modes of strategically facilitating the global climate talks. Strategic facilitation allows actors to cope with the complexity of global climate change negotiations by providing them with additional coordination and communication services during interactions with their peers. Strategic facilitation recognizes the need for weaker parties to qualify as "peers" by enhancing their participation in negotiation. It allows stronger parties to maintain legitimacy by dividing procedural tasks among other actors that can equally fulfill these tasks, without undermining the whole process.

The conceptualization of strategic facilitation outlined in Chap. 7 calls for the rethinking of paradigms of 'justice' and 'fairness'. The conceptualization of the principle of "equitable access to sustainable development" confirms that the 'human factor' at global climate change negotiations is the most important variable in the whole process. As cognitive processes connote various "mental anchors" as expressed by paradigms with the function to reduce contingencies when making decisions, any decision-making process should start by checking whether actors employ the same mental paradigms. As it is more likely that participants have various, differing perspectives, consensus on paradigms is a prerequisite for any negotiation outcome. Particularly when external actors produce (technical) knowledge (e.g., epistemic communities), decision-makers should be aware of discrepancies between how such knowledge is interpreted by the others.

The understanding that '*justice*' pertains to the quality of the outcome or of the decision, '*fairness*' to how procedures are used and '*equity*' to the ability of actors to participate in the decision making process has been forwarded by Chap. 7. While justice and fairness have long been subjects of studies, equity needs further deliberation. Chapter 7 has conceptualized equity by identifying its functionality—*to enable actors to participate*. Equity demands that the various background conditions and diverging departure points are appropriately addressed when assessing the "quality" of one actor's participation at the negotiation table. Equity is only possible when 1) inputs and outputs are comparable, 2) when fair procedures are in place when establishing mechanisms for compliance and verification, 3) when equitable behavior is more profitable than inequitable behavior, and 4) when there is no free-riding. When these four conditions are present, just and therefore effective outcomes are ensured.

Chapters 8 and 9 argued that negotiation already offers ways to enhance decision-making. While finding new mechanisms or introducing new external actors to intervene in the decision-making process may provide "fresh ideas", they may also further increase the complexity of the decision-making. Therefore, it is argued in this research project that existing resources should also be identified and used. As Chaps. 8 and 9 have shown, global climate change negotiations are equipped with additional resources that accompany multilateralism. However, exploiting these missed opportunities requires certain paradigm shifts and initiatives to address problems such as transition costs (as described by path dependence). Such opportunities need to be strengthened and modified.

The political conditions of climate change and how decisions are negotiated create a situation where leadership is not only expensive, but brings with it additional burdens. Governments are often reluctant to shoulder these costs under current conditions, as leadership frequently distorts equitable relationships for both leaders and followers. For example, when fulfilling the terms of historical responsibility, where countries with the best capabilities are expected to sacrifice the most, governments of developed countries need massive political capital to justify their leadership, which may require the waiver of claims for equity, particularly in a situation where free-riding remains a profitable option. Sacrificing current economic advantages for the sake of leadership is seen as detrimental in a highly competitive globalized world.

Other forms of facilitating the decision-making process are identified in Chap. 8, such as leadership complemented by chairmanship and by the facilitation of threshold states. COP chairmanship can be an effective way of structuring and administering concrete negotiation rounds, diverting pressure away from negotiations, or can be easily seen as "abusing" its privileges. Chairmanship has been linked with privileges such as enhanced access to information. When negotiating countries assume chairmanship, problems can arise. The facilitation of threshold states is a corollary to "cross-negative-externalities", where countries can be classified both as developed and developing depending on which definition is to be employed. Having multiple identities, threshold states are able to bridge various perspectives. Threshold states' facilitation offers the negotiation table additional resources to reconcile various conflict cleavages, particularly conflicts between the North and the South.

Chapter 9 conceptualizes various flexibility mechanisms that are already being employed or that can be further strengthened or institutionalized to manage conflicts during negotiation. 'Flexibility' is a desirable property or goal that aims to enhance the generation and implementation of solutions. Flexibility allows actors to bridge various levels of accountability as national governments need to fulfill the mandate given to them by their domestic constituents, while committing to collective goals at an international level. Nevertheless, flexibility is only explicable through contextualization, including an analysis of one actor's path dependence. Flexibility measures that allow countries to address their national conditions as determined by past decisions are necessary to ensure compliance.

10.2 Lessons for Theory: The Value of Knowledge

The value of contextualization in scientific analyses is usually limited to its usefulness in providing lessons for other cases. For instance, the purportedly high contextuality of climate change negotiations is seen as limiting the universality and applicability of lessons learned from analyses of climate change. Contextualization refers to the assumption that the actions and behavior of actors can only be fully understood by analyzing the historical process. A context examines the sets of actors, issues, structures, processes and outcomes that interact within trajectories or paths. While the contextualization of the climate change negotiation system cannot produce "universal" knowledge needed for general scientific laws, negotiation analysis can provide insights into negotiation management. While conditions may be different, negotiation processes follow manageable trajectories. The main purpose of contextualization is not to reproduce the past in the future nor to predict what the future will be, but to understand how trajectories taken are influencing current and future decision-making.

An example mentioned in Chap. 2 was the assertion of oil-fueled car motors over electric car motors at the beginning of the twentieth century. In 1806, the first cars equipped with internal combustion motors ran by fuel gas appeared, which paved the way for the introduction of the ubiquitous, modern gasoline-fueled internal combustion engines in 1885. Meanwhile, cars running on electricity briefly appeared at the end of the nineteenth century but were successfully relegated and almost disappeared until the end of the twentieth century. A plausible explanation of this development may be, as the theory of path dependence argues, a situation of dominance through standards. The first prototypes of both types of motors were built in the same decade. In 1815, Josef Bozek, a professor at Prague Polytechnic, introduced an oil-fired steam car. He was followed by various inventors, who intentionally or unintentionally assumed or borrowed technological specificities leading to the realization of synergies of technological standards. Many inventors that introduced similar cars in 1838 (Walter Hancock, London, UK), 1867 (Henry Seth Taylor, Stanstead, Canada), 1878 (Amèdée Bolleé, France), 1879 (George B. Selden, USA), and 1886 (Karl Benz, Germany) adopted standards that defined the developmental trajectory of car engines (see Georgano 1985; The Montreal Gazette 1986; Eckermann 2001).

On the other hand, Ányos Jedlik from Hungary, who introduced an early type of electric motor in 1828, was emulated by only a handful of inventors. Whether electric cars would have dominated the private transportation sector if bigger car companies (as first movers) had preferred electric motors remains a compelling question. The preference of oil-fueled combustion engines may be attributed to network effects. One possible example is that a company closely monitors the developments made by their competitors. When one competitor has found a technological niche that for instance increases the company's productivity or expands its market share, other companies tend to follow and introduce a similar technology. In this regard, technological developments tend to be closely related to each other,

thus employing similar standards. In addition, technological developments highly depend on complementary technologies. Compared to oil-fueled engines, the complementary technologies of electric cars such as battery storage and charging, which may have improved simultaneously in the early stages of development, were instead neglected. This may have hindered electric motors from setting up standards.

Related to the value of contexts is the theoretical assumption that a historical process is a development and an evolutionary process. It could also be easily interpreted that the historical journey ends when the goal, that is, 'optimality', has been reached at one point in time. As this research project has argued, while contextuality has a historical aspect, it does not and cannot assume that there is a rational or optimal end. Conceptually speaking, theoretical assumptions require the possibility of negation. In this matter, because contextuality or path dependence still cannot present criteria based on path-dependent *inefficiency*, *non-optimality* and *irrationality*, it remains problematic how efficiency, optimality and rationality are of significant value for the study of path dependence.

Unlike the implications of evolutionary history, an analysis of contexts and path dependence suggests that agents are not always capable of accessing all information needed for rational and optimal judgment. When making a rational judgement, actors must know (and have access to) all relevant information in order to compare costs and benefits. In addition, various inputs and outputs are not always commensurable or comparable, limiting a valid assessment of costs, benefits, sanctions and rewards. Furthermore, the significance of positive and negative externalities is not always measurable and attributable, leading to significant distortions of calculations. Contextualization argues that various contexts are not comparable as various externalities and self-enforcing dynamics differ depending on the context. Alternatives and options can be "more optimal" only when they are capable of "experiencing" all the conditions in a chosen path, which is theoretically and practically impossible. Therefore, as rationality and optimality are highly dependent on the assessment of possible alternatives or options, contextuality negates rationality. When rationality ignores the value of experience and learning, it becomes raddled, at least in the climate change decision-making.

Another interesting theoretical reflection that can be made refers to how "changes" are relevant in the study of historical processes. Historical processes seldom involve the same actors or maintain the same dispositions, priorities and perspectives among generations. Issues may be understood differently as time goes by. While some older power actors disappear, new powerful actors emerge in any decision-making process. Power shifts from region to region. The time-context may present various interpretations and acceptability of principles and terms. Terminologically speaking, there can be no historical process without the notion of change. The notion of change means however that the final purpose, the *telos* cannot be sustained in the course of the historical process. As such, because historical processes cannot have an *a priori* final purpose, path dependence is rather a study of "junctures" (*Augenblicke*) and not of continuums.

10.3 Lessons for Practice: The Value of Strategies

As the rationality and optimality of the values of inputs and outputs are not always comparable, it becomes an important to ask how, in light of this incommensurability, 'good' decisions are still attainable. What are 'good' decisions? Decision-makers are challenged when decisions have to be made under conditions of uncertainty and complexity. Particularly when decision-makers are held accountable for the ramifications of their decisions, what kinds of instruments are available for them to overcome *caveats*? This research project has identified various strategies to structure or manage uncertainty such as sequencing or time-differential methods that decision-makers usually employ to confront contingencies in decision-making. Commitment periods are applied to limit the validity of decisions. This however requires constant re-negotiations, which consider changes in the preferences of actors. With outcome-sequencing and time differentiating methods, decision-makers are able to overcome *caveats*.

In addition, this research project confirms that the success of actors in fulfilling their goals depends on how they manage information and learn during the negotiation process. The complexity of climate issues inevitably means diffusion and information overload. Assessing what information is relevant for a specific agenda at a specific point in time is an important activity when making decisions. In global climate talks, decision-makers depend highly on scientists, both from epistemic communities and from the national science academies, to enhance the power of their information. Nevertheless, with power comes responsibility and accountability, as there is still a need to clear several accountability issues with climate scientists and climate science in general. This makes global climate decision-making vulnerable to attacks from skeptics.

The determination of flexibility measures occurs only as interests are exchanged among actors. Only in the course of the negotiation process can actors discover opportunities to address both their national problematic conditions and their collective problems in general. Coalitions and partnerships are valuable resources in reaching individual and collective goals. Adaptability and flexibility highly depend on how actors use the learning process when negotiating. Therefore, actors need to have an open mind when negotiating and recognize that regressions and set-backs are equally opportunities that can be tapped.

Furthermore, addressing complexity (including its ramifications such as the inter-linkages of issues) requires a more integrated and comprehensive approach in determining collaborative decisions. Such decisions undergo various deliberative processes embedding various scientific, technological, cultural and professional perspectives, which may both enhance or inhibit the use of specific chosen instruments to reach desired goals. Without the opportunity to look at precedents, it is a huge task to consider the actors, sectors, governmental agencies, regimes, principles, norms and agreements with interrelated stakes in the climate decision-making process. A further challenge for global climate decision-making is how to maintain

integrated policies without undermining their environmental integrity, that is, the effectiveness of policies to address climate change.

10.4 Outlook for Further Research: Where to Go from Here?

The theoretical and practical discussions in this research project lead to various implications for future research. Interesting subjects for further analysis have been identified and conceptualized, such as the analysis of decision-making when the economic behavioral change of private households is required to implement global and national decisions. For instance, how global and national climate policies are translated to the personal level is to date still poorly researched in the climate and decision-analysis literature. An example is the current challenge for the German "*Energiewende*" (energy turnaround) which both addresses climate protection and energy supply security. The majority of the German population supports the re-structuring of the energy supply infrastructures. But this support ends at the individual level when electricity grids or wind mills are to be constructed in their vicinity or when transition costs are reflected in their monthly electricity bills.

As the implementation of the *Energiewende* would require the construction of new energy-related infrastructures (such as electricity grids that would connect energy sources from the north to the south of the country where most of the industries are), a wave of legal civil complaints are expected by the legal institutions. For instance, in 2012 alone, 1,502 complaints were registered by the *Bundesverwaltungsgericht* (federal administrative court) (FOCUS 2013). Such a wave of civil complaints is a huge management and financial challenge for climate (and energy) policies as this will significantly delay the process and in various cases would dramatically increase the costs of implementation.

Moreover, a more profound theoretical discussion on correcting historical wrongs could follow this research project. The entanglement of climate change negotiations in North-South relations deals with various justice issues from both North and South perspectives and how historical wrongs are translated to responsibilities (and how historical wrongs should not lead to present and future wrongs). Although there is already consensus about the historical responsibilities of developed countries, its concrete application seems to be highly technically and politically problematic as it is linked with compensation. As this research project asks, what resources are relevant and acceptable as compensation when inputs and outputs are generally incommensurable? How much compensation is needed to correct a historical wrong? Can concepts of compensation be found that would assuage the fears of developed countries that they are providing "blank checks" to developing countries, from which they can only expect future advantages?

This research project furthermore hints at the need to find concepts and methods to evaluate actors' behavior for broader equity and sustainability implications.

A consensus-building process was started in COP15 promoting the idea that climate protection can occur without undermining economic development. An unanswered question in this regard refers to the embedment of environmental (protection) concerns within other policy priorities. As decision-makers have various priorities (relating to areas such as energy security, peace and order, economic competitiveness and food security), which may conflict with climate (protection) goals, they will require methodological approaches and models to understand trade-offs and co-benefits between climate responses and other priorities. Such models should be able to explain how synergies can occur and be effectively managed, for instance between food security and climate protection. With such models, decision-makers are able to seek balance between multiple objectives.

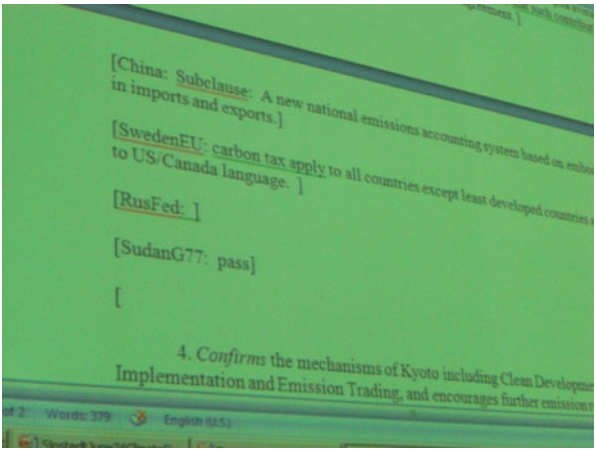
As this research project discusses, while the commensurability of values between inputs and outputs is seen as limiting the validity of cost-benefit analyses, an alternative approach can be adopted by looking at "human well-being" as the ultimate purpose of public policy-making. How does a specific policy increase human well-being in general? The use of human well-being as an indicator does not look solely at the monetary values of policies. However, for this concept to manage multiple policy priorities and objections its adequate conceptualization and measurability is necessary. The subjectivity and questionable quality of data on human well-being, means that how to conceive of human well-being in a manner useful to decision-making and policy analysis remains a huge challenge. It may for instance include a comprehensive and integrated approach which covers among other areas non-economic motivation for climate protection and for "frugality" (limited use of environmental resources as lifestyle). For instance, how can less consumption (which means fewer environmental footprints) increase human well-being?

This research project highlights the value of context and historical trajectories, so that further research can be conducted to develop economic models that integrate transition or switching costs into integrated assessment methods. Actors, as identified by this project, are constrained by lock-ins when assessing the feasibility and attractiveness of alternative decision frameworks and technologies. Actors are confronted by additional costs of switching technologies or decision frameworks, hindering the adoption of more efficient alternatives. In addition, transition periods incur additional costs that need to be identified and conceptualized. Why are periods of transition vulnerable? What makes transition periods vulnerable? How can this vulnerability be managed?

Finally, capacity-building of developing countries is very important to this research project. There is a still a need to find ways for developing countries to initiate capacity-building without needing the assistance of developed countries. Only when this is possible can developing countries ensure independence. How can developing countries find resources and capabilities of their own to diminish their structural disadvantages? How should South-South cooperation be understood and operationalized? More importantly, how can developing countries increase their political weight in negotiations without becoming threats to developed countries? How can developed countries realize that strong partners are more valuable than weaker ones?

Annex 1: Impressions from the Simulation Games

IIASA, 2009, Austria



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United States of


Hungary

IIASA, 2010, Austria


United Kingdom
Grenada &
AOSIS

De la Salle University, 2010, Philippines

University of Frankfurt, 2012, Germany


Grenada
China
Japan


Germany
Canada
Indonesia
Russia
Bangladesh
Sweden
Azul

University of Cologne, 2012, Germany

University of Leipzig, 2012, Germany


Ukraine


India
Brazil
Russia

Annex 2: COP 15 Simulation Game General Description

Climate Change Negotiations Simulation, University of Frankfurt 2012

The following people will be representing the following state and non-state actors:

Facilitators:

Denmark (Plenary)	1.
	2.

Major Players:
Brazil
Canada
China
Germany
Grenada (& AOSIS Chair)
India
Japan
Russian Federation
Sweden (& EU Chair)
Sudan (& G77 Chair)
UK (& G20 Chair)
USA
G20 Countries & Economies in Transition
Australia
Hungary
The Netherlands
South Korea
Switzerland
Poland
Ukraine
G77 Countries

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Bangladesh
Ecuador
Gabon
Indonesia
Nepal
Nigeria
Pakistan
Philippines
Saudi Arabia
Rapporteur from Outside the Process:
Rapporteur from Inside the Process:
Game Master: Ariel Macaspac Penetrante

Each person receives an ID and placard with his/her country name. The country stand should be raised whenever she/he wants to make a motion or ask a question.

The observers from the audience are designated as NGOs. They are given name tags. They are not allowed to talk or to vote (but are allowed to send written messages to delegates). They may accompany the delegates in all their meetings as observers. They will identify themselves with the NGO they are representing (see name tag) and should concentrate on observing features that could be relevant for them. For instance, the NGO South Network which is promoting the rights of the developing countries would probably join the G77 informal meetings. Amnesty International would probably observe how human rights are addressed in the negotiations. Observers from scientific organizations will observe and identify features of the context where scientists can contribute something. Some NGOs are giving out the so-called "Fossil of the Day Award" to those seen as delaying the negotiating process. The countries listed in the Fossil Award list will probably experience decline in tourism, because of this negative image. This award represents the pressure from NGOs which should be considered in the negotiation.

Disclaimer: While the issues to be resolved in the game are similar to what are being negotiated in the ongoing process expected to culminate in Copenhagen, they are not an exhaustive list of such issues. They have also been simplified so that the game can be played in a few hours. The positions of countries are also not completely consistent with their real life positions.

Agenda and Rules

The 15th Conference of Parties in Copenhagen will be simulated. The purpose of the negotiation is to formulate language to a section of resolution that intends to inspire a new treaty to replace the Kyoto Protocol when it expires at the end of 2012. It is not the purpose of the simulation to finish a draft resolution, but rather to experience the complexities of negotiation process.

Because of the abbreviated nature of the panel, the game will not be able to provide all of the preliminary discussions that might be useful. The game will begin mid-point in the negotiations.

The agenda of the session is mainly about commitments to reduce GHG emissions. Formal and informal negotiations should be about the expression of interests and negotiating to include these interests to the resolution. We will be limiting the simulation to the discussion of Clause 3: Assigned amounts, percentages, year of level, commitment period. Thus, you will need to determine (a) the percentage reduction of greenhouse gases your country would like to reduce (e.g., 20 %), (b) the base year (e.g., 1990 levels), (c) within what time frame (e.g., by 2020).

Your position will be entered under Clause 3 of the Draft Resolution:

> 3. Encourages Parties to limit their greenhouse gas emissions by [X], with emissions to be calculated to a baseline year of [X] within the years of [X].

Passages which are still be discussed and voted (consensus basis) are to be written in a bracket.

Of course, the negotiation may include statements related to other areas seen relevant to the current agenda. The content of the negotiation is determined by the participants themselves. The theme of the session serves mainly as the starting point of negotiation. For instance, the following issues can be addressed by the delegates (acting out roles as Parties to the UN Framework Convention on Climate Change).

The Urgency of Addressing Climate Change

Targets to Stabilize or Reduce Emissions

Expanding the Clean Development Mechanism

Including Adaptation

Technology Transfer and Intellectual Property Rights

The President of the Conference, Denmark's Minister of Environment, is in-charge of facilitating the plenary, accept and relay motions and ask the plenary to vote to approve motions (e.g. Gabon expresses the need to include "as shared interests" in point 2 and calls for its approval in the plenary). Facilitators can ask questions for clarification ("looping") or invite state actors to follow the norm of mutual respect during situations of escalations. Denmark is also responsible for typing the proposed languages to the draft resolution.

Chairs of G20 (UK), EU (Sweden), AOSIS (Grenada), and G77 (Sudan) are themselves representing countries. They must find ways to balance the need to facilitate between countries of the group and as well to push forward their own interests. When speaking, these facilitators should differentiate their roles as representatives of the coalitions (e.g. "the United Kingdom speaks on behalf of the G20. . .").

To start the simulation game, each country delegate will be asked to give a short ministerial statement (30 s to 1 min) that sets forth their position during the start of the simulation. The short speech enables the countries to find out which countries they should approach based on their own interests. The participants are encouraged to role play their country as closely as possible based on the information sheet given prior to the simulation. The participants should consider this when designing the

mini speech and the negotiation strategy. For example, some countries might want to get right to the details, while others might want to keep the discussion purposively vague and non-committal.

One country may request for a break/caucus (e.g. Sudan: "Sudan, as Chair of G77, is requesting for a break for 15 min so that the members of the G77 can meet together in a separate room and discuss the issue of technology transfer"). The request can be granted by a simple majority vote. The EU chair (Sweden) can use this break as opportunity to debate with other countries of the EU or the countries may choose to bilaterally discuss with another delegate. When the requested time elapses, the facilitators will gather the delegations and a debate will follow in the main plenary. The delegates can request for a break/caucus as often as they like. Furthermore, an individual country might want to invite a specific country for a bilateral meeting anytime (also during plenary sessions). There is no need for all countries to be in the room to start the plenary.

During plenary sessions, the formal question-and-answer period will be moderated by the Chair/Facilitators. (For those experienced with Model UN, this will be a sort of moderated caucus.) Each delegate will need to raise his/her placard and be recognized by country name in order to speak. To maintain something close to an actual international negotiation, we ask that each delegate refer to her/himself as "we" or "the country of . . .", or just the country name (e.g., China believes that . . .).

Delegates are encouraged to submit draft language to be added to the draft resolution. There is a laptop with the draft resolution projected for all to read. Participants may add language to the document either by sending a note to the Chair (Denmark) during the debate, or in person during the informal debate. Participants will want to encourage as many delegates as possible to support their position. Because of the compressed nature, participants are encouraged to come to the conference with draft language already determined.

Negotiators will regularly receive "notes from the capital", which may include changes in the country's positions as "dictated" by the negotiator's government. Negotiators are encouraged to follow such instructions. Furthermore, negotiators may exchange notes during formal and informal negotiations. In addition, NGOs may send notes to specific countries.

The first half of the negotiation will proceed for 90 min. It is followed by an interim evaluation for 15 min and lunch. In the second half of the negotiation,

In the interim debriefing, the students should answer the following questions:

Are we in an impasse? What should we do to overcome this?

After the interim debriefing (and lunch break), the students should resume negotiating for another 90 min. In the second part of the negotiation process, the negotiators should make attempts to actually reach an agreement, or at least agree to a timeline when it may happen.

In the final debriefing, the observers are requested to express their views. After the brief talks of the evaluators and observers, we will open the floor to the participants and the audience to ask questions about the simulation and about the knowledge generated from the game.

Preparation Materials

To guide the participants in their preparation, the following questions might be useful:

How vulnerable is your state to climate change? In what ways?

What resources does your state have to respond to climate variations? Why and how?

What is your state's current policy position on the Kyoto Protocol? What has shaped this response? Is your state willing to pursue binding commitments to reduce GHGs?

Has it signed and ratified the Protocol? If so, when and why?

Is your state an Annex 1 or a Developing State?

What are your state's current GHG emissions?

What are the sources of your state's GHG emissions?

What has influenced the position of your state? (economic development, fear of losing competitive advantage, threat of climate change, sense of responsibility, etc.)

What issues would help or hinder your state's support of the policy goal?

What states might share your position, or be opposed to your position? Why?

Negotiation Journal:

Students are expected to address all the following questions in writing their negotiation journal (please note that this journal is mandatory):

Was the North-South divide manifested in any form at the negotiation table? If no, why and what other factors may have prevented the negotiators from reaching an agreement? If yes, why and how did this divide prevent the negotiators reaching an agreement?

Was gender relevant in determining the negotiation outcome? How about emotions?

Were you able to observe forms of bias to the advantage of certain parties? What are these biases and how did they affect the negotiation process?

Was the chair part of the problem? What could the chair have done to facilitate the negotiation process more effectively?

Was coalition-building helpful or detrimental in the negotiation process? Why?

Disclaimer

While the positions may be close to the actual positions the country is pursuing, this paper is not an exhaustive list of positions and not completely consistent with their real life positions. Some of the positions listed could be hypothetical in nature and are meant to produce interesting dynamics in the simulation game.

Annex 3: Confidential Profile—Denmark

Research and Position Tips for Denmark and Conference Chair

Basic Information

As host of COP 15, Denmark is fulfilling the role of a facilitator. The Danish Government's goal is to enter into a binding global climate agreement at the United Nations Conference in Copenhagen. The agreement will apply to the period after 2012.

The government's ambition is for the agreement to include as many countries as possible, and that the agreement must contribute to a reduction in man-made greenhouse gases which have a negative effect on our climate system.

The government will therefore put all its efforts into obtaining an agreement that combines respect for the environment, living standards and long-term security of energy supply in the best way possible.

Denmark's prime minister said Thursday that EU leaders will postpone until later this year a decision on how much money they will pledge to poor nations to help them combat climate change.

Lars Loekke Rasmussen said EU leaders would agree on terms at 2-day talks starting Thursday for funding projects to reduce greenhouse gas emissions and to cope with a warming climate.

But he said a final decision on all aspects of financing — including an estimated €100 billion ($139 billion) a year for developing countries — would come in a few months.

This could jeopardize global climate change talks that Denmark will host in December to try to strike a deal for all regions to reduce emissions to try to curb global warming.

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Positions

By hosting the UN climate conference COP15 in 2009, the current Danish government has brought energy into focus again as a decisive political area. Furthermore, the Danish government has taken a range of initiatives to increase the focus on the necessity of an international agreement on a reduction in greenhouse gas emissions. Among these initiatives are:

The Greenland dialogue. This came about as an initiative of the Danish Minister for Climate and Energy, Connie Hedegaard. The plan was to create a forum where the often stiff and protracted discussions under the auspices of the UN could be softened up. The idea was simple. Ministers from more than 20 countries gathered in the summer of 2005 in Greenland in order to see with their own eyes some of the consequences of climate change. At the same time the meeting was supposed to provide a haven for the politicians to talk to one another without restrictions. Accordingly a code of conduct was put forward: there were to be no consultation documents, no press, only one official per minister, no conclusions were to be made on anything, and subsequently nothing of what the participants had said was to be reported. This haven for dialogue was a success, and therefore it has been followed by similar dialogue meetings in South Africa in 2006, in Sweden in 2007 and in Argentina in 2008.

Climate attachés. In order to keep updated on climate-related discussions in other parts of the world, the Danish government has sent five climate attachés to New Delhi, Moscow, Washington, Brasilia and Pretoria. The attachés are to report home on climate-related developments in the region they are covering.

Denmark is engaging furthermore in bilateral talks with countries, e.g. with the United States related to mandatory cuts, with Bangladesh in establishing an adaptation center in Dhaka, etc. Denmark also wishes to pinpoint the importance of sustainable development, eradication of poverty and equity in the dialogue. It believes that confronting climate change can be done without undermining development.

Experience from Denmark shows that it is possible to maintain high economic growth while at the same time reducing the dependency on fossil fuels. The business community and its organizations' interest in having their points of view considered and their interests represented prior to the conference has increased steadily. The government has therefore established a Business Panel on Climate Change.

To improve the possibilities for civil society in developing countries to improve capacity and create awareness on climate change in their own country, and to participate in the UN climate negotiations, the Government supports a targeted program, implemented by Danish NGOs and their international partners. Denmark should encourage developing countries to work closer with NGOs in a partnership scheme.

Simulation Tips

Denmark as chair will open up the session by the ministerial statements (2 min). This will be done in alphabetical order. However, the chair has the so-called "friends of the chair" which will be tolerated when they pass the 2 min limitation. It can decide whether to tolerate or to immediately cut ministerial statements. Some countries will tend not to respect the 2 min limit.

The Danish Minister of Environment and Minister of Finance are acting as chairs to highlight the notion that financial stability and economic development should not hamper addressing climate change.

During informal sessions, one of the three Danish delegates should join the G20 or EU deliberations. The others should discuss bilaterally with other nations (if possible).

In the opening statement, the chairs should mention that for the session, the agenda is to find common grounds in the reduction of Green House Gases (GHGs). The chairs will invite the delegates to voice out their positions during the main plenary and will be responsible for time keeping.

Sudan will then request for an informal break for informal meeting for 10 min. The chairs will ask the plenary to approve the request for break for 10 min. For this kind of vote, a simple majority is needed.

The state parties (and also the facilitators) can ask for as much breaks as they think needed. After the requested time, the facilitators will ask the parties to come back to the plenary. The goal of the plenary is to draft a resolution related to emission cuts. However, it might be the case the before countries commit in reducing GHGs, some propositions will be made in other areas such as the CDM or even minor clauses in the resolution.

It is important that before countries can submit propositions that these countries will read their passages very load which will be then open for a debate. In case there will be no consensus for a possible vote, the delegates or the chairs themselves can ask for an informal break for the informal meetings for a specific time (10 or 15 min).

Denmark will be bilaterally negotiating with parties during informal breaks. As part of the EU, Denmark should be in constant communication with other EU countries. Denmark as a country maintains developmental projects in developing countries such as Bangladesh. Denmark is free to engage in technical assistance to countries, however, Denmark wants binding commitments in return. Denmark should also seek direct talks with China, India and Brazil.

In case there will be heated debates and escalations, the chair should intervene and remind everybody of the need for mutual respect in the process.

Negotiations will occur in several arenas (main plenary, informal meeting), different dimensions (bilateral and multilateral) and different locations (main room or corridors).

To increase the pressure, Denmark should note the vigilance of NGOs. Denmark should mention for instance the fossil of the day award by environmental NGOs

which will bring recipients to the bad light, affecting the public image of the country.

Denmark is free to ask question for clarification or to suggest solutions if needed. Denmark pursues its own interest as stated in this paper which it has to balance with the role as facilitators without losing integrity.

Denmark is in charge of typing down the proposed language to the resolution. It should write the name of the country then the proposed language, e.g. 40 % reduction baseline 2005.

Disclaimer

While the positions may be close to the actual positions the country is pursuing, this paper is not an exhaustive list of positions and not completely consistent with their real life positions. Some of the positions listed could be hypothetical in nature and are meant to produce interesting dynamics in the simulation game.

Annex 4: Confidential Profile—Sweden

Research and Position Tips for Sweden, EU President and G20 Representative

Country Profile

- Sweden holds the EU presidency in the second half of 2009.
- The climate issue is a top priority of the Swedish Government's environmental work. If emissions of carbon dioxide and other greenhouse gases are not curbed there will be serious repercussions. Work is being stepped up in both the UN and the EU to reduce emissions and achieve the climate goals that have been set. In Sweden, the Government is investing almost SEK five billion in reducing climate impact and adaptation to climate change between 2009 and 2011.
- The EU has an important and active role to play in the international negotiations on a broad climate agreement, supported not least by its ambitiously high objectives. In March 2007, EU heads of state and government concluded the most ambitious set of climate and energy objectives ever adopted by a group of countries. The EU's climate policy objectives are based on the IPCC's assessment of the risk of harmful climate change—temperatures must not be allowed to rise by more than 2°C above pre-industrial levels. The EU's own emissions targets by 2020 are:
  - To reduce greenhouse gas emissions by 30 % within the framework of a global climate agreement, or by 20 % in the absence of an international agreement.
  - To increase the proportion of renewable energy to 20 %.
  - To increase the proportion of renewable fuels to 10 %.
  - To increase the efficiency of energy use by 20 %.
- About one-quarter of the energy consumed in Sweden in 2003 came from renewable sources—more than four times as much as the European Union average of 6 %. In Stockholm, one-quarter of city buses run on ethanol or biogas.

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Positions

Acceptable Commitment for EU: To cut greenhouse gas emissions by 30 % below 1990 levels by 2020 or 20 % emission reduction by 2020 with 2000 as baseline if an international agreement is reached committing other developing countries and the more advanced developing nations to comparable emission reductions.

Sweden sees its EU presidency as a good instrument in pursuing national interests. One approach Sweden is pursuing seeks the greater participation of the civic society and private market in addressing global challenges such as climate change. Sweden wants to strengthen the clean development mechanism through reforms. One reform would include creating incentives for private companies to invest in clean technologies in the least develop countries such as the African states which are to a significant extent not profiting in the current clean development mechanism. The mechanism requires a minimum level of human capital, infrastructure and financial capacity for the developing countries leading to the exclusion of the least developed countries.

Sweden supports creative technology transfer schemes such as the "joint development of green technologies." The pool of experts in this "mechanism" will be supported by the international community and the technologies developed through this scheme will be available for all countries including the developing countries. The least developing countries will receive a more intensive technical support through multilateral and bilateral agreements. Sweden is particularly interested in providing trainings in the least developed countries and as the EU chair, Sweden aims of sending experts in the African countries.

Sweden and the EU are willing to invest more money in technology transfer, however, binding commitments in reducing GHG emissions are required for any financial and technical assistance, the EU is extending.

The EU is particularly skeptical (however it welcomes it) with the approach of the United States in pursuing alternative mechanisms without binding commitments. Although it believes that the private sector can play an important role, the EU seeks partnership with the private sector (and to some extent regulation).

As member of the G20, Sweden as EU chair should remind other industrialized nations that the current financial crisis should not impede policies in confronting climate change. The financial crisis should not be used as reason to slow down the process. Instead the climate change context should be considered in planning for reforms in the financial sector.

Simulation Tips

Sweden as EU chair should formulate a strong interest in pursuing binding commitments in reducing emissions.

Sweden should air that it is skeptical of mechanisms without binding commitments as this will undermine the integrity of the international community and will produce leap holes and gaps in any treaty or agreement because of possibilities of free riding.

Sweden (as EU chair) should remind the largest emitting countries namely the United States and China of the necessity to reduce emissions. With the case of the G77, the EU should explore possibilities of reducing emissions without decreasing the demand for oil (as almost all OPEC countries are per se developing countries and are members of the G77).

The EU is the 20th member of the G20 coalition. Sweden and other EU members should be in close contact with other G20 members such as the United States.

Disclaimer

While the positions may be close to the actual positions the country is pursuing, this paper is not an exhaustive list of positions and not completely consistent with their real life positions. Some of the positions listed could be hypothetical in nature and are meant to produce interesting dynamics in the simulation game.

Annex 5: Confidential Profile—United States of America

Research and Position Tips for the United States

Basic Information

- Largest emitter of greenhouse gases (soon to be replaced by China)
- Largest consumer of fossil fuels and energy/largest economy in the world
- Has not signed or ratified the Kyoto Protocol
  - refused to sign because of: scientific uncertainty, China and India not being required to have mandatory reductions, high cost of transforming the US economy and energy needs that are largely based on the use of fossil fuels, and the desire to have voluntary rather than mandatory reductions
- Claims to have plan in action to reduce greenhouse gas emissions by 18 % by 2012 (critics contest the validity of the plan and measurement of greenhouse gas emission)
- The United States produces around a quarter of the world's carbon dioxide emissions while representing less than 5 % of the world's population. While these figures are clearly disproportionate, U.S. leaders argue that the Gross National Product (GNP) of the country also represents 25 % of global GNP. Together with China, the United States is the world's biggest emitter of greenhouse gases (GHG).
- The United States has long been a very large consumer of energy. Figures from the World Wide Fund for Nature (WWF) show that in 2008 the average U.S. American was responsible for 24 tons of carbon dioxide emissions per year, compared to 11 tons in the United Kingdom, 9 tons in France, 5.4 tons in Brazil, and 1.7 tons in India.
- America's massive carbon footprint is due to its sheer size and economic success. Over the last 25 years, the United States has enjoyed the largest annual economic and population growth rate of any mature industrial economy in the world.

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- U.S. Americans use a lot of energy to run their many electronic appliances, and heat or cool buildings, particularly during the very hot summers and cold winters that affect much of the continent. Americans also drive a lot, owing to their country's size and relatively cheap gasoline. Retail prices are less than half the level in Germany or the United Kingdom. Most American families have at least two vehicles.
- In search for good schools and save environments, many Americans have moved away from the central cities pushing the boundaries of suburbia. With little or no investment in public transportation, gas usage rose and travel distances increased during the late twentieth century.

Positions

The United States under the Obama administration is more optimistic that a more effective mechanism in confronting climate change would be found. However, it intends not to accept far-reaching formal commitments to cut emissions. Furthermore, the US government is keen on domestic opposition to any binding commitments which would require a greater influence of the state in the society. This will likely receive resistance particularly from the middle class. The United States prefers not to be isolated in the climate change negotiation. It follows a different strategy in which the United States bilaterally negotiate with emerging countries such as China to find a non-binding commitment based on trust and good will. The United States seek direct communication with G77 countries and do not tend to tolerate exclusion in the negotiations occurring between EU and G77.

The United States should support the G20 in limiting the bargaining table to those countries which are greatly affected, because having a too large bargaining table with all countries reduces the efficiency of any outcome.

Regarding technology transfer, the United States does support maximizing incentives for innovation, creativity and technology transfer to developing countries. However, the country seeks to do this in bilateral terms. Furthermore, US firms providing technology should be involved in constructing infrastructures and do not wish to open competition with European firms which would be the case in a multilateral technology transfer scheme. Furthermore, the United States does not wish to compromise intellectual property rights and seeks to promote affordable access to environmentally sound technologies, however, only in a limited time scale ("**no blank check for China**"). In addition, the United States rejects binding commitments leading to intervention by governments in market-based innovation and rather supports partnerships with the private sector. The United States opposes the current negotiations focusing inordinately on compulsory licensing (CL) as a means of diffusion.

The United States seek to bilaterally negotiate with China in forming a collaboration scheme between the two countries focusing on the reduction of GHG emissions. The United States intend to establish a new comprehensive program

for cooperation with China. The cooperative agenda will pursue the advancement of green technologies and deploying low-emission coal technologies.

The United States prefers a nationally determined commitment in reducing emissions. The United States congress just passed a law limiting its emissions by 2020.

The United States is using the "legislation card" to legitimize its position (it will not push any agreement that will be refused by the US congress and senate). The United States want to slow down the process to wait for a signal from the congress and senate.

Acceptable Commitment: To cut greenhouse gas emissions by 17 % below 2005 levels by 2020, 42 % by 2030 and 83 % by 2050. It is not willing to use 1990 as baseline. The United States is requiring comparable emission cuts by China, India and Brazil. Furthermore, the United States is not willing to accept any BINDING reduction of emissions, because it will not be ratified by the US Congress.

Scenario Tips

The United States should be active in the negotiation game. It should protest when it is excluded in the talks occurring between G77 and EU. It should criticize China that it hides behind the G77. Furthermore, the United States should bilaterally discuss with China, India and Brazil in finding a *non-binding* mechanism in reducing GHGs.

The United States should remind all delegates that the new post-Kyoto regime should not "punish" developed countries for being developed (fairness argument).

Disclaimer

While the positions may be close to the actual positions the country is pursuing, this paper is not an exhaustive list of positions and not completely consistent with their real life positions. Some of the positions listed could be hypothetical in nature and are meant to produce interesting dynamics in the simulation game.

Annex 6: Confidential Profile—India

Research and Position Tips for India

Basic Information

- Will soon pass China as the largest population in the world.
- Booming economy will need large quantities of fossil fuels to continue to grow.
- Has resisted efforts requiring India to have mandatory emission caps.
- Needs technology and funding to develop green energy production (more of India's resources are focused on reducing poverty and improving standards of living). The prime minister announced its plan to shift to solar energy, however, this plan would need significant concessions from the developed countries regarding technology transfer.
- Dwindling water resources due to glaciers shrinking in the Himalaya mountains, pollution and population growth, will only get worse as climate change increases.
- Wants to be seen as environmentally friendly but is severely limited in what it can do (due to population growth and developing economy/third world status)
- Shares many similarities with China, but are not close allies (mistrust each other, fought a war in the 1960s, tension over Tibet)
- Prefers emission reductions based on per capita measurements.
- India is member of both G77 and G20.
- According to the World Bank, India's carbon dioxide emissions have increased by 88 % since 1990.
- Per capita carbon dioxide emissions in India are relatively low. The average Indian is responsible for roughly 6 % of the CO_2 emitted by the average citizen from the United States.
- On average, floods affect about 5,000 km^2 of land and 4.2 million people in India each year.

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- The International Energy Agency expects Indian national energy consumption to more than double from 2002 levels by the year 2020, increasing from 116 to 252 GW.
- According to Indian Ministry of New and Renewable Energy the renewable power capacity was around 8 GW at the end of March 2006, roughly 6.5 % of the total power generation capacity.
- A 1-m rise in sea level could displace millions of people in India, a country with a coast line of several thousand miles.
- The Gangotri glacier, the source of the River Ganges, is retreating at a speed of about 30 m a year, with warming temperatures likely to increase the rate of melting.
- Annual coal consumption in India has more than tripled since 1980.
- According to research carried out at Oxford University, the total number of flood zone refugees in India alone could reach anywhere between 20 and 60 million. Sea level rises could also prompt an influx of millions of refugees from Bangladesh.
- In July 2005, the eastern Indian state of Maharashtra was hit by the hardest monsoon rains ever recorded. Nearly a meter of rain fell in 24 h, causing extreme flooding in Mumbai and elsewhere in the state.

Positions

India sees climate change as a potential threat to sustainable development.

Acceptable Commitment: To cut carbon emissions by 15 % below 1990 levels by 2020 if other emerging countries will do the same.

India follows the strategy of enhancing synergies and trade-offs between sustainable development objectives and long-term strategies to limit climate change.

With G77, India seeks to build analytical and implementation capacity in developing countries to maximize synergies at local, regional and global levels of decision-making.

India is particularly interested in forwarding unsustainable consumption patterns related to justice and fairness. 25 % of the global population lives in rich industrialized nations who are responsible for more than 70 % of the total global CO_2 emissions and consume 75–80 % of many of the other resources of the world. In per capita terms, the disparities are large. An Indian citizen emits less than 0.25 tons of carbon per year whereas a US citizen for example emits more than 5.5 tons per year. In this regard, there is a need for an equitable and efficient solution to climate change and India suggests that efficiency can be obtained through a system of tradable emission quotas and equity through equal allocation of global environmental space to all human beings. India thinks that this is well received by developing countries and wants the G77 to be united to demand the rights of developing countries to economic development and also the "common but differentiated responsibilities of different countries" stated in the draft resolution.

Furthermore, the climate change has significant impacts on agriculture, sea level leading to submergence of coastal areas, as well as increased frequency of extreme events in India. In this relation, India has a special interest in establishing an international adaptation mechanism that would assist countries in extreme events.

India is concerned with the fast pace at which negotiations are taking place on the climate front. India's main energy resource is coal. Current climate change talks call India to change its energy strategy based on coal, its most abundant resource, and use other energy resources, which may turn out to be expensive. India seeks more freedom to decide which type of energy it can use and how to generate power. The country wants assistance in pursuing other energy resources especially it anticipates more energy demand in the course of its industrialization.

TT and CDM should be linked to ensure wider adoption of environmentally beneficial technologies beyond the CDM project. India would like to see that a "CDM project" leads to real technology transfer giving the country the ability not only to operate the technology but also to replicate and innovate.

Another concern of India is pricing of technology. There should be competition here. In a bilateral deal, the supplier of technology has monopoly power and the price charged for technology may be too high. Also projects such as sequestration projects do not involve technology transfer. One way to ensure that CDM projects involve technology transfer at competitive prices is to require that every CDM project, including sequestration projects, make a specific contribution to a technology acquisition fund with which the developing country is free to buy technology not necessarily related to the CDM project, from anywhere in the world. This can moderate excessively high charges for technology from a monopolist supplier.

The risks to poor countries should be the primary focus of the climate change analysis, rather than costs to the developed countries. To this extent, a paradigm shift is necessary from the cost minimization in the future analyses of IPCC.

Simulation Tips

Although India is a member of G20, it feels that G77 is the proper forum in pursuing its interests. However, it is not happy that China is trying to dominate the G77 even though it is not a G77 member. It sees China as an opportunist as China seeks the other emerging countries such as India to commit in reducing emissions while China has no intention of committing as it thinks that such a commitment will hamper economic development.

India seeks further cooperation with the EU in matters related to technology transfer and the enhancement of capacity to handle climate change. However, it is not yet ready to commit, particularly when China and Brazil are not doing the same.

Annex 7: Confidential Profile—China

Research and Position Tips for China

Basic Information

- Largest population in the world that continues to grow rapidly
- Booming economy will need large quantities of fossil fuels to continue to grow
  - Seeking oil deals in Africa (Nigeria, Sudan, Chad, etc.) and Central Asia
  - Heavily reliant on brown/dirty coal for energy production
  - Building large dams for energy with significant environmental damage to area, displacing millions of Chinese
- Much of China's growth is due to increased trade with the United States
- Has resisted efforts requiring China to have mandatory emission caps
- Needs technology and funding to develop green energy production (more of China's resources are focused on reducing poverty and improving standards of living)
- Dwindling water resources due to glaciers shrinking in the Himalaya mountains, pollution and population growth, will only get worse as climate change increases
- Shares many similarities with India, but are not close allies (mistrust each other, fought a war in the 1960s, tension over Tibet)
- Poor environmental image, one major environmental disaster per day is the perceived norm
- Prefers emission reductions based on per capita measurements
- Between 1994 and 2004, China's greenhouse gas emissions grew by 4 % a year
- China currently depends on coal to meet two-thirds of its energy needs
- It hopes to raise its use of renewable energy from 7 % to 10 % by 2010
- China may overtake the US as the world's largest emitter of greenhouse gases by the end of this year
- China has aimed to reduce its energy intensity by 20 % by 2010 and to have 15 % of its energy come from renewable sources by 2020.

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Positions

China's first priority remains "sustainable development and poverty eradication".

China's **best alternative to a negotiated agreement or BATNA** is an agreement only between the United States and China.

China has announced its own commitment: a 40–45 % reduction of 2005 levels in what it calls "carbon intensity." It means China will reduce emissions relative to its GDP growth, meaning that its emissions will actually increase over time because its economy is expanding so rapidly.

Although China is not a member of G77, in the context of the climate change negotiations, China maintains (and wish to maintain) collaboration with G77. It sees G77 as a good platform to delay the negotiation process without being directly held accountable to the delays. China should be in close contact with Sudan which is the G77 chair.

China is very much interested in expanding schemes of technology transfer and relaxing intellectual property rights regulations in technologies very much needed for its process of industrialization. Furthermore, China wants free technology transfer to all developing states. Technology transfer is not a "goodwill" of the developed countries, but a commitment and compensation by the developed countries as they contaminated the environment. The developed countries stole the "environmental space" from developing countries.

China's reluctance to take action now implies a faith in technical progress to effectively deal with climate change in the future when China reached a specific development level.

China follows an opportunistic approach. It will support measures that would hamper the development of others through their binding commitments in reducing GHGs. However, if the measures would have negative implications to its own development, China is not prepared to make concessions. China, as an authoritarian state, depends very much on development (industrialization) to legitimize the control of power of the existing leadership. It is afraid, that binding commitments that will slow its development can lead to political instability in the near future.

China would like to see that a "CDM project" leads to real technology transfer giving the country the ability not only to operate the technology but also to replicate and innovate, however, without making binding commitments.

The risks to poor countries should be the primary focus of the climate change analysis, rather than costs to the developed countries. To this extent, a paradigm shift is necessary from the cost minimization in the future analyses of IPCC.

China welcomes collaborating with the United States, focusing on reducing greenhouse emissions to mitigate the effects of climate change and the country is very interested in hearing the proposals of the United States.

Simulation Tips

China should pursue bilateral talks with the United States to get transfer technology commitments in modernizing its industrial facilities. China welcomes the initiatives of Denmark as Facilitator. China intends to use the G77 to pursue its own interests particularly in delaying the process. China should try to balance India's influence in the G77.

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