



Instituto Universitário de Lisboa

Escola de Ciências Sociais e Humanas

Department of Social and Organizational Psychology

Science and rhetoric in a globalizing public sphere:
Mediating systems of climate change knowledge and action

A Dissertation presented in partial fulfillment of the Requirements for the Degree of
Doctor in Psychology

by

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ISCTE-IUL

October, 2013



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October, 2013

The research reported in this dissertation was supported by a Doctoral Grant (SFRH/BD/62102/2009) from the Portuguese Foundation for Science and Technology.

FCT

Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA CIÊNCIA, INOVAÇÃO E DO ENSINO SUPERIOR

ACKNOWLEDGMENTS

In the end of this long journey, I wish to express my gratitude to all those who have been with me along the way. It is thanks to their invaluable contributions, support and friendship, this journey has been exciting, fun, and enriching.

I am profoundly indebted to my supervisor, Paula Castro, for her generosity and patience with me. It would not be possible to get to the end of this dissertation without her stimulating insights, attentive appraisals, and thoughtful commentary. I was probably a very difficult Ph.D. student, with too many ambitions, and it was her who kept me on the track, and made this long and intricate journey worthy.

I would like to thank Professor Melek Göregenli, who hosted me in Ege University, and provided the support I needed in formulating the framework of this dissertation. Although my visit there was very short, participating in her team was thought provoking.

I am grateful to my friends, both to old friends and the new ones I made in this journey, for peering, learning together and remaining with me, and for their support and care. To Raquel Bohn Bertoldo, for being my peer who was always there to discuss and to help, to İdil Soyseçkin for being my all time available co-coder, and to Tennur Baş, who provided invaluable support and stimulating discussions and links on the topic. My sincere thanks for help with everything, really, to Ana Loureiro, Cláudia Simão, Carla Mouro, Susana Batel, Rita Morais, Cláudia Andrade, Cristina Camilo, Carole Garton, Luisa Bachelor, Mário Melo Costa, Dima Mohammed, Marcin Lewinski, and to Cloé Sire. Without them, neither would I have found my way to the end of this journey, nor would it have the fun and the laughter.

I would like to thank to the Portuguese Foundation for Science and Technology (FCT) for providing the necessary resources, to the Center for Social Research and Intervention (CIS-IUL), to the Department of Social and Organizational Psychology, and its laboratory (LAPSO) at ISCTE-IUL for providing the conditions, the understanding and the help for the completion of this work. I also would like to thank all the interviewees who devoted their precious time, thoughts and views for this work.

I dedicate this thesis to my family, who have always been there with unconditional support and love.

ABSTRACT

People's knowledge and beliefs about intangible problems such as climate change rely heavily on mediated discourses of science and policy. This thesis employs a dialogical and rhetorical approach to social representations to examine how two mediating systems -the mainstream press and environmental non-governmental organizations- represent and reconstruct climate change. The first empirical chapter focuses on the articles published over one decade (1999-2009) in the mainstream Turkish press. The analyses reveal that climate change emerged as a matter of public concern after 2005 in relation to the ecological extremes faced with in the country (Study 1), and that high levels of dramatization in the press in this national context were achieved by drawing on these local impacts and dire risks, and divorcing them from the global and political aspects of the problem (Study 2). Through this separation between the global and the local, and by reconstructing an image of solid scientific knowledge, a hegemonic representation of a serious 'human-caused threat' was established, without identifying by whom or how it would be dealt with (Study 3). The second empirical chapter focuses on the interviews (N=22) with non-governmental actors involved in climate change information and policy in Turkey and Portugal. The analyses show that when responding to less reflexive tasks, the non-governmental experts also confine themselves to the hegemonic representation: 'a human caused problem' (Study 4). Yet, in their reflexive representations, they focus more on the solutions to the problem, bringing into play, contrasting and reconciling two more representations: 'an environmental problem' and 'a socio-political problem' (Study 5). It is shown how these representations interfere with each other in two argumentative contexts, in which the interviewees organized the points of agreement and disagreement in a way which makes their views more acceptable to others (Study 6). Overall, these studies show that, in pursuit of persuasion, the mainstream press mainly resorted to a unifying threat and to emotions, whereas the non-governmental actors resorted to negotiation and reconciliation of divergent views.

Keywords: Mediating systems, Press, NGOs, Social Representations, Communication, Discourse, Rhetoric, Climate change

Classification (PsychINFO): 3000 Social Psychology

3040 Social Perception & Cognition

4070 Environmental questions e attitudes

RESUMO

O conhecimento e crenças das pessoas acerca de problemas intangíveis tais como as alterações climáticas, dependem fortemente dos discursos mediados da ciência e da política. Esta tese utiliza uma abordagem dialógica e retórica das representações sociais para analisar como dois sistemas de mediação -a grande imprensa e as organizações não-governamentais ambientalistas- representam e reconstróem as mudanças climáticas. O primeiro capítulo empírico foca-se nas notícias publicadas ao longo de uma década (1999-2009) na grande imprensa Turca. As análises revelam que as mudanças climáticas emergiram como uma questão de interesse público após 2005, em relação ao extremos ecológicos enfrentados no país nessa altura (Estudo 1), e que os altos níveis de dramatização na imprensa neste contexto nacional foram alcançados a partir dos graves riscos e impactos locais, sendo dissociados dos aspectos globais e políticos do problema (Estudo 2). Através desta separação entre o global e o local, e reconstruindo uma imagem do conhecimento científico como sólido, foi estabelecida uma representação hegemónica de uma grave “ameaça causada pelo homem”, sem se identificar quem a causou nem como se lidaria com ela (Estudo 3). O segundo capítulo empírico foca-se nas entrevistas (N = 22) com atores não-governamentais envolvidos na produção de informação acerca de mudanças climáticas e da política seguida a esse respeito, na Turquia e em Portugal. As análises mostram que ao responder a tarefas menos reflexivas, os especialistas não-governamentais também se limitam à representação hegemônica: “um problema causado pelo homem” (Estudo 4). No entanto, nas suas representações reflexivas, concentram-se mais nas soluções para o problema, pondo em jogo, contrastando e conciliando mais duas representações: “um problema ambiental” e “um problema sociopolítico” (Estudo 5). Mostramos como essas representações interferem umas com as outras em dois contextos argumentativos, nos quais os entrevistados ordenam os pontos de acordo e desacordo de forma a que os seus pontos de vista sejam mais aceitáveis aos outros (Estudo 6). De forma geral, esses estudos mostram que, na tentativa de persuadir o público, a grande imprensa recorre principalmente à ameaça unificadora e ao apelo emocional, enquanto os atores não-governamentais recorrem à negociação e reconciliação de pontos de vista divergentes.

Palavras-chave: sistemas da mediação, comunicação, representações sociais, discurso, retórica, mudanças climáticas, imprensa, ONG

Classificação (PsychINFO): 3000 Psicologia Social
3040 Percepção e Pensamento Social
4070 Questões Ambientais e atitudes

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LIST OF ABBREVIATIONS

ABC	Attitude, behavior, context
CC	Climate change
CO ₂	Carbon dioxide
EU	European Union
GHG	Greenhouse gas
GW	Global warming
HEP	Human Exemptionalist Paradigm
HOMALS	Multiple Correspondence Analysis (Homogeneity Analysis)
IPCC	Intergovernmental Panel on Climate Change
NEP	New Environmental Paradigm
NGO	Non-governmental organization
PPM	Parts per million
SR	Social representations
SPSS	Statistical Product and Service Solutions
TSR	Theory of social representations
UNFCCC	United Nations Framework Convention on Climate Change
VBN	Values, beliefs, norms

CHAPTER 1

INTRODUCTION

CHAPTER 1. INTRODUCTION

In the last months of 2012, and at the aftermath of Hurricane Sandy¹, a campaign entitled ‘Do the math’ traveled several US cities. Organized by a global grassroots movement called ‘350’, the campaign depicted climate change in a very concise and concrete manner: “There are three numbers you need to really understand global warming, 275, 390, and 350” (Science factsheet of the campaign²). The first number stands for the pre-industrial levels of carbon dioxide (CO₂) in the atmosphere in terms of parts per million (ppm). The second number reflects the level of concentration of this greenhouse gas when the ‘factsheet’ was circulated, and the last number, 350 (ppm) stands for the level at which ‘it should be kept’.

Climate change is widely regarded as one of the most complex problems that our societies face. According to some authors, the unusual scope of the problem, which extends to global and intergenerational scales (Gardiner, 2006; Etkin & Ho, 2007), and the vast uncertainties and complexities involved in its apprehension, permit no social framing to embrace its entirety, and make climate change an ‘unqualifiable’ object (Blok, 2011). The problem can perhaps be best described by its unfolding character and as an object with a considerable ‘lack of object-ivity’ (Knorr-Cetina, 1997). Offered to be viewed as a ‘hyper-object’ (Morton, 2010) that resides in almost unthinkable timescales and that confounds the frameworks and boundaries of our daily understandings, climate change can be conceived as a matter of public perplexity and controversy (Latour, 2004).

To put it shortly, climate change (CC) is indisputably grand. How can we then conceive the extremely concise articulation of the ‘climate change math’ that involves only three numbers? How does such a complex and intangible problem become part of daily talk and activities? How is the discourse of science re-presented in dealing with the ‘lack of object-ivity’ of climate change? Who are most significant actors involved in making CC a public concern? What are most saliently used categories of meaning and strategies of persuasion by these actors and mediating systems? In this thesis, I address such questions by privileging a societal approach which draws on the perspective of the theory of social representations (Moscovici, 1961/2008), as well as on other discursive

¹ Hurricane Sandy, also called ‘Superstorm Sandy’ hit the American continent in the last days of October 2012. According to the US National Weather Service, it was the 18th named storm of the 2012 Hurricane Season (<http://www.erh.noaa.gov/phi/storms/10292012.html>).

² See <http://math.350.org> for the campaign website, and <http://www.350.org/en/factsheets> for the science factsheet of the campaign (Retrieved January 22, 2013).

and rhetorical perspectives to social psychological phenomena (Billig, 1987, 1991; Potter, 1996; Harré, Brockmeier & Mühlhäusler; 1999).

Three points that will be recurrently revisited in this thesis may be highlighted with regard to the quotation from the ‘Do the math’ campaign. The first concerns the easily discernible role scientific knowledge plays in the campaign’s representation of CC. By way of the powerful rhetoric of the science, an essentially normative argument (350 ppm for the global levels of CO₂) is presented as a ‘matter of fact’ (Latour, 2004), or as doing ‘math’. The second point specifies the function of this heavy reliance on scientific knowledge in representing issues like climate change. According to Harré and his colleagues (1999), a fundamental aspect of environmental discourse is the combination of an ‘is’ (e.g. the present levels of CO₂ as well as the reconstructed past levels) with an ‘ought’ (e.g. the prescribed future levels for this greenhouse gas). The argument as a whole represents a moral discourse; however, the authors claim, while the audience is “led from an *is* to an *ought*” the environmental discourse does not depart from a scientific reasoning, or at least a heavy dependence on scientific knowledge (p. 48).

The third point concerns the global or ‘planetary’ scope of the argument. No particular context, location or group is specified in presenting the math of CC to public, since the problem is constructed as concerning everyone, everywhere. CC is a truly global phenomenon (Gardiner, 2006), yet, the global nature of the problem does not suffice alone to elucidate the construction of a ‘global soul’ (Doyle & Chaturvedi, 2010). If the talk about issues like CC has emerged “as a world language”, it is also due to the “crucial role of the new worldwide media systems that have emerged over the past decades, making possible the beginnings of an environmental lingua franca” (Harré et al., 1999, p. 15). Leaving aside the cultural and ideological aspects that may be involved in the construction of a global soul, it can be said that intangible issues like CC become ‘real’ by being circulated, they become ‘global’ by being mediated at a mass scale.

As will be summarized in **Chapter 2**, social psychological studies about CC have focused mainly on people’s perceptions, beliefs and attitudes. These studies have emphasized the powerful influence of the social context and norms on the fluctuating levels of public concern and people’s engagement with the problem. This thesis focuses particularly on the representations of CC that the press and the environmental non-governmental organizations (NGOs) put in circulation in the public sphere and that provide the social, discursive and normative context of these perceptions, beliefs and

attitudes. I more specifically focus on the Turkish press and on the CC campaigners from NGOs in Turkey and Portugal. Recognizing the importance of those institutions and actors that take part in mediating –i.e. representing, transforming, translating– the public knowledge on and engagement with the problem, I focus on how these two ‘mediating systems’ (Castro & Batel, 2008; Castro & Mouro, 2011) represent and reconstruct various aspects of climate change.

Mediating systems, such as specialized governmental agencies, NGOs, and the media, play a crucial role in the social representation and re-signification processes of issues like CC. They represent and reconstruct the scientific knowledge about the intricate relationships that give rise to environmental problems and their consequences, which, in the case of CC, are not tangible, not easily detectable by senses (APA, 2009). In other words, they objectify the risks and threats, make them ‘real’ for the public (Beck, 1999), confining their meanings in various ways that significantly affect the decisions and the recognition of existing possibilities (Carvalho, 2005, 2010). Second, they also translate the new normative proposals, policies and laws –that are many times formulated in global and generic terms– to local contexts, giving them concrete content, legitimizing, contesting and in some cases implementing them (Castro & Batel, 2008; Castro, 2012). In doing this, they distribute and ascribe political roles and responsibilities to social actors, influencing how the actors perceive their relative agencies (Carvalho, 2010). In short, mediating systems are key actors in the definition of meanings associated to CC, as well as in the social change and political transformation processes constructed around the problem.

Studying mediation and re-presentation of CC means attending to how the scientific knowledge, and the global, generic proposals about CC are entangled with existing knowledge and belief systems, territorial exigencies and geopolitical aspirations, and become part of common sense and practices. The theory of social representations (TSR) is fit for this purpose in many respects. In **Chapter 3**, I present the TSR both as a theory of communication and as a theory of common sense knowledge that specifically deals with how individuals, groups and societies make sense of new objects that are brought to the public space by various (e.g. scientific, legal, media) systems. The analytical framework, the concepts employed, and the rationale of the empirical studies are introduced and discussed in this chapter.

Approaching the news media “as the primary intermediary between science, politics, and the citizens, as well as their agenda-setting role for citizens’ meaning making

on climate change” (Olausson, 2011, p. 295), in **Chapter 4**, I focus on how the news articles from the mainstream Turkish press depict CC. To date, the most part of the research on media representations of CC has concentrated in the industrialized Western countries (UK and US, mostly). The studies collected in this chapter aim to contribute to a better understanding of how the issue is represented in those countries –like Turkey³– where the public sphere is structured around different priorities, values and belief systems, and perspectives to global environmental governance (Billet, 2010; Doyle & Chaturvedi, 2010).

In this chapter, **Study 1** is a preliminary quantitative analysis of the volume of CC coverage in the two most-widely read mainstream Turkish newspapers. The main findings obtained about a decade of CC coverage (1999-2009) are afterwards used in sampling a corpus of news articles, which are content analyzed in **Study 2** in order to account for the salient meanings, themes and other trends in context in the mainstream news portrayals of CC. The analysis of multiple correspondences among the coded categories of content (HOMALS) allows the study to map the representations and associations carried out in the articles onto a two dimensional semiotic space.

Study 3 focuses specifically on how the scientific knowledge about CC is represented in the press. The first part of this study presents a replication of the previous content analysis on a corpus composed only of those news articles that cover the ‘science of climate change’ in the two newspapers. The analysis in the second part is guided by a more discursive approach, and focuses on a sub-set of these articles, those that quote scientists. In seeking answers to research questions derived from the literature, this more detailed analysis aims to show how the rhetoric of science is reconstructed by the press, and helps in interpreting and substantiating the findings of the previous analysis on the representation of climate change science.

The second empirical chapter, **Chapter 5**, presents three studies on the interviews conducted with experts from NGOs⁴ that are actively involved in CC information and

³ I choose to study the Turkish press also because I know from within the cultural and political context of the country, and having worked previously in the field, hold some experience of the actors, discourses, policies that relate to CC in Turkey.

⁴ The literature offers numerous terms to distinguish between NGOs according to their various aspects, such as international NGOs, environmental NGOs, advocacy NGOs, civil society organizations, and science-based interest groups designated as ‘epistemic communities’ (Edwards & Hulme, 1996; Jasanoff, 1997; Demirovic, 1998; McBeth & Rosenberg, 2006). Since the organizations included in this study show characteristics of almost all of the above, I will use the generic term ‘NGOs’ to refer to those non-state organizations involved in climate information and policy.

policy in Turkey and Portugal. The relation of these actors with the issue differs from that of the mainstream press, in the sense that for these actors CC is not just one of the many news items but one of the main organizational and presumably personal concerns. Therefore, an in-depth interview study was considered to be fit for the task of scrutinizing the conflicts, dilemmas and ambivalences these actors face in mainstreaming CC, in generalizing the new norms, and in legitimizing and delegitimizing the policy proposals offered to tackle the problem.

The three consecutive studies focus respectively on the non-reflexive (word associations), reflexive (open ended questions) and (video-elicited) argumentative parts of the interview. **Study 4** employs two analytical techniques for the structural analysis (Vergès, 1992) of the word associations collected, and draws preliminary hypotheses about the central and peripheral elements of CC representations. These hypotheses are then re-assessed in **Study 5** with a thematic analysis (Attride-Stirling, 2001) of the reflexive arguments that respond to the open-ended questions. The goal in this study shifts from distinguishing the central and peripheral elements of the representations, to identifying the consensual and contested meanings and representations of CC.

Study 6 focuses on the arguments instigated by the use of short video-excerpts that aimed to elicit controversy and debate on two subjects. The first regards the scientific consensus on the human causes of CC, and the second regards the utility and virtue of the carbon offsets in tackling CC. The interviewees' responses to the presented controversial arguments on these subjects are analyzed by paying attention to 'small words' (Billig, 1999; Castro, 2006), and to the order and organization of the arguments (Billig, 1991; Snoeck Henkemans, 1995; Mouro & Castro, 2012). The goal in this analysis is to identify to what extent and how different and at times conflicting views and representations are brought together, negotiated, and reconciled. The study draws on one of the central premises of the TSR, namely 'cognitive polyphasia' (Moscovici, 1961/2008), which suggests that the increasing plurality of representations and the heterogeneity of knowledge not only permit but also require the "diverse and even opposite ways of thinking" (Moscovici & Markova, 2000, p. 245).

In synthesis, the public space fashioned around CC is currently characterized by the broad acceptance of climate science, and by the lack of an effective climate politics (Grundman, 2007; Giddens, 2009). To reiterate in these terms, the research presented in this thesis has two main components: The science and the politics of climate change,

which can be hardly separated from each other, and which will be treated in relation to each other.

The former regards how the uncertainties associated with, the intangibility, and the ‘lack of object-ivity’ of CC are dealt with; how the rhetoric of science is brought to play, and how scientific knowledge is differently reconstructed by the two mediating systems. As will be expounded in the respective chapter, the cultural and political context of the Turkish press allows better opportunities for the studies on the mainstream news articles to focus especially on these questions. The latter regards how the normative proposals, the global and generic solution strategies are contested, legitimized and negotiated, how different problem definitions, conflicting views and undertakings are dealt with, and how representations and articulations arising from different scales and contexts intervene and interfere with each other. Although these questions are addressed in the discourses put together by both mediating systems, the arguments raised by the NGO experts provide better opportunities for scrutinizing them.

By answering these questions, I hope, this research sheds some light on how the epistemic and the normative, the natural and the socio-political, the global and the local, and the scientific and common sense knowledges are brought together in the discourses of the press and the NGOs. By illuminating these I also hope to contribute to the search of a common world that will be able to deal with the challenges imposed by climate change.

CHAPTER 2

STUDYING CLIMATE CHANGE

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This chapter is comprised of three main parts.

The first part presents the scientific notion of climate change, emphasizing its short but ‘hot’ history, and shows that CC exacerbates the existing conflicts not only in the political sphere but also in the world of science. This is done by drawing on the contrast between realist and social constructionist approaches.

The second part is constructed around an attempt to expand the focus of the literature in environmental psychology that focuses on CC. This is done by summarizing the psychological research on CC in two main threads, and by comparing these with some of the influential sociological approaches to risk. In this part, first the prevailing social psychological theories and the empirical research findings on the drivers of and barriers to environmentally significant behavior are summarized, and some criticisms of this dominant model of sustainability in climate research and policy are presented. Then, a description of the studies that focus on the perception and understanding of the risks associated with CC is provided. Having depicted the two main threads in the psychological literature on CC this way, some of the efforts to enlarge the scope of research in environmental psychology is presented afterwards, connecting these to the ways the notion of risk is addressed in some sociological approaches.

The third and concluding part of the chapter sets forth a proposal to study CC by drawing on the discussions carried out in the previous parts. It emphasizes the role of mediating systems in presenting CC to the public, and suggests that examining how CC is represented by the media and the NGOs may be useful in expanding the empirical focus on CC perceptions and engagement. This part has two subsections, which emphasize the widely recognized importance of the press in representing climate change, and the increasing importance of non-governmental organizations as the mediating actors of CC knowledge and action.

2.1. Climate change: A social scientific overview

2.1.1. A very short history of climate change science

The term ‘climate’ refers to a set of data derived by averaging the temporary weather fluctuations, and reflects the unchanging conditions of a certain location (Weart, 2003, p.

10). ‘Global climate’ refers to the planetary scale conditions that serve as a backdrop to other ecological phenomena, and to life on planet (Rosa & Dietz, 1998). Climate, then, has two central aspects: First, it is a statistical construct, an abstract representation, an ‘elusive’ idea that binds together the physical world and cultural imagination (Hulme, 2009); and second, it implies relative stability, in a contrast to the rapidly changing conditions of our daily lives.

A very short history of the scientific understanding of CC reflects how this abstract representation has come to play a very important role in our material world. This is the history of climate slowly being connected to many other entities in a series of scientific innovations. The first connections that Weart (2003), Bolin (2007), and Edwards (2010) cite date back to the 19th century, to the works of J. Fourier (on the relation of the earth’s temperature to its atmosphere), J. Tyndall (on the relation between radiant heat and gaseous matter, 1863), and S. Arrhenius (on the relation between the atmospheric composition –CO₂ levels– and the surface temperature of the planet, 1896). Consequently, when T. C. Chamberlin connected the ocean currents and salinity to the state of the global climate (1906), the possibility of anthropogenic intervention in climate was already a hypothesis. However, the majority of scientists remained unconvinced by the speculations about fossil fuel related climate changes. Especially in the first half 20th century, it was counter-intuitive to think that humans could change the face of the planet (Weart, 2003).

That intuition and the scientific consensus about anthropogenic CC was built mostly in the second half of the century, by way of ice-core explorations, tracking of carbon isotopes, satellite measurements, increased use of computers to manage weather data, and comprehensive models integrating the terrestrial, aquatic and atmospheric ‘carbon budgets’ (Weart, 2003; Edwards, 2010). Increasing accuracy of records by such means and several iterations of data in different and expanding spatial and temporal scales allowed (1) the conclusion that the concentrations of the greenhouse gases (GHG) were unequivocally increasing, (2) the empirical connection between these gases and the energy balance of the biosphere. It was now a matter of adjudication whether and to what extent it entailed a real problem. Because this was explicitly a political as well as a scientific process, the physical science of climate change underwent a remarkable transformation (Hulme, 2009). Standardization of meteorological observations and globalization of weather data were only the first steps in the entwining of climate science with politics and diplomacy (Edwards, 2010). In the 1970’s, several international meetings and research

programs were held, focusing specifically on the possible consequences of the observed increase in the GHGs (Bolin, 2007, p. 27-32). By the 1980's the United Nations Environment Program (UNEP), and in 1987, the UN General Assembly were involved with the definition of the risks, and the scientific implications of the problem. Bolin (2007) draws attention to one of the most detailed reports of the time, published by the US National Academy of Sciences in 1982:

There is probably some positive association between what we can predict and what we can accommodate. To predict requires some understanding, and that same understanding may help us to overcome the problem. What we have not predicted, what we may have overlooked, may be what we least understand. And when it finally forces itself on our attention, it may be harder to adapt to, precisely because it is not familiar and well understood. (Quoted in Bolin, 2007, p. 35)

The quotation emphasizes the role of prediction in the understanding and adapting to climate change. In so doing, it not only reflects the uncertainties⁵ acknowledged by scientists, but also the ‘unfolding character’ (Knorr-Cetina, 1997) of the problem. In other words, the reason why this report from a highly respected scientific organization ponders over the limits of knowledge⁶ acquired about climate change may be sought in the object’s unfolding character, “or its lack of ‘object-ivity’ and completeness of being, and its nonidentity with itself” (Knorr-Cetina, 1997, p. 20).

The founding of the Intergovernmental Panel on Climate Change (IPCC) in 1987 may be seen as part of the attempts to ‘objectify’ climate change –or deal with its lack of object-ivity–, and institutionalize the role of the scientific community in the debate (Hadjilambrinos, 1999). As mentioned above, the ridicule and rejection of the possibility of anthropogenic forcing on the climate system were commonplace among scientists in the earlier decades of the 20th century (Weart, 2003). This has changed especially in the last two decades, as the IPCC acquired its position as the scientific authority in the debate, emphasizing the anthropogenic causes and potentially devastating consequences of

⁵ The understanding of CC necessitates incorporation of uncertainties at many levels. Uncertainty is inevitable in the scientific understanding of complex phenomena, and integral to climate science (Edwards, 1999). It is useful to here distinguish uncertainties regarding the causes and the consequences of CC, as well as empirical (reducible, quantifiable) and epistemological (irreducible, unquantifiable) uncertainties (Edwards, 1999).

⁶ Knowledge normally is reserved as the last thing to be explained, and remains un-interrogated in the analyses that focus on its transformative effects (Knorr-Cetina, 1997). However, climate change, like other contemporary ‘unfolding’ objects (e.g. biotechnology, artificial intelligence), seems to require a more complex relationship with knowledge, e.g. reflexive re-considerations of its limits and uncertainties.

climate change. The mounting evidence reviewed by the IPCC, and the institution's effective combination of scientific and political functions have also helped the issue to become a public concern and kept it on the international policy-making agenda (Hadjilambrinos, 1999).

The IPCC's 'epistemological hegemony' (Hulme & Mahony, 2010) rendered the remaining skeptical voices as 'contrarians', or 'deniers'. From a minority position, these voices have been influential in raising controversies, and in the way the phenomenon gained public attention (Beck, 2010). The maintenance of the controversies is seen to be supported by a professional public relations effort that is traced in the literature to be connected to industrial and ideological concerns (Jacques, Dunlap, & Freeman, 2008; McCright & Dunlap, 2010, 2011; Weart, 2011). The uncertainties about, and the 'social construction' of the problem have often been employed as political resources (Edwards, 1999; Demeritt, 2006). Climate change has this way been transformed into an idea to be contested, rather than a physical phenomenon to be studied (Hulme, 2009, 2010). In various instances, and especially in the US, the IPCC has itself been part of the contestations and controversies rather than settling them down, and has become one of the famous examples of the intertwining of science and politics (Hulme & Mahony, 2010).

As collected and reviewed by the official assessment reports of the IPCC, in the last decades scientists have integrated numerous variables to the predictions about climate change. Thanks to multiplying computing power, integration of satellite data and other tracking techniques, these include extremely complicated effects of the aerosols, sulphates, cloud formations, rate of increase in industrial efficiency, interactive vegetation, and other natural feedback mechanisms (Weart, 2003; Edwards, 2010). However, the inclusion of every new variable requires new puzzles and uncertainties to be taken into account. In this sense, the 'discovery' of climate change is not complete. It can never be complete, since what is being modeled on the planetary scale appears as humanity's interaction with its environment (Edwards, 2010).

2.1.2. Living with uncertain facts

This short detour through the history of the scientific understanding of CC attempted to give a glimpse of how this scientific *fact* was *constructed*. Today, CC is both (1) a fact, representing the current pace of the complex relations between human and ecological systems, and (2) a construction, immersed in increasingly complex monitoring

instruments, data standardization techniques, imagination of those who are passionately engaged with it, and their hypotheses and models which connect the invisibly small to the unimaginably large⁷. The purpose of this section is to show that the controversies around climate change –e.g. whether it is a fact or an ideological conviction– are profoundly connected to the role of science in society, or what is expected of science (Castro & Lima, 2001; Hulme, 2010).

In the face of ecological risks such as CC, the uncertainties that are integral to the scientific understanding of the problem are employed as resources to contest and discard the accumulated scientific evidence (Edwards, 1999; Hogenboom, Mol & Spaargaren, 2000; Lahsen, 2007)⁸. Especially in the US, the controversy over the anthropogenic causes of the problem is perpetuated by the efforts that the literature traces to some conservative think tanks, which have especially confronted the politicized or ‘junk science’ of climate change (see Jacques, Dunlap, & Freeman, 2008; McCright & Dunlap, 2010). In these confrontations, an idealized image of science has allowed the ‘contrarian’ argument that CC is a mere hypothesis, a construction built on simplistic models and predictions that reflect the aspirations of the ‘alarmists’ (Demeritt, 2001). The completion of this argument is that costly public action cannot be based on hypotheses, but only on verified science (Edwards, 1999; Demeritt, 2006).

One of the directions taken to address the ‘contrarian’ charge has been to discredit and reject these claims on the same grounds –aspirations and ideologies contaminating science. This draws on the idea that the social and political contingencies should be –and could be– carefully excluded from science by rigorous application of a set of shared (Mertonian) rational norms (Mulkay & Gilbert, 1984), enabling science to resolve the controversies. From this perspective, uncertainty appears as a temporary pathology awaiting more precision and data that are supposed to reveal the determining facts (Wynne, 1994). According to some scholars, although this realist –and in some cases

⁷ If the latter could not be emphasized vividly for reasons of brevity, see Edwards (2010) for an extended demonstration of how ‘climate data’ is filtered, recalibrated and integrated by ever more powerful yet provisional models, and not simply collected –from the tree rings, ice cores, etc. For Latour (2011), this complex mediation and reinterpretation of climate data has been the main epistemological resource for climate ‘contrarians’: “they find this knowledge too indirect, too mediated, too far from immediate access”, however, “this tapestry is amazingly resilient” because it is interwoven in a series of iterations from many different perspectives, “allowing data to be recalibrated by models and vice versa” (p. 6).

⁸ The perpetuation of the ‘climate controversy’ largely depends on the obfuscation of different types of uncertainties with each other (Pidgeon, 2012). The concept of ‘uncertainty transfer’ (Spence et al., 2012) captures this problem, namely, the transference of the uncertainty about one aspect of climate science and policy (e.g. scale of the disruption) with a different aspect (e.g. significance of the human causes).

positivist– perspective has its shortcomings, it has to be maintained, because “if global change is seen as primarily a social construction rather than an objective (albeit imperfectly understood) condition, then it poses little threat to the future of our species” (Dunlap & Catton, 1994, p. 23; see also McLaughlin & Dietz, 2008).

One of the most important shortcomings of this –realist– approach is its avoidance or unreflexive treatment of existing conventions, convictions, and interests (Wynne, 1994), which tends to suppress the voices of different perspectives, and yielding an expert and elitist discourse on the politics of climate change (Beck, 2010). The assumption is that once the facts about CC are established, the greening of the societies will more easily follow (Wynne, 1994; Beck, 2010). The realist approach, then, implies that the resolution of the controversies is to be provided by the institution of science and by enhanced ‘scientific literacy’ (McCright, 2007).

A second general direction in responding to the ‘contrarian’ efforts to obfuscate scientific communication about CC is shifting the focus from scientific facts to societal risks. Such a view is cognizant of the difficulties of resolving such controversies with more data, since deciding what counts as knowledge is also a societal problem (Mulkey & Gilbert, 1984; Edwards, 1999; Demeritt, 2001). From this perspective, uncertainty appears as integral to scientific knowledge, and can have irreducible qualities (Edwards, 1999). This social constructionist perspective suggests that, in order to effectively deal with CC, the authority of science and specialized expert knowledge have to be somewhat reconciled with diverse and sometimes contradictory voices (Backstrand, 2003). Hence, the emphasis is on increasing ‘public participation’ rather than ‘science literacy’. The way forward, as argued by most of the authors cited in this debate, is to avoid simplistic debates between clear-cut positions of realism and social constructionism, and to transform the debate “from a battle over truth to a debate about how to act within uncertainty” (Edwards, 1999, p. 467).

However, the social constructionist approach has also its adverse political implications, by unwillingly contributing to the deconstruction of an “epistemologically secure foundation” onto which a rational climate action would be devised (Demeritt, 2006, p. 456). It implies that the resolution of the controversy is to be brought about by social negotiation (Edwards, 1999), and the role assigned to science in this social negotiation process varies between approaches. By opening up the debate to wider segments of society, the scientific authority is not completely erased, but limited (Demeritt, 2006). The

problem here is that without the powerful rhetoric of science, it becomes more difficult to timely and effectively address the risks imposed by climate change (Hulme, 2007).

What we learn from this simplified divergence between realist and social constructionist approaches (Rosa & Deitz, 1998; Beck, 1999) is that the barriers impeding significant action against CC do not only suggest working with both certainties and uncertainties at the same time. They concern more profound questions such as how the norms and the authority of science are mobilized in public debates (Jaspal, Nelich, & Koteyko, 2013).

This has been the outstanding theme of the social studies of science field in the last three decades. Some critical perspectives in this literature suggest that, for about two centuries, the modern society has produced an image of itself as depending exclusively on ‘matters of fact’ (Latour, 1993, 2004). These were seen as easy to prove, calculate, replicate, reproduce; they quickly made sense and slowly became part of our everyday activities. They were presented as being ‘out there’, waiting to be domesticated by the work of scientists, for the use of an increasingly disembedded society⁹. The formula for the scientific enterprise to occupy its reserved place between the nature and society in this era was simple: All truth was attributed to nature, while all falsehood was explained by the society (Latour, 1993).

With its many aspects, climate change makes it more difficult to adhere to the narratives about the ‘matters of fact’ that characterized much of the thinking of ‘the moderns’ (Latour, 1993). CC is one of the best examples of those side effects or ‘externalities’ of the industrial growth that return to society, become subjects of public debate, and sit at the center of political conflict (Beck, 1999). These side effects, which appear as ecological risks when they become public, bring about new questions concerning human exemptionalism and limits to growth (Catton & Dunlap, 1978; Dunlap & Catton, 1994). They open space for new conceptualizations of society, and proposals that extend the social relations to the world of objects¹⁰ (Latour, 1993). To put it shortly,

⁹ That our everyday lives are increasingly disembedded from the natural environment is one of the challenges against the communication and understanding of CC (Moser, 2010). Latour (1993) sees this process as brought about by the modern sciences, by distinguishing, separating and contrasting the domains of nature and culture to the extent that they eventually were seen as incommensurate. As an outcome of this process, the hard facts constructed and established by experts, which are prone to cultural perception, moral judgment, politics and technology, appear to us as ‘out-there’ in ‘Nature’ (See also Potter, 1996).

¹⁰ There are an increasing number of concepts offered to the vocabulary of social sciences, such as ‘hybrids’, ‘quasi-objects’, (Latour, 1993), ‘knowledge objects’ (Knorr-Cetina, 1997), ‘hyper-objects’ (Morton, 2010) to capture this extension, the unfolding character and the lack of ‘object-ivity’ of the emerging problems like

CC manifests a complex blending of the natural and the cultural. “It makes a mockery of the premise that society and nature are separate and mutually exclusive” (Beck, 2010, p. 256). Rather than an object that can be delimited as a simple fact, demonstrated, replicated and verified by experiments, CC is a collective experiment itself that extends to global and intergenerational scales, with causes and effects dispersed variably in time and space (Gardiner, 2006; Etkin & Ho, 2007).

Furthermore, CC also disrupts the post-modern commentary concerning the end of the grand narratives and the ‘system’ being unresponsive to human actions. In a way, it is the ultimately grand narrative of how the ‘eco-system’ responds to human actions (Myerson, 2001, p. 36). However, the understandings of the ‘nature’ of the eco-system’s responsiveness are deeply embedded in the categories of human understanding, inciting numerous controversies around the questions such as ‘what counts as a problem?’, ‘how much CC is too much?’, ‘are we entitled to control the ‘eco-system’ in order to sustain it in a way that suits the needs of humans?’, and above all, “how do we want to live?” (Beck, 1999, p. 138).

2.2. Psychological and sociological approaches to climate change

The foregoing section suggested that, along with their broader impacts on human society, the challenges imposed by problems like CC have a bearing on social scientific assumptions and disciplinary approaches. One of the first and most influential social scientific proposals concerning this influence, the New Environmental Paradigm (NEP) (Dunlap & Van Liere, 1978; Catton & Dunlap, 1978) was taken up both by sociology and psychology, albeit differently. The proposal itself was both theoretical and empirical, in that it suggested that our societies were going through a paradigmatic shift, from Human Exemptionalism (HEP) to a newly emerging environmental paradigm (NEP), and aimed to measure this shift by a scale tapping environmental worldviews (Castro, 2002).

As long-held assumptions began to lose their power over our perceptions, we began to recognize that the reality of ecological constraints posed serious problems for human

climate change. Notwithstanding their differences, these concepts generally refer to those entities that cannot easily be dealt with from within the modern distinctions of subject/object, nature/culture, local/global, and knowledge/belief. This is mainly because they bear the capacity to manifest as something else than what they signify at present, and through this quality, to disrupt and transform the relationships that created them (Knorr-Cetina, 1997). Such objects offer unique opportunities for the social sciences, in making “us more aware, less comfortable, and hence more reflective about how we intervene, in word or deed, in the changing order of things” (Jasanoff, 2010, p. 249). They force “everyone to rethink anew the role of objects in the construction of collectives” (Latour 1993, p. 55).

societies *and* for the discipline of sociology. It began to appear that, in order to make sense of the world, it was necessary to rethink the traditional Durkheimian norm of sociological purity –i.e., that social facts can be explained *only* by linking them to other social facts. The gradual result of such rethinking has been the development of environmental sociology. (Catton & Dunlap, 1978, p. 44)

This second part of the chapter draws on an apparent divergence: By undertaking the paradigm shift from HEP to NEP to a large extent, environmental sociology has mostly focused on the changing societal, political and institutional dynamics brought about by new ecological risks, and the epistemological questions these entail. The questions asked in this literature were comprehensive, politically cognizant, and mainly characterized by social constructionist approaches (Buttel, Dickens, Dunlap, & Gijswijt, 2002). As mentioned in the previous section, the role of the institution of science, and the relations between nature and society were called into question, conceiving CC as a ‘manufactured risk’, rather than an environmental problem.

Meanwhile, environmental psychology has focused mainly on the empirical capacity of the proposals and methodological tools –such as the NEP scale– to measure and model environmental beliefs and attitudes as determinants of behaviors to be promoted. The questions asked in this literature were mainly characterized by an exclusive focus on the private sphere, and a realist and a policy-oriented framework (Uzzell & Rathzel, 2009; Castro, 2012).

A recent review of literature on the role of the non-governmental sector in transition to a low-carbon society (Büchs, Smith, & Edwards, 2011) has highlighted the well-known disciplinary predispositions in the context of climate policy. The authors have identified “two contrasting approaches to understanding how our actions might be changed to reduce their impact on climate change. The first draws on social psychology, focusing on individual behaviour. ... The second draws on the sociological tradition and focuses on social practices as the unit of analysis” (p. 3). The behavior change approaches were labeled as the dominant paradigm, while the focus on social practices for creating societal and structural changes was designated as the alternative perspective.

The following sections highlight two key aspects of the psychological literature on environmental problems with a specific focus on CC, discussing these together with the divergent approaches in the sociological literature. A summary of the literature on the drivers of pro-environmental behavior is provided first, with its criticisms; then follows a

brief summary the literature on perception and understanding of the risks associated with climate change.

2.2.1. The ABC and VBN theories

Most of the psychological research focusing on environmental problems and CC draw on the crucial distinction between the individual and the environment the individual is immersed in, which rests upon the fundamental distinction between the ‘internal’ and ‘external’ variables acting on ‘pro-environmental behavior’. For instance, one of the often cited theoretical approaches, the ABC theory (Guagnano, Stern, & Dietz, 1995) has posited that behavior (B) is a joint product of the individual attitudinal variables (A), and the external contextual factors (C). Despite constructing a simplistic model that was forged within the premises of the attitude theory and reasoned models, the ABC theory has highlighted the interaction among the variables it had identified, such as awareness of costs and consequences of one’s choices, and the ascription of responsibilities. To put it differently, demographic and other ‘external factors’ were theorized to influence behavior only indirectly, by way of their relation to and effects on beliefs, motivations and other ‘internal factors’, and their activation of particular norms (Guagnano et al., 1995).

Perhaps the most important lesson to be drawn from the research guided by the combination of attitude and context to predict and change behavior is that for those behaviors that are not strongly endorsed or required by the context, the attitudinal factors have only a weak bearing upon behavior (Guagnano et al., 1995, Stern 2000). In other words, the social context is assumed to have a significant role on the pro-environmental behaviors (Olli et al., 2001). However, a limitation of the empirical studies supporting the theory has been the extremely simplistic treatment of the social context, –e.g. operationalized as presence or absence of recycling bins (Guagnano et al., 1995)– in studying pro-environmental behavior.

This limitation was addressed by numerous empirical studies and theoretical suggestions in the field, drawing mainly on the theory of reasoned action (Fishbein & Ajzen, 1975) and the norm-activation theory (Schwartz, 1977); and by focusing, for instance, on littering decisions (Cialdini, Reno, & Kallgren, 1990) purchase of organic food (Thøgersen, 2002), choices of commuting (Wall, Devine-wright, & Mill, 2007), and energy saving behavior (Nolan, Shultz, Cialdini, Goldstein, & Giskevicius, 2008). In general, the research that followed the question concerning the factors influencing pro-

environmental behavior has increasingly detailed and highlighted the importance of social norms and their reception. Particularly, Cialdini and colleagues have distinguished between, and in a series of studies have scrutinized the impact of different types of norms on pro-environmental behavior¹¹. Notably, most of these studies focused on the influence of social norms on behavioral decisions have taken field settings as sites of research, and helped construct a specific model of social influence (Cialdini, 2005).

Another influential theory in the field has been the value-belief-norm (VBN) theory (Stern, Dietz, Abel, Guagnano, & Kalof, 1999; Stern, 2000). To account for the ‘environmentally significant behavior’, the theory has integrated the norm-activation theory (Schwartz, 1977), and the New Environmental Paradigm (NEP) (Dunlap & Van Liere, 1978; Dunlap, Van Liere, Mertig, & Jones, 2000) with the mounting evidence about and conceptualization of the impact of values on behavior (i.e. altruistic values, Stern & Dietz, 1994; Dietz, Stern, & Guagnano, 1998). This integration was built upon the observation that the literature offers different ways of conceptualizing environmental behavior, as a matter of values and attitudes that individuals hold, and the norms and external variables that constrain these in specific contexts. The VBN theory arranged these conceptualizations in “a causal chain of five variables leading to behavior”: personal values, environmental worldviews, perceived consequences for the valued object, perceived ability to reduce threat, and norms¹² (Stern, 2000, p. 412).

The VBN theory identified between different types of environmentally significant behavior, namely (1) private-sphere consumer behaviors, (2) public-sphere citizenship behaviors, and (3) environmental activism; and four categories of their causal variables (attitudinal, personal, contextual, and habit), producing a comprehensive list of causal factors (Stern, 2000). “Different kinds of environmentally significant behavior have different causes. Because the important causal factors may vary greatly across behaviors and individuals, each target behavior should be theorized separately” (Stern, 2000, p. 421). Following this call, much of the research in environmental psychology has focused on

¹¹ The study of norms has a long history in social psychology; this specific research thread has contributed especially in the understanding of the differences between the descriptive and injunctive norms in their linking to behavior, as well as the dependence of the individual’s normative focus on cultural, situational, and dispositional factors (e.g. Cialdini, Reno, & Kallgren, 1990; Cialdini et al., 2006; Goldstein, Cialdini, & Griskevicius, 2008).

¹² In the causal chain proposed by the VBN theory, the moral norms are conceived as the main basis for “the ways environmentalism finds behavioral expression. In particular, environmental citizenship behavior ... is affected by broad beliefs about how society should be organized and by social-structural variables that reflect an individual’s access to resources to act as a social change agent” (Stern et al., 1999, p. 91).

specific behaviors and has employed the insights summarized by the VBN theory with the goal of reaching a better understanding and more complete theorization of environmentally significant behavior, through its drivers and barriers.

2.2.2. Assessment of values, beliefs and norms in service of behavior change policies

Contemporary environmental psychology is characterized by its overall orientation to empirical data and policymaking (Gifford, 2009; Uzzell & Rathzel, 2009). According to Uzzell and Rathzel, the empirical focus on –the drivers of and barriers to– consumption behavior has been a defining characteristic of the field, with consumption being treated as taking place in a social, cultural and political vacuum. Consequentially, the principal concern has been “changing the behaviours of individuals and groups, instead of looking at the relationship between the political, economic, and social contexts and the actions of individuals” (Uzzell & Rathzel, 2009, p. 341). The authors label this approach as part of the model of ‘weak sustainability’, which is seen to reproduce and reinforce the fundamental dualism between individuals and society, and thereby contributing to, rather than overcoming people’s relative weakness and susceptibility as consumers in the face of intensifying global environmental problems.

The focus on the determinants of environmentally significant behavior is easily discernible in American Psychological Association (APA)’s Task Force Report (2009) that reviews the growing body of psychological research on CC. The APA report establishes the human contributions to CC in the framework of consumption behavior, depicted as driven by individual (e.g. age, income, needs, beliefs and attitudes about the environment) and contextual factors (e.g. norms and regulations, media and advertising, family and organizational culture)¹³. In other words, one of the primary concerns of the studies reviewed by the report are the human behavioral contributions to CC, driven by the values and beliefs individuals hold, and constrained and shaped by the norms and other external variables.

In this framework and with an overall orientation to provide guidance for the design and implementation of new policy measures, a significant part of psychological studies on CC have focused with quantitative surveys on the reception of and the levels of

¹³ In turn, the psychosocial and mental health impacts of CC are depicted mainly in relation to emotional outcomes such as stress, despair and apathy, which are devised as powerfully influenced by social norms, risk appraisals, mental models, and media representations (APA, 2009).

support to mitigation and adaptation policies (Grothman & Patt, 2005; Steg, Dreijerink, & Abrahamse 2005; Dietz, Dan, & Shwom, 2007; Lubell, Zahran, & Vedlitz, 2007; Heath & Gifford, 2009; Poumadere, Bertoldo, & Samadi, 2011; Borgstede, Andersson, & Johnson, 2013). For example, Steg and colleagues (2005) have assessed the acceptability of new energy policies among the Dutch public to test the causal chain suggested by the VBN theory. The significance of the relations between the variables in the causal chain confirmed the assumptions of the VBN theory, and led to the conclusion that norms are more strongly connected to less costly behaviors (i.e. recycling, filing up the wash machine, acceptability of policies), than relatively costly behaviors (e.g. commuting choices) (See also Guagnano, Stern, & Dietz, 1995).

Support for the importance of core values, beliefs and norms in shaping responses to CC were also obtained from a survey study of the US public's support for climate policy measures (Dietz et al., 2007); and by looking at the public and private sector decision makers' willingness to accept new policy measures (Nilson, Borgstede, & Biel, 2004). According to this study, the central role of norms in redefining the relations between core values and organizational goals was stronger in the public sector than in private sector. While in the private sector internal goals and self enhancement values were achieved as a significant predictor of acceptance of the policy measures (e.g. prohibitions, taxes), in the public sector the relations between the external goals and self transcendent values were found to be significantly mediated by norms. Overall, a convergence point of the findings in this research thread regards the prominence of perceived costs and efficacies in linking the risk perceptions to consumption behavior¹⁴, support for mitigation policies (e.g. Dietz, et al., 2007), and representations of one's adaptive capacity (e.g. Grothman & Patt, 2005).

The volume of studies on and the specific section devoted in the APA report (2009) to the barriers against engagement with CC reinforce the inferences drawn above about the influential role of norms on behavior and the general orientation of the psychological literature to inform policymaking. The studies addressing the problem of engagement have broadly distinguished the individual barriers (lack of knowledge, distrust in information sources, externalizing responsibility and blame, reliance on

¹⁴ The self report measures employed in these studies many times assume energy saving behaviors as taken with an environmental intent. However, research has also pointed up the potential influence of other factors –such as micro-economic ones– on the household energy saving and other daily consumption behaviors (Whitmarsh, 2009; Borgstede et al., 2013).

technology, psychological distance of the threats; reluctance to change lifestyles, uncertainty and skepticism, issue fatigue, lack of place attachment, fatalism, and helplessness) from social or structural barriers (lack of action by others, conflicting social norms and expectations, conflicting goals and aspirations, the commons dilemma, lack of enabling initiatives, other pressing –economic– priorities, lack of common goals and superordinate identities) (Lorenzoni, Niholson-Cole, & Whitmarsh, 2007; Gifford, 2011; Poortinga et al., 2011; Batalha & Reynolds, 2012).

2.2.3. Criticisms of the dominant model of sustainability in climate research and policy

The studies cited above are characterized by the efforts to undertake the environmentally significant behavior as a complex object that resides both in the moral sphere and in social settings (e.g. Nilson et al., 2004; Whitmarsh, 2009a), rather than one that can be accounted for directly by values, beliefs and attitudes the individual holds. With a realist approach to the policy process, these studies have provided empirical support for, and highlighted the influential role of the social context and norms in achieving sustainability goals in relation to CC. However, this is achieved almost exclusively by assuming a predetermined ‘context’ of social transformation, to which individuals characterized with self-interest are expected to participate (Shove, 2010a; Webb, 2012). This dominant approach in environmental psychology, designated above as the model of ‘weak sustainability’ (Uzzell & Rathzel, 2009) has been criticized both from within social psychology, and by researchers employing sociological and social constructionist approaches to social change.

Uzzell and Rathzel’s (2009) view of the ‘strong sustainability’ model for environmental psychology places the emphasis on relations of production and political relations (i.e. how existing institutions function in the envisioned transformations), to expand the focus on the relations of consumption. This involves conceiving social relationships as comprising multiple and interwoven levels, “not relegated to a specific domain existing outside the realm of the economy and the environment, but [which] defines the economic, political and environmental sphere in a certain historical moment in a given place” (Uzzell & Rathzel, 2009, p. 345). Furthermore, a research program aimed at strong sustainability suggests a change of focus towards “how people position themselves as social actors, how they make sense out of the world, and how they see opportunities and barriers to action and in so doing understand the conditions of social life which need to be changed” (Uzzell & Rathzel, p. 341). This means to say that studies of

environmental concern can benefit from studying individuals not only as participating –or not– within predetermined frameworks of social transformation, but also as active citizens in re-defining and re-constructing the political processes of societal change¹⁵.

A similar point was raised by some sociological accounts in the context of climate policy. In a rather critical manner, the current policymaking agenda on climate change was characterized by a conscious avoidance of critical questions concerning the existing socio-political framework, and depicted as “anchored in simple accounts of attitude, behaviour, choice and change” (Shove, 2010a, p. 285, See also Webb, 2012). In a “deliberately provocative” article, Shove (2010b) has argued that the dominant policy agenda on CC is mainly constructed on (1) the rational choice model of individual/society interaction, (2) the exclusive focus on the variables of and ways to influence the individual behavioral choices, and (3) the treatment of the notions of social context and habit as external causal variables; viewing these explicitly in connection to the definition of the problem in psychological literature.

Shove’s (2010a, 2010b) criticisms mainly addressed conceptualizing the drivers of environmental deterioration as ‘individual behaviors’, overlooking the fact that these –and what are conceived as their determinants– are simultaneously ‘social practices’. According to this argument, the attempts to contain the ‘contextual variables’ in models of behavior change entails treating the normative practices, daily routines and habits as abstract factors bearing upon the behaviors they direct, rather than behaviors themselves (Shove, 2010b). Some authors in social psychology agree with this critique: “arguing that values and norms are the decisive reasons why people do or do not engage in sustainable behaviours implies that dependent variables are being treated as independent variables.” (Rathzel & Uzzell, 2009, p. 341). The proposal here, to arrive at a better understanding of the consumption patterns, and associated lifestyles and worldviews, is to scrutinize not only how these variables and factors function “once they are in place, but also the forces and practices by which they are put into place” (p. 348). This means to ask questions that are

¹⁵ This conflict appears in different forms in the history of social sciences, for instance as the duality between ‘structure’ and ‘agency’ (e.g. Giddens, 1984). Approaches conceiving the individual as “constantly performing or achieving society” instead of entering pre-determined roles, classes, and *structures* (Latour & Strum, 1986, p. 170) which can be classified as the theories of ‘process ontology’, strongly reject these dualities. A second rejection is raised by the theories of ‘inseparability’, which hold that individual and societal are separate but interdependent (Sawyer, 2002). The theory of social representations (Moscovici, 1961/2008) holds this sociogenetic approach, and views the dualism between the individual and society is a false problem (Jovchelovitch, 1996). This will be highlighted in the following chapter on social representations.

not asked in the dominant policy agendas, to “shift the focus away from individual choice and to be explicit about the extent to which state and other actors configure the fabric and the texture of daily life” (Shove, 2010b, p. 1281)¹⁶, and to address the social discourse and policy agendas alike (Castro, 2012) as legitimizing and de-legitimizing practices of the multiple motivations involved in people’s environmental behaviors.

In their reply to the ‘deliberately provocative’ sociological argument raised by Shove (2010b), Whitmarsh, O’neill, and Lorenzoni (2011) have argued against the simplistic portrayal of psychological models, and the “wholesale dismissal of nonsociological approaches to social and behavioural change” (p. 258). Their response rests upon the “critical difference between addressing climate change mitigation and adaptation ...and seeing climate change through the lens of panacea/opportunity for radical social change” (p. 259). In an attempt to reconcile and focus on exchanges and points of intersection between the disciplines, the psychologists’ reply was concluded by reconstructing the sociologist’s critique as the necessity for “carefully considering how sustainability is conceived and enacted in various realms of the policy arena” (p. 260). From this reconciliatory point of view, (sociological) analyses of social practices and institutional transformations, and (psychological) analyses of individual behaviors may yield different insights, which may potentially intersect, providing the public and policymakers with more robust frameworks and tools for coordination of different levels of public responses to climate change. Or as Whitmarsh and colleagues (2011) put it “using multiple perspectives and approaches can offer a complementary, and potentially more complete, view of the object of study” (p. 259).

In a second reply, Shove (2011) has challenged the very attempts to reconcile and put together the different disciplinary assumptions, accentuating the ‘issues of incommensurability’. According to this view, without there being a coherent

¹⁶ This sociological critique (Shove, 2010a, 2010b) can be viewed in relation to the perspectives of ‘governmentality’ that focus on the processes through which a whole rationality of government is reproduced at the level of individual concerns, constructing ‘morally responsible’ (Rasborg, 2012) and ‘calculating’ (Webb, 2012) subjects. Studies employing this perspective have commonly addressed the top-down agendas (having features of pedagogy, planning, management, and discipline) that allow the governments to reframe public problems primarily as problems ensuing from the private sphere (Phillips, 2000), to ascribe the responsibility for policy goals to experts (Hulme, 2009), and responsibility for action to individuals (Oels, 2005; Lovbrand, Stripple, & Wiman, 2009, Webb, 2012). Studies that view CC in relation to the emergence of new forms of governmentality have highlighted the increasing de-socialization (Rasborg, 2012) and de-politicization (Swyngedouw, 2010) of the problem and the policy agendas. Notably, these processes include justification of the creation of new markets and advancing commoditization, while overlooking the potential contributions of societal options or limiting them to no-regrets policy options, which are connected to ‘technologies’ of citizenship and behavior change (Oels, 2005; Webb, 2012).

epistemological framework through which different ontological assumptions could be explicitly compared and contrasted, bringing together conflicting perspectives may jeopardize the outcome of serious research questions. Furthermore, Shove argued, different approaches are necessary and valuable, not because they provide a more holistic view and “provide policy makers with a more colourful palette of responses to matters of urgent concern”, but because “they generate different definitions of the problem” (p. 264). Hence, according to this view, different ‘perspective-plus-problem-definitions’ lay in parallel to each other, and strive for dominance.

As to the conflict and cooperation between different disciplinary approaches, the approach guiding this thesis is aligned with the view presented by Whitmarsh and colleagues (2011) in that the societal perspective exemplified by sociology, and the perspective addressing individuals and groups as both active and constrained agents, exemplified by psychology, have points of convergence, and can be put both in opposition as well as collaboration with each other. However, it also has to be acknowledged that different problem definitions built on different ontological and epistemological assumptions cannot be put together unreflexively, and to attain “single narratives and simple, one-dimensional story lines that explain behaviour and specify what should be done to change it” (Shove, 2011, p. 263).

As to the conflict between the (psychological focus on) individual behaviors and (sociological focus on) societal practices, this thesis proposes to take seriously the questions of how these are put together, compared, and ‘mediated’ in public discourse and communication. This means to address how those institutions and actors that take significant roles in making CC public reconstruct and reframe the ‘problem’, and attempt to establish certain types of knowledge, values, norms and behaviors in relation to CC. Such an approach puts emphasis on the re-presentation of the problem: The multiple and conflicting definitions of ‘dangerous’ climate change have a crucial bearing on what will be seen as the rational solutions to the problem (Lieserowitz, 2005), and the means through which a sense of urgency and alarm, as well as a sense of security (Oels, 2005) are provided for the individuals.

The concept of risk is particularly useful both in these terms, and in reconciling the psychological and sociological approaches to CC. According to Taylor-Gooby and Zinn (2006) recent developments in the sociological literature on risk, i.e. “a tendency toward more individualist and, to some extent, realist accounts” (p. 397) as well as in the

psychological literature, i.e. a tendency “toward constructionism and, to some extent, to more social approaches” (p. 397) promises new options to bring the two disciplinary orientations closer, and opens up opportunities for cross-disciplinary research. Their review first of all confirms the more salient tendencies in the two literatures –associating psychology with realist, and sociology with social constructionist approaches–, and points up a recent convergence as to the treatment of concept of risk. The following section focuses on this second main thread of psychological research on CC.

2.2.4. The assessment of climate change risk perceptions

The two previous sections have introduced one of the main focuses of psychological research on climate change as the determinants of and barriers to behaviors associated with CC mitigation and adaptation. As these crucially depend on the awareness, perception and understanding of risks and dangers (Weber, 2006; APA, 2009), a second main thread in psychological research has concentrated on how people face up to the risks associated with CC.

The APA report (2009) allocates two chapters to the broad literature on the awareness and understanding of, and coping responses to CC, viewing both mainly in the framework of risk perception and amplification. In this regard, the report highlights the crucial dissociation “between the output of the analytic and affective systems” (p. 23), with its implications for the uncertain and intangible risks associated with CC. The adverse implications are discussed not only to account for the less than advisable levels of engagement with CC at all fronts, but also for the difference in the reception of and judgments about the problem in expert and public spheres (See also Lieserowitz, 2006; Weber, 2006; Marx et al., 2007, and section 3.1.2).

Earlier research in this thread has focused on the public awareness of and knowledge about the problem, suggesting that the overall public concern and perception are not necessarily based on adequate understanding of the problem (e.g. Bostrom et al., 1994; Read et al., 1994). This research was developed by shifting the focus from CC literacy to the perception of risks and uncertainties (e.g. Lieserowitz, 2006; Sundblad, Biel, & Garling, 2007), as well as to the intercultural differences (Dunlap, 1998; Lorenzoni & Pidgeon, 2006; Lorenzoni et al., 2006), and the role of ideologies (Heath & Gifford, 2006; Zia & Todd, 2010) in understanding and engaging with the risks imposed. Confidence in one’s knowledge on CC was obtained to be low among the public, and

particularly among those who remain skeptical about the problem (Sundblad, Biel, & Garling, 2009). More recent findings suggest that the general public do not clearly distinguish between different types of uncertainty and skepticism (Poortinga et al., 2011; Spence, Poortinga, & Pidgeon, 2012), and that skepticism is associated with conservative political ideologies and traditional values, as well as older age and lower socio-economic status (Whitmarsh, 2011; Poortinga et al., 2011).

The notion of ‘psychological distance’ of CC (Spence, Poortinga, & Pidgeon, 2012) synthesizes most of the findings in this literature. Spence and colleagues count the uncertainties about particular consequences in this framework together with the tendencies to perceive the threats at temporal and spatial distances¹⁷, and others as more vulnerable to CC impacts (e.g. Lorenzoni & Pidgeon, 2006; Lorenzoni & Hulme, 2009; Smith & Joffe, 2013). To bring CC “psychologically closer and make potential climate change impacts relevant to individuals’ social group, locality, and lifetime” (Spence et al., 2012, p. 969) in risk communications, psychological literature puts an emphasis on the role of emotions in people’s perceptions and judgments of intangible risks (e.g. Lieserowitz, 2005, 2006; Marx et al., 2007, Höijer, 2010), as what lacks is conceived to regard the affective component and not the analytical processing of CC information (APA, 2009).

When the methods employed in this literature is considered, it appears that the current knowledge on the beliefs about and the public understanding of and engagement with CC also depends, for the most part, on quantitative surveys (Lazo, Kinnell & Fisher, 2000; Nilsson, Borgstede & Biel, 2004; Heath & Gifford, 2006; Lorenzoni & Pidgeon, 2006; Lieserowitz, 2005, 2006; Nisbet & Myers, 2007; Sundblad et al., 2007; Cabecinhas, Lázaro, & Carvalho, 2008; Kellstedt, Zahran, & Vedlitz, 2008; Whitmarsh, 2009a). While such studies are useful in detecting general trends in public opinion, and provide measures for intercultural comparisons, they fall short in capturing the whys and wherefores of these trends (Wolf & Moser, 2011; Pidgeon, 2012).

¹⁷ The perceptual distance of CC impacts can be viewed in relation to notion of ‘environmental hyperopia’ (Uzzell, 2000) which suggests that local environments are represented as less vulnerable to threats than regional and global environments (Garcia-Mira, Real, & Romay, 2005). Environmental hyperopia is explicitly connected to processes involved in risk perception, e.g. optimistic bias (Uzzell, 2000), and to the dominant representations of nature, environment and risk (Lima & Castro, 2005). In line with the risk representation framework proposed by Joffe (2004), I take the psychological distance of CC as a cultural coping strategy rather than a matter of bias and a cognitive error, which involves not only conscious but also affective and unconscious processes that generate a sense of security for the self, through which the causes and the preventability of the hazard –vulnerability as well as the sense of agency– is put on others (Smith & Joffe, 2013).

Although more difficult to replicate and generalize, qualitative studies allow researchers to more fully understand the representational processes and socio-cultural factors acting upon specific decisions and attitudes, affective and behavioral responses to various types of climate change information and aspects of the social-environmental change (Wolf & Moser, 2011). Among the techniques employed in such studies, one can identify word-association tasks (Cabecinhas, Lázaro, & Carvalho, 2006; Lieserowitz, 2006; Lorenzoni et al, 2006), semi-structured interviews (Bostrom et al., 1994; Rathzel & Uzzell, 2011; Smith & Joffe, 2013) and focus groups (Stoll-Kleeman, O’Riordan, & Jaeger 2001; Lorenzoni & Hulme, 2009). According to Lieserowitz (2006), affective images collected by self reporting and word-association techniques serve better in examining risk perceptions, whereas the assessment of cultural values and political ideologies gain more importance in individual support for climate policies. On the whole, these studies –to be summarized below– have highlighted the defining influence of the local belief systems, traditional and cultural ways of knowing, and interpretive communities on the perceptions of and attitudes towards climate change¹⁸.

Pidgeon (2012) has distinguished a third avenue of research methodologies that can be particularly useful for identifying possible tradeoffs and formulating policy recommendations. These may appear as a subset of qualitative approaches, but are distinguished by their explicitly deliberative organization. According to Pidgeon, deliberative studies, providing participants with structured information about the topic, employing group discussions and dialogue with major stakeholders and experts (Lowe & Lorenzoni, 2007; Vega-Leinert & Schröter, 2008; Hayden, Hatton, & Lorenzoni, 2011), and incorporating value elicitation and decision-structuring techniques appear as less exploited research opportunities.

Fourth and finally, it is possible to distinguish those studies that focus on media representations of CC, especially the national press portrayals of the issue. It is widely

¹⁸ Such comprehensive approaches to how people engage with CC can be seen in a general agreement with the premises of some of the influential sociological approaches to risk. For instance, cultural theory’s (Douglas & Wildavsky, 1982) original emphasis on risks as cultural, political and moral phenomena, rather than objective assessments of probabilities can be taken as one example. Seeking to identify the conventions of how people “construct symbolic systems of purity ...so as to order what they experience as the chaotic set of stimuli”, cultural theory has put emphasis on the role of the ‘other’ as the locus of danger and fear (Joffe, 2004, p. 77; see also Taylor-Gooby & Zinn, 2006). Furthermore, interpretative communities of risk (e.g. fatalist, individualist, egalitarian patterns of cultural bonding) offered by cultural theory have been taken up in psychological studies to examine the ways people see themselves and others at the face of risks, and tend to discount or amplify them (Heath, & O’Hair, 2009; Weber, 2010).

acknowledged that the media are the main source of information about climate change (Stamm, Clark & Eblacas, 2000; Corbett & Durfee, 2004; Cabecinhas, Lázaro, & Carvalho, 2008; Sampei & Aoyagi-Usui, 2009; Olausson, 2011). Studies guided by psychological perspectives constitute only a small part of the research on media portrayals of CC, however, the focus on media communication is highly promising in scrutinizing the cultural perceptions and reconstructions of risks, as they allow to ask questions that cannot be asked in self-report studies, and to orientate research to societal aspects of the problem. Since this thesis focuses on how CC is ‘mediated’, the main threads of the literature on press portrayals of CC will be summarized separately later in this chapter.

2.2.5. Efforts to enlarge the scope of research in environmental psychology

So far, this chapter has depicted the literature in environmental psychology with a realist approach –both to environmental problems and to science itself– which was characterized by quantitative inquiries into the drivers of and barriers against particular behaviors, and assessments of risk perceptions. As already mentioned, the field can also be depicted with a growing interest in social constructionist approaches, especially in scrutinizing risk perceptions (Taylor-Gooby, & Zinn, 2006), and in qualitative methodologies, paying attention, for instance to social representations, identities, discourses and belief systems.

In an attempt to enlarge the focus on environmental values and beliefs, Castro and Lima (2001) have integrated the questions concerning social identities and beliefs about science and scientific knowledge with the framework offered by the NEP (Dunlap & Van Liere, 1978; Stern et al., 1999). Drawing on a sample of the Portuguese public’s responses to these questions, the study has identified two belief systems, and showed that including people’s social identities alongside their social positions and values significantly increases the explanatory power of the analysis in accounting for these: The first one, resembling the NEP, endorsed the new ideas about the environment being under threat and in need of protection, and represented science as a human product, influenced by the convictions of scientists. The second belief system resembled the old HEP, namely those ideas endorsing that humans are meant to rule their environment, which are sustained by a confidence in science as “capable of providing explanations independent of scientists’ intimate convictions” and to resolve the problems being faced (Castro & Lima, 2001, p. 416).

Perhaps the most innovative point the study indicated was that people do not necessarily endorse only one of these belief systems, but are able to maintain both of them

simultaneously, suggesting that although the new ideas are accepted at higher levels, they do not directly and smoothly replace the old ones. That means, there were participants who were non-coherent in their endorsements of the old and the new ideas, as well as those participants who were coherent. Furthermore, the co-existence of different belief systems was shown to be directly related to the social identities, in the sense that the predictive power of social identity variables was higher for the coherent participants, as hypothesized by the study (Castro & Lima, 2001).

The incompatible demands arising at the face of the complexity of real world situations, and the contradictions and ambivalences that play a critical role in people's attitudes and behaviors towards the environment, have constituted fruitful research questions for social psychology (e.g. Castro, 2006, Ojala, 2008; Mouro & Castro, 2012). For instance, in an interview study with a London-based sample of UK public, Smith and Joffe (2013) have found that CC was represented through a series of conflicting themes, such as self/other, natural/unnatural and certainty/uncertainty. According to this study, in making sense of CC, people think in terms of antinomies and weigh and move across different positions, considering the –vulnerability, responsibility, and conduct of– others. Employing the perspective of social representations, the authors conclude that “the ability for people to oscillate between different positions is likely to afford them the best chance of making themselves heard” (p. 29).

An example of qualitative studies that pay attention to how people situate themselves against the challenges, action implications and norms associated with CC can be given from an interview study conducted with a non-representative sample of the Australian public (Kurz, Donaghue, Rapley, & Walker, 2005). Through discourse analysis of the interviews, the researches have found that water and energy are represented differently, the former as a scarce resource that must not be wasted, and the latter as a series of technological options and an abundant product, rather than a resource. Furthermore, interviewees have presented themselves as situated between the personal norms of conservation of resources (water), and social norms of consumption. That is, when the normative influences on individual behavior are scrutinized discursively, it appears that people present themselves as altruists –and not hedonists– constrained by society to consume –and not to conserve. This may be conceived in relation to other coping strategies, such as setting blame on anonymous others (Smith & Joffe, 2013). For Kurz and colleagues (2005), by representing incompatibilities between the norms of

conservation and consumption, people create “social spaces in which potentially environmentally damaging practices remain unchallenged, or at least successfully defensible” (p. 616).

Another example of the efforts to enlarge the focus of environmental research in psychology is a focus group study with a representative sample of Swiss public, in which Stoll-Kleemann, O’Riordan, and Jaeger (2001) have taken the dissonance perspective, suggesting that people seek a sense of consistency in their attitudes and behaviors, and this may result in denial and displacement in the face of political and moral exhortations. Their analysis has pointed out four socio-psychological denial mechanisms that serve to deal with dissonance and the gap between attitude and behavior with regard to the norms associated with CC: (1) resorting to technological fix and regulatory innovation (managerial) (2) highlighting the costs of shifting away from habits and lifestyles (comfort), (3) setting blame on the inaction of others (tragedy of the commons), and particularly (4) the lack of trust in the governments (governance-distrust). These four closely interlinked ‘barriers of denial’ hampering CC engagement bear considerable resemblance to how the interviewees in the study of Kurz and colleagues (2005) situate themselves as ambivalent actors, and point up the importance of others in one’s engagement with CC.

Focusing with reconvened focus groups on the construction of responsibility at the face of ecological and technological risks, Bickerstaff, Simmons and Pidgeon (2008) have identified that the construction of the sense of personal agency was connected to “perceptions of other responsible agents –most importantly, institutional actors– and of whether those agents are competent and trustworthy and can be expected to fulfill their duty of care” (p. 1327). Drawing on findings such as those summarized above, Pidgeon (2012) has pointed up that the current pace of CC governance is characterized by a situation in which the “governments and the public attribute responsibility for action to one another” (p. 99).

To summarize, when the heterogeneity and co-construction of the belief systems, identities and representations are recognized by research, and when the questions are formulated qualitatively, the alignment of values, beliefs, attitudes and norms appear as complex entanglements with manifold others, especially with the governance structures that endeavor to establish these (norms). For studies that focus on the contradictions and ambivalences involved in the public’s engagement with CC, this suggests the need for

examining how expert knowledge is mediated and reconstructed in the public sphere, rather than only looking at how CC risks and policies are perceived. In this framework, focusing on how mediating systems (e.g. the media, the NGOs) reproduce, maintain and attempt to change the social context in which the values, beliefs and behaviors related with CC take shape may help expanding the focus of research from (individual) risk perceptions and other determinants of environmental behavior to (public) representations of risk and collective action.

2.3. From perception to representation of climate change: Mediating systems

The implications of the studies summarized above are compatible with the premises of most of the sociological approaches that put emphasis on the mediation of, and the reflexivity involved in engaging with the global risks like CC. This concluding part of the chapter first draws on some relevant aspects of these approaches, summarized in the framework of risk society (Beck, 1992), in a way to connect the abovementioned implications with a proposal to examine how CC is represented and reconstructed by various mediating systems. It then provides an overview of the studies on the mediating systems (the mainstream press and NGOs) that will be at the center of the inquiry in the empirical chapters.

The theory of risk society (Beck, 1992, 1999) provides a societal framework¹⁹ that is amenable to psychological approaches on account of the emphases put on the (1) mediated nature of, (2) the new actors involved in the re-signification of, and (3) the reflexivity brought about by, the new global risks. The reflexivity of the risk society, offered as the most central aspect of the changing social and cultural self understandings in this new era, is characterized by the coexistence of and opposition between the old forms of certitude and determination, with the new forms of indetermination and ambivalence (Beck, 1997). In this newly emerging logic, the innocent descriptions of

¹⁹ The theory describes a new phase of development of modern society, where the ongoing modernization is confronted with its unintended consequences that it cannot contain and control with the full force it used to enjoy in the previous phase of modernity (Beck, 1992). A central paradox of the risk society is that “the production of risks is the consequence of scientific and political efforts to control and minimize them” (Beck, 1998, p. 12). Hence, while trust in the expert mediating systems is still central to public engagement with risks, science is seen to become increasingly “disenchanted and scientific authority makes way for an ‘institutionalization of doubt’” (Hogenboom et al., 2000, p. 86). According to Beck (1999), as they become issues of public debate and deliberation, the manufactured risks –such as CC– both legitimize and demopolize expertise. The public sphere, involving a kind of ‘public science’, is seen to acquire the role of an ‘open upper chamber’ for the discursive checking of scientific knowledge and claims (Demeritt, 2006).

segments of the natural world and other patterns of the old industrial society are superimposed with the new exigencies and conflicts brought about by manufactured risks. This way, the theory highlights a paradigmatic shift from the early modernist logic characterized by ‘either-or’ categories, to a complex ‘both-and’ type of rationality²⁰ (Beck, 2010).

One of the critical implications of this framework for the assessments of public concern, as was already implied in the previous section, regards the need to go beyond categorizing the public as *either* concerned *or* not-concerned, and pay attention to the superimposition of beliefs, tendencies and exigencies that originate in the dynamic of risk society on the conventions and institutions of the old industrial society.

While the theory of risk society puts emphasis on the increasing reflexivity in public debate centered around the manufactured risks, some authors have emphasized the need to pay attention to the sources of ‘anti-reflexivity’, instead of focusing solely on reflexivity (McCright & Dunlap, 2010), or assuming it as the ultimate feature of environmental knowledge and behaviors (Borne, 2009). Empirical studies have highlighted that the contradictions between and the interference of the old and new ideas (stemming from the previous phase of modernity and the risk society) can be strategically employed to resist change in real world settings (Kurz et al, 2005; Castro & Batel, 2008; Mouro & Castro, 2012). Hence, it remains as a question to what extent and in which ways the premise of reflexivity applies to how the actors of the risk society deal with the challenges brought about by manufactured risks like climate change.

What makes the theory of risk society particularly relevant at this juncture is the emphasis put on the processes of mediation, which are seen to lend the risks their social significance. The theory holds that risks become ‘real’ by being staged in the media (Beck, 1999). It is the “crucial role of the new worldwide media systems” that helped the environmental problems to converge into global risks, and environmentalism emerge “as a world language” (Harré et al, 1999, p. 15). To put it differently, as emphasized by the risk society thesis and many others cited in this chapter (e.g. APA, 2009), the public understanding of and engagement with CC is essentially ‘mediated’.

Furthermore, the intangibility and border-transcending dynamism of risks are seen

²⁰ In these terms, climate change has provided a perfect example for the development of the theory, since it appears as both natural and cultural, both objective and subjective, both global and local, both control and indeterminacy, both cooperation and conflict: “climate change is pure ambivalence” (Beck, 2010, p. 258).

to necessitate the emergence of new actors, and the creation of new institutions (Beck, 1999). The IPCC is an excellent example of the ‘boundary organizations’ that assign the “vast array of issues lying between the two ideal-typical poles of ‘pure science’ and ‘pure policy’ to one or the other side of the science-policy boundary” (Jasanoff, 1997, p. 582). The ‘boundary organizations’ can be seen as ‘expert mediating systems’, or a subset of the mediating systems that are situated between the world of science and world of common sense, with the function of translating (global) knowledge into (local) action (Jasanoff, 1997; Castro & Batel, 2008; Castro & Mouro, 2011).

While boundary organizations many times appear as the ‘scientific authority’ (Guston, 2001), other mediating systems, such as the NGOs and the media, are characterized by their proximity and openness to public, and the higher degree –as compared to the governmental organizations– to which the citizens trust these organizations (Cabecinhas, Lázaro, & Carvalho, 2008; Büchs, Smith, & Edwards, 2011), which grant them their important role in wide sectors of social change. In representing and translating both the scientific knowledge and the new norms and policy proposals to concrete contexts, and relating these to existing practices, mediating systems effectively combine scientific and political rationalities, global and local levels of governance and action, and different temporal frames of causation and consequences of CC.

In this framework, studying public understanding and engagement with CC in a societal perspective means examining how mediating systems represent and reconstruct the knowledge on CC, associated actors, solutions and responsibilities. The two final sections of this chapter focus on two distinct mediating systems, shortly summarizing the growing literature in press representations of CC, and the involvement the non-governmental actors in the reconstruction of the CC.

2.3.1. The media representations of climate change

As mentioned above, how the media represents CC is influential in shaping public understanding and perceptions of the risks and threats and sustaining or contesting the new norms, alternative actions or possible solutions (Corbett & Durfee, 2004; Carvalho, 2005; Cabecinhas et al., 2008; Olausson, 2011). In turn, media representations are also seen as responsive to the changing political agendas and contexts, efforts of various social actors, as well as the values and ideological cultures of the society within which it functions (Carvalho & Burgess, 2005; Doulton & Brown, 2009). In accordance with the

prominence of the media in social signification processes around CC, there has been considerable interest in media representations, and especially in the national press portrayals of the issue. The accumulating literature on press representations of CC can be classified into four main research threads.

The first research thread is characterized by a temporal focus, taking the volume of press coverage on CC as an indicator of the public salience of the issue (e. g. Mazur & Lee, 1993; Mazur, 1998; Brossard, Shanahan, & McComas, 2004; Sampei & Aoyagi-Usui, 2009). Such studies have identified distinct stages of press reporting and public concern, as well as phases of social discourse and narratives, maintaining that ecological issues are susceptible to a typical cyclical pattern (e. g. Downs, 1972; McComas & Shanahan, 1999). The main assumption in the quantitative approaches to coverage volume is that the public only absorbs simple images from the news, rather than a detailed content. In other words, the assumption is that the press does not provide people what to think, but what to *think about*. Through this agenda setting function, public and political concerns are seen to “rise and fall with the quantity of news coverage” (Mazur, 1998, p. 459).

The second thread of studies on press representations of CC includes the questions of how the problem, and the associated risks and solutions are reconstructed, and the socio-cultural factors contributing to its representation. Some of these studies have taken the journalistic practices as their main concern, looking for instance at journalistic norms, logic, and creativity, and how these affect the reporting of CC (e. g. Boykoff & Boykoff, 2004, 2007; Boykoff, 2007b). Others studies have approached the press to understand the broader public sense-making practices (Doulton & Brown, 2009; Jaspal & Nerlich, 2014), paying specific attention to affective imagery and iconic representations (e.g. Doyle, 2007; Smith & Joffe, 2009; Höijer, 2010), cultural and geopolitical differences (e.g. Brossard et al., 2004; Eskjaer, 2009), and the qualitative changes and shifts in the ways CC is communicated (McComas & Shanahan, 1999; Carvalho & Burgess, 2005; Russill, 2008). Rather than focusing on factors such as media ownership and news production processes, especially this second approach has been more oriented towards the questions of how social and cultural norms act upon the reconstruction of the problem within the press discourse (e.g. Höijer, 2004; Caillaud, Kalampalikis, & Flick, 2011).

A third research thread can be distinguished with its focus on the representation of scientific knowledge on CC in the press (e. g. Hulme, 2007; Ramos & Carvalho, 2008). The growing body of research that focuses on the reconstruction of facts and uncertainties

by the press, and the appropriation of these by different social actors (Boykoff & Boykoff, 2004; Antilla, 2005; Boykoff, 2007a; Carvalho, 2007; Liu, Vedlitz, & Alston, 2008; Olausson, 2009; Billet, 2010) indicates the prominence of scientific knowledge for the public salience, perceptions and understandings of CC.

A fourth thread of research is made up of those studies that pay specific attention to the role of the ideological cultures (Carvalho & Burgess, 2005; Carvalho, 2007; Olausson, 2010; Dotson et al., 2012) in representing CC. Roughly put, these studies point up considerable differences between right leaning conservative press, and left leaning or liberal press, not only regarding the reconstruction of scientific knowledge, but also and especially regarding the ascription of responsibilities and endorsed policy strategies. The focus on the portrayals of the international diplomatic processes constructed to respond to CC (Petersen, 2007; Billet, 2010; Caillaud, Kalampalikis, & Flick, 2011) and the agency of political actors that bring different aspects of the issue on the public agenda (Carvalho, 2005; Grundmann, 2007; Rowe, 2009) may also be seen as connected to the focus on ideologies and the public political consciousness (Weiskel, 2005; Gavin, 2009).

The media research briefly outlined above²¹ has been conducted almost exclusively in highly industrialized countries (with few exceptions, Billet, 2010; Dotson et al., 2012), and has focused mainly on the national mainstream press. These studies have employed diverse forms of linguistic and discourse analyses, accounting for the salient public trends and representational processes in the reconstruction of the problem and its solutions. The empirical focus on the mediated representations of CC provide enormous opportunities to expand the knowledge on individual perceptions, attitudes and behaviors, by providing knowledge on the societal context in which these take shape. It allows asking questions that cannot be asked in self-report studies, to take into account the temporal context, and to orientate research to societal aspects of the responses collected and the trends obtained in public opinion surveys. For these reasons, the first empirical chapter (Chapter 4) focuses on the articles from the mainstream press in Turkey, in a specific

²¹ Social psychologically guided studies constitute only a small part of the research on media representations of CC, yet, most of the studies employing the premises of discourse analysis, paying attention to the actors and frames through which the content is reconstructed, are compatible with the framework of social psychology. For the main points of convergence in this extensive literature, especially in relation to the production of political agency and subjectivities, see Anderson (2009) and Carvalho (2010). For more detailed review of those articles informing the present study, see chapter 4.

developing country context.

2.3.2. The NGOs as mediating systems and sub-political actors

As mentioned before, climate change has led to the creation of a series of institutions – even a global governance regime (Oels, 2005)– and the involvement of new actors –even a world public sphere (Beck, 2011). The concept of ‘subpolitics’ (Beck, 1997, 1998) was offered to capture the emergence and involvement of new actors –outside the traditional institutions and governmental agendas– both in reconstructing and dealing with the global risks. ‘Subpolitics’ is said to shoot up when dangers produced by the industry, “externalized by economics, individualized by the legal system, legitimized by the sciences and made to appear harmless by politics” can no more be kept out of the social concerns (Beck, 1998, p. 16). The environmental ‘subpolitics’ involve, among other actors, the NGOs, farmers’ cooperatives, and local consumer initiatives, as well as concerned citizens of a global public sphere (Beck, 1997; Hogenboom, Mol & Spaargaren, 2000). Their individual-collective participation in global networks of action has been striking and decisive, putting world corporations and national governments under pressure, and raising new concerns on the agenda²² (Beck, 1997).

It follows from the above that the work of the ‘mediating systems’ and the efforts of the ‘subpolitical’ actors intersect each other in constructing a green public sphere (Dryzek, 2005), and also the public space around climate change. The NGOs have a peculiar position in mediating CC as they seem to carry out both roles simultaneously, by institutionalizing the public interest, and by being institutionalized along with the new global environmental arrangements. Their work can be characterized as “somewhere between what we usually think of as science, on the one hand, and politics, on the other” (Jamison, 1996, p. 242). To grow into being serious actors and to gain legitimacy in the national and international policy processes, NGOs are faced with the imperative to become more professional, more scientific, and less ideological²³ (Yearley, 1996),

²² In his later works, Beck (2011; Beck et al., 2013) prefers ‘cosmopolitan publics’ and ‘cosmopolitan communities’, replacing the concept of ‘subpolitics’. Beck (2010) depicts climate change as the first instance that cosmopolitan communities and commitments, characterized by ‘both-and’ type of reasoning, have managed to exert significant influence on the dominant global policies and governmental institutions.

²³ This point is discussed in the context of the legitimacy and legitimizing functions of the NGOs in connection to the globalizing political order. Here, distinctions are drawn on the extent to which the fundamental concerns of public interest and community empowerment are compromised against the requirements of the official funding mechanisms and the global agenda of privatization (Edwards & Hulme, 1996; Jamison, 1996; Kamat, 2004). The recognition and legitimization of the authority of the institutions

participate in various discourse coalitions (Carvalho, 2000), and abide by dominant policy perspectives (Jamison, 1996; Kamat, 2004). Yet, they also hold the possibilities of “changing that policy by changing the micropractices and the discourse from which they emerge”, exercising their power through the strategic manipulation of the options embedded in the dominant policy frameworks (Fisher, 1997, p. 457).

The divergent roles and coalitions undertaken by the NGOs can be used for distinguishing between and classifying these actors. For instance, McBeath and Rosenberg (2006) have designated a criterion they called ‘orientation towards system’, which distinguishes between the radical and moderate tendencies in the non-governmental sphere. This criterion refers to “whether the NGO works within the existing national system and has a pragmatic orientation, or attempts to change significantly the status quo organization of power” (McBeath & Rosenberg, 2006, p. 61). For these authors, an NGO’s orientation towards the system primarily hinges on its taking up –and reproduction– of the socially shared belief systems, ideologies, and the specific practices involved in the relevant field of policy and action.

This distinction echoes with one of the much debated divisions across the broad environmental movement, drawn by Dobson (1990) between *environmentalism* and *ecologism*. While (moderate) environmentalism is associated with a managerial approach to environmental problems, “secure in the belief that they can be solved without fundamental changes in present values” (p. 2), (radical) ecologism is associated with profound transformation of the social and political systems, as well as their relation to the environment.

When seen like this, the determination of the radical and moderate tendencies of the non-governmental actors becomes a question of how the risks and challenges imposed by CC are employed: to put together and reconcile *with* the assumptions embedded in the geopolitical order, or *against* these, to advance extreme sanctions (Giddens, 2009). To reformulate it in accordance with one of the main topics discussed in this chapter, this question refers to whether the NGO relies on the model of ‘weak sustainability’, translating the dominant policy agendas as normative articulations about micro-level or individual consumption behaviors, or on the model of ‘strong sustainability’ engaging also with the political relations and relations of production (Uzzell & Rathzel, 2009).

with broader legitimizing norms and discourses that prevail in the particular field of policy and action are seen as a requirement for an NGO’s legitimacy (Fisher, 1997; Edwards & Hulme, 1996; Bernstein, 2011).

An important point in drawing on such distinctions in the analyses of the lively world of NGOs and environmental discourse, is to pay attention not to overly simplify these as reified dispositions (Mol & Spaargaren, 2000). It is crucial to see that the divergent roles and coalitions undertaken by the NGOs make them the most ‘versatile actors’ of climate change communication (Carvalho, 2000), ambivalent in their dealings with broader legitimizing norms and authorities (Yearley, 1996). What sometimes appear as divergent orientations, and what can be designated as conflicting positions in CC action and communication, are mostly strategic choices in particular contexts and matters of emphasis (Dryzek, 2005). Hence, rather than differentiating between the NGO actors (as radical and moderate ones), a more interesting question regards the enacting of these tendencies in the context of representation and the dynamics of argumentation.

Studies that focus on the non-governmental actors as mediating systems to investigate how CC is represented in the public sphere and social settings are quite scarce in psychological literature. In one of the rare examples, Hayden, Hatton and Lorenzoni (2011) have conducted an interview study with major UK stakeholders –from industry, government, NGOs, as well as the experts– to examine how energy security is connected to climate change. According to the discourse analysis of the interviews, the emphases on the pressures of energy security and technological fixes against the rising GHG emissions constructed the dominant (hegemonic) discourse among the UK stakeholders. The counter-hegemonic discourse that challenged the dominant concerns of energy crisis and security, on the other hand, represented CC “as the latest symptom of an unsustainable society, which could be addressed by reflecting upon societal goals and aspirations as well as humans’ relationship with the environment, without which significant reductions of GHGs will not be possible” (p. 139).

In one of the few examples of the deliberative studies mentioned before (Pidgeon, 2012), Lowe and Lorenzoni (2007) have worked with experts –conducting interviews and follow-up communications– from different backgrounds to construct their diagrammatic representations of CC, and interpreted these by a mental models approach. They have identified two interacting sides to the ‘danger’ of CC: The influences on the climate system (causes), which were connected to *mitigation* solutions, and the reverse influences upon human and natural systems (impacts), which were connected to *adaptation* solutions. Above these, a third danger expounded in the interviews regarded the *status quo*, and reflected a “tension between maintaining the status quo (with some minor adjustments)

and adopting the precautionary approach of protecting all life on Earth from the potentially negative impacts of climate change” (Lowe & Lorenzoni, 2007, p. 138). The conclusion was that the expert decisions regarding the mitigation and adaptation solutions, as well as the perception of risks and uncertainties, were strongly influenced by the positions taken as to this tension between geopolitical and precautionary approaches.

As suggested by these examples, an important aspect involved in the discourse of expert actors of CC regards the relationship between what has to be maintained and what has to be changed, between the status quo and the measures against the dire implications of CC (see also Giddens, 2009; Hulme, 2009). This complex political aspect of CC that involves the interference of the old and the new, and of security and risk, was already depicted by resorting to the reflexivity of the risk society (Beck, 1997), and will be propounded in the second empirical chapter (Chapter 5) that presents an interview study with NGO experts. Before proceeding with the empirical analyses of two mediating systems of CC to see whether and how contradicting beliefs, exigencies and types of knowledge are reflected upon, the epistemological framework of the theory of social representations, which has focused on the co-existence and interaction of the old and new ideas from its first formulations on (Moscovici, 1961/2008; Castro, 2003) will be presented in the next chapter.

CHAPTER 3

THE THEORY OF SOCIAL REPRESENTATIONS

CHAPTER 3. THE THEORY OF SOCIAL REPRESENTATIONS

This chapter is comprised of three main parts.

The first part introduces the theory of social representations (TSR) both as a theory of communication, and as a theory of modern common sense. I emphasize the differences between the classical concept of collective representations and the social psychological notion of social representations, depicting the later as communicative phenomena. Then I set forth the continuities and discontinuities between scientific knowledge and common sense, situating the theory at the boundary of the two types of knowledge. Finally, the theory's contribution to a 'psychology of knowledge' is introduced.

The second part, entitled 'studying social representations' presents some of the core concepts offered for the analyses of social change and contradictions, after setting forth how the social and the cognitive (systems) are connected in this framework. With regard to social change, I introduce two typologies of representations according to their connection to practices and the levels of consensus they achieve. This part finally introduces the structural, genetic, and dialogical approaches to the study of social representations.

The third part of the chapter presents in more detail the central premises of the dialogical approach to social representations, and their congruence with those of the discursive and rhetorical approaches in psychology. In this regard, I specify here how conflicting views are put together and organized, and how different types of arguments – namely conventionalizing and thematizing arguments– are conjugated in pursuit of persuasion. This will be done by focusing on a specific discursive format that indicates cognitive polyphasia in thinking and argumentation.

The chapter concludes by emphasizing the relevance of combining the analysis of discourse and representations in scrutinizing mediated communications and studying the 'thinking society'.

3.1. Communication and social representation

3.1.1. Collective and social representations

The purpose of this first part is to give a glimpse of the epistemological background onto which Moscovici (1961/2008) has constructed his social psychology of

knowledge. It does not aim to offer an exhaustive account of the history of the notion of social representation. The main goal is to emphasize the central tenets of the contribution of Moscovici (1961/2008, 1984/2000) in devising social representations as both an epistemological framework, and the object proper for social psychology.

The commonly recognized ancestor of the notion of social representations is Durkheim's sociological concept of collective representations. Yet, Moscovici has forged the TSR also on the legacies of Lévy-Bruhl, Piaget, Vygotsky, and Freud, not simply by combining their diverse interests, but by thinking both with and against these classical thinkers (Jovchelovitch, 2007): "His indebtedness to a tradition much larger than social psychology shows that beyond disciplinary boundaries the social sciences share a set of preoccupations and concepts that it is important to recognize as common" (p. 66). An integrated discussion of the contributions of each author in the re-formulation of social representations as a social psychological research program is provided by Jovchelovitch (2007). In what follows, I only very briefly summarize the elementary points that are retained from Durkheim's notion of collective representations, which had the most important influence on Moscovici's work (Augoustinos & Walker, 1995).

First, Moscovici saw collectivity as "the only way in which we become rational", arrive at general notions, and establish regularities (Moscovici, 1998/2000, p.129). No criterion of rationality or knowledge could be entrenched independently of a particular social setting that provides the content of representations. This anti-Cartesian outlook was perhaps Moscovici's primary motive in offering social representations to the field of social psychology in 1960s, which was dominated by the restricted use of the term (mental) representation as a strictly individual cognitive activity (Farr, 1993; Jovchelovitch, 2007).

Second, social representations are matrices of knowledge, beliefs, and languages, with a logic of their own. Following Durkheim, they are conceived as an 'environment' for the individual or the group (Moscovici, 1984/2000), implying a certain level of detachment from individual contingencies. However, they gain this property only "through the participation of individuals in the life of the group, and the mental categories which they crystallize" (Moscovici, 1998/2000c, p. 130), which means that they cannot be in a strict sense detached from the individuals and groups. The point is rather that once they are formed and stabilized, they acquire a sort of agency, becoming the common

categories of understanding and thinking. That is to say, they become the common sense ideas with which the individuals and groups interact and communicate (Duveen, 2000).

Third, social representations are incorporated in the individual actions, and they exercise a constraint which extends to all the members of the group within which they are acquired and elaborated (Moscovici, 1998/2000c, p. 127). The constraining character of Durkheim's collective representations was thus maintained to a large extent, in a research program aiming to scrutinize how this constraint operates in specific contexts. However, representations were not only conceived by their constraining function, but also by their enabling function. In connection to this, and crucially, they were conceived as not necessarily unifying, but also diversifying (Vala & Castro, 2013).

For Durkheim, collective representations integrated a "general theory of social phenomena" (Moscovici, 1998/2000c, p.124) devised to explain social order and stability²⁴. They were used to explain the present in terms of the accumulated, objectified past knowledge and beliefs (Némedi, 1999; Markova, 2003). Moscovici retained this basic proposal, but re-formulated social representations as a "specific theory of psychic phenomena" (1998/2000c, p. 124) whose role is to conventionalize novel and unconventional objects. This re-formulation reflected the theoretical developments in social sciences, especially as to the relationship between the individual and the social²⁵; and was offered to social psychology to achieve "its putative mission of becoming a trans-discipline, integrating at a higher level the perennial epistemological conflict between the individual and societies in which they are embedded" (Jesuino, 2011, p. 37).

²⁴ In establishing the two basic postulates of sociogenesis and social belonging (Valsiner & van der Veer, 2000), Durkheim relied on those aspects of society that seemed to maintain themselves throughout profound societal changes and historical eras, such as myth, religion, and rituals. Since these phenomena endured much longer than individuals who were continuously replaced in the more or less stable structure, they were seen as the real social phenomena, autonomous from the individuals, the proper material to be analyzed (Bauman, 1976; Giddens, 1993).

²⁵ There has been considerable controversy regarding Durkheim's social epistemology, partly due to the confusion of Durkheim's epistemology with his sociology of knowledge (on this extended debate see especially Bauman, 1976; Giddens, 1993; Rawls, 1996; Némedi, 1999; Pickering, 1999). Overall, it can be said that Durkheim conceived an incommensurable distance, a dualism between the individual and society (Giddens, 1993; Lehmann, 1993; Markova, 2003). In this dualism, society was distinguished as a more complex level of reality than the realities that it was conceived to include and dominate (Durkheim, 1953/2010, p. 12). The central epistemological tenet was that the individual and natural –lower level– explanations could not account for the social and cultural –higher level– phenomena (Moscovici, 1998/2000). However, in scrutinizing the 'permanent and essential aspect' of individual and local contingencies, the sociologist was assumed with the gaze from above and outside the society (Bauman, 1976; Latour, 2002), while her analysis is "methodologically bound to draw upon members' knowledge and accounts" (Knorr-Cetina, 1981, p. 27).

According to Moscovici (1972/2000) a new approach to the relationship between the individual and society is possible if we recognize that “society is not an environment geared to training the individual and reducing his uncertainties but a system of relationships” (Moscovici, 1972/2000, p. 113). Furthermore, we should “cease to consider our environment as an immutable ‘external’ milieu and see it instead as the humanized background to the relationships in which men engage and a tool for these relationships” (Moscovici, 1972/2000, p. 114). Durkheim’s insistence on society being an external entity to the individual contingencies²⁶ (Bauman, 1976) was transformed in this way, together with the stability or regularity that was conceived to characterize it. Then, the suggestion “to envisage social control and social change in a common perspective rather than treating them separately” (Moscovici, 1972/2000, p. 113) concerns both how the society, and the relation between the individual and society is conceptualized.

In short, the conceptual framework of collective representations, that was oriented to perceive regularities and explain stability, was transformed into a social psychological framework that was oriented to also account for diversity and explain social change (Vala & Castro, 2013). This transformation has been possible by conceptualizing representations primarily in relation to communication, rather than to discrete levels of realities (Moscovici, 1998/2000c; Gillespie, 2008). The central and constitutive role ascribed to communication and to dialogue, and the interest in studying representations ‘in the making’, rather than crystallized realities, are explicit in Moscovici’s justifications of his preference for the term ‘social’ instead of ‘collective’ to denote representations:

If, in the classical sense, collective representations are an explanatory device, and refer to a general class of ideas and beliefs (science, myth, religion, etc.) for us they are phenomena which need to be described and to be explained. They are specific phenomena which are related to a particular mode of understanding and of communicating –a mode which creates both reality and common sense (Moscovici, 1984/2000, p. 33).

Moscovici’s seminal study on Psychoanalysis (1961/2008) is the primary example in which social representations were described and explained in terms of the forms of communication and collective elaboration of interacting groups. The study has identified

²⁶ As a conceptual tool to extract the analysis from the irregular details and temporary of aspects of social reality, collective representations were conceived as the irreducible states of unconsciousness “in order to avoid any metaphysical associations with states of consciousness” (Pickering, 1999, p. 4).

three modalities or genres of communication –namely, diffusion, propaganda and propagation– that were employed respectively by the popular, communist and Catholic press in France (See section 3.2.1). The emphasis of the theory on communicative processes and dialogue has allowed it to be used extensively in media research (Castro & Gomes, 2005; Smith & Joffe, 2009; Höijer, 2010, 2011; Olausson, 2011) and in the analysis of conversation and dialogue (Markova, 2008b; Mouro & Castro, 2012).

This does not mean that the TSR is only a theory of communication and interaction. Besides scrutinizing how social representations are elaborated –by describing their content in relevant contexts– the theory also aims to understand the functions of social representations. For Moscovici (1961/2008), the social psychological potential of the concept resides in combining (1) the analysis of how common sense is transformed by new knowledge (i.e. psychoanalysis), (2) the analysis of interaction of different groups in this collective sense making process and how a sense of continuity is restored in each group, and (3) the analysis of particular processes of communication, through which societal transformations and new representations are reflected and brought about.

When studying a representation, we should always try to discover the unfamiliar feature which motivated it and which it has absorbed. But it is particularly important that the development of such a feature be observed from the very moment it emerges in the social sphere. (Moscovici, 1984/2000, p. 40)

However, this three-fold combination and the discovery of the unfamiliar features are not many times possible, since many representations appear already as part of common sense, having been integrated to the life of the individuals and groups. Then, if one research strategy is to seek for new representations –in formation, another is to look for how old representations act upon common sense understanding at times of crisis or public confrontation –in operation. This second strategy has often been adopted in the field of social psychology. In other words, social representations have generated much more interest as explanatory phenomena or as independent variables than as phenomena to be explained (Wagner, 1995).

Social representations are both created in communication, and they enable it by providing the common categories of understanding and communication (Moscovici, 1961/2008). In this two-way relation with communication, social representation appears

both as the *process* and the *outcome* of that process²⁷ (Bauer & Gaskell, 1999). The processes involved in *representation* may take place in a variety of encounters –between ideas, individuals, groups, societies–, but *representations* are maintained and elaborated mainly in, and their power and efficacy comes from, the active efforts of communities and groups.

Social representations take three different forms and functions in different analytical contexts (Raudsepp, 2005): They are (1) the objectified cultural products constructing the *societal context*; (2) the molar meaning units allowing communication and interaction at the *interpersonal and intergroup context*; (3) the heterogeneous content of the individual mind or the *intra-personal context*, fashioning the mind as a society of representations. Moscovici (1998/2000c) has employed the metaphor of money to show that social objects can take all three forms and functions at the same time: currency of a nation (impersonal, societal), a unit of exchange (interpersonal, intergroup), and a belonging (personal, group). This metaphor is best understood when representations are seen as fashioned in the course of interaction and communication, and not beforehand, waiting, as it were, to be selected and diffused later. “Like money, they acquire shape and value by circulating, and have value only as long as they circulate” (Moscovici, 1992, p. 6).

Jodelet (2008, 2011) has associated the increased focus of research on the content (meaning) –or social representations as independent variables– to the shifts in the main concerns between the two editions of ‘psychoanalysis’ (in 1961 and 1976), reflected in the reorganization of the second edition. According to Jodelet, the second edition “expanded the analysis of the properties and functions of social representations including their influence on communicative and practical action. Representations are considered as meaning; they express group dimensions as well as cognitive and symbolic ways of naming and classifying social reality and coping with unfamiliarity” (Jodelet, 2008, p. 418). While the first edition had a stronger emphasis on the sociology and social psychology of knowledge, the course of the doctoral thesis becoming a book was characterized by a more comprehensive approach, highlighting the *phenomenon* of representations, over the maintained interest in the *transformation* of representations. In

²⁷ I use *representation* in the singular form to refer to the process of representing. As the outcome, *representations* are plural, since ‘a representation’ cannot be said to exist by itself, it always exists in relation to other, alternative representations.

Moscovici's words, the second edition aimed to "redefine problems and concepts of social psychology from this phenomenon, by stressing its symbolic function and its power of construction of reality" (1976, p. 16, quoted in Jodelet, 2011, p. 5).

This was one of the reasons why Jodelet (2011, p. 3) chooses the first edition; and it does not mean to say the ambition of the second edition did not find its echo in 'social psychology' as one of the alternative currents opposing to the 'mainstream' of the discipline. However, it meant a retreat of the 'psychology of knowledge' aspect of the theory from the empirical studies in, and debates about this theoretical current (Jodelet, 2011, p. 5). That being so, the reformulations and developments of the theory afforded new perspectives to the study of social representations (Jodelet, 2008). These will be introduced later. The remaining of this part of the chapter will focus on the 'psychology of knowledge' aspect of the theory.

3.1.2. Science and common sense

In the previous section, by emphasizing the relation between representation and communication, one of the basic premises of the theory was perhaps understated. It regards the distinction and the relations between the 'reified' and the 'consensual' universes (Moscovici, 1984/2000), which are often associated respectively with science and common sense. This section highlights the relations, rather than a contrast between the two universes, in line with the development of the theory.

To understand the distinction between a reified universe and a consensual universe, it requires to first see that the modern society to which Moscovici adapted the notion of collective representations is "characterized by more diverse centres of power which claim authority and legitimacy" (Duveen, 2000, p. 9). In these societies "legitimacy is no longer guaranteed by divine intervention, but becomes part of a more complex and contested social dynamic in which representations of different groups in society seek to establish a hegemony" (p. 9). Secondly, thanks to the revolutionary path of scientific innovations, which have constituted one of the main sources of social change, modern societies are characterized by a sort of "deification of scientific beliefs" (Moscovici, 1998/2000c, p. 142). This means that in these societies, science is entrusted with the authority and legitimacy of having direct access to nature and to the 'matters of fact' (Latour, 2004). The impact of scientific knowledge on the self-understanding, organization and steering of the modern society is so distinctive that Moscovici has

distinguished societies with sciences from the societies without sciences. In this distinction, social representations emerge as the common sense phenomena of the societies with sciences.

In examining the processes through which new scientific knowledge is incorporated into the existing body of –common sense– knowledge, Moscovici (1961/2008, 1988) saw epistemic discontinuities between the two. This was “mostly due to the constraints of practical contexts within which these two kinds of knowledge operate” (Jesuino, 2008, p. 394). In the reified universe of science, thinking was characterized by conformity to prescribed rules, procedures and terminology, and as focused on clearly delimited objects that are seen as indifferent to individual purposes (Moscovici, 1988). In contrast, thinking in the consensual universe was designated as a public activity “done out loud”, with communication purposes, and in a manner that “maintains and consolidates the group whilst conveying the character each member requires of it” (Moscovici, 1984/2000, p. 34).

However, later on, arguing against the contrast between the pure image of (scientific) knowledge and impure and manipulative image of (social) influence, Moscovici (1993) has emphasized the dynamic of majority and minority influences that creates consensus and dissensus in decision and validation processes both in science and in common sense. Similarly, many researchers in the field have accentuated that the distinction has tended to draw a too sharp line between science and common sense, hierarchically ordering the two types of knowledge (Augoustinos & Walker, 1995; Batel & Castro, 2009). Consequently, in the process of development of the theory, reification and consensualization are conceived as processes that play their parts in both worlds (Bangerter, 1995; Bauer & Gaskell, 1999; Batel & Castro, 2009).

To summarize, for the TSR, there is not a radical discontinuity, but some noteworthy differences –as to the context of verification– between scientific knowledge and common sense, and the two are not incommensurable (Jesuino, 2008). Furthermore, the perspective of the TSR is interested less in the differences between science and common sense, and more in exploring how new concepts and ideas originated in the world of science become incorporated into everyday understanding and practices (Bauer & Gaskell, 1999). In doing this, social representation research pays attention to both continuities and discontinuities between the between the world of science and the world of common sense (Jesuino, 2008).

3.1.3. Studying common sense as creative reconstruction

The canonical view of the relation between scientific knowledge and common sense has viewed the latter in terms of diffusion and vulgarization of science (Moscovici, 1961/2008). The first term refers to the unchanging character of knowledge as it is transmitted across diverse public domains and transported to wider sectors of society. The second term refers to a decline in the quality of understanding, implied also by terms like distortion, popularization, and ‘public deficiency’ (Bauer & Gaskell, 2008). In both lines of research –that employ these terms, the public understanding is characterized by passivity and deficiency as to the reception of scientific innovations. These approaches have more recently been updated or elaborated by the perspective of ‘creative reconstruction’ of scientific knowledge, influenced by the social studies of science, and reflected in the recent examples of public understanding of science research (Irwin & Wynne, 1996; Bauer & Gaskell, 1999; Carvalho, 2007).

Moscovici’s study on psychoanalysis (1961/2008) was one of the earliest accounts that challenged the simplistic approaches to generalization of science (Jodelet, 2008). What Moscovici designated in this study was “a new common sense which cannot be understood in terms of the vulgarisation, diffusion or distortion of science” (p. xxix).

As implied above, the approach of the TSR to the relation between scientific knowledge and common sense differs from that of the social studies of and discursive approaches to scientific production. This is not only because the theory sees some differences between the two forms of knowledge, but also because it primarily addresses the impact of social representations in making and re-making common sense, enabling and constraining ‘natural thought’ (Jesuino, 2008), and “helping people to perceive their world as safe and orderly” (Potter, 1996, p. 211) in the face of contradictions and uncertainties. Its approach is similar to that of the social studies of science and discursive approaches both in its emphasis on scientific innovations as the major sources of social change, and its treatment of scientific knowledge as an integral part of social discourse and creative (re-) construction of facts, rather than truth unveiled (Bauer & Gaskell, 1999; Potter, 1996). Moreover, although an ascendancy of science over common sense is often assumed, this is not viewed as to silence or pacify the public discourse. On the contrary, against the approaches focusing on the deficit and misunderstanding in public knowledge, the TSR shifts “the focus of comparison from science versus the public to comparisons among different publics of science” (Bauer & Gaskell, 1999, p.166).

To summarize, the TSR has provided a critical contribution to the understanding of the interface between science and common sense. The theory has powerfully shown that the ‘new common sense’ cannot be characterized only by diffusion, or by the distortion of scientific knowledge in the public sphere. Its achievement regards not only that there is a third modality overlooked by diffusion and distortion research, but also that these should be seen as specific forms of a generic phenomenon, that of social representations (Bauer & Gaskell, 2008, p. 338).

The following part of the chapter presents the conceptual and analytical tools elaborated within the framework of the TSR, which have proved to be critical contributions to approaches both in social psychology and beyond the discipline. The presentation of the conceptual tools start with the forms or genres of communication, which incorporate the notions of diffusion and distortion in the broader perspective of social representation. However, before that the central conceptualization of the relation of the social and the cognitive is employed as a short introduction to the presentation of the conceptual tools in studying social representations.

3.2. Studying social representations

One of the central questions addressed by the TSR regards the relation between the social and the cognitive. “That is the question of how social relations and the plurality of representations in circulation shape our cognitive processes” (Gillespie, 2008, p. 389). In this framework, the psychological study of social representations can be characterized as the study of the relations between the cognitive operational system and the regulatory metasytem (Doise, 1993). Moscovici (1961/2008) has identified these two cognitive systems in his interview observations in *Psychoanalysis: The cognitive operational system* “works with associations, inclusions, discriminations and deductions” (Moscovici, 1961/2008, p. 167). The social metasytem “is constituted by social regulations considered to be normative regulations which control, verify and direct cognitive operations” (Doise, 1993, p. 58). The later system re-works the material produced by the first, according to the requirements of the situation. For instance, by the application of logical principles in the context of scientific activity, and by separating ‘us’ from ‘them’ in the context of intergroup conflict (Doise, 1993).

Expressed in a different way, the first system functions with molecular meaning units (i.e. percepts, concepts), and the second system re-organizes the cognitive output of

the first according to the molar meaning units (social representations) which derive from the life of the groups, and which are activated in and employed in accordance with the demands of particular contexts.

Doise (1993) acknowledges that throughout people's everyday movements across situations and social contexts, the demands of the metasytem and its operation on the cognitive functioning continually change. Particular positions defended and endorsed in a certain context may be unacceptable in another. That is to say, the reasoning of the individuals are subject to different social representations that function as 'organizing principles' of the social metasytem (Doise, 1993). This view makes explicit the necessity to situate and examine human cognitive processes within the organization of the relationships among social actors. However, it pays little attention to the agency of the actors in representing (i.e. foregrounding, restricting or repressing particular ideas); it appears, at times, as if individual cognitive functioning is characterized by the constraints, and not enabled by the shared meaning systems. In other words, the 'thinking society' appears a collective construct of the intervention of the social representations on cognition, without much intervention space left for the individuals (McKinlay & Potter, 1987; Billig, 1991, 1993).

To comprehend the perspective emphasized by Doise, one must see that the implications are considered mainly at the societal and not individual level of analysis. For Doise (1993), the communication genres identified by Moscovici (1961/2008) constitute one of the best examples of how social representations intervene in the symbolic relationships between the actors and influence the public sense-making practices.

3.2.1. Communication genres

The first part of this chapter aimed to establish social representations as communicative phenomena. This section briefly expands this theoretical assumption into concrete modalities or genres of communication that have guided empirical research on how social representations are anchored, objectified and elaborated (Moscovici, 1961/2008; Castro, Mouro, & Gouveia, 2012).

Just as we are born into social representations, we are born into speech and communicative genres, i.e. conventionalised and institutionalized forms of communication. Children adopt speech and communication genres naturally in their social environment as they acquire language and learn to speak in different genres without even realising that they do. Social

representations are thematised through communication genres. (Markova, 2003, p. xvii)

To study how new ideas are incorporated into common sense understandings, Moscovici (1961/2008) focused on how psychoanalysis was represented by the popular, communist and Catholic press in France. At the time psychoanalysis was a curious and intriguing phenomenon, being dealt with by the wide sectors of the French society. The study identified three modalities or genres of communication –diffusion, propaganda, and propagation–, showing that each communication genre was characterized by its goals of communication, forms of the argument, and its linguistic, logical and rhetorical features.

Diffusion was associated with the popular press, and was characterized by absence of conflict. The goal in diffusion is to elicit simple, new and impressive images (Markova, 2003), circulate the information in an impartial and non-reflexive way (Wagner & Hayes, 2005). It is characterized by a certain distance to the content, and the avoidance of explicit positions taken towards it. “The aim is not to solve contradiction, and accommodate divergence, but to present it, and let the reader arrive at his/her own conclusions” (Castro & Gomes, 2005, p. 5). The communicator is identified with and un-differentiated from the audience in an effort to adapt to the interest of the audience (Doise, 1993), making, in turn, the identification and reception of the audience easier (Wagner & Hayes, 2005).

Propaganda is characterized by the opposition of two perspectives, the communicator is distinguished from the audience, but engaged in the content. The goal is to clearly differentiate the truth from the deception, and reflect the conflicting social relations that give rise to the opposition (Doise, 1993). Propaganda aims to produce a conceptual and ideological effect, and new attitudes and behaviors, rather than simple images (Wagner & Hayes, 2005). This is carried out through certain linguistic means, for instance in the case of the Communist press in France, by coupling ‘pseudo-science’ with ‘psychoanalysis’ pervasively, in order to attach a negative meaning to it. The re-statements and recycling of what is already consensual for the group function to distinguish ‘us’ from ‘them’ (Markova, 2003). This suggests that propaganda is employed mostly from the minority position, in order to appropriate the meanings ascribed to the object by the majority.

Propagation was associated with the Catholic press, which resembled a relatively well-structured group with well-established beliefs and value-system in France. From the majority position, the Catholics were striving to contain and integrate new scientific innovations to their value-system. Propagation, observed in their collective efforts, refers

to a selective appropriation and accommodation of new knowledge into the pre-existing meaning systems (Doise, 1993; Wagner & Hayes, 2005). The goal is to settle down a dominant interpretation of the new phenomenon; rather than focusing on behavior or explicitly provoking new ideas, it is to maintain “the existing ones and strengthen norms by providing new meanings” (Wagner & Hayes, 2005, p. 126). In this venture, propagation reconciles different and seemingly opposite representations, and involves a complex process of accommodation (Castro, 2006). Unlike propaganda, where the relationship of the alternatives is characterized by opposition, in propagation it is characterized by adaptation and reconciliation.

As mentioned before, these three basic modalities of communication have expanded the simplistic perspectives of diffusion and distortion of science (Bauer & Gaskell, 2008). The social representation process may consist only of the circulation of information (diffusion), the explicit distortion of the less familiar by drawing on what is already familiar (propaganda), and selective accommodation and negotiation of the unfamiliar features with what is already familiar (propagation), as well as strategic combination of these modalities.

3.2.2. Anchoring

Anchoring is first of the two elementary processes involved in the generation of social representations. It refers to the classification and naming of unfamiliar objects or novel phenomena by comparing them with the previously existing or culturally accessible meaning categories (Augoustinos & Walker, 1995). The selection of anchoring categories is affected by the social relations and regulations, the pre-existing elements of knowledge that organize the life of the groups (Castro & Gomes, 2005). In this sense, anchoring is a retrospective process (Devine-Wright & Devine-Wright, 2009); it stands for a continuity principle (Markova & Wilkie, 1987), which conserves the approach and reactions of the group in the face of novelties. Hence, anchoring is not an individual process of assimilation, and is not equal to cognitive categorization (Joffe, 1998), yet, it is an inner-directed process (Moscovici, 1984/2000). A classic example is the reception of psychoanalysis as a form of confession by the Catholic milieu in France (Moscovici, 1961/2008).

Anchoring is not an automatic process, it is an active effort of opinion formation about (Moscovici, 1984/2000), and symbolic coping with the newly encountered

phenomena (Wagner et al., 1999). It involves comparison, evaluation and integration of the new object into the semantic network of old objects (Markova, 2000a).

Hence, classifying and naming, the two aspects of anchoring (Moscovici, 1984/2000), necessarily involve comparisons with a ‘model’, against which the unfamiliar object may be evaluated. In this process, the peculiar aspects of the object, as well as its potential threat or uncanniness, may be lost; but the object becomes imaginable, representable (Joffe, 1998). While it earns the meanings tied to the existing categories it is anchored in, these categories are also transformed to some extent by the unfamiliarities brought about by the novelty (Moscovici, 1984/2000). In other words, both in interpersonal and mediated communication, the old categories and existing meaning structures that are used to anchor new meaning are also transformed in this process. They are slightly altered according to the context, circumstances and goals of communication, in order to capture the novelty by establishing abstract links to it (Castro & Gomes, 2005).

3.2.3. Objectification

The second process, objectification, refers to the transformation of these abstract links into concrete mental content (Joffe, 1996), saturating them with reality (Moscovici, 1984/2000). Objectification is a more other-directed process than anchoring, where many disputes and disagreements regarding the object will be settled down for a group. While anchoring involves a continuity with and categorization into what already exists, objectification is the concretization and adaptation of the already named novelty to the outside world (Joffe, 1996; Markova, 2000a). In this process, an image, icon or metaphor of the object is produced, and replaced by its name. Or as Moscovici (1984/2000, p. 49) put it, “the word for a thing” is turned into “a thing for a word”.

Objectification refers to a particular and dynamic group process that produces a “sort of common experience in which the abstract is translated into the world of objects” (Billig, 1991, p. 66). This process concerns “neither a problem of truth nor an arbitrary choice, but [is] determined by the group’s experiential world and the negotiated consensus of the group members” (Wagner et al., 1999, p. 100). While the experiential world of the group delimits the world of icons, images and metaphors, the unfamiliar properties of the object become the resources for different communities to produce and maintain radically different and sometimes contradicting representations (Bauer, 2008).

This means that objectification –like anchoring– is not an automatic, but a

discursive, rhetorical and ideological process (Billig, 1991; Harré, 1998). On the one side, it reflects the different stakes and vocabularies through which different groups engage with and engender new representations. On the other side, it reflects the role of unfamiliar objects in engendering new discourses, confrontations, understandings and practices, and therefore new publics. As a fundamental process of social influence, objectification refers to the “making and breaking of” these unfamiliar objects (Bauer, 2008, p. 76), it clarifies that for social representations to attract and repel each other, it is necessary to have a public debate or confrontation on a significant social object²⁸, around which different groups re-present and re-position themselves. In other words, it emphasizes that an object is many times a project for groups involved in its representation (Bauer & Gaskell, 1999), and profoundly relates to “how a community wants to live” (Bauer, 2008, p. 73).

3.2.4. Types of representations, mediating systems, and social change

Conceptualizing anchoring and objectification as two basic processes does not mean that all novelties are ‘domesticated’, systematized and incorporated into common sense in the same way. Such a view would assume “all thoughts... to possess a similar character” and paint a too homogenous picture of modern common sense (Billig, 1993, p. 52). To avoid such an interpretation, it must be made explicit that not all representations relate to people’s daily lives in the same way. This section introduces two distinctions, or typologies of representations, that make this point explicit.

The first distinction is offered by Harré (1998) who distinguished between *transcendent* and *immanent* representations, according to their dependence on the practices that they concern. Transcendent representations are independent of the practices they concern, they enter the public sphere as new (scientific, legislative) proposals which are not new sign systems, but new rules for the use of existing sign systems (Harré, 1998; Castro, 2012). Immanent representations, on the other hand, have no existence independent of the practices, since they emerge from the practices. Transcendent representations, such as psychoanalysis in 1950s, climate change in 2000s, take time to become part of everyday knowledge, and establish links with and bring about new practices (i.e. visiting a psychoanalyst, carpooling). Even when they reach a high level of

²⁸ The title of Moscovici’s original study, *Psychoanalysis: Its image and its public* implies this object-oriented outlook of the theory, suggesting that while particular images of psychoanalysis were being re-constructed by its subjects, the public(s) –of psychoanalysis– were being constructed not only in their relation to each other, but also through the novelties brought about by the object.

discursive agreement, their potential for initiating new practices may be limited, as in the case of water conservation behavior (Kurz et al., 2005), or participation in innovative laws (Castro & Batel, 2008).

To make the arguments above more intelligible, a temporal perspective for understanding and examining social change (Bauer & Gaskell, 1999; Castro, 2012) may be of great service. In this regard, drawing on the literature on sustainability, Castro (2012) has suggested four phases for understanding the pace of social change in the context of emerging environmental problems (See also Castro, Garrido, Reis & Menezes, 2009): In the first, *emergence* phase, a new idea or concern emerges in the public sphere, typically offered by a minority. This is the phase “the new idea starts spreading, and a new set of values and a new discourse start to organize around it. If the new values or discourses come to achieve a certain level of social consensus and legitimacy, it may happen that new measures follow at the societal level” (Castro, 2012, p. 108). The second, *institutionalization* phase is characterized by institutional, legal and policy proposals, which translate the public concern into formal agreements. This is a highly contested process of delimiting the problems, ascribing responsibilities, and distributing tasks and burdens. Once the institutional framework, new laws, and mediating systems in charge of implementing them are built, the third phase, namely, *generalization* begins. This is the phase in which the former minority ideas are generalized to the majority of a population, through the efforts of government agencies, as well as NGOs, media campaigns, “and other incitements aimed at transforming ideas and coordinating them with practices” (Castro, 2012, p. 109). The fourth, *stabilization* phase is reached only if these societal efforts eventually bring about a full coordination of discourses and practices.

Although Castro and colleagues (2009) and Castro (2012) delineate these phases in the context of environmental reforms and legal innovation, there is sufficient reason to conceive the proposed phases in the form of a cyclical model summarizing how social representations are transformed (Jensen & Wagoner, 2009). Proposals of phases of social change that bear considerable similarities to the framework presented above can be found numerous studies, for instance on press representations (e. g. Carvalho & Burgess, 2005), and expert (e. g. Weart, 2010) and public debates (Nisbet & Myers, 2007) about climate change, as well as about biotechnology (Gaskell & Bauer, 2006). These examples suggest the relevancy of conceiving the transformation of social representations in distinct phases, which may apply differently to different sets of representations, but still help in

contextualizing research in a broader framework (Jensen & Wagoner, 2009).

The task of social psychological research would be simple if it was possible to identify the emergence phase with the work of scientists, the institutionalization phase with the work of politicians, and the generalization phase with the engagement of the public. However, “social change is not an on/off accomplishment, but a complex process resulting in the coexistence of competing meaning” and discourses (Castro, 2012, p. 108). That means, the definition of the problems, and the construction of the meanings associated to the object are not limited with the emergence phase, nor bound only with the scientific community. The intellectual, rhetorical and discursive struggles over how the novelties should be represented, and re-framing and reconstruction of the object continue throughout all the phases, and may involve several cyclical repetitions of the phases (Jensen & Vagoner, 2009). If we take the example of CC, it can be said that the institutionalization phase had already matured to some extent at the global level by 2000, and the generalization phase could be said to achieve some progress in some countries. Yet, there was still a significant conflict over the material reality of the problem (Weart, 2010), and an ambiguity over the use ‘global warming’, ‘climate change’, or ‘enhanced greenhouse effect’ to refer to the phenomenon (Whitmarsh, 2009b).

That said, the phase of generalization is characterized by particular difficulties concerning societal change that are relevant for social psychological research, since it is the phase that the wide sectors of a society encounter with the problem, coupled with new norms and proposals (both formal and informal) associated with it (Castro, 2012). The social psychologically relevant challenge, in this phase, is to transform these transcendent representations into immanent ones, and considerable resistance to these new proposals – by drawing on existing immanent representations and local demands– should be expected (Castro, 2006; Castro et al., 2009). This interface between the new, global, transcendent, and the old, local, and immanent is shown not to transpire in the form of direct blatant oppositions (Mouro & Castro, 2010), but as discursive reconciliations (Castro & Batel 2008; Mouro & Castro, 2012).

Mediating systems, such as NGOs and governmental institutions created to foster change, play a pivotal role in the generalization of new social representations (Castro & Batel, 2008; Castro, 2012). As mentioned before, these expert mediating systems many times function as boundary organizations, they work “at the frontier of the two relatively different social worlds of politics and science”, with distinct lines of accountability to each

(Guston, 2001, p. 401). In their efforts to offer concrete content to abstract representations and legitimize new transcendent proposals, these organizations are faced not with a quiet acceptance, but with a multiplicity of positions, meanings, and projects with different stakes (Howarth, 2006). That they sometimes resort to reified forms of communication, for instance by privileging expertise, can be understood as a response to the deeply contested process of generalization of new ideas and norms (Castro & Batel, 2008; Batel & Castro, 2009).

A consequence of the public confrontations and negotiations revolving around the object in multiple levels and a non-linear manner is the level of consensus achieved and conflict maintained concerning the new ideas and norms that relate to the object. Consensus, in the sense used here –namely in the generalization of social representations– is not a numerical, but functional matter; and refers to the necessity to maintain the social unit and “coordinated interaction relative to the social objects” (Wagner, 1994b, p. 214).

Now, after distinguishing between social representations as to their relation with practices, and elaborating on this distinction in a temporal framework, a second distinction can be drawn as to the levels of consensus they acquire. In this second typology, social representations are classified into three varieties according to the different levels of consensus that characterize their efficacy, or their unifying and coercive power for the members of a group (Moscovici, 1988). *Hegemonic* representations refer to the most widely accepted or shared knowledge that is often taken for granted, not connected to any particular group, and not even explicitly discussed (Markova, 2008b). But they “prevail implicitly in all symbolic or affective practices” and reflect the “homogeneity and stability” attributed to collective representations (Moscovici, 1988, p. 221). In other words, hegemonic representations are closed to dialogue, they subsist as unquestioned facts.

Emancipated and *polemical* representations, on the other hand, are both the explicitly employed, contested and elaborated features of the public discourse, and the dynamic (re-)constructions of the interaction among different groups. While polemical representations are closely tied to particular social groups and identities, emancipated representations are at least partly autonomous from the social identities and stakes that had initially constructed them. Yet, this neither means that polemical representations arising in conflict and not being shared among the antagonistic groups exist solely in the mind of the groups that promote them (Wagner & Hayes, 2005), nor that emancipated representations

are totally devoid of conflict and contestation. These two modalities of representation can best be conceived as two poles of a continuum that can be distinguished according to the degree of conflict between alternative ways of world-making (Gillespie, 2008).

Emancipated representations are elaborated and characterized by diverse alternatives that pull and push them to various directions (Mouro & Castro, 2012), whereas polemical representations are elaborated in the context of intergroup ideological conflict, and are characterized by a dichotomy that is represented as being primarily the labor of the major rhetorical opponent.

3.2.5. Three approaches to the study of social representations

The previous section specified some of the theoretical contributions of the TSR to the analyses of social change. Two proposals for differentiating between social representations were introduced. The first concerned their relation to practices, the second concerned the levels of consensus that characterize their efficacy and rhetoric. A basic argument to draw from these is that the inquiries in different phases of social change, and of different types of representations, require different analytical approaches and methods. The present section introduces three approaches to the study of social representations that can –not directly but only for reasons of comparison– be connected to the hegemonic, emancipated, and polemical social representations.

The *structural* approach conceives social representations as molar meaning units, and holds that the understanding of their maintenance and change necessitates the identification of their constitutive elements. The elements are theoretically classified into two complementary clusters: those that are central, and those that are peripheral.

First, the structural approach holds that social representations are organized around and structured by a ‘central core’ or nucleus (Guimelli, 1993). The central core is a cluster of the central elements of a representation that determine its content. It is considered as the place of consensus of a representation, which stabilize the meaning, maintaining it throughout contextual shifts (Abric, 1993; Guimelli, 1993). Furthermore, the central elements are considered as being specific and non-negotiable, stable, or at least more resistant to change. They are characterized primarily by their significance for, and function in structuring the entire field of representation, and defining other –peripheral– elements (Wagner & Hayes, 2005; Vala & Castro, 2013).

Second, the peripheral elements are conceived to have lesser significance and

definitional power in the representation. They are the operational and more dynamic features of a representation, granting the flexibility it requires across contexts (Abric, 1993; Moliner, 1995; Wagner, Valencia, & Elejabarrieta, 1996). Furthermore, they are often characterized by normative and evaluative functions, against the descriptive and defining function of the central core (Moliner, 1995).

Moliner (1995) has examined the hypothesis that the central core is only made up of descriptive (functional) elements, while the periphery consists of evaluative (prescriptive) elements. Focusing on the social representations of the ‘firm’, this study has demonstrated that the central core may include both descriptive and evaluative elements. For instance, the notion of ‘profit’ –a non-specific notion central to the representations of the firm– was shown to be granted evaluative power. This suggests not taking for granted (1) that the specific and non-negotiable elements would have only descriptive function, and (2) that the central core is solely descriptive of the object. Then, the central core emerges as the site of agreement of a given group about an object, be it a description or an evaluation. In other words, the central core is where “the homogeneity of a social group is achieved or defined” (Abric, 1993, p. 75), while the heterogeneity of the group is reflected in the periphery.

As mentioned before, social representation refers both to a process (sense-making) and to the content (meaning). In distinguishing the core from the periphery of a representation, the structural approach prioritizes the content in descriptions of social representations (Lahlou & Abric, 2011). By way of analogy, it can be said that a representation is described like an atom, with a closed nucleus holding together the exchangeable electrons. While social change is depicted as the exchange of electrons, the relative stability of the social system is explained by the matters of consensus or agreement represented by the nucleus.

The *genetic* approach to the study of social representations (Doise, 1993, Spini & Doise, 1998) holds that the description of social representations in terms of consensus alone are insufficient. The basic premise is that people who share some common views about a phenomenon do not necessarily hold the same positions (Doise, Spini, & Clémence, 1999). By way of the same analogy to the physics of electricity, the approach focuses on the organization of the ‘representational field’, in which the individual differences can be accounted for by the powerful societal forces, which function as

‘organizing principles’ upon the systematic variations in the emphases or adherences given to different aspects of the object.

Techniques used to obtain common representations are actually based on a study of material that is characterized by varying degrees of interindividual variations. The sole aim of social representation research is not to show how scattered and varied fragments of opinions can be integrated into a coherent whole. Systematic sources of variations among individuals must be studied on their own with appropriate research methods whose very use obliges researchers to revert to the problem of interindividual differences. (Doise, 2004, p. 175)

The organizing principles of the inter-individual differences in the representational field are conceived as the principles of ‘social anchoring’, which situate these differences in the social history of individuals and groups (Spini & Doise, 1998). The proposition is that social identities and other significant categories of social structure fundamentally act upon the anchoring of representations, and the variability (and relative maintenance) of positions. As shown by a series of studies on human rights, (Doise et al., 1999; Spini & Doise, 1998), people’s adhesion to human rights, and the perceived efficacy of the government and the self are anchored in value choices, and are strongly influenced by the perception and experience of social and ideological conflicts. For instance, those who relate to human rights by anchoring them to universalist values are generally not satisfied with government action to implement human rights, while in the perceived context of social conflict, the reliance on government action decreases, especially when traditionalist values are involved in the representation.

The importance of the genetic approach lies in its emphasis on the dynamic relation between the socially established categories (i.e. social identities) that structure the representational field, and their re-presentation processes that are inconceivable outside the dynamics of communication and interaction between individuals and groups. That means to say, social identities, values, and the concept self, which function as organizing principles, can also be conceived as social representations, since their influence on anchoring and individual positioning depend on the practical context of conflict and power relationships between groups (Elejabarrieta, 1994; Elcheroth et al., 2011).

Lastly, the *dialogical* approach (Markova, 2000b, 2003, 2008a; Jovchelovitch, 2007; Bauer & Gaskell, 2008) is distinctive in its emphasis on the relational and dynamic character of representations. This approach addresses social representations continuously

in the making, rather than independent and relatively stable meaning units. According to this approach, their relatively stable appearances should be seen in the context of their maintenance by particular groups in relation to and against other representations. This means to apprehend social stability in the context of social change, and not the other way around (Markova, 2000b). It also means to pay closer attention the temporality of representations, and their dependence on interaction, communication, and conflict (Jovchelovitch, 2007; Bauer & Gaskell, 2008).

Through this understanding, social representations emerge as dynamic organizations of common sense knowledge and language, *by* groups and *among* individuals and groups, functioning *across* minds, rather than independently, above or within them (Markova, 2000b, 2003). By drawing on the analogy to the physics of electricity once again, the dialogical approach can be depicted as focusing on the heterogeneity of common sense knowledge as currents or ‘phases’ of thought, the tensions between and the interference of representations (Markova, 2003).

This makes the dialogical approach suitable for analyzing the representations that comprise conflict and controversies –namely polemical representations– arising from vivid debate and contestations involving multiple and shifting positions²⁹ (Renedo, 2010). The previous chapter has introduced CC as a complex (of) representation(s) characterized by a diversity of controversies, and as a still largely unfamiliar, intangible phenomenon under construction. It is mainly for this reason that the following part the chapter expounds further on the dialogical perspective of social representation, presenting some core aspects of the theory within this framework.

3.3. The dialogical approach to social representation

The foregoing parts of this chapter have emphasized the TSR as a social psychological theory of communication, of common sense knowledge, and of social change. One of the underlying features of this presentation was the theory’s dynamic understanding of the relation between the individual and society. According to this understanding, monologues of individual cognition and consciousness can not account for how we become social

²⁹ Similarly, the *structural* approach can be depicted as more suitable to analyze well structured, established, or hegemonic representations. Furthermore, the very idea of inter-individual differences in alignment with social identities or other organizing principles, elaborated by the *genetic* approach, implies differential positionings in relation to emancipated representations.

(Moscovici, 2001, Renedo, 2010). This part of the chapter presents dialogicality as an epistemological conception of human mind, and introduces some central concepts of the TSR in this framework.

3.3.1. The dialogical triad

If social representations are relational and plural, it is because they are the ramifications and the substance of the interaction of individuals and communities. The basic triad of *Ego-Alter-Object* is a conceptual abstraction that captures this interaction. It is the basic unit of the theory of social knowledge that illustrates the dynamics of the social representation process (Markova, 2003). The triad highlights that the subject never encounters the object alone, or directly, but in relation to others, or the *Alter*. It indicates the ontological nature of the Ego-Alter interdependency, and provides the basis for the dialogical epistemology of the theory of social representations. For Moscovici (1972/2000, p. 107) it provides the basis of a new kind of social psychology, systematizing the process of interaction by focusing on the interdependence of several subjects in relation to a common object of interest.

The dialogical approach is concerned with the concrete manifestations the Ego and the Alter, i.e. with the relation of a subject with another subject, a group with a culture, collective voices in the self, or in a group (Markova, 2006). That is, in its different designations, the dialogical triad can be applied to different contexts of interaction. For instance, and typically, it is conceived as a relation of two subjects and an object, where each subject can be individual or collective entities in communication, confrontation, or joint action (Bauer & Gaskell, 1999, Jovchelovitch, 2007). It can also serve as the stage of the inner dialogue with the internalized ‘voices’ of dialogical others, or the inner Alter (Wertsch, 1991; Markova, 2006, Renedo, 2010).

Three points may be highlighted for the understanding of the dialogical triad as constituting a dynamic process. First, as implied above, the Alter (or the other) is hardly ever singular, it almost always refers to a number of others or alternative views. When translated to the basic antinomy between the subject and object “the subject is always a collective of conscious selves and others, who come together for a project of common intentionality” (Bauer & Gaskell, 2008, p. 345).

Second, the interaction of the Ego-Alter dyad is *interdependent* with other triads or meaning units produced in different contexts (Markova, 2000b). That means, even “during

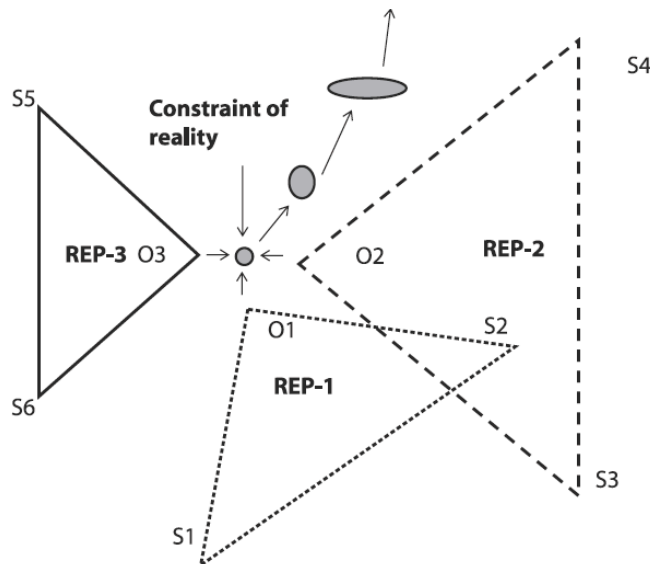
a single encounter several dialogical Ego-Alter relations simultaneously compete and clash with another” (Markova, 2003, p. 156). It is the co-existence of simultaneous and sequential relations in these continuous mediation processes that defines the concept of social change (Markova, 2003, p. 168).

Third, and perhaps most importantly, what characterizes the relationship between the Ego and the Alter is *tension*. Social change and the dynamics of the representation process originate from the oppositions in this tension, through which representations confront, are compared, negotiated and evaluated (Markova, 2000b, 2003). However, it would be a misconception to view the dialogical triad in terms of a tension that is between the already constructed positions, identities and discourses concerned with an object (Markova, 2003, 2006). At times, the tension rests upon the history of particular group and identity conflicts, at other times, the object is the source of the tension (and contention), around which the subject positions, attitudes, new social representations are produced, perspective taking and negotiation of meanings take place. In this sense, the dialogical approach emphasizes the object-centered sociality mentioned before. To make this point more explicit, Markova’s elaboration of the propositions about beliefs and knowledge in social representations (Moscovici, 1998/2000c, p. 136) may be of service.

According to Markova (2003) the triadic relations may comprise strong relations between the Ego-Object, and weaker relations between the Ego-Alter. For instance, when two newly introduced people working on the issue engage in a conversation on climate change, the topic of the conversation more familiar to both of them may help for the subjects to get to know each other. Even the primarily knowledge-based (predominantly descriptive) articulations and re-presentations in such a conversation may help drawing inferences from each others’ choice of concepts. Alternatively, the triadic relations may also comprise strong relations between the Ego-Alter, and weaker relations between the Ego-Object. This happens in the context of (predominantly prescriptive) belief-based representations, where “the object of belief comes from the *Alter* rather than from the *Object* as such” (Markova, 2003, p. 166). To continue with the example of a conversation on climate change, this is what happens when a person who just read an article on the irreparable risks posed on the marine life communicates her new concerns to a friend. Such examples can be multiplied, the central point is that the Ego-Alter-Object triad is a theoretical and generic case of the representation process, in real life situations the triadic relations are hardly ever symmetrical.

The three basic points mentioned above may be better explicated when one integrates time (serial, sequential nature of relations) to the basic dialogical triangle. Bauer and Gaskell (1999) have offered the ‘toblerone model’ of social representation, to emphasize the seriality or movement of representation, oriented by a project, plan or goal of the active participants to it. They extended the basic dialogical triad to past and future, by multiplying it as identical, consecutive triangles. This yielded the shape of a triangular prism, which they objectified with shape of a chocolate bar called ‘toblerone’. Soon enough, the same authors (Bauer & Gaskell, 2008) revised the model. Seeing that the ‘toblerone model’ does not really depict time –because time means movement, in this case the movement of the Ego-Alter-Object positions– they updated the ‘toblerone’ model with the so called ‘wind-rose model’.

Figure 1. The wind rose model of social representation (Bauer & Gaskell, 2008)



The wind-rose model of social representation outlines many of the crucial features of the dialogical perspective of social representations:

- (1) Representations are always in relation to each other, attracting and repelling, crosscutting and co-constructing one another.
- (2) In dialogue, neither of the nodes of the triangle are static, they are negotiated, elaborated, and mobile in the semiotic space.
- (3) The movement takes place around the Object; the publics and the negotiation of meaning are mobilized around an issue at stake. “...The centripetal intentionality of different communities [are directed] towards the common referent, that obscure object of desire, the shock, curiosity, ambivalence or disgust.” (Bauer & Gaskell, 2008, p. 345).

(4) The object moves (expands, contracts, or rather, becomes amplified, delimited) less than the subjects, making it sometimes appear as ‘static’ in comparison to the active subjects continuously negotiating and shifting perspectives. However, both semiotically and literally, and thanks to the efforts of its subjects, the Object is also subject to change.

(5) All subjects that somehow engage with the Object are potentially in relation to each other, and potential Alter positions for one another.

Bauer and Gaskell (2008) adopt the wind-rose model for the intergroup context. Their main goal is to demonstrate that “representations are formed in relation to other communities, in order to resist or dominate”; moreover, the size of the triangles are unequal to mark the “minorities and the majority, or [the] competing minorities of unequal power. The future shape of the centre, the common reference point, depends on the interaction between these milieus and their paramount pragmatic realities” (Bauer & Gaskell, 2008, p. 345).

When taken to the context of cognition, the figure depicts the co-existence of different meaning systems available to the individual at a given point in time. The dialogical relation (i.e. REP-1) is the active process of representation that take place in relation to other representations (i.e. REP-2). That social representations are dynamic phenomena attracting and repelling each other is reflected in this encounter –which depicts a movement, namely of thought–; however, while it may take only moments in ‘inner dialogue’ (Markova, 2003), such movement may take decades and fierce confrontations and discursive battles among social groups in the societal context.

3.3.2. Cognitive Polyphasia

Cognitive polyphasia is an integral concept to the TSR, offered in the theory’s original formulation (Moscovici, 1961/2008) as a ‘disturbing hypothesis’. Yet, it is a logical outcome of social representations co-constructing and cross-fertilizing each other in the interaction of members of a society; it is the rule, rather than the exception (Moscovici, 1961/2008, p. 189). One may suggest that the plural form of the term ‘social representation(s)’ already implies the variability expressed by the concept.

The term polyphasia comes from the physics of electricity where the adjective ‘polyphasic’ refers to the existence of alternative and simultaneous currents which, however, can be out of phase with each other. (Markova, 2003, p. 111)

Cognitive polyphasia refers to the dynamic co-existence of and interference between different meaning systems in thought and speech. It regards the ability of the individuals and communities for employing different logical registers, in correspondence with the demands of the information and contexts affording the thinking its content (Moscovici, 1961/2008). Essentially, it “links cognition and knowledge to their social context of production and provides the means to theorise how different representations, meanings and styles of thinking co-exist” (Renedo & Jovchelovitch, 2007, p. 783). As already implied in the previous section (see Figure 1), it can be best understood within the context of multiple and shifting Ego-Alter tensions (Markova, 2003; Renedo, 2010), opposition and interference of co-constructing representations.

It follows from above that the communication genre genuinely fostering cognitive polyphasia is propagation. This is because both the Ego and the Alter are engaged in the content, and they are directed to reconciliation, rather than conflict.

The hypothesis of polyphasia has been fruitful in guiding empirical studies, especially concerning controversial issues. For instance, Gervais (1997) has identified ‘rational-objective’ and ‘local-experiential’ forms of representation in tension, composing the polyphasic field of representation of nature, in the context of an oil spill that took place in UK. Wagner, Duveen, Themel and Verma (2000) have demonstrated the interference of the old (religious) and new (scientific) representations of ‘madness’, and their divergent expressions in distinct –family and public– settings, in the context of urban India. A similar finding, connecting the co-existence of the traditional and the scientific knowledge systems with the minority identity in the context of Chinese community in England is reported by Gervais and Jovchelovitch (1998). In a more recent study, Mouro and Castro (2012) have shown that cognitive polyphasia may also be used as a resource to resist the formal sanctions and globally endorsed norms by drawing on local knowledge and requirements (See next section).

Cognitive polyphasia is one of the ‘dangerous truths’ in social psychology (Moscovici, 1972/2000) that make explicit the relevance and fruitfulness of studying ‘real world’ phenomena, and paying attention to the complex processes of communication and discourse. Moscovici’s initial hypothesis has drawn on interview transcriptions, which are discursive material. Conscious of this inference, some researchers have emphasized the ‘discursive’ nature of polyphasia (Wagner, 2007; Jovchelovitch, 2008).

[Cognitive polyphasia] helps us to understand the multiplicity of voices expressed in the

language of individual speakers and within public spheres. It is a concept that captures the inter-subjective, and therefore communicative, nature of all knowledge systems, and the heterogeneity and diversity of human communities. (Jovchelovitch, 2008, p. 442)

Provencher (2011) has pointed out that the hypothesis is acknowledged with respect to “the use of different social representations in different situations depending on the communication partner(s) and the communicative context involved” (p. 378). She argues that this suggests a “moving away from the more cognitive and individual perspective suggested by Moscovici’s original exposé” (Provencher, 2011, p. 377-378). This indicates a difference in the reception of the hypothesis, regarding it being *primarily* a matter of cognition or discourse. Thus, cognitive polyphasia can be conceived more clearly by making its two aspects more explicit (Mouro & Castro, 2012): First, as the capacity of human cognition to attain different reasoning phases or forms embedded in particular meaning systems; and second, as the capacity of the self to draw arguments and contents from different belief systems for particular goals. The two aspects are thoroughly intertwined, since according to the dialogical approach to social representations, cognition cannot be conceived outside dialogue and discourse.

Finally, Markova (2003) has distinguished polyphasia from Bakhtin’s ‘heteroglossia’ or multivoicedness (Wertsch, 1991), in a way to inform the analyses of polyphasia. For Markova, heteroglossia, or the divergent styles of speech pointed up by Bakhtin, is afforded by “the infinite openness of languages” (p. 112). The Ego-Alter relations, on the other hand, primarily reflect the comparisons, evaluations and judgments that are carried out in the reflection, interaction and argumentation. It is then the task of the researcher to infer, from social discourse and argumentation, the tension and the shifts between the phases of reflection. In doing this, the main resources for explanation are the mutable views and positions of dialogical partners, and the communicative, community and societal contexts in which they are embedded. Paying attention to these, Markova argues, does not necessarily imply moving away from the cognitive or semiotic perspectives, however, it means moving away from individualistic epistemologies.

3.3.3. Conventionalizing and thematizing arguments, conventional and reflective representations

To specify the relationship between arguments and representations, it requires first to recall and elaborate on the distinction (made in section 3.2.4) between the hegemonic,

emancipated and polemical representations. Drawing on Markova (2008b), hegemonic representations, being taken for granted, commonly accepted or *conventional* knowledge that are not in the center of public discourse, can be contrasted with emancipated and polemical representations, which she refers as being *reflective*. Conventional social representations subsist implicitly in stable, reifying, and monological articulations, “yet, they can become activated at any time and transformed into reflective ones” (Markova, 2008b, p. 268). As mentioned before, for them to become activated and transformed, making and breaking of new social objects, that is, reactivation of the contradictory themes of common sense –in times of crisis or around a novelty– is a prerequisite. Reflective social representations are the dynamic features of public discourse that are deeply embedded in the daily activities of a group. Hence, they are contested, elaborated and thematized through multifaceted and heterogeneous dialogical relations (Markova, 2008b).

In a focus group study conducted in France and Czech Republic to explore social representations of responsibility in the context of crimes committed in the Communist era, Markova (2008b) has presented a series of dilemmas to the participants. The analysis of conversations distinguished that the participants from France merely expressed a generic position, and did not further thematize it, i.e. “it’s human, and it stinks” (Markova, 2008b, p. 265). These were identified as articulations that resort to *conventional* representations. The Czech participants, on the other hand, argued at length on the responsibilities of different actors, thematizing “multifaceted and heterogeneous dialogical relations” (p. 265), typically by reflecting on the question ‘what would I have done?’. These were identified as articulations that resort to *reflective* representations. Seeing social representations as interdependencies between cultural and conventional phenomena, and challenging inter-subjective relations, Markova concluded that representations are “generated both from relatively stabilized contents and dynamic interactions” (p. 268).

In their exploration of a specific format of polyphasia in rural Portugal, and in the context of reception of new environmental norms, Mouro and Castro (2012) have identified similar generic statements that simply endorse legal and global norms through *conventionalizing* arguments. These were distinguished from those arguments that emphasize and elaborate on the particular problems by resorting to local context and demands, namely the *thematizing* arguments. This analysis has also pointed out a particular combination of the two types of arguments –or the argumentative formats– that

serve to accomplish particular goals (see next section). What becomes visible by this research is that the formal norms can be supported by generic statements (accepting them as general conventions), “without compromising the possibilities of contesting and negotiating their specific meanings” (Mouro & Castro, 2012, p. 17).

These examples demonstrate that availing oneself of the specific processes involved in representation, conversation and argumentation relies on real life situations, demands and stakes. A further point in this regard may be raised in the context of inter-group conflict. For this, we must first recognize that *emancipated* representations allow and generate cognitive polyphasia more (easily) than *hegemonic* and *polemical* representations (Moscovici, 1988; Gillespie, 2008; Mouro & Castro, 2012). Indeed, polemical representations may be designated as those that do not permit polyphasia.

To examine how people deal with polemical representations, Vala and colleagues (1998) have focused on policy issues that created disagreements between two competing political parties in Portugal, by presenting their participants some propositions that reflect the disagreements. Drawing on the endorsements of the propositions by the members of the two parties, they found that when confronted with a proposition typical of the outgroup, in a particular case, the members of one political party placed the proposition within “the scope of enlarged consensus” (or convention), “while simultaneously denying its differentiating character” which had been attributed to it by the other group (Vala et al., 1998, p. 486). That is, while they were expected to reject the ‘polemic’, they rendered it as a convention, rejecting its significance for debate. The discussion of the authors on “the place of rhetoric and argumentation in the validation of social representations” (p. 486) suggests that, under specific circumstances, conventionalization can also be employed a rhetorical strategy that serves to prevent the appropriation of a certain argument or representation by a particular (competing) identity or group.

3.3.4. Focusing on conflict and the organization of the arguments

Throughout the presentation of the approach(es) of the TSR to common sense knowledge, this chapter has so far emphasized the theory’s focus on communicative practices, its dialogical epistemology, and its complex treatment of consensus and conventions. One final emphasis, which is directly connected to and embedded in these, has to be put on – the focus on– conflict and controversy. It was mainly Billig’s (1987, 1991, 1993) contributions and his call for a ‘rhetorical psychology’ that afforded the increasing

importance assigned and attention paid to conflict and contradictions in social representations. This section builds on the previous one, and provides an example of how the expressions of the contrary themes of common sense are scrutinized in social representation research.

Bridging different levels and contexts of human activity, transcendent and immanent proposals about these, and old and new ideas, social representations –especially of environmental issues– many times involve discursive reconciliations, rather than blatant oppositions (Castro & Batel 2008; Mouro & Castro, 2012). People can express adherence to apparently contradictory themes of common sense, “simultaneously asserting the reasonableness, or truth, of two rhetorically conflicting elements of social belief” (Billig, 1987, p. 22). Or, as mentioned above, they may wish to prevent the appropriation of a certain idea by a particular identity or group, incorporating –a version of– the counter view into their own.

In examining such dilemmatic aspects of social discourse, equal and unequal expressions of the conflicting themes embedded in particular argumentative organizations should be paid special attention (Billig, 1987). Likewise, specific attention must be paid to the type of representations involved in the conflicts (Mouro & Castro, 2012; Jaspal, Nelich, & Koteyko, 2013). Both in studying cognitive polyphasia and in examining the complex dialectic of discourse meanings and persuasion, argumentative indicators can be useful tools, as they point out particular arrangements and movement of discourse and reflection (van Dijk, 1977, especially chapters 3 and 8; van Eemeren, Houtlosser, & Snoeck Henkemans, 2007).

Studies in pragma-dialectical theory of argumentation (van Eemeren & Grootendorst, 2004) offer analytical insights to the use of conjunctives and concessives, designating these as indicators of the character of the encounter between two parties involved in an argumentative conflict. For instance, according to Snoeck Henkemans (1995), the conjunctive ‘but’ may indicate both conflict and reconciliations. In most cases, the content of the conjunct after the conjunctive ‘but’ and its relation to the first conjunct establishes the nature of the encounter. According to this account, the second conjunct can be *restrictive* or *replacing*, meaning it can either restrict the view represented in the first conjunct by providing an alternative that can *coexist* with it, or *reject* it in a way that the view raised in the first conjunct cannot be maintained. Furthermore, and again with exceptions, the argument raised in the second conjunct is seen to reflect the position of the

subject, while the first conjunct carries the function of a concession. By prefacing the core argument with its alternatives, the subject “admits that a possible counter-argument against his standpoint is true or acceptable” (Snoeck Henkemans, 1995, p. 292).

This point echoes the ‘agreement prefaces’ that initially affirm a given argument before disagreeing with it (Billig, 1991). ‘Yes, but...’ is a typical example, “as the disagreement which follows the ‘but’ has been prefaced by the signal of agreement” (p. 179), and thereby the disagreement is mitigated. Especially in the pursuit of persuasion towards one’s strong beliefs, Billig argues, the ‘yes, but...’ discursive format is adopted as a rhetorical strategy that functions to offer an argument in a way that is more agreeable to others. Simultaneously, it may function to direct the topic of discussion towards one’s views, distinguishing them and moving away from others (Billig, 1999).

Following Billig’s suggestion to pay attention to small words, Castro (2006) has suggested that the three communication genres rely upon different conjunctions. According to this account, *diffusion* can be characterized by the conjunctive ‘and’, in putting together different views in an argument without the need to attain a decision or resolution. *Propaganda*, on the other hand, functions with the contrast between ‘yes/no’, distinguishing clearly between the true and the false, or legitimate and illegitimate views. Finally, *propagation* relies on the ‘yes, but...’ discursive format, as long as the two sides of the conjunctive ‘but’ are simultaneously recognized and legitimized, although with unequal expressions.

Both descriptions of the ‘yes, but...’ discursive format (Billig, 1991; Castro, 2006) can be classified as the *restrictive* type of encounter, in terms offered by Snoeck Henkemans (1995). In other words, For Castro (2006), the dialogicality of this format can be seen as a signpost for cognitive polyphasia, since a concession or reconciliation is actively sought in this discursive organization. For Billig (1991) dialogicality refers to the awareness of the alternative that structures the argument in this particular rhetorical form, maintaining that there is no dialogue that does not involve some form of rhetoric. In some cases, the whole argument is organized towards the Alter, “in the sense of it being first and foremost a position taken vis-à-vis the alternative” (Gillespie, 2008, p. 381). Hence, the orchestration of the dialogical alternatives in such complex arguments aims at effective persuasion³⁰. To reiterate the comparison, when the starting point of the

³⁰ To clarify this proposition, persuasion, which relies on dialogue in order to be effective, must be clearly distinguished from propaganda, which aims at monologue (Markova, 2008c). Then, the ‘agreement

description is the relationship with the Alter, the movement of reflection is seen to imply polyphasia (Castro, 2006); when it is the conflict or disagreement itself, the movement of reflection is seen to be accomplished in order to increase the rhetorical efficacy of one's views, avoiding their naïve interpretations, and succeeding the 'mitigation of the disagreement' (Billig, 1991).

To substantiate that these two emphases on the function and implications of the 'yes, but...' discursive format only support each other, one has to acknowledge the different processes of recognition and legitimization characterizing the unequal expressions in the two conjuncts of the argument. This is demonstrated by an empirical example that was mentioned above: Focusing on the encounter between the legal (global) and the traditional (local) knowledge systems in the context of biodiversity conservation, Mouro and Castro (2012) have identified a specific format of polyphasia, carried out by employing the 'yes, but...' discursive format, through which the legal and formal knowledge received some affirmation before being resisted. The interviews and focus groups conducted in this study were characterized by the "attempt[s] to maintain cooperation and the negotiation of meaning" (p. 17). According to this analysis, the affirmative part (first conjunct) of the argument *conventionalizes* the legal and global norm by generic statements; and after the 'but' (in the second conjunct) the subject resists the convention by *thematizing* (Markova, 2008b) a disagreement, typically by resorting to local context and demands.

The reason for encountering these two processes in negotiating and legitimizing global and local knowledges is due to the fact that the two contexts and demands are not of equal power, nor of kind. The conventionalizing argument in the first conjunct merely mentions and recycles what is already legitimate, while the following thematizing argument involves legitimization and reflexive elaboration of particular local issues. The 'yes, but...' discursive format, then, is employed to first conventionalize a norm or a hegemonic representation, to the challenge, restrict and resist to it afterwards.

The examination of the 'yes, but...' discursive format shows that with contributions of discursive and rhetorical approaches, the study of social representations

prefaces' employed to mitigate the disagreements with one's strong views, are other-oriented and dialogical. In this sense, argumentation theorists (Billig, 1987, 1991; van Eemeren & Houtlosser, 1999, 2004) maintain that dialogical relationships are simultaneously rhetorical relationships, and the analyses of the two are bound together.

have transformed in a way that involves more detailed analysis of language and discourse, and emphasizes the role of conflict, power and resistance in the making and re-making of social representations. The next section briefly summarizes the center-stage debates that have helped such transformations to take place in the study of social representations.

3.3.5. Social representations and discursive psychology

The development of the TSR as a social psychological research program can be seen in connection to the development of other theories and approaches in the field, e.g. social identity theory, discursive psychology, rhetorical psychology. An example of its relation and fruitful combination with the rhetorical approaches was introduced in the previous section. This section offers a more general overview of its relation, comparison and dialogue with the discursive approaches.

The exchanges between the TSR and discursive psychology –especially in the end of the 1980s and start of the 1990s– is well documented (e. g. Litton & Potter, 1985; Potter & Wetherell, 1987; McKinlay & Potter, 1987; Billig, 1991; 1993; Jovchelovitch, 1996; Potter, 1996; Potter & Edwards, 1999; Markova, 2000a; Castro, 2003; Voelklein & Howarth, 2005; Howarth, 2006), and need not be re-staged once again. Today, after two decades of exchange of ideas and critiques, the two approaches may be depicted as in a certain degree of convergence³¹, and with concrete benefits from the rather controversial debates. A short outline of these benefits –for the TSR– may be covered in four interconnected points.

First, ‘cognitivism’ has perhaps been the most common point of the critics from the discourse analytic perspectives. While this point may make sense for the approaches inspired by Foucault’s non-psychological approach to discourse, it cannot be applied constructively to the discipline of psychology that devoted itself to mental structures. On

³¹ For instance, consider the notions of social representations and ‘interpretative repertoires’, which are described as “recurrently used systems of terms used for characterizing and evaluating actions, events and other phenomena” (Potter & Wetherell, 1987, p. 149). Indeed, the ‘interpretative repertoires’ is offered to replace social representations, depicting them as mental and cognitive entities (Castro, 2003). In this effort, the repertoires are distinguished as (1) not *intrinsically* linked to social groups, but somewhat more individualistic and contingent; furthermore, (2) they are not bound with consensus that grants authority to them, but “are used to perform different sorts of accounting tasks” (Potter & Wetherell, 1987, p. 156); and (3) they are linguistic phenomena that are drawn for creating social effects, e.g. to legitimize inequalities, “where premises and inferences regularly change places, where shifts are fluidly made between arguments from principle and practice” (Potter & Wetherell, 1998, p. 155). Following from the three previous sections, the two latter differences can be said to no longer distinguish the two approaches. Yet, the first point of divergence, namely the psychology of groups versus psychology of contingency appears as a crucial difference, to be taken up in this section.

this front, the debate and confrontations of the TSR with the dominant cognitivist perspectives in the discipline have probably been more constructive; and if today one can find enhanced understandings of social and situated cognition (Semin & Smith, 1999; Smith & Conrey, 2007), this can be connected at least partly to the efforts within the TSR. On this front, the perspectives of TSR and discursive psychology should be seen as allies rather than foes (Howarth, 2006). Furthermore, cognition is not necessarily a ‘dirty word’: “To know, anything and anywhere, is a creative and meaningful act: it is a movement of social subjects towards their social world, which far from being mere information processing, involves action, passion and otherness” (Jovchelovitch, 1996, p. 5).

The second point regards the relationship between change and stability: From the critical perspective of discursive psychology, it apparently was the case that for some time the TSR has left “no room for a change in the content of social representations and... that individuals [are] regarded as nothing more than the victims (or dupes) of their representations” (McKinlay & Potter, 1987, p. 482). This criticism is to the point when considered against the classical perspective of collective representations that tends to disentangle the individual and social *realities*. However, the TSR’s hold of the individual and social levels of *analysis*, and the agency ascribed to individual and society neither determines one with another, nor collapses the two into each other (Augoustinos & Walker, 1995; Volklein & Howarth, 2005). The presentation of the present chapter was organized to emphasize that this is a one-sided view of social representations, if not a misunderstanding or deliberate effort of dismissal (Castro, 2003). Assuming that this chapter has already devoted enough space to describe social representations as a theory of social change, as well as of stability, I move onto the next point.

The third point regards the contingency of representations and their relation to practices, and is directly connected to the previous one. It suggests that the TSR had not dealt sufficiently with how the representations are *made*, and what do they *do*, or rather what people *do* with representations (Litton & Potter, 1985; McKinlay & Potter, 1987; Potter, 1996; Wagner, 1998). This chapter has addressed these questions rather unsystematically, but pointed up the some of the recent propositions and constructive efforts as to these questions. Namely, the processes of conventionalization, thematization, reconciliation and transformation all refer to the efforts of the subjects and the efficacy of representations in generating social effects (legitimization of and resistance against new norms). It is possible to give more examples of the renewed treatment of some of the

classical notions used in the approach of the TSR. For instance, Batel and Castro (2009) have proposed two diverging communicative orientations, namely *reification* and *consensualization*. These are assumed as “different types of utterances and arguments, coalescing in distinct discursive formats” (p. 416) instead of static notions applying to sharply differentiated *reified* and *consensual* universes.

Augoustinos and Walker (1995) and Howarth (2006) provide more comprehensive accounts of the function of reification and legitimization of social representations in ways that render the connections between social representations, identities, cognitions and attributions more explicit. From the studies cited in these reviews, social representation research appears as ultimately directed at scrutinizing and exposing “the dialectics of coding and transcoding, consensus and dispute, cooperation and conflict, imposition and resistance at the heart of all meaning, practice and communication” (Howarth, 2006, p. 80). Furthermore, for instance in the context of environmental and health risks, social representations are shown to be employed not only to resist against the challenges imposed by these, but also to reduce the perceived threats, insecurities, and one’s responsibilities by representing the risks elsewhere, and setting the blame on others (Uzzell, 2000; Joffe, 2004).

In comparison to the third one, the fourth criticism that regards (lack of) treatment of action in the TSR (Potter & Edwards, 1999) has been a more welcome debate. This is probably also because, from its first formulations on, the TSR has emphasized –less or more– representation as comprising action (Moscovici, 1961/2008) rather than a ‘cause’ of action (Wagner, 1994a), and action as part of representation (Wagner, 1998). Yet, when one considers the diverse approaches to the study of social representations, the precise link between action and representation appears as considerably vague. On this front, the discourse analytic perspectives, and more specifically the approaches in discursive and rhetorical psychology (Potter & Wetherell, 1987, 1998; Billig, 1987, 1991; Potter, 1996) have powerfully demonstrated the relevance of paying attention to what people *do*, and how their stakes, interests, and footing arrangements powerfully act upon their representations.

Ways of linking action and representation have more recently been debated not by viewing the two as theoretical notions but more concretely in terms of, for instance, neutralization and resistance played out in time (Valsiner, 2003; Castro & Batel, 2008). Valsiner (2003) has clearly distinguished social *representing* as “a process of guiding

ourselves towards futures, through the help of heterogeneous semiotic mediators – social representations” (p. 2). According to this account, the static depictions of social representations, linking the present only to past, obscure their major function as to orientate (both constrain and enable) “the streams of consciousness” (p. 2). However, “constraining operates so as to highlight the enabled part of the field while dis-enabling the rest” (p. 13). Crucially, for Valsiner, the enabling and dis-enabling function regards not only the sense-making practices, but also the efforts to “delimit the uncertainty of the immediate future” (p. 12). In this framework, social representation emerges as anticipatory ‘pre-adaptation’, or even ‘pre-discursive’ mechanisms orienting the thinking towards a given situation or context it is required to address.

All the critical comments mentioned above seem to boil down to the claim that the TSR is “overwhelmingly perceptual-cognitive in its theorizing, while its analytic materials are overwhelmingly discursive” (Potter & Edwards, 1999, p. 450). While this claim cannot be maintained on the theoretical level (Jovchelovitch, 2002, 2007, 2008; Elcheroth et al., 2011), it has some relevance as to some of the methods and analysis employed in the studies of social representations. However, it must be recognized that even the more quantitatively oriented and structural approaches in the TSR maintain that language is a network where the constituents acquire meaning only through other constituents (Lahlou & Abric, 2011), and emphasize the dangers of reifying the descriptions.

It is worthwhile at this point to recall the four main themes Moscovici (1984/2000, p. 62) has drawn from the early research on social representations: (1) to obtain material from samples of conversations normally exchanged in society; (2) to consider social representations as a means of recreating reality; (3) to focus especially on times of crisis and upheaval, when a group or its image are undergoing a change; (4) to see the people who elaborate such representations as something akin to amateur “scholars”. These earlier themes in social representation research seem to have served as guidance for latter studies that are oriented in an increasing rate towards qualitative understandings that explicitly endorse and employ the analysis of language, discourse and communication (Flick, 1994; Batel & Castro, 2009). The strength and social psychological relevance of the TSR, as emphasized throughout this chapter, comes from connecting the linguistic and discursive phenomena to the reflexive understandings and intrinsically political thinking of individuals and groups (Howarth, 2006; Gillespie, 2008; Elcheroth et al., 2011).

3.4. Studying the ‘thinking society’: The focus on two mediating systems

If the discussions carried out in this chapter were to be reduced to one sentence, it would write as follows: Representations cross-fertilize each other and change, because they are compared, contrasted, reconciled and elaborated in the course of interaction and dialogue, by active participants. They can be reified, conventionalized, contested, thematized only by active subjects. This section aims to take this abstract proposition to more concrete terms. This is done by describing the specific contexts of representations addressed in the empirical chapters, and by returning to the mediating systems, which are conceived as crucial institutions of the ‘thinking society’ (Moscovici, 1984/2000), and active participants and highly influential actors of CC action and representation. In doing this, the section sets the rationale in focusing on the mainstream press and the NGOs.

As mentioned before, this thesis focuses on how two mediating systems (the press and the NGOs) represent and reconstruct CC knowledge. Although the two are closely connected to each other, the press and NGOs are endowed with distinct roles, and are bound by different norms, resources and expectations in making CC an issue of public concern. Most importantly, for the NGOs that carry out projects and campaigns about CC, the issue is not one among the many novelties to be reported –as for the press– but one of their principal concerns, a problem that connects and exposes many other environmental problems. Furthermore, beside their relation to the object, the press and the NGOs also have different relationships with other institutions and actors involved in CC action and representation. This is especially so as to their relation with the scientific and political authorities and their portrayals of the dominant policy agendas. For instance, while the mainstream press may confine itself to disseminating new scientific knowledge, policy proposals, political decisions and the government’s actions without establishing an integrative frame (Castro & Gomes, 2005), the NGOs are entrusted with their critical views on and comprehensive interpretations of these. They are not bound by the media’s balancing norms (see Boykoff & Boykoff, 2007), but by the promise of going beyond the episodic framings and providing the public proposals for interpreting and evaluating the new information (Jamison, 1996; Jasanoff, 1997).

To reiterate with the terms introduced in the present chapter, this means that it is more likely to find conventionalizing arguments and lower degrees of thematization in the mainstream press articles, whereas the NGO experts and campaigners may be expected to offer more thematizing arguments and reflective representations (Markova, 2008b). While

the mainstream press may tend to resort to diffusion, seeking not comparisons between but balanced reporting and impartial descriptions of different perspectives, the NGO experts are probably more prepared to offer comparisons, evaluations, criticisms and endorsements, carrying out negotiation of diverse meanings. This means that they probably resort to different linguistic repertoires and discursive strategies in representing CC and creating a rhetoric of action.

For the reasons set forth above, the two empirical chapters devoted respectively to the analysis of how the mainstream press and the non-governmental actors represent CC employ different research questions and analytical approaches.

Chapter 4 focuses on how climate change is represented in the mainstream Turkish press. The specificities of the case of Turkey and the Turkish press are introduced in this chapter. For now, it suffices to say that the studies reported in this chapter primarily focus on the processes accompanying the rise of public concern about CC in Turkey, and the *generation* of new representations in a developing country context. This involves looking into the anchoring categories chosen to represent CC, the major actors and themes of the climate change news, as well as how the scientific knowledge is employed and translated into common sense, and how scientific discourse on CC is reconstructed by the press.

To date, there are no detailed analyses on such topics in Turkey, and there is a lack of knowledge about how the Turkish press deals with climate change. To overcome this gap, I follow the literature on the press representations of CC in other countries, and draw specific research questions to analyze the news articles from the mainstream Turkish press. The studies collected in this chapter are organized in such a way as to first account for the quantitative trends and general tendencies to get a grip on the temporal and journalistic context, and then use these to ground the more detailed qualitative and discourse analyses. Throughout this chapter, attention is paid to how scientific knowledge about CC is represented and how the rhetoric of science is reconstructed in the press.

Chapter 5 focuses on how the non-governmental actors actively involved in CC communication and policy represent and reconstruct the problem, and how they deal with and attempt to transform its manifold meanings. Although the studies reported in this chapter focus on interviews conducted with NGOs from Portugal and Turkey, they do not primarily aim at intercultural comparisons. Rather, the NGO actors are assumed as participants of a 'global climate change regime' (Oels, 2005), facing similar conflicts and controversies. Since these actors are engaged with CC on a regular basis, at different

levels of governance (Jasanoff, 1997), and through manifold discourse coalitions (Carvalho, 2000), their articulations are expected to be characterized by contradictions, ambivalences and cognitive polyphasia. The main theoretical interest in focusing on the discourse of the NGO actors, then, regards the dynamic *interference* of representations, rather than the categories of common sense knowledge they are anchored to. This requires paying attention to how the diversity of representations are dealt with, how the conflicting views are brought together, compared and negotiated, and how arguments are offered in more persuasive ways, or in ways that are more acceptable for others (Billig, 1991).

In sum, the studies collected in the two empirical chapters concern representations that arise from different social contexts, and that involve particular dynamics. The mainstream press articles provide better opportunities to explore how CC is represented at the societal level, in a national context, and temporal framework –in the course of years. They can be assumed as a window to look into the majority (or mainstream) understandings, dominant discourses, and hegemonic representations of CC in an industrializing country. The interviews with the non-governmental actors, on the other hand, provide better opportunities to examine how CC is negotiated with a series of imagined others, in interpersonal, intergroup and societal contexts (The efforts to focus the interviews to the intergroup and societal contexts will be set forth in the respective chapter). They can be assumed as a window to look into a particular minority dynamic, namely to how those in the forefront of CC action and representation strive to make themselves heard, make their arguments persuasive, how they call into question and attempt to extend, amplify and transform the hegemonic representations of CC. The research questions, analytical concepts and hypotheses about the representations brought to play by the two mediating systems are further specified of in the respective chapters.

CHAPTER 4

CLIMATE CHANGE IN THE MAINSTREAM TURKISH PRESS

CHAPTER 4. CLIMATE CHANGE IN THE MAINSTREAM TURKISH PRESS

4.1. General introduction

As mentioned previously, people's understanding of climate change is essentially 'mediated' (APA, 2009), i.e., the media plays a crucial role in how our societies grapple with CC. The influence of the mass media on public concern and understanding may be described by its two distinct capacities: The first concerns the influence on the relative salience of an issue, by means of coverage over time (Mazur, 1998). Second and more important is its capacity in representing the issue in particular ways, effectively setting the terms of the debate and meaning making activities (Carvalho, 2005; Liu, Vedlitz, & Alston, 2008). Therefore, analyzing the quantitative and qualitative aspects of press portrayals of CC is useful in understanding several aspects of 'how a society thinks'.

In this context, this chapter focuses on how CC is represented in the mainstream Turkish press during almost a decade (1999-2009). The chapter is comprised of three studies.

The first study looks at the volume of coverage in two mainstream Turkish newspapers (Section 4.2). The goal in this exploratory study is to understand the main trends in Turkish press attention to CC, and compare these with the global trends.

The second study is a content analysis of a sample of articles representative of the mainstream news reporting on CC in Turkey (Section 4.3). It aims to locate the most salient actors, themes and topics about CC, and examine the relations between the identified elements.

The third study has two parts that focus more specifically on how the scientific knowledge on CC is represented in the mainstream Turkish news articles (section 4.4). The first part involves the replication of the previous content analysis on those news articles that report specifically the scientific knowledge on CC. The second part includes a discourse analysis of the ways science and scientists are quoted in these articles. The goal in these analyses is to explore how scientific knowledge on CC is reconstructed in the press, transformed into common sense knowledge, and how the two universes are linked.

Before presenting the analyses, a short introduction on the context of media production and the wider social and political context in Turkey is presented below.

4.1.1. The context: Politics and media in Turkey

The purpose of this section is to provide a summary of the overall socio-political context in Turkey. To do this, I focus on some key points that concern the environmental policies, and the national context of media production. Because Turkey has a peculiar position in the global climate agenda, first its geopolitical stance is summarized, then a brief history of politics and media in the country is provided.

Turkey is depicted in many studies as a country with a critical geo-strategic location, by being on the energy corridor between the oil and gas resources around the Caspian Sea and the Middle East, and the demand centers in Europe and the Mediterranean (e.g. Demirbas, 2003; Kaygusuz, 2009). Strengthened by the cold war, this geo-political role was one of the main reasons in Turkey's becoming a founding member of the OECD in 1948 (Muftuler-Baç, 1998). This membership became a problem for Turkey in 1992, when the UN Framework Convention on Climate Change (UNFCCC) was opened to signature. The country was placed in both Annex I, among the developing countries, and in Annex II, together with other OECD countries that were to lead the way in CC mitigation (Kaygusuz, 2009; Türkeş, 2008). Prioritizing its economic development goals, Turkey did not become a party to the UNFCCC, and during almost a decade of negotiations asked to be deleted from these Annexes. At the Seventh Conference of Parties in Marrakesh in 2001, Turkey was removed from the Annex II list in recognition of its "special circumstances." (Kaygusuz, 2004; Türkeş, 2008).

Turkey has thus remained outside the international CC agenda while the global framework of action was formulated and the mechanisms concerning the binding commitments were elaborated (Kaygusuz, 2004). The country could not have a seat in the negotiations that constructed and followed the 1997 dated Kyoto Protocol (Türkeş, 2008). In this period, environmental problems in general, and CC in particular, were less of concern than the economic recession and the political instability that marked especially the 1990s. "Indeed, in less than nine years, six coalition governments with varying compositions and five different prime ministers ruled the country. This clearly indicated the absence of a hegemonic political center." (Kaya & Çakmur, 2010, p. 530). For the barely functioning bureaucracy and the largely delegitimized political system, the agenda was not reducing or even accounting for emissions, but creating an impetus for growth. This impetus and the sought hegemonic political center would be settled in the next decade by the reformed Islamic neo-conservatism. Before returning to the present

circumstances in Turkey in the context of media production, a very brief summary of its historical background will also help contextualize what is already described.

A recent history of Turkey can best be started with the 1980 military coup, after which a “systematic and intensive depoliticization process” (Christensen, 2010, p. 181) accompanied market liberalization and privatization policies. Inspired by Europe, which played a profound role in the development of Turkish national institutions, economics, politics, and the civil society (Kosebalaban, 2007), a complete structural transformation took place in the country, being opened up to foreign investment, rapid industrialization and urbanization, and massive energy projects (Ignatow, 2005).

One consequence of this era, which was characterized by the post-coup government phrase ‘skipping an age’, was the emergence of environmental problems and concerns typical of developing countries (Ignatow, 2005). These were mostly local and tangible problems, such as water and air pollution, which gave rise to local resistance movements and campaigns against industrialization projects³². Environmental measures prototypical of the era –such as establishing local and national environment agencies, and passing new laws and regulations– were effectuated. These helped to “gradually bring Turkey into compliance with EU environmental standards, although enforcement mechanisms have generally been weak” (Ignatow, 2008, p. 856). Despite the reactions against the massive increase in Turkey’s foreign debt and its increasing dependency due to its industrialization efforts, “the Turkish public has remained generally supportive of Turkey’s modernisation and industrialization projects” (Ignatow, 2005, p. 654).

Another consequence of the post-coup era, on the media sector, was corporate monopolization (Finkel, 2000). By the year 2000, two main media groups controlled almost 70 percent of the market, and the first of these, the ‘Hürriyet Group’ became the third largest conglomerate in Turkey (Kaya & Çakmur, 2010). This process also brought about the tabloidization of newspapers and “generated a tendency toward sensational news journalism” (Christensen, 2010, p. 181).

After the decade of political and economic instability and ethnic conflict³³ –the 1990s–, the newly established Justice and Development Party (AKP) claimed the center-

³² These were partly motivated by anti-imperialist sentiments as well as national paranoia, which are essential for understanding public concern for environmental and other issues in Turkey (Ignatow, 2005).

³³ The brutal ethnic conflict related to the rights of the Kurdish minority has sidelined virtually all other social and political issues in the country, especially in the 1990s. This grave political and cultural problem persisted for decades, and continues to profoundly affect all socio-political issues in the country.

right territory of Turkish politics by joining Islamic conservatism with neo-liberal agenda of intense privatization and deregulation. The mainstream media eagerly supported and legitimized the party, as an antidote to both radical Islamism and the shrinking political center (Kaya & Çakmur, 2010, p. 531). Proceeding cautiously after 2002 with an unprecedented media backing, and simultaneously acquiring more influence on the media, the party had a landslide victory in 2007 elections. Hence, currently the mass media in Turkey can be seen as divided into two major camps: Primarily commercial, neo-liberal media, and primarily pro-government, neo-conservative media. “Both camps are essentially linked to the pre-existing *economic system* but parted as to the *sociopolitical order*” (Kaya & Çakmur, 2010, p. 533, emphasis added).

To summarize, Turkey has a news agenda dominated above all by national and regional political conflicts. It took a long time for the environmental issues in general, and climate change in particular, to enter media reports and public discussions (Ozturk & Çitak, 2010). Among diverse problems such as ethnic and regional conflicts and political turmoil, CC failed to satisfy the newsworthiness criteria in the Turkish political context. Therefore, the country, which has been the last signatory to the Kyoto Protocol in 2009, provides a case in which the public awareness of and concern with CC surfaced at least with a delay of 10 years (Baykan, 2009).

In this context, the following studies focus on the articles that were published in the two most widely read Turkish newspapers: *Hürriyet* (Freedom) and *Zaman* (Time). There are in Turkey a high number of newspapers reflecting a wide variety of ideological orientations and worldviews; yet, the two selected papers represent the two most influential worldviews mentioned above. In the last decade, and parallel to the rise of neo-conservative worldviews³⁴, *Zaman* took over the crown of *Hürriyet*, the longtime best-selling daily and the flagship of the Hürriyet Group. In this extremely short period of time the definition of the ‘mainstream’ has changed considerably in the country, along with the shift of powers in the center-right of the political spectrum (Kaya & Çakmur, 2010).

³⁴ The transformation of the *Zaman* newspaper should be seen in parallel to the transformation of (some) conservative movements, and their becoming the new hegemonic political center in Turkey. In these terms, *Zaman* is no longer a newspaper followed by a closed community, but a new (most-widely read) mainstream newspaper. The fact that its columnists are connected to conservative communities, and it generally supports the government agenda do not change this aspect of its reporting, but perhaps limit it to a specific period, the period covered by the analyses.

It is now possible to set forth a critical assumption in selecting these two newspapers and formulate it as a hypothesis. As mentioned, the two newspapers diverge in their approach towards the sociopolitical order, since *Hürriyet* voices the neo-liberal worldview and *Zaman* is the pioneer voice of the neo-conservative worldview. However, they converge in a wide array of transnational and economic issues (Kaya & Çakmur, 2010). For instance, in the press reporting of the risks associated with genetic modification, these two worldviews were found to converge against the leftist, nationalist, and Islamist worldviews, establishing the mainstream and legislating position towards genetic modification in Turkey (Veltri & Suerdem, 2013).

Hence, it can be assumed that the reporting of the two newspapers –where they converge– reflects the central, legislating position to tackle CC in Turkey. In this sense, the phrase ‘mainstream press’ is used to refer to newspapers that (1) are widely read, and (2) reflect the discourse of hegemonic political center.

Then, despite the different worldviews they represent, the CC portrayals of the two newspapers are *not* expected to differ significantly. If some difference between the reporting of the two newspapers is detected, this should be interpreted as CC already bearing upon the sociopolitical order. However, if –as hypothesized– the reporting of the two newspapers do not significantly differ, this should be read as CC being represented as a global, geo-political, and diplomatic issue, newly introduced into the country context, rather than a localized, socio-political issue.

4.2. STUDY 1: Climate change coverage trends in the mainstream Turkish press

4.2.1. Introduction: Cycles of media attention

The volume of press coverage of a phenomenon is a good indicator of the public attention it receives over time (Mazur, 1998). The goal of the present study is to get acquainted with the material that will be subsampled for the following studies, and to gain some initial impressions about the public attention paid to climate change in Turkey across the years. After establishing the general coverage trends, these impressions will be converted into preliminary hypotheses that can provide some guidance for the analyses to follow.

According to Downs (1972), ecological issues such lack the necessary qualities to occupy public attention in a sustained manner. This is first of all because they span across large timescales in their impacts, sometimes becoming more visible, other times fading away. Second, they are mostly caused by social arrangements that benefit the majority or a powerful minority of population; and thirdly, they affect different segments of the society in different ways. Consequently, Downs argued, there are ‘issue attention cycles’ that reflect up and down times of public and media attention to such problematic issues. In his agenda setting study, Downs has hypothesized five stages of issue-attention cycles: (1) a *pre-problem* stage, when only some expert or interest groups are concerned with the issue; (2) a stage of *alarmed discovery* of the problem and euphoric enthusiasm about tackling it, reflected in an upswing in coverage; (3) a *maintenance* stage, in which the obstacles and costs of tackling the problem are faced; (4) a *decline* in public interest due to unchanging obstacles and circumstances, and also due to other emerging issues; (5) a *post-problem* stage, characterized by the fading of public attention, to return in some cases to the center of public debate through a new discovery or development regarding the issue.

Evidence supporting the stage hypothesis was collected from the press coverage of climate change in the US (e. g. Trumbo, 1996; McComas & Shanahan, 1999). It was also criticized to be too linear, by emphasizing specific characteristics of each issue (Ungar, 1992), and the specific discursive, cultural and political factors constructing the issue cycles (Trumbo, 1996; McComas & Shanahan, 1999; Brossard et al., 2004; Anderson, 2009). For instance, Ungar (1992) has argued that in the context of CC, attention cycles are chiefly affected by actual physical events and the social scare they cause. His analysis of the US media coverage in the 1980s discerned the dramatic droughts in 1988 as the main impetus for the sharp increase in attention in the country. According to this account,

issues such as CC need to be forced into public consciousness by linking them with the physical impacts felt by the person in the street (Ungar, 1992), but they will still fade out quickly along with the sense of dramatic crisis.

Boykoff (2007a) has located significant increases in CC coverage of the US media in 1988, 1990, 1992, 1997, 2001-2002, and 2004, and grouped the contributing factors to these increases into three categories: meteorological, political, and scientific. For Boykoff, the increased levels of public attention owes to the interaction of these factors, and in the 1988 upswing of CC reporting in the US, “unprecedented weather may help explain how this issue initially captured media attention, but political and electoral considerations were also important” (Boykoff, 2007a, p. 6). That means, in their public reception, ecological issues are not characterized by intrinsic but socially constructed qualities.

A study of CC news coverage in Japan during the decade following the 1997 Kyoto conference (Sampei & Aoyagi-Usui, 2009) has reported a dramatic increase of coverage in the year 2007. According to the findings, following the warmest winter on records in Japan, 2007 commenced with reports about the movie ‘An Inconvenient Truth’, and starting from February, the IPCC report received an unprecedented level of attention in the Japanese media –even more than around the Kyoto Conference. This finding corroborates that when the weather and ecological anomalies coincide with scientific and political events supporting and upholding their significance, they powerfully act upon the media and public attention (as in 1988 in US). When these different sources of information concur in public imagination in consistency with each other, ‘teachable moments’ are created. These moments usually initiate with unusual weather and ecological phenomena, but are actualized by the work of mediating systems that saturate these with reality, and make them act as the “harbingers of things to come” (Lieserowitz, 2004, p. 56).

In short, the literature seems to suggest that (1) the coverage of CC does not follow a ‘natural’ cycle, it is fundamentally connected to (2) the dynamics of the mediating systems that both reflect and reconstruct (3) the active efforts of social actors that bring the issue to the public agenda (Trumbo, 1996; Carvalho & Burgess, 2005), and (4) the developments in scientific, political and policy arenas (Boykoff & Boykoff, 2007).

When the time span of the studies mentioned above are considered, it becomes explicit that the press reporting of CC started earlier in the US and the UK –already in the 1980s– and was followed by the press of other countries (Mazur, 1998). In this regard,

Shanahan's (2009) review reveals what may be conceived as a general trend: It is probably no coincidence that in Brazil, China, India, Mexico, South Africa, and Vietnam the coverage of CC increased significantly in 2006 and 2007. Shanahan, among others (e.g. Sampei & Aoyagi-Usui, 2009; Schafer, Ivanova, & Schmidt, 2012), has considered the release of the IPCC's fourth assessment report in 2007, the Stern Review, and the movie 'An Inconvenient Truth' in 2006, together with the regional extreme weather events as the major factors in this apparently global trend.

A more recent comparison of CC coverage in 27 countries throughout 1996-2010 (Schafer et al., 2012) shows the differences in cycles of reporting that took place in industrial and industrializing countries around the years 2006-2007. The increase in the relative salience of CC in the press of the highly industrialized countries followed the earlier peaks of attention –for instance around 1988, 1997 and 2003. In these countries, the recent increase in the volume of coverage can be seen to reflect the 'mainstreaming' of CC³⁵, being taken up by the already existing institutions and economic policy organizations (Schafer et al., 2012). Yet, in countries like Singapore, South Africa, Thailand and Yemen, the available data suggests that the issue has gained a relative salience for the first time around 2007. Hence, while in such industrializing countries CC reporting was probably in its first cycle –indicating the *emergence* of new representations about CC in the public sphere–, the reporting in the industrialized countries was characterized by the characteristics of the *generalization* phase, i.e. frames of international politics, economic policy, moral responsibility (Anderson, 2009; Eskjaer, 2009; Gavin, 2009; Caillaud et al., 2011).

In light of these findings, the goal of the present study is to obtain a preliminary understanding of the reporting of CC in Turkey, by establishing the general coverage trends. This is pursued by seeking answers to the following questions:

- (1) How are the articles reporting about global warming and climate change distributed in years? In which years do the articles accumulate?
- (2) Is it possible to tentatively distinguish stages of reporting (Downs, 1972) in the Turkish press by looking at the frequency of articles in years?

³⁵ For instance, in Germany, the alternation between the local perspectives (e.g. roadmaps for action, national political agenda) and global ones (GHG reductions) implies that the focus had already shifted in this period from establishing the problem to the actions targeting the problem (Caillaud et al., 2011).

(3) Is there a difference between the patterns observed in the frequencies of articles from the two newspapers? If so, what does this difference indicate?

(4) Is there a difference between the patterns of the frequencies of articles mentioning global warming and climate change? If so, what does this difference indicate?

4.2.2. Method and material

The two most-widely read Turkish newspapers –*Hürriyet* and *Zaman*– provide advanced search services on their archive databases. Two search terms, ‘global warming’ (küresel ısınma) or ‘climate change’ (iklim değişikliği) were used, and articles dating back to 1997 were retained. This does not mean that there were no articles mentioning the two terms prior to 1997, since the online databases of the two newspapers do not cover previous years. Furthermore, due to some inconsistencies in the databases (see below) the years 1997 and 1998 were excluded from the analysis. The present study, then, is limited to the period between 1999 and 2009 (11 years). Considering the background provided in the previous section about the Turkish case, it is reasonable to assume that reporting of CC prior to this period was at insignificant levels in Turkey.

During the collection of frequencies for each keyword and each newspaper, and construction of the initial frequency distributions, some obstacles were met. The total number of articles, which are clearly above 2000 for each newspaper, cannot be accurately accounted for due to a number of reasons:

- (1) The results of the queries done with the two keywords intersect to some extent,
- (2) Some inaccuracies were detected, especially in the database of *Zaman*, and in an increasing manner in years prior to 2004. For instance, in many cases one article was retrieved several times, making the total number of articles appear higher,
- (3) *Zaman*’s database did not display more than 1000 results for a given year, which constituted a problem in accounting for the coverage volume in 2007.

The latter two obstacles were dealt with systematically. However, the intersection of the results of the queries done with the two keywords was left unchecked by the study. That is, those articles that mention both keywords, and therefore collected in both clusters of articles (that mention GW and CC) were assumed to be distributed evenly in years. Hence, the frequencies displayed in the results section should be considered as approximate, but certainly not inaccurate in a way to effect the interpretations.

The Google index of web searches in Turkish for ‘global warming’ in the same period was used to compare the coverage trends with the levels of public concern in the country. It must be noted that the figures provided by the *Google Insights* reflect an aggregate of the queries. It does not represent the absolute search volume, since the data is normalized relative to the total number of queries done on Google over time.

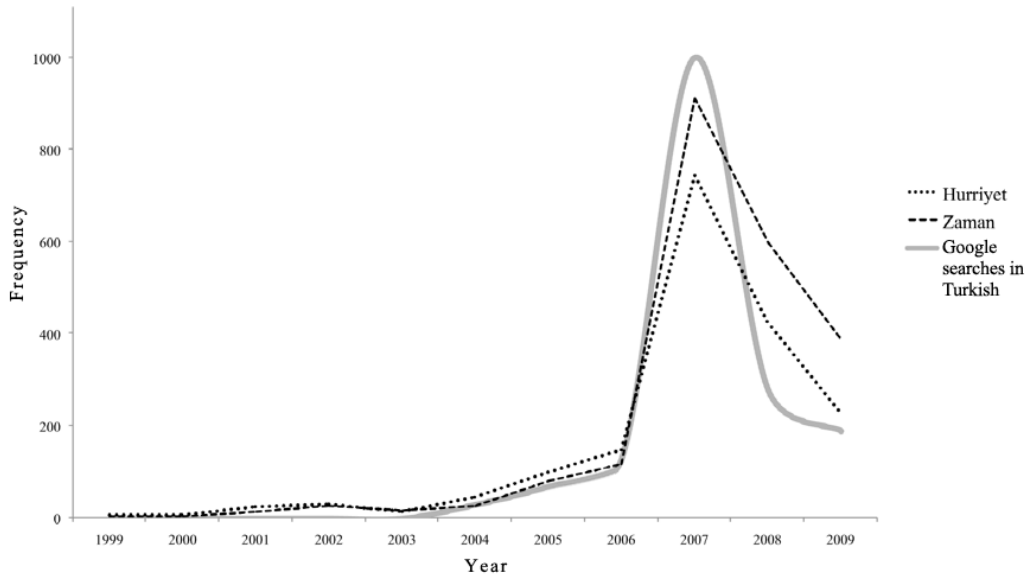
4.2.3. Results: Climate change coverage in Turkey in its first decade

The total number of articles that contain the keyword ‘global warming’ in *Zaman* is significantly higher (N = 2782) as compared to other figures: With the same keyword, *Hürriyet* returned a total of (N = 1960) articles. The total number of articles in *Zaman* that contained the keyword ‘climate change’ is (N = 1478), and for the same keyword *Hürriyet* returned (N = 1009) articles. Because these figures include those articles that mention both keywords, the figures should be considered as the maximum possible number of articles (as if there were no articles that used the two keywords together), and not precise frequencies.

As demonstrated in Figure 2, the articles that mention ‘global warming’ in both newspapers are heavily concentrated in the latter years –after 2006. For Turkey, the mainstream press attention to CC cannot be said to exist prior to year 2004. The first time the annual number of articles that report about the topic exceeded the one digit values was 2001 for *Hürriyet*, and 2002 for *Zaman*. These figures indicate a radical difference from the reporting of the issue in industrialized countries in the same period, for instance from the UK where the annual number of articles in mainstream newspapers between 2000-2003 were several hundreds (Carvalho & Burgess, 2005).

Starting from 2004, a steady increase took place in both newspapers, turning into an explosion of articles that mention ‘global warming’ in 2007. “Alarmed discovery and euphoric enthusiasm” (Downs, 1972) describes this period with accuracy. The peak of reporting was reached in 2007, when each day both newspapers mentioned ‘global warming’ in several articles. This alarmed discovery should be considered in the context of unprecedented warm winter records and historical droughts affecting the country in 2006 and 2007 (Dellal & McCarl, 2010). While such extreme events cannot be definitively connected to global warming, they help instigating the “teachable moments” of its potential impacts (Lieserowitz, 2004, p. 56).

Figure 2. Frequencies of articles that mention ‘global warming’ in the two papers and the annual trends in Google search volume for the same keyword in Turkish

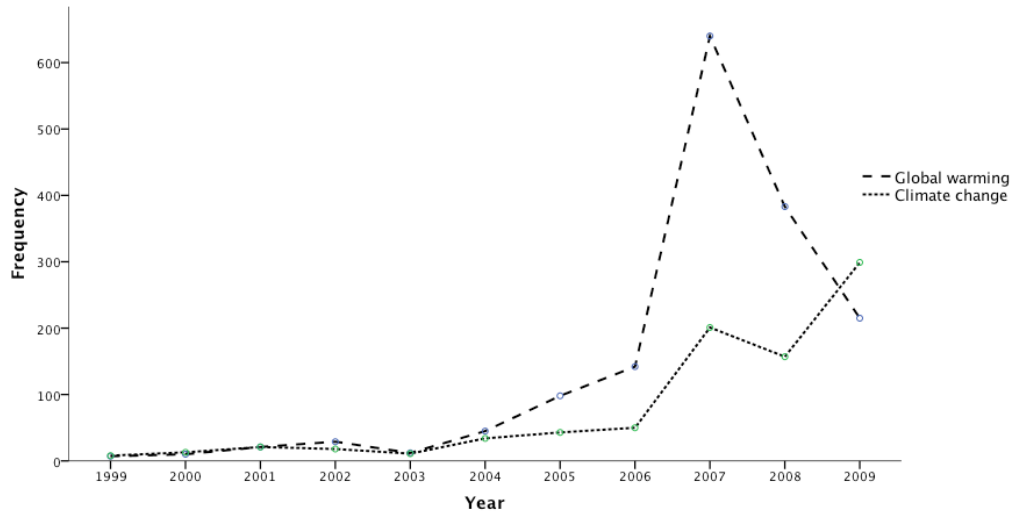


Such enthusiasm in reporting could not be maintained for long (Downs, 1972). After 2007, the coverage of the issue retreated in both newspapers, but not to the levels prior to 2006. That is, global warming was maintained as a significant issue in 2008 and 2009; the end of this maintenance period could not be determined by the present study.

The trends in the volume of the Turkish language web queries in Google search engine match perfectly with the figures obtained from the quantitative analysis of mainstream press coverage. The relative number of web queries confirms 2007 to be a critical year for the emergence of CC as a matter of concern. Another point that the frequency of web queries in years supports the figures of coverage trends regards the difference between the periods before and after the ‘alarmed discovery’. The volume of internet queries made in 2009 appears notably higher than those in 2004.

Concerning the preference between the two keywords in covering the issue, overall, the term ‘global warming’ was preferred to ‘climate change’ (See Figure 3). This trend was amplified in year 2007 along with the massive upswing in the number of articles, and reversed in both newspapers in 2009. This reversal suggests 2009 as another critical year for the issue coverage in the mainstream Turkish press, and indicates that this was probably a moment in which the meanings associated with the issue have changed. In this sense, the present study can be seen as focusing on the first cycle of CC coverage, a cycle in which ‘global warming’ was the more often used term to denote the problem.

Figure 3. Frequencies of articles that mention the keywords ‘global warming’ and ‘climate change’ in Hürriyet



This finding is probably part of a tendency of the mainstream media to refer to ‘global warming’ instead of ‘climate change’ (Corbett & Durfee, 2004), especially in the initial cycles of reporting (e.g. Mazur & Lee, 1993). The term ‘global warming’ has more currency in the media due to its emotive and dramatic character as compared to ‘climate change’, which appears as a more neutral term (Whitmarsh, 2009b). The term ‘climate change’ reflects wider and more complex ecological consequences of the phenomenon, and is preferred by the scientific community (Lorenzoni et al., 2006). It comes as no surprise then that the use of ‘global warming’ to exceed the use of ‘climate change’ in stage of alarmed discovery, which took place in relation to the local ecological extremes. Likewise, it makes sense that the elevated use of the relatively impartial term ‘climate change’ comes only later, in 2009, once the initial enthusiasm was left behind. Probably, once the definition of the problem, the associated risks and impacts were fairly established, and the difficulties in addressing these were met, a less dramatic and more impartial language was of use in dealing with different aspects of the problem. As mentioned before, this is the characteristic of the maintenance stage of reporting (McComas & Shanahan, 1999).

4.2.4. Conclusions

The analysis of the CC coverage trends in the two most-widely read Turkish newspapers aimed to distinguish the stages of press reporting through which the issue became a matter of public concern in Turkey. The CC coverage trends of the two newspapers were almost

identical. Although *Zaman* published more articles than *Hürriyet* overall, there was no significant difference in the rise and fall of coverage volume in the two newspapers.

According to the findings, CC was not part of the press agenda in Turkey until 2004. The issue became newsworthy only after 2004, when the national government formally recognized the problem. After this year, there was a continuous increase in the number of articles mentioning the issue, and an explosion of articles –especially those that mention the term ‘global warming’– in 2007. By drawing on the literature (Ungar, 1992, Lieserowitz, 2004) this extraordinary upswing was connected primarily to the social scare brought about by the extreme droughts that hit the country in 2006 and 2007.

It is necessary to consider other factors that probably had a significant influence on the extraordinary upswing of reporting (Boykoff, 2007a). The wider socio-political context and the sensitivity of the Turkish press to the government’s position (Kaya & Çakmur, 2010) should be considered among these. As mentioned before, the country was burdened with political instability and economic crises throughout the 1990s. Due to curbing of intense ethnic conflict and the relative stabilization of the economy starting from 2002, the issues of ‘secondary importance’ could make it to the public agenda. This also made it possible for Turkish governance structures to deal with the long postponed issues of relevance, such as the ratification of the UNFCCC on May 2004, preparation of the First National Communication of Turkey to UNFCCC on January 2007. The Kyoto Protocol was signed on February 2009, not only due to the pressures from the EU and international environmental organizations (Erdogdu, 2010), but also due the founding of a new political center which became able to respond to such demands. These political developments may be seen to have significantly affected the coverage of the issue.

Among other factors that may have contributed to the extraordinary upswing and the peak of reporting in 2007, the release of the fourth IPCC assessment report on February 2007 should be taken into account. The IPCC assessment reports, published roughly every 5 years, have been influential documents in defining the problem and providing basis for the risks discourse concerning climate change (Bolin, 2007), and have yielded significant media attention (e.g. Hulme, 2009; Schafer et al., 2012). In 2007, the dissemination of the IPCC report coincided in Turkey with the movie ‘The Inconvenient Truth’, and the political repercussions of the Stern Report to the UK Government (see Sampei & Aoyagi-Usui, 2009 for a similar account). Hence, a combination of ecological,

scientific and political factors (Boykoff, 2007a) can be said to have prompted the extraordinary upswing in press attention to the issue in Turkey in 2007.

The volume of Google index of web queries about ‘global warming’ in Turkish demonstrated an identical pattern to the coverage trends in the two newspapers. This helps in generalizing the findings regarding the mainstream press coverage to the wider context of public attention and concern.

The decreased use of the term ‘global warming’ and its replacement by ‘climate change’ in 2009 suggest that some qualitative changes took place in the coverage of the issue after its alarmed discovery. This is one of the points that need to be examined in the following studies.

Three distinct stages can be hypothesized by drawing on the findings: (1) A pre-problem stage (1999-2005), in which very scarce attention was paid to the issue; (2) a stage of alarmed discovery or upswing (2006-2007), in which a record number of articles were published³⁶; and (3) a stage of maintenance of reporting (2008-2009), which the study could not determine whether/when it was concluded. These tentatively proposed stages will be taken into consideration in the following studies, focusing on the material qualitatively.

The main limitations of the study concern the use of online archive databases. Although the two newspapers provide the most organized databases and advanced search tools in comparison to their competitors, there were some incoherencies in the earlier years, especially in *Zaman*, and especially before 2004. These obstacles were dealt with systematically, and due to the remaining doubts, the period of analysis was limited to the 1999-2009 period. The intersection of the uses of the terms ‘global warming’ and ‘climate change’ in the analyzed articles made it impossible to provide a precise account of the number of the published articles. Hence, the results of this study should be considered in the framework of specified questions, attempting to provide a general understanding of the trends of press coverage and public concern.

Finally, the stages and the cycles of media reporting can be compared to the phases through which social representations are generated and transformed (Castro, 2012; see

³⁶ That the peak was reached only at 2007 may justify the limitation of the alarmed discovery stage to this year. However, the swift increase in the number of articles had started in the last months of 2006. It is a limitation of the present study, namely the categorization of the articles according to the years instead of the months in which they were published, that yields this extension of the alarmed discovery stage to two years.

also section 3.2.4). With regard to the stages, the *emergence* phase, in which a new representation is made public by the persistent efforts of a minority, may be seen as corresponding to the ‘pre-problem’ and –if the minority is successful in legitimizing the new ideas and proposals– to the ‘alarmed discovery’ stages. The phase of *institutionalization*, in which new institutions are created, costs are calculated, and roadmaps for action are prepared, is compatible with the characteristics of the ‘maintenance’ stage, and in some cases the ‘decline’ of public attention. The *generalization* phase of social representations cannot be said to directly correspond to the ‘post-problem’ stage, as the generalization of social representations may take much more time and societal effort, involving new knowledge claims, definitions, and societal proposals aimed at tackling the problem, namely new cycles of public attention.

Hence, alternatively, the phases through which social representations are generated and transformed may also be associated with the cycles of reporting. In this regard, the data available from the US and the UK press coverage of CC suggest that the first cycle(s) of reporting that took place in these countries in the 1980s and 1990s can be designated as the *emergence* phase of representations (e.g. Mazur & Lee, 1993; Brossard et al., 2004), and to some extent the *institutionalization* phase, especially around and after the Kyoto Protocol in 1997. As mentioned before, in the first decade of the new century, the new cycles of CC reporting that took place in these countries showed characteristics of the *generalization* phase of social representations (Carvalho & Burgess, 2005; Doulton & Brown, 2009; Smith & Joffe, 2009; Caillaud et al., 2011), while the issue was yet emerging in many industrializing countries (Shanahan, 2009; Schafer et al., 2012).

When viewed in relation to the political and policy contexts of CC, the present study suggests that the period examined in the Turkish press is probably the *emergence* phase of social representations. The qualitative characteristics of this phase, in the context of mainstream Turkish press reporting, are examined in the following study.

4.3. STUDY 2: Climate change news in the mainstream Turkish press:

A content analysis

4.3.1. Introduction: Mainstreaming climate change

The previous study provided an overview of climate change coverage trends in the Turkish press. It showed that CC became an object of public attention in Turkey only after 2004. By looking at the changes in the volume of coverage in what was designated as the first cycle of CC coverage, three stages of reporting were identified: An initial stage in which very little attention was paid to the issue (1999-2005), the alarmed discovery of the problem (2006-2007), and the stage of maintenance of reporting (2008-2009). Climate change emerged as a public concern and was probably established as a serious problem in the country throughout these stages. However, to give substance to these inferences, it is necessary to pay attention to the qualitative characteristics of the mainstream press reporting in this period. The present study aims to do this by drawing on the literature on press representations of CC, and by drawing specific research questions for a qualitative analysis of the content of the news articles from the mainstream Turkish press.

The qualitative focus on the press coverage of an issue assumes that the stages of reporting are constructed by particular thematic and narrative patterns, discursive sources, and styles of reporting (McComas & Shanahan, 1999; Carvalho & Burgess, 2005). In their study of CC related articles in the US newspapers in the 1980-1995 period, McComas and Shanahan have found that the upswing stage of newspaper attention (1986-1989) is characterized by the narratives of risks and dangers. The scientific controversy and the frames of economics and domestic politics appeared in the maintenance stage (year 1990), and continued in the decline of reporting (1991-1993). Guided by this finding in analyzing the Turkish press, it is reasonable to expect a high emphasis on the risks and dangers associated with CC, especially around 2007.

Similarly, Trumbo's (1996) content analysis of five US newspapers in the same period has shown that scientists are quoted most frequently in the early upswing stage, owing to their claims about the causes of and the risks posed by CC. In the later problem solving stage in which the issue is maintained on the agenda, the frequencies of articles quoting politicians and interest groups is reported to increase, accompanying a decrease in appearances of scientists. This means that the stages of reporting can also be described by

reference to the sources quoted by the press, and it is worthwhile in this sense to pay attention to the actors of the news articles.

In the UK press, social actors are also reported to have played “by far the most powerful and effective role in shaping climate change in the public sphere” (Carvalho & Burgess, 2005, p. 1458). By focusing on two decades of CC reporting in the UK, in their critical discourse analysis, Carvalho and Burgess have identified three stages in the reporting of risks associated with CC: The initial stage between 1985 and 1990 is reported to reflect the early definitional power of the scientists, which was quickly seized by the government to situate the risks within a neo-liberal economic program. The high levels of coverage in this period diminished almost completely between 1991 and 1996, “because no ‘climate catastrophe’ occurred and it became difficult to sustain a ‘dramatic’ risk storyline” (p. 1464). Instead, the costs and economics of CC started to gain prominence in risk discourses, through the inclusion of new actors (e.g. the insurance industry). After receding in this period, CC regained attention in the UK public sphere in the 1997-2003 period, with its new formulations in the international framework of action. In this last period identified by the study, the dangers of CC were depicted through a more territorial perspective, in a way that is also more integrated with international politics, giving way to an emphasis on the national energy policies. This renewed attention may be seen as a new cycle of reporting in the UK, bringing the impacts and risks of CC closer to home (Boykoff & Boykoff, 2007, Boykoff, 2008).

Further evidence supporting the occurrence of new cycles of CC reporting with different qualitative features was obtained also in other European countries³⁷. What can be called the ‘mainstreaming’ of CC (Schafer et al., 2012) is most clearly visible in the press of countries like France, Germany (Caillaud, Kalampalakis, & Flick, 2011) and Sweden (Olausson, 2009). While in the Swedish press the main frames were of collective action – both by mitigation and adaptation– against a *social preblem* (Olausson, 2009), in the German press the risks were represented with greater proximity and dialogically – connecting the local exigencies both to the needs of poorer countries and to the global nature of the problem (Caillaud et al., 2011, p. 375).

³⁷ A constructive public debate directed to problem solving was hampered in the US by the efforts of the conservative movements to introduce skepticism into the public agenda (Jacques et al., 2008), and by the Republican Party’s ideological choices (Boykoff, 2007b). Whereas, in other parts of the world, and especially in the EU, the phenomenon was increasingly connected to local, political and economic solution frames (Anderson, 2009; Eskjaer, 2009; Doulton & Brown, 2009; Olausson, 2009; Caillaud et al., 2011).

However, such findings cannot be easily generalized across many countries, even those in the EU. For instance, a study of CC discourse in the Portuguese media (Carvalho & Pererira, 2008) has pointed out a disconnect between the ‘global’ problem, and its national and local forms of causation. Similarly, Billett (2010) has identified in the English language Indian press a “risk-responsibility divide”, through which the causal responsibilities were represented outside, and only the adverse consequences were situated within the country borders. A comparable image of responsibility and agency ascription was found also for the Argentinian press, where the most salient frame of conflict was depicted not as taking place between the scientists, but as between the industrialized and industrializing countries (Mercado, 2012). These findings show that despite the risks and dangers posed by CC was established in these countries in local forms, the issue was being depicted by reference to its broad human causes and to the international framework of action and negotiations³⁸, rather than to local exigencies.

In light of the findings discussed above, it may be expected that in the period examined by the present study, the definitional power of scientists would be used by the mainstream Turkish press articles to put an emphasis on risks and dangers. The portrayals of scientific knowledge and the international framework of action may be expected to outweigh the portrayals of (national) political conflict, economic policy and moral responsibility, which are reported from the press of industrialized countries at the same period (Eskjaer, 2009; Gavin, 2009; Caillaud et al., 2011). To see whether this is the case, the analysis of the news articles published in two mainstream Turkish newspapers pays attention to several aspects of CC representation, drawing on seven research questions that were extracted from the literature. The seven questions presented below are used as guidelines for analyzing, and deriving variables for coding the collected news articles.

4.3.2. Research questions derived from the literature

(1) *Geographical scales and geopolitical levels*: It is widely acknowledged that with its many aspects climate change relates to a wide range of scales and levels of human activity (e.g. Dunlap & Michelson, 2002; Hall & Pidgeon, 2010). The news media has a pivotal

³⁸ In this regard, the case of Portugal in CC action and negotiations –more specifically that the Portuguese press was preoccupied mainly with reporting the international developments in the analyzed 2003-2007 period– necessitates to be seen in connection to the wider EU climate policy. While the major part of the EU was in the process of curbing emissions, Portugal, as other countries that are at the borders of EU territory, was permitted to increase its GHG emissions –by 27% from the 1990 levels (Carvalho & Pereira, 2008).

role in the reconstruction of the problem, and the framing of the responsibilities at scales and levels ranging from local to global. A distinction between *local*, *national*, and *global* geographical scales and geopolitical levels at which the press articles depict the issue helps to understand to what extent CC is ‘localized’ in the articles (Olausson, 2009).

‘Localization’, in this sense used here, refers to the extent to which CC is represented at the local and national contexts of causation and collective action. It is fairly established that in many countries –especially in the phase of its emergence in public sphere– CC is framed as a ‘global’ problem, poorly connected to local level action and national responsibilities (Carvalho & Pererira, 2008; Eskjaer, 2009; Shanahan, 2009; Mercado, 2012). Portrayal of CC as a global, deterritorial phenomenon only trivially connected to territorial and political realities poses a major obstacle for climate sensitive action (Giddens, 2009; Doyle & Chaturverdi, 2010). With regard to the findings mentioned above and the national political context of Turkey, representation of a global problem, and a disconnect with the local forms of causation and action may be expected. Research question: What is the geographical scale at which CC is portrayed in the article?

(2) *Dimensions of understanding*: To address the role of the press in reporting climate change, the ‘understanding’ of an environmental problem has to be taken into account. Stamm, Clark, and Eblacas (2000) have offered three major dimensions for the understanding of CC, namely, the *causes*, *consequences*, and *solutions*. Similarly, drawing on how the IPCC has so far reported about the phenomenon, Smith and Joffe (2009) have used these three categories for coding the visual content of British press articles. From a theoretical point of view, these dimensions may be conceived as the anchoring categories for climate change to be represented. In this regard, for reasons set forth above, an overall emphasis on the risks and dangers, and anchoring CC to its *consequences* may be expected, since it is assumed that the analysis deals with the emergence phase of social representations. However, in the maintenance stage of reporting (2008-2009), *solutions* may also be expected to gain prominence.

Research question: Which of the dimensions of understanding of CC, namely *causes*, *consequences*, and *solutions* is foregrounded by the article?

(3) *Main theme*: Elaborating on the previously identified (Boykoff & Boykoff, 2007) major contributions to media coverage over time, Boykoff (2008) has proposed four nested framing categories for news coverage in the mainstream press, which are employed

as the major themes of climate reporting: The theme *ecological/meteorological* is composed of reports about weather events and biodiversity; the theme *political/economic* involves issues concerning the business world, and the economic and political debates; the theme *technological/scientific* comprises the frames of scientific debate, new studies and technologies; and finally the *culture/society* theme reflects the frames of popular culture, public understanding, engagement, and processes of adaptation. These categories offered through the analysis of the UK mainstream press have to be considered reflexively to see if they summarize the corpus from the Turkish press.

Research question: What is the main theme of the article? Does it involve primarily the *ecological, political, technological* or *cultural* aspects of the issue?

(4) *Main actor*: One of the most important factors in bringing CC on the media agenda has been the efforts of the social actors (Trumbo, 1996; Carvalho & Burgess, 2005). It is crucial to identify the main actors depicted in the news –who can be both the subjects and the objects of the news stories– in order to understand the dynamics of the political and discursive processes taking place around CC, and their re-construction in the reporting of news (Carvalho, A., 2008; Liu, Vedlitz, & Alston, 2008).

Several studies (e.g. Carvalho, 2000; Carvalho & Burgess, 2005; Dotson et al., 2012) have identified politicians as the main actors of the CC news, defining to a large extent the engagement of other actors. News reporting is found to be strongly linked to the pronouncements of politicians and top governmental figures, whose role in time replaced “the early definitional power of scientists” (Carvalho & Burgess, 2005, p. 1462). In the emergence phase of CC as a public concern, scientists may be expected to appear as the main actors of the news articles. However, political figures may also gain prominence, especially in the maintenance stage. The fourth question regards the actors that are in one way or another reported as the main agents of the communicated content.

Research question: Who is the main actor depicted in the article?

(5) *Linked public issues*: As any policy issue, climate change can be associated with or linked to other public or policy issues, with consequences for its public image. For instance, reporting CC in connection to water management policies or international affairs have quite different agenda setting implications. Liu, Vedlitz, and Alston (2008) have constructed 12 categories to summarize the public issues that were connected to CC in the US regional press: *agriculture, defense, education, energy, health, housing and*

community, international relations, land and water management, macro-economy, science and research, social order, and transportation. An assessment based on these categories may help to understand the policy relevancy of and public agenda(s) constructed around CC in the news articles from the mainstream Turkish press.

Research question: To which public issue CC is primarily linked to in the article?

(6) *Tone of reporting*: The sixth question regards the representation of scientific knowledge on CC, and is derived mainly from the findings in the press of some highly industrialized countries –especially the US. As mentioned in section 2.1.2, in adherence to the journalistic norm of balance, the press in the US has for some time depicted the issue as a controversy between divergent expert views, which gave way to a “balance as bias” (Boykoff & Boykoff, 2004), an over-emphasis on uncertainties (Antilla, 2005, Boykoff, 2007a, 2007b), and the elevated circulation of skeptical or contrarian arguments.

In the British press, the core idea of CC as a multi-faceted threat is reported to be established as early as 1988, dominating the polemical representations that depict the phenomenon as ‘natural’ (Jaspal & Nerlich, 2014). Later on, as the issue became more politicized, the controversy was (re-)inserted in the UK public sphere, especially by the right leaning press (Carvalho & Burgess, 2005). However, compared to the rather neutral tone of reporting in the US press, that was sustained by an controversial image of science, the press reporting in the UK has been characterized by a more alarming tone (Hulme, 2007; Doulton & Brown, 2009; Dirikx & Gelders, 2008). In the US, the perpetuation of the controversy in the press was associated with the efforts of the conservative movements (McCright & Dunlap, 2003; Jacques et al., 2008). On the other hand, the press in other industrialized countries and in other parts of the world, for instance in France, Germany (Brossard et al., 2004; Caillaud et al., 2011), Portugal (Carvalho & Pereira, 2008; Ramos & Carvalho, 2008; Carvalho, Pereira, Rodriguez, & Silveira, 2011), India (Billett, 2010), and Argentina (Mercado, 2012) are reported to persistently emphasize the scientific consensus on anthropogenic causes, and the alarming implications of the problem.

It is therefore important to see whether the mainstream Turkish press sought a balance between the conflicting scientific claims, depicting CC knowledge as controversial and giving rise to skeptical interpretations, or whether the reporting was focused on the alarming findings associated with the issue, by resorting to an uncontroversial image of CC knowledge.

Research question: How is the scientific knowledge on CC reported? Does the article depict a controversial/uncertain phenomenon, or an uncontroversial/alarming problem?

(7) *Communication genre*: The last question concerns the communication genres distinguished by Moscovici (1961/2008) and explicated in section 3.1.1. To reiterate, *diffusion* stands for the dissemination of basic information, without thematizing it from different perspectives, and providing an integrative frame. *Propagation*, on the other hand, is said to take place when the communicated content is explored and thematized by drawing on different accounts and from different perspectives. Lastly, *propaganda* refers to explicit endorsement of one perspective against another, in a way to delegitimize the alternative (Castro & Gomes, 2005). Using these distinctions makes it possible to discern if the issue is depicted through conflict, reconciliation, or mere information.

Research question: Which of the communication genres, namely *diffusion*, *propagation* and *propaganda* is exercised in the article?

Seeking answers to these questions in the mainstream press reporting of CC, this study aims to shed light on the public image of climate change in the period of its emergence as a matter of concern in Turkey. By drawing on the national context shortly reviewed at the outset, and the findings of the previous study, the following tendencies may be expected:

- (1) Framing of the problem at the global scale, rather than at national and local scales;
- (2) Anchoring of the representation to the consequences, rather than causes and solutions associated with the problem;
- (3) Primacy of the ecological/meteorological theme over political/economic, and social/cultural themes;
- (4) A heavy dependence on scientists to establish the problem in a way that leads to the tendencies mentioned above, giving them primacy over other actors;
- (5) Strong linkage to land and water management issues among other public issues;
- (6) An alarming tone of reporting based on an uncontroversial image of CC knowledge, rather than a skeptical tone based on a controversial image;
- (7) Relative preference for the diffusion genre of communication, in comparison to propagation and propaganda genres.

4.3.3. Method and material

The study is a theoretically driven content analysis of the news articles that report climate change in the mainstream Turkish press. Content analysis aims at “making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (Krippendorff, 2004, p. 18). Content, then, is not seen as an inherent property of a text, but is emergent in the process of reading and coding, always with respect to a particular context. The present analysis draws on the questions extracted from the literature and set forth above, to examine, organize and record the salient categories of meaning associated with CC, and the styles of reporting resorted to in the news articles published between 1997 and 2009³⁹.

To collect the corpus, first, four news sections in which the CC related news were concentrated in the two most widely read Turkish newspapers, *Hürriyet* (Freedom), and *Zaman* (Time) were selected: *agenda*, *world*, *economy*, *politics*. Then, a stratified sampling strategy was employed to be able to include a significant number of articles from the years prior to 2004. This was carried out by shifting the sampling rate gradually in years. That is, while from the articles published from 1997 and to 2000 every 5th article was selected, the sampling rate was decreased to every 12th article in 2007. In case the article to be selected did not discuss ‘climate change’ or ‘global warming’ as its central topic, the next article (i.e. 13th article in the row, if not 14th and so on) was selected. This process yielded a total of (N = 317) articles.

The article was taken as the unit of analysis, and coding was recorded in an SPSS database (for the code dictionary with full descriptions of the sub-categories of each variable see Appendix A). Coding categories were mutually exclusive, and reliability was checked by an independent coder. The second coder, a PhD student in sociology, was first presented the code dictionary. After rehearsing with a few articles and jointly clarifying and refining parts of the code dictionary, the second coder coded a random selection of 10% of the articles. The rate of intercoder agreement is a simple and intuitive method to account for reliability when the variables are nominal, but it does not account for the probability of chance agreement (Lombard, Synder-Duch, & Bracken, 2002). However, as

³⁹ Unlike other analyses in this chapter, the time scope of the present study extends to 1997-2009, instead of 1999-2009. This owes to the desire to reflect the changes in the news coverage in time. While the corpus of the present study was collected, the problems in the databases (especially of *Zaman*) was not clearly identified, and those articles published before 1999 were included. The quantitative analysis of coverage also had the same time scope, however, seeing that the problems in the databases might significantly influence the results, the scope was limited to 1999-2009.

the number of the coded categories for variables increase, the probability of chance agreement decreases substantially. The rate of intercoder agreement was separately calculated for the variables, and is listed together with the code categories in Table 1. The overall rate of agreement across variables is .82; although this figure is above the .70 minimum, and .80 of acceptability in most situations (Lombard, Synder-Duch, & Bracken, 2002) it can only be considered as moderate.

Table 1. List of sub-categories and the rate of inter-coder agreement in the coded variables

Variables	Sub-categories	Coder agreement
Newspaper	Hürriyet	-
	Zaman	-
Section of the newspaper	World	-
	Economy	-
	Politics	-
	Agenda	-
Stage of reporting	1997-2005	-
	2006-2007	-
	2008-2009	-
Source or author	Specified author	-
	Signed by the newspaper	-
	National press agency	-
	International press agency	-
Length of the article	Short articles	.974
	Mid-length articles	
	Long articles	
Geographical scale	Local	.846
	National	
	Global	
Dimensions of understanding	Causes	.846
	Impacts	
	Risks	
	Solutions	
Main theme of the article	Culture/society	.872
	Ecological/meteorological	
	Political/economic	
	Technological/scientific	
Main actor of the news	Scientist	.795
	Politician /government	
	NGO /advocacy group	
	Corporate /business	
	Celebrity	
	Non-human	
Linked public issues	Common people/consumers	
	Agriculture	.718
	Attitudes & behaviors	

	Energy	
	Health	
	International relations	
	Macro-economy	
	Land & water management	
	Science & research	
Tone of reporting	Alarming	.744
	Neutral/balanced	
	Skeptical	
Communication Genre	Diffusion	.795
	Propaganda	
	Propaganda	

The variable ‘dimensions of understanding’ (Stamm et al., 2000), has four sub-categories, namely *causes*, *impacts*, *risks*, and *solutions*. This is because the *consequences* of CC, used as one of the three sub-categories in previous studies (e.g. Smith & Joffe, 2009) was identified as being used in two distinct ways in the news stories. The first use was as evidence or proof of the material reality of CC: Some articles have mainly depicted the consequences of CC (e.g. polar melting) as its already visible *impacts*. The second use involved a different temporal reference: By emphasizing the potential future consequences that are not yet visible (e.g. sea level rise), other articles represented these as *risks*. Hence, in coding for the ‘dimensions of understanding’, the *consequences* was divided into and treated as two sub-categories: *impact* and *risks*, yielding the four sub-categories used for coding this variable.

The coding categories for the variables ‘main actor’ and ‘linked public issues’ were also slightly modified. The sub-category *non-human* was included in coding for the actors depicted in the news, in order to account for those articles that depicted the non-human species, and that portrayed CC itself as an actor, without depicting other actors. Several sub-categories offered by Liu and colleagues (2008) to code for the ‘linked public issues’, such as *defense*, *education*, *transportation*, were excluded due to the extremely low number of articles linking CC to these issues. The sub-category *attitudes & behaviors* was included in order to account for the extent to which CC is depicted in connection to consumer behavior and the involvement of the public. These decisions yielded the eight categories for the coding of this variable that are listed above.

It is also necessary to clarify how the ‘tone of reporting’ was operationalized. In coding for this variable, the goal was to register whether the article portrayed the scientific knowledge on CC as consensual or controversial, i.e., whether an alarming problem or an

uncertain phenomenon was being depicted. This was done by paying attention to the use of certain linguistic features (consensus, hypothesis, fact, theory, dis/agreement), and by using three categories. Those articles that could not be regarded as employing an *alarming or skeptical* tone, that is, those articles that neither depict an image of consensual science to place an emphasis on the alarming consequences, nor a controversy between conflicting expert sources in a way that highlights uncertainties and create suspicion on the causes of CC, were coded for the sub-category *neutral/balanced*.

Finally, in order to achieve an overview of the relationships among the categories of content and the categories of the contextual (supplementary) variables, a Multiple Correspondence Analysis (HOMALS) was conducted. This technique is used for assessing the homogeneity/heterogeneity of a system of categorical variables, and provides a representation of how they can be organized on two interpretive dimensions (Carvalho, H., 2008). It serves to digest and interpret the data according to the multiple correspondences among the categories of content, illustrating these on a two-dimensional semiotic space. In the following sections, the interpretation of the correspondences follow the descriptions of the most salient aspects of CC representation in the news articles from the mainstream Turkish press.

4.3.3. Results: Salient trends in mainstream news reporting of climate change in Turkey

Consistent with the overall coverage figures, 44,5% of the articles (N = 141) were from *Hürriyet*, and 55,5% (N = 176) were from *Zaman*. The cross-tabulation of the results showed that there were no significant differences between the two newspapers in reporting CC in the period analyzed. The only notable difference between the newspapers regards the authorship or the signatures of the articles. In *Hürriyet* more articles were signed by specified authors (24,1%) than in *Zaman* (9,1%), while in *Zaman* press agencies were referred significantly more (55,1%) in comparison to *Hürriyet* (31,9%) (X^2 df(2) = 21.506, $p < 0,01$). In both newspapers there was a remarkable amount of articles that no author or source was identified (35,6% in total).

Besides this difference in the way the articles were produced, the two newspapers represented CC similarly in the analyzed variables. This means that the issue was not ‘localized’ in a way to create a divergence between the meanings attached to CC by the neo-liberal and neo-conservative worldviews, represented by the two newspapers. Before focusing on the findings on the main analytical variables, let us first look at two contextual

variables shortly describing how the articles were distributed in the ‘news sections’ and in the ‘stages of reporting’.

Among the four news sections common to the two newspapers, *agenda* and *world* were the sections that contained almost three quarters of the analyzed articles. The sections *economy* and *politics* were used far less for reporting CC (N = 53, 16,7% and N= 33, 10,4% respectively). These figures demonstrate that CC was represented less in the economic and political contexts, and more in the global and popular contexts. When the articles published in each section are examined according to their publication dates, another noteworthy difference is identified. The reporting about CC started first to take place in the sections *agenda* and *world*. Only later, and in an increasing rate after 2005, the sections *economy* and *politics* were used for reporting about CC. Only 25% of the articles reported in the *economy* and *politics* sections were produced before 2007, while 75% of these articles in these sections were produced in the last three years covered by the analysis. This indicates that the mainstream news coverage of CC firstly took place in less technical and global contexts, and only later –and marginally– was treated as economic and political news.

As to the three stages of reporting identified previously, the analysis shows that only 11% of the collected articles were published in the pre-problem stage (1997-2005). This percentage does not reflect the actual proportion, since a stratified sampling strategy was adopted in order to include more articles from the earlier years. In reality there were far less articles published in the pre-problem stage. The major part of the collected articles are distributed evenly between the alarmed discovery (2006-2007) and maintenance (2007-2008) stages (43,9% and 45,1% respectively). This is due to the fact that the massive upswing took place only in 2007, and in 2006 relatively less number of articles were published in comparison to the subsequent years⁴⁰. That means, the majority of the articles published in the alarmed discovery stage were published in 2007.

After briefly reporting about the context of journalistic production, and leaving the findings about the temporal context to be expounded on later, we can now turn to the seven research questions that were treated as the analytical variables.

⁴⁰ An alternative strategy would be to limit the alarmed discovery stage only to year 2007, when the upswing took the form of an explosion. But this would mean classifying the year 2006, in which more than 100 articles were published in each newspaper, together with those years in which hardly 10 articles were published about the issue.

(1) *Geographical scale or geopolitical level*: As demonstrated in Table 2, the analyzed articles have depicted CC mainly as a global scale phenomenon (66,5%). Reporting about the local events without framing these in a global/national framework was very scarce (11,7%). Those articles that reported CC in the national context were also relatively few (21,8%), when compared to those that framed the issue as a global matter.

Table 2. Geographical scale depicted by the articles

Geographical scale	Hürriyet	Zaman	Total N	%
Global	87	124	211	66,5
National	33	36	69	21,8
Local	21	16	37	11,7
TOTAL	141	176	317	100

It must be acknowledged that the exclusive coding strategy employed in recording the properties of articles has intervened in these results to some extent. In some cases more than one scale or level could be identified. In these cases, the primacy of one geographical scale over the other was determined by paying attention to where the article primarily depicted CC. For instance, an article reporting about the droughts at a specific location could be coded for 'global', when the content was provided by a Japanese scientist who described these droughts in a global framework.

(2) *Dimensions of understanding*: Bearing some resemblance to previous findings (e.g. Smith & Joffe, 2009), the causes of CC were considerably underrepresented (1,9%), whereas the risks were strongly emphasized (38,8%). A total of 62% of the articles depicted CC in connection to its impacts and risks (consequences in general). This can be related at least partly to the ecological extremes experienced in the country in 2006-2007.

Table 3. Dimensions of understanding of climate change

Dimensions	Hürriyet	Zaman	Total N	%
Causes	2	4	6	1,9
Impacts	41	33	74	23,4
Risks	53	70	123	38,8
Solutions	31	48	79	24,9
Not identified	18	21	35	11,0
TOTAL	141	176	317	100

A typical narrative of CC comprises if not all, more than one of these dimensions. Hence, these figures must also be viewed by considering the fact that the coding was

exclusive. Those articles that mentioned the causes merely with one phrase, and continued with thematizing other and more dramatic dimensions (i.e. the future risks) were coded for other dimensions. That means, the 6 articles that were coded for the *causes* were the ones discussing the anthropogenic causes *primarily*. Hence, it may be a misinterpretation to conclude from these figures that the human causes were not mentioned at all. Rather, they were –in some cases– taken for granted, treated as a convention or as part of a dominant representation, without the further need for thematization (Markova, 2008b).

(3) *Main theme*: The theme categories *ecological/meteorological* and *political/economic* were more salient (34,4% and 36,9% respectively) than *technological/scientific* and *culture/society* (9,1% and 13,2% respectively). At this level of description, these results resemble those of the UK tabloid press in the 2000-2006 period (Boykoff, 2008). To highlight an important difference, in Table 4 the four theme categories were cross tabulated with those of the variable geographical scale. This is useful to demonstrate that the only thematic category framed at local and national scales was the category *ecological/meteorological*. While the articles coded for the theme *political/economic* represented these at the national scale to some extent, the *culture/society* and *technological/scientific* themes were represented almost only at the global scale.

Table 4. Cross-tabulation of the themes with the geographical scales

Theme /Geographic scale	Local	National	Global	Total N	%
Political/economic	7	34	84	125	36,9
Ecological/meteorological	18	25	66	109	34,4
Culture/society	4	5	33	42	13,2
Technological/scientific	2	2	21	25	9,1
Not identified/other	6	3	7	16	6,4
TOTAL	37	69	211	317	100

X^2 df(6) = 15.230, $p < .05$

The articles coded for the theme *culture/society* typically reported the efforts to draw attention to global warming. ‘Cyclers against global warming’, the movie ‘An Inconvenient Truth’, and various non-governmental campaigns were among the threads that constructed this category, and their common elements were awareness rising, and the need to do ‘something’. Both these articles and those about the scientific studies, scenarios and technological solutions –collected under the theme *scientific/technological*– mainly depicted a global scale problem.

Resembling the findings in the UK (Boykoff, 2008) and Swedish (Höijer, 2010) tabloid presses, the disturbance of species and melting glaciers were presented as the ecological impacts of CC at the global scale. At the local and national scales, CC was depicted as the cause of the freshwater related problems. Desertification, shrinking lakes, and other hydro-geological problems were connected to global warming both as visible impacts (local), and impending future risks (global). The otherwise distant treat of CC was brought to ‘here and now’ by the articles coded for *ecological/ meteorological*, and the image of a disaster associated with water resources in these articles.

The majority of articles coded for the category *political/economic* mainly depicted the international political figures, typically by voicing the countries, for instance by referring to “Peking”, “Bush”, “Russia” among others, and the international organizations such as the G8 and the UN. These articles reported, in a rather general fashion, the international political and diplomatic relations, and in divergence with the UK press, avoided the economic impact of CC (Boykoff, 2008), especially at the national context.

(4) *Main actors*: Politicians and governments were depicted as the main actors in almost half of the articles (45,1%). This predominance over all other actors should be considered by keeping in mind the chosen ‘serious’ news sections from the newspapers.

Table 5. Main actors of the news stories

Actors	N	%
Politician/government	143	45,1
Scientist	38	12,0
Non-human	32	10,1
NGO/advocacy	19	5,9
Corporate/business	16	5,2
Consumers/common people	18	5,6
Celebrity	11	3,5
Other/Not identified	40	12,6
TOTAL	317	100

In comparison to politicians, other actors, including scientists (12%), were hardly represented in the collected corpus, which is an unexpected finding. This finding concerning the dominance of the political actors is comparable to the findings from the UK press (Carvalho & Burgess, 2005; Doulton & Brown, 2009), but in the Turkish case it was mostly the international political figures and not the national government that structured the field of action and others’ engagement; rather it was portrayed by others as

the responsible actor. This is no surprise, since the UK government has been one of the most proactive international actors, while the Turkish government has been among the less active national governments, accounting for the country's GHG emissions first time in 2007, and ratifying the Kyoto Protocol only as a gesture in 2009 (Erdogdu, 2010).

Remarkably, climate change itself was represented as an 'actant' in many of the articles, being depicted as 'doing' things (especially to the non-human species). Articles with headlines such as "Global warming fooled the birds", or "Global warming will sink this island" either rendered the problem itself as the actor by mentioning no other actors at all, or scientists were quoted to construct the problem as a sort of 'enemy' (Swyngedouw, 2010). By reference to the impacts, some species were also depicted as actors, such as migrating flora, invading algae or jellyfish. The category *non-humans* mainly reflects these articles (10,1%).

Many actors were depicted as merely trying to draw attention to the problem. Articles coded for these categories covered for instance celebrities climbing mountains to call for action, NGOs emphasizing the importance of the coming Climate Summit, the Orthodox Patriarchate visiting the UN secretary. These articles reported less about the details of CC (e.g. the policies to be discussed the climate talks, what to do to act against climate change), and were mainly directed to keep the issue on the agenda.

(5) *Linked public issues*: Among the 8 coded categories, *land and water management*, *international relations*, and *energy* were the major public issues associated with CC.

Table 6. Cross-tabulation of the linked public issues with the stages of reporting

Linked policy issues	Stage I	Stage II	Stage III	Total N	%
Land & water management	1	30	32	63	19,9
International relations	14	15	18	47	14,8
Energy	4	14	16	34	10,7
Agriculture	2	12	13	27	8,5
Science and research	2	9	10	21	6,6
Macro-economy	4	9	8	21	6,6
Health	3	6	3	12	3,8
Attitudes and behaviors	0	5	7	12	3,8
Not identified /Other	5	39	36	80	17,4
TOTAL	35	139	143	317	100

$$X^2 \text{ df}(14) = 26.058, p < .05$$

When their distribution in the hypothesized stages of reporting is scrutinized, the frequencies of certain categories indicate some important points. First, the only public issue that was substantially linked to CC in the pre-problem stage, that is to say before 2006, was *international relations*. This means that, before CC became a concern for the wide sectors of Turkish public, it was inserted into the public sphere as a matter of international politics and diplomacy.

Secondly, the overall increase in the frequencies through the three stages of reporting does not match the rate of increase in the frequencies of *agriculture*, and particularly the *land and water management*. While before 2006 there was only one article concerned with land and water management, the frequency of this category exploded to 30 in the second stage. This swift increase in the frequencies of these two categories signals the importance of the local extremes –coinciding with other types of information linking these to CC– in bringing the issue into public attention.

Other public issues excluded from the analysis –such as transportation, housing, education– due to their extremely low frequencies, and also the relatively low frequencies of the categories *health* (3,8%) and *attitudes and behaviors* (3,8%) indicate the level of structural adaptation to CC in the country (Liu et al., 2008). In other words, they point up the lack of connections between CC and these ‘everyday’ issues, at least in a way to be reflected in the mainstream news.

(6) *Tone of reporting*: This variable was concerned with the portrayal of scientific knowledge on CC, and the extent to which skepticism and uncertainty were introduced into the public agenda. The results show that in many articles (42,9%) in devising an alarming tone of reporting, the scientific knowledge on CC was largely assumed as uncontroversial. There were only 3 cases in which a skeptical account was portrayed in a way to contrast the conflicting scientific claims, assuming the scientific knowledge on CC as controversial. The vast majority of the articles that did not exert an alarming tone, focusing on the alarming knowledge provided by the world of science, adopted a neutral tone (56,2%), recognizing the scientific consensus (See Table 7). These findings are consistent with findings from other countries, e.g. Portugal (Carvalho & Pereira, 2008; Carvalho et al., 2011), Germany, France, (Brossard et al., 2004; Caillaud et al., 2011), and India (Billett, 2010).

Table 7. Cross-tabulation of the tone of reporting with stages of reporting

Tone/Stages of reporting	Stage I	Stage II	Stage III	Total N	%
Neutral	24	66	88	178	56,2
Alarming	10	72	54	136	42,9
Skeptical	1	1	1	3	0,9
TOTAL	35	139	143	317	100

$$X^2 df(4) = 10.200, p < .05$$

As indicated by the radical disproportion between the total frequencies of *skeptical* and *alarming* tones of reporting, the phenomenon of CC was established, and not put into question. Indeed, in many cases, the alarming tone refers to a strong emphasis on catastrophic scenarios. Inflated certainty and sensationalism are among the major findings of the studies focusing on media representations of CC (Mazur, 1998; Doulton & Brown, 2009; Foust & Murphy, 2009). Headlines such as “Turkey is becoming a desert”, “Water wars are coming” accentuated frights that may only partially and with a margin of uncertainty be connected to CC. However, they reflect the salient tone of the mainstream Turkish articles, especially in the upswing stage of reporting.

When the change in the frequencies of the tone of reporting are tracked throughout the stages of reporting, i.e., left to right in Table 7, the steady increase in the *neutral* tone (24-66-88), and the peak of the *alarming* tone in the ‘alarmed discovery’ stage (10-72-54) can be noticed. As hypothesized, this upswing stage stands out with the alarming tone that characterizes the articles published in this period (McComas & Shanahan, 1999). Following the same hypothesis, and findings for other country contexts (e.g. the UK, Carvalho & Burgess, 2005), some amount of skepticism was expected in the maintenance stage. Yet, the alarming tone was maintained to a large extent, while only the use of the neutral tone and not the skeptical tone climbed up. This may be conceived with regard to the national political context: Without any emission reduction targets and pressure on the industrial growth in the country, it may be that case that there is no societal function of skepticism (McCright & Dunlap, 2003), namely to curb a (non-existing) costly national action plan.

(7) *Communication genre*: The findings concerning the genres through which the content was communicated (Moscovici, 1961/2008) indicate a clear preference for the diffusion genre (71,6%), in comparison to propagation and propaganda (See Table 8).

Table 8. Cross-tabulation of communication genre with the stages of reporting

Genre /Stage of reporting	Stage I	Stage II	Stage III	Total N	%
Diffusion	25	96	106	227	71,6
Propagation	3	23	22	48	15,1
Propaganda	7	20	15	42	13,3
TOTAL	35	139	143	317	100

This was done by reporting about new information and events in an episodic manner, rather than discussing or thematizing their implications. The content was many times confined to the ‘matters of fact’ (Latour, 2004), avoiding all conflict and contradictions. This means that the analyzed articles were mainly directed to establish a simple, hegemonic representation of CC. Even in the longer articles, conflict and comparison between different views were very scarce. Such a prevalence of the diffusion genre may be interpreted as a finding that confirms the hypothesis regarding narrative qualities of the initial stages of reporting, namely creating dramatic storylines and trivializing the representation (McComas & Shanahan, 1999, Boykoff & Boykoff, 2007). Since the drama quickly loses its novelty, this prevalence was expected to diminish in the maintenance stage (Carvalho & Burgess, 2005). However, the three identified stages of reporting were not found as significantly distinguished by the use of the communication genres. In other words, diffusion appears as a general characteristic of the mainstream Turkish news reporting on CC, in the period covered by the analysis.

4.3.5. Putting the pieces together: Multiple correspondence analysis

To explore the relationships among the categories of content and to connect these to the context of reporting, a Multiple Correspondence Analysis (HOMALS) was conducted. When all the categories analyzed in the previous section were included in the HOMALS, an extremely skewed distribution was obtained. More precisely, only the categories *skeptical* (N = 3 in the ‘tone of reporting’) and *causes* (N = 6 in the ‘dimensions of understanding’) were projected on one side of the distribution, radically segregated from the rest of the category nodes. This indicates that the causes of the problem are brought to the fore of the representations mainly in association with the skeptical accounts, and remain in isolation from the rest of the content. This is an important finding, however, the extreme skewness resulted in a swarm-like appearance of the major part of the categories and made these difficult to read and understand. Therefore, in order to obtain higher levels

of heterogeneity, these two categories with very low frequencies were treated as missing values, and the analysis was conducted by excluding these. The frequencies of the active and supplementary variables included in the repeated HOMALS are provided below.

Table 9. Frequencies of the categories included in the HOMALS

Variables	Categories	N	%	Mis.
Newspaper *	Hürriyet	141	45	
	Zaman	176	55	
Section of the paper *	Agenda	119	37,5	
	Economy	53	16,7	
	Politics	33	10,4	
	World	112	35,3	
Stage *	1997-2005	35	11,0	
	2006-2007	139	43,9	
	2008-2009	143	45,1	
Length	Long articles	153	48,3	
	Mid-length articles	108	34,1	
	Short articles	56	17,7	
Geographical scale	Global	211	66,5	
	National	69	21,8	
	Local	37	11,7	
Dimensions of underst.	Causes **	6	-	
	Impacts	74	23,4	41
	Risks	123	38,8	
	Solutions	79	24,9	
Main actor	Politician /govt.	143	45,1	40
	Scientist	38	12,0	
	NGO	19	5,9	
	Celebrity	11	3,5	
	Non-human	32	10,1	
	Consumers/common	18	5,6	
	Businessmen/corporate	16	5,2	
Main theme	Politics/economics	115	36,9	16
	Ecological/meteorological	109	34,4	
	Culture/society	42	13,2	
	Technological/scientific	25	9,1	
Linked policy issues	Land & water management	63	19,9	80
	International relations	47	14,8	
	Energy	34	10,7	
	Agriculture	27	8,5	
	Macro-economy	21	6,6	
	Science & research	21	6,6	
	Health	12	3,8	
	Attitudes & behaviors	12	3,8	
Tone of reporting	Neutral/balanced	178	56,2	
	Alarming	136	42,9	
	Skeptical**	3	-	

Communication Genre	Diffusion	227	71,6
	Propagation	48	15,1
	Propaganda	42	13,3

* Supplementary variables

** Categories treated as missing values and excluded from the analysis

The first and second dimensions yielded by the HOMALS had high reliability scores (Cronbach’s α_{dim1} .728; Cronbach’s α_{dim2} .638) and were responsible for 52,5% of the inertia (eigenvalues: 2.902 and 2.349 respectively). For these reasons, the first two dimensions were selected as the axes of Figure 4. On table 10, the discrimination measures of the variables on each of these dimensions are emphasized in bold.

Table 10. Discrimination measures of the variables in dimensions

Active variables	Dimension 1	Dimension 2
Length of the article	.037	.108
Geographical scale	.075	.574
Dimensions of understanding	.246	.588
Main actor	.525	.223
Main theme	.633	.770
Linked policy issues	.518	.151
Tone of reporting	.104	.054
Communication genre	.137	.025

As shown in the table, the variables ‘main actor’, ‘linked public issues’, ‘tone of reporting’ and ‘communication genre’ discriminate better in the first dimension, and ‘length’, ‘geographical scale’, ‘dimensions of understanding’, and ‘main theme’ discriminate better in the second. However, discrimination power of the variables ‘length’, ‘tone of reporting’ and ‘communication genre’ are quite low. To make these figures more intelligible, the contributions of the lower level categories of these variables loading to each dimension may be of service.

On the first dimension, the categories *impacts*, *ecological/meteorological*, *scientist*, *science and research*, and *non-human* load significantly and with positive values, while the *solutions*, *political/economic*, *politician*, *energy*, *international relations* and *propaganda* load significantly with negative values (cut-off point: .028). It follows that the first dimension distinguishes between the more natural/factual, and the more political/controversial aspects of representation. Hence, this dimension –the X-axis– is labeled as ‘socio-political’ on the negative and ‘natural’ on the positive side on Figure 4.

the local impacts of CC. Third, the sections *economy* and *politics* are expectably situated in the socio-political side of the plot, corresponding with the more locally disputed aspects of the issue, such as *energy*.

Regarding the stages of reporting, the analysis suggests that the alarmed discovery (2007-2008) and maintenance (2008-2009) stages do not significantly differ in their coded content. This is a surprising finding, suggesting that a dramatic image of CC –the strong emphasis on risks and threats– were maintained after the peak of reporting, without shifting to a more problem-solving oriented reporting, which in turn was expected to involve elevated skepticism. The pre-problem stage (1997-2005) is distinguished from the two latter hypothesized stages. This stage is situated closer to the global end of the second dimension, and also to the socio-political end of the first dimension. The main inference to be drawn is that in the mainstream press representations, CC has first appeared as a global-political issue, and then became ‘localized’ while being ‘naturalized’.

To continue by interpreting the distribution by quadrants, an outstanding contrast may be emphasized first: It regards the separation of what may be called the science of CC, represented as both ‘global’ and ‘natural’ and in the fourth quadrant, from what may be called the politics of CC, represented in the second –local and socio-political– quadrant. This separation verifies that the representation of the scientific knowledge on CC as de-territorial and de-politicized knowledge affords an alarming tone of reporting on the risks of CC (Foust & Murphy, 2009; Swyngedouw, 2010), in a disconnect with the local exigencies. Arguably, if the categories *skeptical* tone of reporting and the *causes* of the problem had not been excluded, they would be situated in the far edge of this quadrant. Once they were excluded, the impacts, risks and solutions are distributed along the first axis, with the solutions on the socio-political side of the plot, the impacts in the ‘natural’ end, and the risks in between, and in the fourth quadrant. This verifies that the risks are not politicized in the analyzed news articles, and as compared to solutions, they remain in more similitude to impacts, standing on the positive side of the first axis.

The first quadrant mainly includes the ecological/meteorological impacts, especially on non-humans and in relation to the land and water management issues. This quadrant reflects the face of CC that is experienced locally, and comprises the categories that were designated as natural. These categories, probably functioning as the most powerful anchoring categories for CC to be represented, are separated both from the

available scientific knowledge, and from the relatively localized issues of socio-political relevance, such as energy and consumer attitudes and behaviors.

Finally, the third quadrant includes the lowest density of categories, and it distinguishes the characteristics of the first –pre-problem– stage of reporting. It verifies that the frame of international relations and the diplomatic consensus around CC has been functional in inserting the phenomenon in Turkish public sphere. A temporal –or cyclical– account of CC representation in Turkey may be started from this quadrant. It may be conceived to then move forward in counter-clockwise direction, by establishing the threat through the categories situated in the fourth and the first quadrants –that appeal to nature, rather than to politics–, and eventually re-introduce the socio-political issues, this time relatively –but still poorly– linked to the national context.

4.3.6. Conclusions

This study has focused on the news articles published in the two most-widely read Turkish newspapers to examine the salient characteristics of CC reporting in its first decade. No significant differences were found between the reporting of the two newspapers. This finding is in line with the findings of Veltri and Suerdem (2013), who in their analysis of the Turkish press have found the neo-liberal and neo-conservative worldviews –here represented by *Hürriyet* and *Zaman* respectively– in agreement against the risks posed by the genetically modified organisms. It suggests that CC was not a politically (and locally) contested issue between the two major worldviews in Turkey in the period analyzed. Rather, it was treated as a global/international issue, disconnected from the local conflicts.

Seven hypotheses were derived from the literature and the quantitative analysis of coverage. The main findings confirm most of these hypotheses:

- (1) Climate change was framed as global threat, poorly connected to local and national contexts of causation and action.
- (2) The articles put a high emphasis on the risks and threats posed by CC, in a way that overshadowed the causes contributing to the problem, and anchored the representation to the consequences of the problem;
- (3) The articles displayed a high reliance on ecological and meteorological themes, however, (international) political and economic themes were circulated at even higher levels. This was an unexpected but reasonable finding, reflecting that CC, from its

inception in the public sphere in Turkey, was depicted primarily and persistently as a matter of international politics, in a ‘global’ framework.

(4) Contrary to the expectations, politicians/governments, and not the scientists, were the most important actors. This finding can be connected to the previous one, and indicates the influence of international political actors in making CC a public concern in Turkey.

(5) Among the public issues linked to CC, the land and water management issues, and to a lesser extent the international relations, dominated other issues.

(6) The articles devised an alarming tone in reporting about the material reality of CC and the state of scientific knowledge, indeed there were so few articles adopting a skeptical tone that they had to be excluded from the HOMALS;

(7) Overall, the news stories were communicated mainly in the diffusion genre, only few articles involved conflict, contradiction and comparisons.

Three main conclusions may be highlighted by connecting these findings to the temporal and country contexts. First, in the sampled articles from the mainstream Turkish press, CC appears as anchored to its impacts, namely the droughts and water related problems experienced in the country. This experiential dimension of hydro-geological impacts seems to have chiefly contributed to the heavy upswing in the number of articles in 2006 and 2007. Hence, CC was represented as an alarming problem and objectified as a threat in direct connection to droughts and water related issues.

The anchoring of climate change to its concrete impacts is unavoidable in some respects. Even the NASA's chief climate expert James Hansen's famous testimony before the US congress in 1988 is represented by its concomitance with the heat wave that was experienced in US during the same period (Mazur, 1998). As discussed in chapter 2, climate change as a ‘hyper object’ (Morton, 2010) is extremely difficult to represent, without certain ‘events’ –which are essentially weather events– and objectified projections that function as its signposts. Although scientists occupied an important role in determining the significance of these signposts, their social value and dramatic qualities were embedded mainly in the cultural and political spheres.

This point also regards the second conclusion that relies on the prominence of politicians and governments over other actors of CC news. This prominence was obtained by the recurrent references to the international political figures –for instance the UN secretary, G8, or ‘Beijing’– who emphasized CC as a serious problem, and contributed to

its credibility. Although to receive media attention, “in general, issues benefit from the publicity and the power-demonstration possibilities of politicians” (Rhombert, 2010, p. 48; Carvalho & Burgess, 2005), the Turkish political figures were depicted to a lesser extent than the international ones.

In relation to the above, CC action was represented in the context of international politics. The international efforts that Turkey was not a party to until 2009 were depicted as a diplomatic consensus, describing the goals of the Kyoto Protocol, or reporting meeting agendas and positions of globally influential governments. In other words, a second anchor of CC was the global political agenda. This may be the situation in many industrializing countries (e.g. Shanahan, 2009; Mercado, 2012), where the diplomatic consensus on CC functions as a global norm, and helps the construction of a hegemonic representation. This representation both put a pressure on the Turkish government and reflected its taking on climate change. According to Erdogdu (2010) Turkish government’s main concern with CC has been of a symbolic kind, and is embedded in the international and diplomatic contexts. This view is in accord with the fact that in the 2003 ‘National Program of Turkey’s Undertaking of the EU Acquis’, the UNFCCC and Kyoto Protocol were covered not in the chapter of environment, but in the framework of international agreements that the EU had been a party (Baloglu, 2009).

A third conclusion regards the scarcity of the news articles that expounded on the causes of climate change. Only six articles were coded as discussing the causes, three of which were coded for skeptical tone of reporting. However, this does not mean that the anthropogenic causes were completely absent in the news; but when mentioned, they were treated as a convention and were quickly skipped. This may be seen primarily in connection to the overshadowing effect of the dramatic impacts that were being dealt with, and provided a concrete image for CC to be represented (Smith & Joffe, 2009). As in the US press representations in 1988, the images of disaster were probably more functional in reinforcing the core of the representation –a multifaceted threat (Jaspal & Nerlich, 2014). More generally, it may be seen as the poor news value and lack of novelty of the unchanging causes of the problem (Boykoff & Boykoff, 2007). Finally, it can be connected also to Demeritt’s (2001) critical view of the focus on dramatic future scenarios in representing CC, which “has tended to sideline political discussion of the uneven pattern of past emissions and the attribution of responsibility for their accumulation in the atmosphere” (p. 313).

It follows from these points that the scientific knowledge and the international agenda on CC were employed to establish CC as a serious –if not a dramatic– threat. A hegemonic representation of CC was produced by heavily emphasizing the dangers and risks, rather than making its diverse aspects intelligible for the readers.

The production of simple, episodic and trivial images of crisis in representing CC (Mazur & Lee, 1993; Doulton & Brown, 2009; Foust & Murphy, 2009) –instead of conveying the complex, unceasing and continuous aspects of the problem– is referred to as dramatization. Interacting with other journalistic norms such as the preference for novelty, dramatization is seen to significantly influence the coverage of CC (Boykoff & Boykoff, 2007). In their research on dramatization of biotechnology in ‘elite’ mass media, Bauer and colleagues designate drama as a characteristic of media discourse that influences the way the audience represents a problem –with its tragic outcomes. They hold that the “dramatic representations regulate the passions of the audience” (Bauer et al., 2001, p. 50), and in cultivating human virtues, they may help prepare the public for collective action. Hence, dramatization can be seen to have a rhetorical function, namely to raise attention and encourage action. However, dramatization may have adverse consequences, especially for its inhibition of individual and collective agency against the threat (Doulton & Brown, 2009; Foust & Murphy, 2009).

In the case of the mainstream Turkish reporting, one of the main predicaments submitted to the public space regards the disconnect between the highly dramatized alarming risks –that were connected to CC without explanation and at times with an inflated certainty–, and the downplay of scientific information, political discussion and thematizations of responsibility. As demonstrated on the first axis yielded by the HOMALS, this disconnect is also bolstered by the distinction between the world of science –that was only functional in depicting ‘natural’ phenomena–, and the contested space of (mainly international) politics. As many authors argue (e.g. Latour, 2004; Beck, 2010, Hulme, 2010), the disconnect between the natural and the social/political may provide an obstacle, rather than assistance in addressing new ecological risks such as CC.

There are some limitations of the study that have to be acknowledged. First, even when a liberal index of reproducibility, the intercoder reliability was only slightly above the general acceptability level of .80 (Lombard et al., 2002). However, lower intercoder agreement should be considered with regard to the number and detail of the coded categories. As contended by Brossard, Shanahan and McComas (2004), finer

discriminations about complex content sometimes present trade-offs with higher reliability. This was less of a problem with the short articles, but in coding longer articles, determining which of the many categories would be coded for a particular variable, within the context of other coded variables, led to discrepancies between the two coding efforts. Still, this is not explanatory of the low reliability scores for the variables tone of reporting and communication genre.

Second and more importantly, the exclusive coding permitted the recording and quantification of only the main or primary actors, themes, policy issues or dimensions. Other –secondary– dimensions, where they exist, could not be quantified and accounted for. In order to avoid misinterpretations the analysis included, where relevant, explicit discussions of the ignored dimensions. However, certain questions laid out at the outset could not be adequately addressed. For instance, the use of the scientific knowledge and the accounts provided by the scientists were overshadowed by the unanticipated involvement of (mainly international) political actors and events. Most evidently, the extremely skewed distribution, which required the exclusion of certain important categories from the HOMALS, was partly caused by the coding scheme. The shortly mentioned and quickly sidelined anthropogenic causes of CC could not be reflected in the representation. In short, the study was an instructive experience showing that studying complex representations –that involve many other representations– could be better explicated by inclusive or multiple coding for variables. Still, the present study has afforded original findings in relation to the existing knowledge on press representation of CC, and new conclusions concerning the image of CC as it was being newly inserted to the public agenda in an industrializing country.

4.4. STUDY III: The science of climate change in the mainstream Turkish press

This study comprises two parts, which include two analyses that focus specifically on how the scientific knowledge on CC is represented in the mainstream Turkish press. To focus on this specific aspect of CC representation, a more specific corpus was constructed. The first analysis draws on and replicates the content analysis carried out in the previous study, then, the second analysis focuses with a discourse oriented approach only on those articles that quote scientists. Before detailing the procedures and presenting the analyses, first, the focus on the representation of scientific knowledge is justified below.

As mentioned before, scientific knowledge is indispensable in understanding and representing CC, since many of its causes and consequences are concealed from direct sensory experience, and have to be inferred from complex calculations and modeling of ecological events. This means that, our knowledge on CC heavily relies on the discourse of natural sciences, which is employed and reconstructed by the mediating systems and made available to the general public (Corbett & Durfee, 2004; Moser, 2010). Therefore, especially in studying how CC enters the public space, it is necessary to pay specific attention both to the role of science and the scientific community in constructing CC knowledge, and to the role of mediating systems –in this case the mainstream press– in how this role is reconstructed.

The previous study examined the representation of CC in general, distinguishing the local - natural and global - sociopolitical aspects of the press representations. The results showed the scientific aspect of CC as situated on the natural and global end of the plot, in a disconnected way from other aspects as well as from the stages of reporting. In short, despite being mentioned frequently, the science of CC appeared as a timeless effort confined to itself.

The controversy that perpetuated in some industrialized countries over the material reality and the human causes of CC was not salient at all. Instead, the human causes were consistently but briefly mentioned and quickly skipped. However, this finding may be misleading, since the tangible consequences of CC are probably more useful for the press in depicting the problem, in comparison to its intangible and complex causes (Smith & Joffe, 2009; Jaspal & Nerlich, 2014). In other words, the assessment of the reconstruction of scientific knowledge in a representative corpus may be hampered by different factors contributing to the press salience of CC. Therefore, it is necessary to more closely examine whether the Turkish news articles have depicted the scientific knowledge on CC

as a debate between contradicting expert voices –as was done in 1990s in the press of some highly industrialized countries (Boykoff, 2007a, 2007b; McCright, 2007), or whether they have established an image of a unified scientific community and solid scientific knowledge (Ramos & Carvalho, 2008, p. 229).

Findings from the press of those countries that are permitted to increase their emissions, where both the scientific production about, and the (per capita) contribution to the problem are relatively lower, and where the macro-scale normalising values in the public sphere differ from those of the industrialized countries (Ramos & Carvalho, 2008, Billett, 2010, Mercado, 2012) suggest that for the mainstream Turkish press we may also expect an image of consensus and solid scientific knowledge. In this context, the general goal of the present study is to acquire a better understanding of how science is put to use in establishing CC as a matter of concern in a country that is at the periphery of CC knowledge and action.

4.4.1. PART 1: Replication of the content analysis: Climate science in the news

4.4.1.1. The goals of the study

This study maintains the analytical framework constructed for the previous analysis that looked at the representation of CC in general. The goals to be achieved by replicating the content analysis on a new corpus of articles that represent and reconstruct what may be called ‘the science of climate change’ are:

- (1) to make intelligible those aspects of CC representation in the mainstream news articles that remained inconspicuous in the previous study, namely the reporting of the human causes, and the skepticism about these;
- (2) to compare the findings from the specific corpus of articles reporting the science of CC to the findings from those articles which represent CC in a more general fashion; and,
- (3) to provide a preliminary overview and some amount of quantification of the content of the collected corpus, which will be then analyzed by drawing on a discourse oriented approach.

4.4.1.2. Method and material

Four news sections of the newspapers *Zaman* and *Hürriyet* were selected: *Agenda*, *World*, *Economy*, and *Politics*. As mentioned before, these are the news sections in which the

reporting of CC was concentrated in the two newspapers. A specific section on environment does not exist in either newspaper and a section on science does not exist in *Zaman*. A search for the combined keywords “climate change” + “science” and “global warming” + “science” was done on the custom-built online search engines of the newspapers.

The search engines returned a total of 436 articles distributed in the 1999-2009 period. In a preliminary analysis, (N = 294) of these articles were identified as reporting CC as their main topic. Only these were retained, and coded in SPSS by the same guidelines explicated in section 4.2.2. An important difference regards the inclusion of a new variable called ‘discursive sources’, to be able to distinguish, wherever possible, those actors depicted in the news –the objects of the news stories– from those who have depicted them –the subjects or the discursive sources– of the content (Carvalho, A., 2008).

Again, a Multiple Correspondence Analysis (HOMALS) was conducted next. Table 11, presented in the results section, summarizes the active and supplementary variables included in the HOMALS, with the frequencies recorded for their sub-categories. Notably, in the present study the categories *skeptical* tone of reporting and the *causes* of climate change were included in the HOMALS, providing a more complete summary the news content. In what follows, the result of the HOMALS is presented to digest the relationships among the coded categories of content, and to compare these to the relations discerned in the previous study.

4.4.1.3. Results: The distant science of climate change

Let us first focus on some notable similarities with and differences from the previous findings. *Zaman* has published more articles that report on the science of CC than *Hürriyet* (186 and 108 articles, 63,3% and 36,7% respectively). Overall, the articles were concentrated in the Agenda and World sections of the newspapers. Only 34 of the articles (about 11%) were published in the economy and politics sections, less than the percentage of articles in these sections found in the previous study.

More articles coupled the keyword ‘science’ with ‘global warming’ than with ‘climate change’ (208 versus and 86 articles respectively, 70,7% versus 29,3%). These figures corroborate the previous findings regarding the preference of the term ‘global warming’ by the newspapers in the period analyzed by the study.

The majority of the articles were published in the 2006-2007 period, the stage of alarmed discovery (Downs, 1972); there were only 21 articles (7,1%) published in the analyzed sections of the newspapers before 2006. Notably, the frequencies of the articles in the three hypothesized stages of reporting reflect the quantitative properties of these stages (N = 21, N = 151, and N = 122 respectively).

In the corpus made up of articles that report the scientific knowledge on CC, there are more mid-length articles (50%) and less long articles (29,6%) as compared to the corpus sampled in the previous study. The long articles analyzed in the previous study were accumulated in the economy and politics sections of the newspapers. Of those included in the present study, the majority of articles were published in the less technical sections –the *agenda* and *world*–, which seem to provide less space for elaboration of the content. In other words, the articles that specifically represent the scientific aspects of CC were kept rather concise, and placed in the popular sections of the newspapers.

Table 11. Variables and frequencies of the categories included in the HOMALS

Variables	Categories	N	%	Miss.
Newspaper *	Hürriyet	108	36,7	
	Zaman	186	63,3	
Section of the paper *	Agenda	144	49,0	
	World	116	39,5	
	Economy	22	7,5	
	Politics	12	4,1	
	Keyword*	Global warming	208	70,7
Stage*	Climate change	86	29,3	
	1999-2005	21	7,1	
	2006-2007	151	51,4	
	2008-2009	122	41,5	
Length of the article	Short articles	60	20,4	
	Mid-length articles	147	50,0	
	Long articles	87	29,6	
Geographical scale	Local	23	7,8	
	National	49	16,7	
	Global	222	75,5	
Dimensions of understanding	Risks	134	45,6	23
	Impacts	61	20,7	
	Solutions	57	19,4	
	Causes	19	6,5	
Discursive source	Scientist	132	44,9	43
	Politician/govt.	50	17,0	
	NGO	26	8,8	
	International org.	18	6,1	
	Other media/journalist	15	5,1	

Main actor	Corporate/business	10	3,4	36
	Scientist	87	29,6	
	Politician /govt.	73	24,8	
	Non-human	39	13,3	
	NGO	25	8,5	
	Consumers/common	17	5,8	
	Corporate/business	9	3,1	
Main theme	Celebrity	8	2,7	16
	Eco/meteorological	153	52,0	
	Technological/scientific	55	18,7	
	Politics/economics	49	16,7	
	Culture/society	37	12,6	
Linked public issues	Science & research	49	16,7	58
	Land & water management	44	15,0	
	International relations	39	13,3	
	Agriculture	31	10,5	
	Health	19	6,5	
	Energy	18	6,1	
	Social order	11	3,1	
	Macro-economy	7	2,4	
	Attitudes & behaviors	7	2,4	
	Tone of reporting	Alarming	146	
Neutral/balanced		137	46,6	
Skeptical		11	3,7	
Communication Genre	Diffusion	188	63,9	
	Propagation	67	22,8	
	Propaganda	39	13,3	

* Supplementary variables

Regarding the geographical scale and geopolitical levels, the articles that frame the phenomenon at the global scale constitute the vast majority (75%). This figure is even higher than the one in the previous study, and indicates the ‘global’ or ‘de-territorial’ nature of scientific knowledge, and also that climate science is produced in other parts of the world rather than in Turkey.

Regarding the main theme coded for each article (Boykoff, 2008), the frequency of the category *technological/scientific* is almost doubled as compared to the previous study (18,7%), an unsurprising trend observed also in the variables ‘main actor’ and ‘linked public issues’. Moreover, the frequency of the category *ecological/meteorological* has also increased from N = 109 in the previous study (34%) to N = 153 in the present one (52%). This indicates how much the discourse of (natural) sciences is employed for depicting the ecological and meteorological phenomena. In parallel, the share of the category *political/economic* decreased to 16% of the articles, from the 36% in the previous

study, suggesting that the natural sciences clearly prevail over the social and political sciences in representing climate change.

The analysis confirms that a skeptical tone of reporting is not a finding that can be reported from the mainstream Turkish news articles in the period covered. In the 294 news articles, only 11 articles can be said to have conveyed a sense of skepticism, attempting to contrast or balance conflicting scientific claims. Furthermore, the articles in which a skeptical view was presented were not necessarily concluded within the premises of that view. This will be expanded further in the subsequent analysis.

After highlighting some basic trends and findings, and the differences of these from the findings of the previous study, we can now turn to explore the relations between the coded categories by looking into the multiple correspondences among them. The first two dimensions yielded by the HOMALS are responsible for 65,1% of the inertia (eigenvalue_{dim1} = .363; eigenvalue_{dim2} = .288). They also have high reliability scores (Cronbach's alpha_{dim1} .781; Cronbach's alpha_{dim2} .691).

Table 12. Discrimination measures of the variables in the first two dimensions

Active variables	Dimension 1	Dimension 2
Length of the article	.077	.008
Geographic scale	.310	.111
Dimensions of understanding	.490	.396
Discursive source	.549	.356
Central actor	.601	.469
Main theme	.709	.411
Linked public issues	.273	.455
Tone of reporting	.231	.350
Communication genre	.027	.033

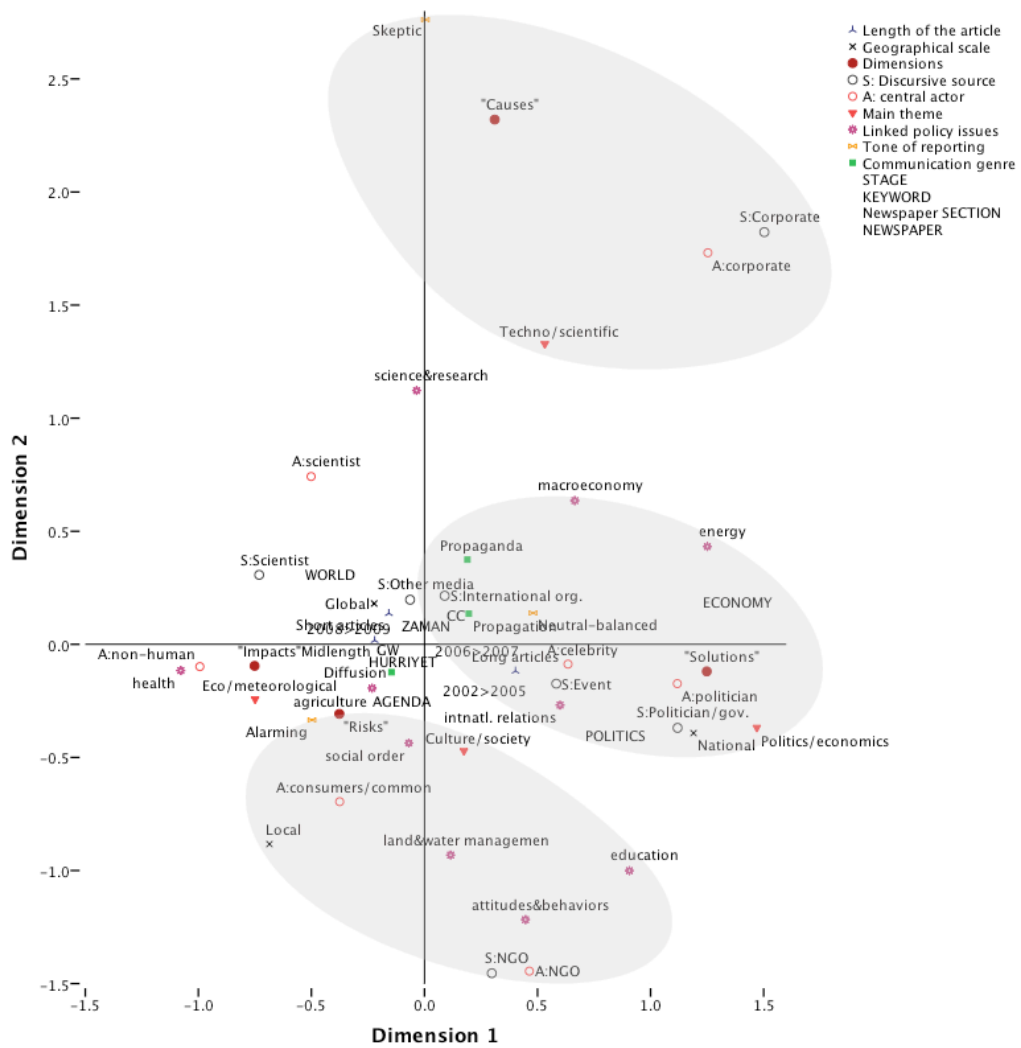
As demonstrated by Table 12, most of the variables discriminate on the first dimension, while the 'linked policy issues' and the 'tone of reporting' discriminate significantly only on the second dimension. As in the previous study, the first dimension discriminates significantly (cut-off point of contributions of the node to the inertia of the dimension = .024) between those categories that resemble the natural (i.e. impacts, non-human actors, the theme ecological/meteorological) and the socio-political phenomena (i.e. solutions, political actors, and the theme politics /economics). This suggests that the relations –that draw on a distinction– between the natural and the human is an essential aspect of the representation of –the scientific knowledge on– climate change.

While the public and policy issues *energy*, *macro-economy*, *education* and *international relations* are situated at the socio-political end of this dimension, *health* is situated at the opposite end, indicating that health issues are represented in relation to the impacts of, and not to the responses to climate change. A notable difference of the distribution along this axis from the one in the previous study concerns the theme *technological/scientific*: It is no more represented on what was designated as the ‘natural’ side of the distribution, and is situated closer to the *macro-economy*, *corporate actors*, and *causes*. However, scientists as *discursive sources* and *actors* are situated on the ‘natural’ side of plot. This suggests that the scientists are depicted as actors speaking of ‘natural’ phenomena, while other –political– actors take role in the reconstruction of the scientific evidence for the public and in political contexts.

The variables ‘length of the article’ and ‘communication genre’ discriminate poorly on both dimensions. Also, the supplementary variables newspaper, keyword, and stages of reporting do not significantly distinguish in the two dimensions, and in any of the binary relations checked by cross-tabulations. These findings indicate that reporting of the scientific knowledge on CC is more or less stable across time, between newspapers, keywords, and the genre the content is communicated.

To interpret the second dimension, the category nodes that discriminate on the Y-axis (cut-off point = .024) may be of use: The nodes with significant positive values on this dimension are the *causes* of CC, *skeptical* tone of reporting, *corporate/business* actors and discursive sources, the theme *technological/scientific*, and the public policy issue *science and research*. The nodes with significant negative values are the *NGO* actors as discursive sources, *local* scale, and the issues related to *land and water management*, *education*, and *attitudes and behaviors*. Drawing mainly on the differentiation of different actors, the issues connected to CC, and the highly positive values of the *skeptical* tone and the *causes*, the second dimension may be interpreted as the ‘discursive positions’ in the debate on the causes, material reality and the implications of CC. More precisely, this dimension separates those (corporate) actors who are associated with *technological* solutions as well as the *skeptical* tone and the human *causes*, from those (NGO) actors who are associated with the *local* issues such as *land and water management* and *education*. In this regard, it is also informative that the structural issues such as *macro-economy* and *energy* are represented at the center of this distribution, apparently being pulled towards both directions by the *skeptical* and *alarming* knowledge claims.

Figure 5. Spatial representation of the first two dimensions yielded by HOMALS



The three ellipses marked on the spatial representation accentuate this difference in what may be called the ‘politicization of science’ by different actors distributed along the Y-axis. The ellipse at the bottom can be said to refer to the non-governmental and sub-political mobilization around CC (Beck, 1999), represented by the co-occurring categories of NGOs as both actors and discursive sources, education, and attitudes and behaviors; closely connected to the alarming local impacts, around which public mobilization is most likely to take place.

The ellipse in the middle mainly refers to the (inter-)governmental politics and economics. It represents the ‘discursive center’ of the debate heated –only to some extent– by the actors in the upper and lower ellipses. Arguably, this is the dominant representation of CC in the corpus, brought to play by the governmental actors and celebrities.

Remarkably, the node for the neutral/balanced tone of reporting remains at the center of this ellipse.

Over the top, still in some degree of isolation or distance from the rest –what, because of this, had to be excluded from the HOMALS in the previous study–, remains the representations of the *causes* of CC, brought into the overall representation by a minority of *skeptical* arguments. This distance is conclusive; both the dominant framing of CC science by the ‘discursive center’, and the alarming risks propounded by the ‘sub-political actors’ are separated from this discourse revolving around whether CC is human-caused or not. In other words, by focusing on the consequences of and solutions to CC, the governmental and NGO actors seem to pursue their own practical agendas respectively on the (inter-)national and local levels of action and intervention. Yet, this seems to happen at the expense of leaving the portrayals of (human) causes of CC to be associated with the skeptical or contrarian minority.

4.4.1.4. Conclusions

This study has focused specifically on how the scientific knowledge on CC was represented in two most-widely read Turkish newspapers. In many ways, the results clarified and confirmed the conclusions of the previous study:

- (1) The anthropogenic causes of the problem were largely overlooked or under-represented. This does not mean that the uncertainties were highlighted. Rather, that CC is human caused was assumed as a hegemonic representation, and was not thematized.
- (2) The results corroborate that CC was primarily anchored to the local impacts and alarming risks associated with the issue. These tangible impacts and scientifically constructed future scenarios involved the novel and dramatic qualities that granted them the newsworthiness, which the unchanging causes of the problem and the complex policy information failed to entail (Boykoff & Boykoff, 2007, Smith & Joffe, 2009). The focus on the risks and threats, and the general orientation to stir emotions, rather than targeting rationality and the elucidation of complex scientific and policy knowledge (Bauer et al., 2001), has probably contributed to the swift increase in public attention, but whether these may entail sustained concern and engagement is questionable.
- (3) Climate change was represented as a global scale problem to be dealt with at the global level, and in the context of science this was even more so. Only few news items covered CC as a problem that has to be dealt with at the local level, the typical site of CC was the

global commons, such as the seas, oceans, and polar regions, as well as the high-level meetings around the world.

(4) The main actors and discursive sources of the news were scientists and politicians, who typically emphasized the seriousness of the problem. Counter claims inserting skepticism into the debate were almost non-existent. There was no effort to balance (Boykoff & Boykoff, 2004) the conflicting views on the causes and the reality of CC.

(5) What was called the science of CC appeared mostly as the natural sciences. Only a few articles discussed the economic aspects of the problem, while other social aspects were completely avoided. This must be understood in the context of construction of the CC threat, rather than propagating the existing policies and potential solutions.

(6) The dominant communication genre was diffusion, the articles mostly aimed at circulating a hegemonic representation –of a global problem, rather than discussing its implications and providing an integrative frame (Castro & Gomes, 2005). When different perspectives were provided, these were not discussed or negotiated explicitly. The representations targeted to establish a convention, rather than thematization (Markova, 2008b).

To summarize and further interpret the outcome of the HOMALS, it can be said that the analysis has yielded similar results to the those of the previous analysis. For instance, the first dimension (the X-axis) was quite similar to that of the previous study (a distribution between the natural and the sociopolitical aspects). The distribution on the second dimension (Y-axis) was rather skewed due to inclusion of the two categories excluded in the previous analysis, *skeptic* tone of reporting and *causes* of CC. These two categories appeared on the positive end of this dimension and redefined the relations between other categories. In the previous study, this dimension was interpreted as the geographical scales and geopolitical levels (between the local and the global) the problem encompasses. In this study, it was interpreted as the discursive involvement of different actors in the transformation of scientific knowledge into common sense. The alarming – not to say alarmist– tone of reporting was associated with the actors actively involved in local level action (the NGOs), which were associated with the no-regret policy issues such as water management, education and the adjustment of attitudes and behaviors. The skeptical tone of reporting was radically separated not only from these actors, but also from the ‘discursive center’ of the debate, namely the governmental actors who remained with all the structural issues in the center of the projection.

Overall, the science of CC was represented as devoid of conflict, and the scientists were depicted as in agreement about the problem and its implications. Scientific sources were mainly employed for shortly mentioning matters of fact, rather than explicating them. Yet, compared to the findings of the previous study, the science of CC appeared as better linked to its socio-political context. Although few in number, there were those articles that depicted the relations between science and politics. Some of these articles claimed controversial connections to oil industry, with headlines such as “Petrol rich neo-cons have bribed against the climate report”. Others laid controversial claims on scientists themselves: “Scientists lie as well!”. It must be noted that these few articles were accumulated in the year 2009.

When considered together with the findings of the previous studies, i.e. that the term ‘climate change’ replaced the term ‘global warming’ in 2009, significant changes might be expected in the mainstream Turkish reporting after the period covered by the analyses. Above all, these may involve more contradiction and conflict, both in the representations of scientific knowledge, and in thematizing the responsibilities of different countries and actors. In the emergence phase of social representations in the Turkish press the most outstanding feature was the relative evasion of these relevant debates, by relying on the authority of science, as well as the global diplomatic consensus. The outcome was the hegemonic representation of ‘climate threat’ (Höijer, 2010; Jaspal & Nerlich, 2014).

The headline of an article published in Zaman on 7 March 2009 may be particularly informative with regard to the stages of reporting, in that it signals that the period of ‘construction of the climate threat’ was left behind: “The drought scare we lived must be a lesson for us”. As soon as the effects of the extraordinary droughts experienced in the country were left behind, in this article, the drought was rendered as a scare, an unnecessary panic, and the overall image constructed especially in the alarmed discovery stage was designated as an exaggeration. As demonstrated by this unique example –and also by this study– instead of avoiding or excluding, paying attention to the idiosyncratic aspects or ‘outliers’ may indeed be informative. Until now, the analyses have mostly focused on the general trends, main themes, and salient patterns in the press representations. However, more detailed analysis and close-up assessment of language and discourse may be useful in questioning, explicating and corroborating the identified trends. Therefore, the subsequent analysis focuses on discursive and rhetorical features of a more specific corpus of articles.

4.4.2. Part 2: The voice of science on climate change in the mainstream Turkish press

4.4.2.1. Introduction

The analysis presented in this section builds on the previous one. It focuses on the representation of scientific knowledge about CC, and on a specific part of the corpus collected previously. The goal is to focus on the specific discursive and rhetorical features of those articles which quote scientists, in order to gain a more detailed understanding of how the scientific knowledge on CC is reconstructed by the news articles from the mainstream Turkish press. Following the example of other studies (Ramos & Carvalho, 2008; Calsamiglia & Ferrero, 2003) the analysis will pay specific attention to how the scientific voices are employed and the rhetoric of science is reconstructed in representing climate change.

To specify the research questions, and to elaborate on the relation between the discursive approaches and the approach of the TSR –provided in section 3.3.5– some of the specific features of CC discourse are presented below.

The media and the rhetoric of science

As mentioned before, representation of scientific knowledge is both an integral part of CC communication, and has been an integral part of the studies addressing how CC is portrayed in the press. This literature suggests that while a controversial image of science characterized the press portrayals of knowledge on CC especially in the US (Boykoff & Boykoff, 2004, Boykoff, 2007a), the scientific consensus was the main resource for the press of many other countries (e.g. Brossard et al., 2004; Carvalho & Pereira, 2008; Olausson, 2009; Billett, 2010, Mercado, 2012). One crucial point here is that consensus is not a numerical but a functional matter (Wagner, 1994b), or that issues of consensus and controversy are essentially discursive, i.e., brought into play by particular argumentative arrangements. Therefore, it is important to pay attention to the ways the skeptical arguments are organized and contrasted to the scientific consensus on the CC.

As mentioned before, for the TSR, representations are not cognitive replicas *of* facts in the world, but a multiplicity of elaborations by social groups *for* social groups (Wagner et al., 2000, p. 6). Such a view of representation is compatible with the discursive approaches both in its emphasis on communicative processes as constitutive of representations, and its taking of “talk and texts as parts of social practices” (Potter, 1996,

p. 105). The significance of discourse for the generation and propagation of social representations requires a rhetorical approach (Wagner and Hayes, 2005), one that takes into account how and to what extent traditional common sense is modified and structured by scientific discourse (Moscovici, 1961/2008).

In this framework, ‘anchoring’ is seen as a critical process through which new phenomena –often of scientific origin– are represented and made familiar by being integrated in previously existing meaning categories (Markova & Wilkie, 1987; Castro & Gomes, 2005). For example, resorting to emotions for anchoring new risks of high magnitude is a strategy used in mediated risk communication (McKie & Galloway, 2009). Concurrently, a strategy found in the Swedish media to make CC comprehensible and more familiar was to anchor it emotionally (Höijer, 2010). In anchoring CC to emotions such as fear, guilt and compassion, the media was found to use animal species –both wild and cute ones– as icons that appeal to these emotions (Höijer, 2010).

In discourse and communication, the old categories that are used to anchor new meaning are also transformed in this process, and change according to the context, circumstances and goals of communication (Castro & Gomes, 2005). By viewing anchoring as a rhetorical and relational and not an automatic process, the approach of TSR makes it important to examine how different discourses may anchor in different meaning categories. According to this approach, one needs also to be attentive to the role of anchoring categories in settling dispute and controversy, since some anchoring categories are more socially valued and more powerful than others for settling dispute and controversy (Castro & Gomes, 2005).

In our society science has a privileged position for offering socially valued and powerful anchoring categories that settle controversies. For some authors, this privilege lies in the capacity of science to appear as having direct access to nature and thereby to produce ‘matters of fact’ (Latour, 2004). Through the use of specific rhetorical features of the ‘empiricist repertoire’, the conclusions of science are presented as regarding facts indisputably “out-there” (Potter, 1996). These rhetorical features can be summarized in three elements (Potter, 1996): (1) use of an impersonal style, minimizing the actions and involvements of the authors; (2) accentuation of the primacy of data, placing measurement both logically and chronologically before the theory; (3) claim to use universal procedural rules, displaying the conditions for facts to manifest. Combining these features, the ‘empiricist repertoire’ is a very powerful persuasion tool, because the result of the

construction of a fact through it is that it appears unconstructed by anyone (Latour & Woolgar, 1979, p. 240). This repertoire is therefore a basic strategy in the ‘construction of facts’, and the ‘out-there-ness’ of intangible phenomena like CC (Potter, 1996).

The use of the ‘empiricist repertoire’ extends beyond the domain of science, as people other than scientists constantly resort to it. When this is the case, resorting also to ‘category entitlements’ (Potter, 1996), such as presenting one’s arguments as coming from someone who is a scientist or an expert in a field, can grant the arguments even higher persuasive power. The power comes from the scientist being seen as both a mere *witness* of the facts encountered in nature, and an *authority* witnessing nature at first hand (Potter, 1996). When the impersonal style of the ‘empiricist repertoire’ is adopted together with “category entitlements”, the reality of nature itself seems to become the persuasive element. If press articles about CC adopt these elements - the ‘empiricist repertoire’ and ‘category entitlements’ - they can be rather persuasive for presenting the ‘out-there-ness’ of the problem.

Therefore, the present study pays specific attention to how the ‘out-there-ness’ of CC is constructed by using the features of the empiricist repertoire and the category entitlements as rhetorical tools, which ‘matters of fact’ are presented in news articles that quote scientists, and how the new phenomenon of CC is anchored in previously existent categories that will enable it to integrate into common sense.

Risk and the temporality of climate change discourse

In our days, “science is claiming to be able to reveal the climate of future generations as a function of the actions of the past, present and future generations” (Hulme & Dessai, 2008, p. 54). This is carried out by constructing scenarios, which can be defined as “internally consistent and plausible descriptions of possible future states of the world” (p. 55), which incorporate uncertainty as an inherent characteristic. Yet, for the sake of its rhetorical efficacy, the uncertainty that a scientific scenario incorporates has to be erased from its presentation. In order to be maximally persuasive about possible future states, risks have to be “represented as if systematically caused, statistically describable, and consequently, somewhat predictable” (Joffe, 1999, p. 3).

In the media, the representation of risks also often comes together with the use of metaphors, which displace concepts and models from one context to another, increasing their rhetorical efficacy (Harré et al., 1999). A good example is the use of the

‘greenhouse’ metaphor to represent the processes warming the biosphere. Another example is the superimposition of different timescales. By using data from millions of years ago to the present day, science constructs a timescale for nature and imposes it on individual’s timescales. Typically, “one pattern of temporality is imposed upon or ‘recalibrates’ another, ‘open’ becomes ‘closed’, ‘long’ becomes ‘short’, ‘cosmic’ becomes ‘human’” (Harré et al., 1999, p.121). In enmeshing different timescales, and describing future events through scenarios, the rhetoric of ecological risks aims to expand the time frame in which the choices are made (Cox, 1982/1998). Yet, the result is often to conceal the complexities posed by phenomena such as climate change (Morton, 2010). Therefore, the numerous depictions of impending dangers and risks (Russill, 2008) or coming catastrophes (Doulton & Brown, 2009) circulating in the media, although effective for convincing people of the irreparability of the phenomenon (Cox, 1982/1998), by eliminating the complex nature of the subject matter and presenting science as certain about tragic future consequences, make it less likely for people to feel that they have agency over them (Foust & Murphy, 2009).

Demeritt (2001) links the steering of CC to future times with the de-politicization of the phenomenon. The scientific focus on future scenarios, he argues, “has tended to sideline political discussion of the uneven pattern of past emissions and the attribution of responsibility for their accumulation in the atmosphere” (Demeritt, 2001, p. 313). A further implication of bringing together different timescales and reducing the complexity of the phenomenon often corresponds to the deploying of emotions in the news, and this makes fear emerge as the main emotion to which CC is anchored (McKie & Galloway, 2009; Höijer, 2010). Consequently, the future, as it is brought closer to the present by discourses of ecological risk, becomes “the spectre of ecological annihilation” (Swyngedouw, 2010).

In this context, the study pays attention to the temporality of the discourse convened by the articles that quote climate scientists: How time is used to construct the risks of climate change, if different timescales are superimposed, and if irreparability is used to emphasize the timeliness of action.

The analysis of discourse is then guided by the following research questions, to be explicated further below:

(1) How is scientific knowledge on climate change represented in articles quoting scientists: as controversial or consensual?

- (2) How is the ‘out-there-ness’ of climate change constructed in these articles, and what is the role of the ‘empiricist repertoire’ (Potter, 1996) in this?
- (3) What are the resources employed and the anchoring categories chosen in the articles in order to represent climate change as a matter of concern?
- (4) How is time depicted in the quotations of scientists, and the temporality of the scientific discourse constructed?

4.4.2.2. *Method and material*

A further search was made on the corpus of articles collected in the foregoing analysis, for quotations from scientists. Only the articles that quoted scientists –both in direct speech (81) and in indirect speech (51)– were kept. Articles quoting reports and studies were included in the selection only when the sources were explicitly referred as scientific. The resulting articles ($N_{\text{total}} = 132$) are distributed through 7 years (see Table 13).

Table 13. Distribution of the articles in years, newspapers and type of quotation

Years	Direct quote		Indirect quote		Total
	Hürriyet	Zaman	Hürriyet	Zaman	
2003			1		1
2004	1				1
2005	2	4		3	9
2006	4	7	2	5	18
2007	10	14	5	10	39
2008	7	15	6	6	34
2009	4	13	7	6	30
TOTAL	81		51		132

In analyzing these news articles, it is assumed that news production is not a simple description of facts but is a specific kind of representation of reality, bound by its professional norms and ideological cultures, the norms and values of the society where it takes place and the representations of its audience (Carvalho, 2007). The analysis draws on the premises of discursive (Potter, 1996) and rhetorical psychology (Billig, 1991), which are productive in explaining the transformation of social representations (Wagner & Hayes, 2005). The three approaches have a common emphasis on the ways in which communication, discourse and rhetoric actively construct particular versions of the world and how these accomplish particular social and interactional objectives.

In view of the above, and taking the article as the unit of analysis, the collected material was read and re-read, and the following steps were taken: (1) the salient themes and reporting tendencies were identified in a data-driven way; (2) these themes and tendencies we then linked to the literature, and the four main research goals, presented above, were formulated; (3) the material was then re-read in a theoretically driven-way in order to identify the discursive strategies and rhetorical devices related to the four goals; (4) finally, some extracts that were particularly illustrative of the four goals were selected to be presented and explored in further detail. The analytic procedures associated with the four goals of the study, and the concepts and perspectives these draw on, are further specified below:

(1) The first goal was to understand how climate knowledge was generically represented in the scientific quotations of the press articles: if it was presented as a controversial or as an unproblematic knowledge. This involved examination of whether scientific knowledge on CC was presented as consensual or controversial in each article, and whether a balance was sought between the voices of ‘skeptics’ and ‘alarmists’ (Boykoff & Boykoff, 2004).

(2) The second goal was to identify the features of the ‘empiricist repertoire’ (impersonal style, primacy of data; Potter, 1996) in the construction of the factualness of CC and how they were reconstructed in the press articles. In undertaking this, specific attention was paid to the ‘pre-citation segment’ (Calsamiglia & Ferrero, 2003) to see whether scientists, their fields of inquiry, and their methods were foregrounded or made invisible. This also involved the examination of ‘category entitlements’ (Potter, 1996), namely how the scientists were presented and what verbs were attributed to the voices cited.

(3) The third goal was to identify the anchoring categories (Castro & Gomes, 2005) for CC to be represented. This step involved examining which anchoring resources –species under threat (Höijer, 2010), melting ice caps (Martello, 2008)– were used, and what affect their use attempted to engender.

(4) The fourth goal was to assess the temporality of the discourse reconstructing the scientific findings related to CC. To achieve this, first, future tense verbs were first located (using Atlas.ti) and then these instances were interpreted in the context of the article. During this process, those instances where timescales were superimposed (Harré et al., 1999) were assessed to see whether this superimposition was done to create a rhetoric of irreparability (Cox, 1983).

The analysis of discourse and rhetoric was supported by some initial quantitative appraisal (with Atlas.ti) to identify some features useful for grounding the qualitative analysis; for instance, the differences between the general publication trends of the two newspapers (see Table 13). Regarding the quantitative differences in coverage, *Zaman* had more articles quoting scientists than did *Hürriyet* (83 and 49 articles respectively). More importantly, although both papers used news translated from international news agencies, *Zaman* provided more news from Turkey than *Hürriyet* (respectively 36 and 6 articles).

4.4.2.3. Analysis

This section first reports how climate change science is depicted in the news articles by responding to the two initial research questions. It then continues with the analysis of the anchoring categories for the representation of risks associated with CC. Finally, the temporality constructed by the articles to emphasize these risks is examined.

Consensual and un-discussed science

From the news articles analyzed, there emerges a representation of CC as a scientific fact upon which scientists have reached a consensus. Virtually all of the analyzed articles convey the reality of CC. Yet, they do so by leaving the anthropogenic causes implicit and often completely un-discussed. Scientists appear as one voice, emphasizing the dreadful consequences and impending risks associated with CC. This result is coherent with the findings for Portugal (Ramos & Carvalho, 2008), and India (Billett, 2010). When considered together with the general coverage trends (see study 1), this absence of controversy seems consistent with the characteristics of the alarmed discovery stage (McComas & Shanahan, 1999).

Therefore, instead of illustrating the finding that the vast majority of the articles present CC in the context of scientific consensus, the analysis first focuses on excerpts from the three articles that mention disputes. Other than these three articles that are quoted below, there were no other exchanges of arguments between the ‘skeptical’ and ‘alarmist’ positions (Boykoff, 2007a).

The first article reports one of the most controversial events during the period analyzed: The hacking of University of East Anglia computers in November 2009, just before the UN Copenhagen summit, to which the international media was quick to call *Climategate*. While reporting mainly on the claims regarding the manipulation of data and

the exaggeration of global warming, in its conclusion the article also establishes the fact of climate change:

...but many scientists report that there is a general consensus regarding anthropogenic climate change as a “fact” and add that this has been proven by a great deal of research. It is said that the phrases leaked are given meanings out of their contexts. (*Climategate, Hürriyet, 22 November 2009*)

The presentation of climate change as a scientific fact is achieved here by referring to the existence of an unspecified consensus among scientists. So, while this article illustrates that disputes are not entirely absent from the corpus of articles analyzed, it also demonstrates how the conflict they raise is resolved. In other words, when a contrary claim is given space in the news, a view aligned with the *majority* of scientists is included to refer to it as a ‘fact’.

The second article that includes a skeptical voice is entitled "Surprising statement from NASA", and can be read in two steps: first, the skeptical voice is introduced, having already been qualified as "surprising" in the title. This step concludes by mentioning the “great reaction” that this statement caused, and, in the second step, three expert opinions are quoted to re-establish the consensus:

US National Aeronautics and Space Administration (NASA) Chair Michael Griffin said “I’m not sure that global warming is a serious problem”. In his statement to National Radio Griffin said, “There is no doubt that a trend of global warming exists. But I’m not sure that it is a problem that we should deal with.” (...)

National Oceanic and Atmospheric Administration’s high level administrator Jerry Mahlman said, “Mr. Griffin’s words show either his ignorance, or that he is an ideologist of global warming deniers. NASA’s high level climate expert and one of the authors of the recent report James Hansen also said “Griffin’s expression signals contempt and ignorance. Because climate change affects millions of people”. Science advisor to the White House, Jack Marburger also stated that the words of the NASA chair bear no relation to the approach of the government, and that Griffin reflected his personal view, as a person who always talks with wit and humor. (*Surprising statement from NASA, Hürriyet, 1 June 2007*)

This extract is another a good example of how the conflict raised by skeptics and deniers of CC is discursively handled. To rhetorically dismiss the conflicting arguments, corroboration amongst the different accounts is achieved by constructing the three experts

as independent, and their views as similar (Potter, 1996). The scientific credentials of the experts in this example also work together with their comments about their fellow scientist who, at best, is not serious in his personal comments, and is even known to talk “with wit and humor”.

The third article that introduces skepticism is different from the previous two, because it originates in Turkey, and refers only to a skeptic scientist. The extract that follows covers the whole body of the very short piece of news:

As global warming is discussed around the world, a Turkish academic has made an ambitious claim. Claiming that drought and climate change are due to global cooling, associate professor Dogan Yasar, member of the Dokuz Eylul University Marine Sciences and Technology Institute, argued that according to the State Meteorological General Directorate’s data, temperature has fallen 1°C compared to the year 2000, and that it is the reason for the drought. (*There is global cooling not global warming*, *Zaman*, 24 June 2007)

The grammatical use of verbs and discursive style of reporting about the scientist in this example differs from the rest of the articles. The scientist in this case is made visible: he has a name, argues, makes claims, and the ambitiousness of his claim is highlighted. As in the previous excerpt, the scientist with the conflicting view is part of the discussion that his claim arises. Here he is ‘personalized’, rather than being treated as part of the generic term ‘experts’ (Calsamiglia & Ferrero, 2003).

In the rest of the articles, however, scientists are not visible, the verbs assigned to them are no longer verbs that ascribe a certain view to the quoted author, such as “argue” (Calsamiglia & Ferrero, 2003), but instead are verbs like “find” or “detect”. The prominent tendency in these articles is to place scientists as authoritative figures in the background of the foregrounded arguments. In other words, when confirming CC, the features of the empiricist repertoire (Potter, 1996) are reproduced and the scientists remain un-named, leaving the data to ‘speak for itself’, as also shown to happen in the media reconstruction of science (Calsamiglia & Ferrero, 2003) and climate science (Ramos & Carvalho, 2008) in other countries.

In the majority of the articles, the information available about the specific fields of inquiry of the scientists is also very scarce, usually specifying only the country or the institution they work in. The use of the anonymous plural forms ‘scientists’ –or other

generic entitlement categories such as ‘experts’, or ‘researchers’ – is frequent (Calsamiglia & Ferrero, 2003). Below are some examples.

Scientists are warning “food and water wars will start in the world”. Sicknesses and deaths due to lack of food and water are described as inevitable. (*Disaster at the door, Hürriyet, 22 November 2007*)

Scientists in Europe and the USA emphasize that the effect of greenhouse gases on global warming is well-known, and that global warming also increases the greenhouse gases, which results in world warming at a higher rate than predicted. (*World will warm up faster than expected, Zaman, 23 May 2006*)

Scientists emphasize that the rise in temperatures at this rate will cause icebergs in the poles to melt, and cause floods, famines and storms due to rising sea levels; as a result of this, the lives of millions will be at risk. (*This year has been the 6th hottest in the world scale, Hürriyet, 14 December 2006*)

In these three extracts, the anonymous plural form ‘scientists’ provides a straightforward example of how category entitlements function (Potter, 1996). Scientists are entitled to know, inform and provide warnings about the future of humanity; through this category entitlement, no further explanation about their knowledge is provided.

In this regard, it is worth highlighting another recurring characteristic: The great majority of scientists quoted are from countries other than Turkey, and mainly from industrialized countries; as mentioned, the identity of these foreign scientists is usually not specified, i.e. they are not personalized (Calsamiglia & Ferrero, 2003). However, the names, titles and affiliations of the Turkish scientists are usually provided, and they are depicted as individual scientists, even when confirming CC. In contrast, the “anonymity” of the foreign scientists, by accentuating their competence (Beacco, et al., 2002), further adds to their entitlement to knowledge in the Turkish context.

In the articles analyzed there is also scant attention to how climate science, *per se*, is produced. This is never questioned or revealed. The focus on evidence presents scientific discourse independent of its producers and their interpretations (Ramos & Carvalho, 2008), and this is effective in constructing the out-there-ness of the findings (Potter, 1996). In the two following excerpts describing scientists’ methods, their equipment is placed more at the fore than their practices. This again makes the scientists invisible, and the data visible. It is as if modern technology is producing the evidence by itself:

These scenarios are produced by the use of scientific data and high-technology computers. (*How do scientists know the temperature of year 2100, Zaman, 1 September 2007*)

We will detect pollution, the decline of fish stocks and the consequences of climate change by our ship, which is equipped with latest generation of modern equipment. (*Scientific research ship Yunus on the way to Syria, Zaman, 5 August 2007*)

The areas of expertise of the international scientists are also seldom mentioned. Yet, it is possible to deduce from the content that the vast majority have backgrounds in earth and biological sciences, which is a tendency widely observed (Hulme & Mahony, 2010).

To summarize, while scientists are left remote and obscure (except when they are Turkish), scientific knowledge confirming climate change is reported as unproblematic with considerable consistency, and in a way that gives primacy to data. The articles reconstitute these knowledge claims in a way that reinforces the social power of science (Carvalho, 2007), without any elaboration on the reported evidence. As a result, CC is communicated as “monologues with a dominant voice” (Markova, 2003, p. 199).

Matters of Fact: Disturbance of nature and the species

As was already apparent in the previous section, and will be further discussed in the next, the effects of CC on the human world are put off to a future time by the use projections and scenarios. For facts related to the present state of affairs, the quoted scientists refer notably to species, presenting changes or disturbances in their natural course of being. In other words, the disturbance of species and loss of biodiversity are used as the major anchoring categories to indicate that global warming is already taking place:

This is a significant change in the amount of fat [of whales], and if this continues, it will make it hard for whales to survive. It shows that there are some big changes in the ecosystem. (*Global warming cause weight loss in whales, Hürriyet, 26 August 2008*)

The warming in water has caused the Mediterranean seals to give birth 3 months later. Rapid seasonal shifts from summer to winter negatively affect lives of marine species. Factors like the quick change of temperature without seasonal progression and changes in wind have changed the reproduction habits of seals. (*Climate change threatens the seal species, Zaman, 29 August 2009*)

The increase in the number of August bugs shows that temperatures have increased and that climate change is really taking place. (*It is the time of August Bug, Zaman, 25 July 2009*)

Mentions of species to anchor CC may be an attempt to place the threats in ‘real-life’. Besides the whales, seals and bugs –the species mentioned in the above extracts– other species, such as birds, butterflies and fish, are also presented by the articles as evidence of climate change. Other examples that are frequently used as resources to indicate that global warming is taking place are water related issues (drought) and the melting of the Polar Regions. Notably, reporting on delicate species disturbed or in danger of extinction, in addition to providing proof of global warming, creates an affective relationship to them⁴¹, a type of anchoring identified in the Swedish media coverage of climate change (Höijer, 2010). Whereas humans, disconnected from the natural order, are reported to be affected mostly in the future and with a certain level of uncertainty, the innocent victims of climate change, animal species, are depicted as suffering its consequences directly because they belong to the category of ‘nature’.

The extinction of species is also used as a way for anchoring new metaphors. A widely used news symbol of global warming is the melting of the polar regions (Martello, 2008). A “NASA climate scientist” metaphorically animates this:

The northern ice shelf is the canary of global warming. This canary is now dead.
(*Five more years for the North Pole, Hürriyet, 12 December 2007*)

Images depicting irreparability such as the one above (*The canary is now dead*) have been functional in presenting the findings and predictions of science as persuasive (Zagacki, 1999). However, their possible negative effects have also been highlighted (e.g. Zagacki, 1999; Foust & Murphy, 2009). The main problem with arguments deploying irreparability, in this context, is that the clear-cut conclusions extracted from complex models and uncertain predictions may in some cases not be met, or met immediately. For example, the ‘death’ of ice shelves in the Arctic is reported in the present tense, but it actually refers to an event that has yet not taken place. The uncertainty about the date when the ice shelves in the North Pole will have melted completely is handled in the

⁴¹ Virtually all of the articles that report about the disturbance of species involve an image. What is the function of an image of a butterfly in a news article reporting CC? It is precisely to establish the precarious existence and great value of what is under threat, and the need to avoid the thread by emphasizing its irreparability (Cox, 1982/1998). Then, such images depicting irreparability are functional in translating the findings and predictions of science into common sense by stirring emotions, instead of addressing rationality, and representing complexity and uncertainties (Zagacki, 1999; Bauer et al., 2001).

present tense, because they are ‘already’ dead at present, according to scientific calculations and models expanding to vast timescales.

The following section presents more excerpts in which different timescales, mentions to the future and temporal images are combined by the rhetoric of risk.

Temporality of the risk discourse: Steering towards the future

A striking feature of the articles quoting scientists is their abundant usage of the future tense. Of the 132 articles in which scientists are quoted, 86 explicitly incorporate future events or projections (65%). These articles are typically organized around the terrible risks humanity is facing; hence the temporality of the discourse should be conceived in connection to the risks posed by CC. The heavy emphasis on the risks and the future-oriented content of the articles may be understood in relation to the media’s tendency for ‘dramatization’ (Bauer et al., 2001).

As discussed before, the discourses focusing on the risks in the media tend to bring the future to act upon the present (Harré et al., 1999). For this to take effect, uncertainties have to be converted to numerically expressed accounts of risks, which play an important role in the media representations of CC (Ramos & Carvalho, 2008). Weber (2006) has argued that the concretization of future events and the maneuvers of moving them closer in time and space are promising ways to raise public concern. Revealing features of the ‘empiricist repertoire’ (Potter, 1996) combined with risk calculus, many of the analyzed articles even employ ‘data’ from the future. In other words, numeric figures produced by scenarios are presented as actual data, as opposed to referring to them as predictions or probabilities. In the following excerpts, in which numeric estimates are used to emphasize severe risks, it is possible to note that the future tense ‘will’ –signifying future certainty– is repeatedly used in preference to a possibility⁴² or conditional tense:

At least 1 billion people will have to move due to 1.8 to 3.0 degrees increase in temperatures. In the year 2080, this number will reach to 3.2 billion people. One third of the world’s population will experience water shortage, and 600 million will experience hunger. (*Global Warming will make 1 billion people refugees, Zaman, 13 May 2007*)

According to the accounts, the temperature rise of 3 to 4 degrees by 2050 in the atmosphere will increase sea levels up to 35 centimeters. This increase will lead to change

⁴² The distinction between future indicative and future conditional in Turkish is very clear. The suffix “-ebilir” reflects future possibility usage (may), the suffix “-ecek” refers to future certainty (will).

and land loss in coastal countries. Freshwater sources close to the coasts will blend with the sea water, and freshwater problems will increase. (*Economic value of global warming will reach at one-fifth of world economy, Zaman, 19 November 2006*)

The extracts show a representation of science as certain about the possible future states of the world, and support it by the use of numeric figures. Let us remember that, for the readers of these newspapers, the uncertainties that pertain to the causes of CC are left un-discussed along with the representation of science as consensual and as an authority. In a way these uncertainties were resolved by the authoritative image of science. Here, even the uncertainties that pertain to the consequences of CC seem to be resolved by the reporting. In this way, Turkish reporting of climate science in the period studied seems to represent CC in a manner that is as scary as possible, which, some authors claim, is not effective in motivating long-term behavioral change (Moser & Dilling, 2007).

A second strategy to bring future closer to the present is the use of conditionals. The repeated grammatical structure of the scientific discourse “*if it goes on like this...*” brings the future nearer by first capturing a *trend* of the past events –in geological timescales–, and then applying it as a scenario commonly called ‘business-as-usual’. The use of the if-clause results in a simplification of how the possible future states of the world or scenarios are constructed, but at least it establishes a probability, and even if only implicitly, opens space for human agency.

If the melting continues at this rate, the North sea may become ice-free by 2012, a much nearer future than expected (*Five more years for the North Pole, Hürriyet, 12 December 2007*)

If the current situation continues, the destruction of water resources and desertification is expected in the plains. (*Konya plains desertification, the economy will be negatively affected, Zaman, 14 October 2007*)

It is time to take serious measures. If it goes on like this, not to mention the second or the third position [in size], Salt Lake will not exist by 2015. (*Turkey's second big lake now is Beysehir, Zaman, 21 August 2008*)

As discussed, Harré and colleagues (1999) draw attention to the combined imposition of different time scales together in ecological discourse, to calibrate one with another. In the extracts above, the geological time order embedded in the discourse of natural sciences is imposed on the cultural and individual time orders, by imposing a calculated future onto the present. This version of recurring risk rhetoric not only aims to

create a human imperative, but also stresses the *timeliness* of action, as most explicit in the third excerpt above. As mentioned by Cox (1982/1998), irreparability is typically used to organize perceptions of a situation involving urgency of action. However, by bringing future risks to the present state of affairs by the use of conditionals, and without devising any proposals to deal with them, the articles seem to merely target public concern, rather than public action.

4.4.2.4. Conclusions

This study has analyzed how two mainstream Turkish newspapers have represented the voice of science on climate change. The analyzed articles rendered science as a distant and authoritative voice, emphasizing dangerous climate change, without exploring how it actually functions or discussing its implications. This has been undertaken by having the quotations assume the form of a monologue (of the voice of science), rather than a dialogue between different perspectives. The use of the generic term ‘scientist’ as ‘category entitlement’ and insistence on the primacy of data are among the features of the ‘empiricist repertoire’ (Potter, 1996) that have been employed by journalists in their reconstruction of scientific knowledge. Science was portrayed as having achieved consensus and certainty, rather than immersed in controversy and uncertainty. This contrasts with the media of some industrialized countries, where studies demonstrated that skepticism and contestation were highly represented (Boykoff & Boykoff, 2004; Carvalho, 2007) and where skepticism has sometimes been an organized movement to combat environmentalism (Jacques et al, 2008).

A further result was the constant steering of the climate change towards the future, through a discourse that converts uncertainties into risks, and risks into irreparable events. This tendency can be best understood in the context of dramatization, one of the more salient journalistic norms when it comes to represent complex scientific issues like climate change (Bauer et al., 2001; Boykoff and Boykoff, 2007).

Based on the findings above, three interconnected conclusions can be drawn. First, in representing the knowledge claims in a way that amplifies the already powerful rhetoric of science (Carvalho, 2007), the reporting is directed at establishing rather than thematizing the issue. To further support this conclusion, however, other media sources and types of articles (e.g. commentaries) also need to be analyzed.

Secondly, in Turkey's mainstream newspapers the scientific discourse on CC has remained separated from the political context, as seen in other industrializing countries (Boykoff, 2010). Using the rhetoric of science, CC is reported as a fact and as a serious threat; but its causes, the associated solutions and responsibilities have not been clearly depicted, and possible political responses were left un-discussed. Moreover, and differently from the Indian press, where risks were thematized along with responsibilities, albeit in different levels (Billett, 2010; Boykoff, 2010), in Turkey, the risks posed by CC were not discussed in the framework of responsibilities. Instead, risks were mainly employed to establish a serious problem, and were represented in their diversity and diffused with considerable consistency. By referring in particular to the disturbance of animal species, biological sciences were used to describe how potentially irreparable these ongoing changes are. This provides an example of the rhetoric of irreparability (Cox, 1982/1998), oriented towards stirring emotions rather than rationalities. On the whole, although some of the characteristics of the initial upswing stage of narrative cycles identified by McComas and Shanahan (1999) are present, they seem to be coupled with a de-politicization of risks.

Thirdly, the real and more momentous threats and challenges posed by CC, especially those concerning the human society, were mostly represented in the future. The relevance of the future was typically constructed by combining the future with the present, and the time order of nature with the cultural one. In this way, the present is connected to a sensational, catastrophic future, a linkage criticized in many different accounts. For instance, according to Foust and Murphy (2009), the reporting of CC as certain about tragic future consequences makes it less likely for people to feel that they have agency over them. While maybe trying to promote action, this strategy may also de-mobilize people by attributing "global warming to a simple rise in temperatures, which (...) decreases the sense of human responsibility for combating global warming." (p. 161). An important drawback of this depiction may have to be faced if the often unexplained scenarios and poorly-specified projections do not materialize as expected, in a way that discredits scientists as false prophets, and environmentalists as alarmists (Foust & Murphy, 2009).

According to Demeritt (2001), the scientific focus on future scenarios has tended to side-line the political relevance of climate change. Moreover, for some authors the de-politicization of CC is not limited to scientific scenarios. Reliance on an orientation

towards the future is considered to be one of the tracks through which many of the current managerial and de-politicized forms of government are introduced (Swyngedouw, 2010). Findings of this study suggest that while a general climate of concern was introduced into the Turkish public sphere by the press articles quoting scientists, this concern was left vague, i.e., presented without conflict, alternatives, and a political subject.

4.4. General discussion of the press studies

This chapter has focused on the emergence of climate change as a matter of public concern by looking at the news articles from the mainstream Turkish press. First, the context of press representations was established. The quantitative analysis confirmed that CC only became a ‘hot topic’ in 2007, when extreme droughts provided an elevated significance to social representations circulating internationally. In turn, the scientific, political and cultural events coinciding with the dramatic local experiences have helped reconstructing these as “harbingers of things to come” (Lieserowitz, 2004, p. 56).

This was a rather peculiar time in which press attention and public debate elevated substantially, associating the transcendent representations embedded in the discourse of science and international politics with the immanent representations emanating from the local life worlds. The second study placed this period of ‘alarmed discovery’ (Downs, 1972; McComas & Shanahan, 1999) into a temporal context. It was distinguished from the earlier stage of reporting –prior to 2006, in which the phenomenon was portrayed mainly as a matter of international diplomacy. The representation of international politics did not cease in the upswing and maintenance of reporting, but was surpassed by other representations that were presented as matters of fact. These were the ecological impacts – mainly the local problems related to freshwater–, connected enthusiastically to, or depicted in the framework of alarming global risks, but in a weak connection with both the anthropogenic causes that precipitate these consequences, and the political and policy responses that target them.

That said, the anthropogenic causes of the problem and the scientific knowledge pointing out their significance were not totally avoided either. Rather, they were shortly mentioned and quickly left behind, without thematizing their implications, and connecting these to particular responsibilities and local action frames. The human responsibility was not challenged, but it was treated as a convention, taken granted, and left vague. This representation bears some resemblance to what was identified in the British press as early as 1988 (Jaspal & Nerlich, 2014): First, the core of the representation was a ‘multi-faceted threat’ through which a global alarm was sounded. Second, the threat was ‘collectivized’, meaning that it concerned the whole ‘world’. Third, the blame was put on the GHGs, rarely explained, but mostly treated as the villains through empty signifiers such as ‘industrial emissions’, ‘dangerous rise in emissions’. The dominant representation of a human caused problem left considerable obscurity on what actions need to be taken –and

by whom—, due to the “volatility and mutability of the peripheral elements” (Jaspal & Nerlich, 2014, p. 16), such as impacts on and risks associated with freshwater systems, agriculture, biodiversity, health.

Hypothesizing that what could not be detected by this study—as to the communication of scientific knowledge—may be more closely analyzed by looking at those articles that mention ‘science’, a third study was conducted. The rationale was to include those aspects of representation—the anthropogenic causes, and skeptical voices that may have created a polemic over the causes and human responsibility—that could not be examined in the subsample of articles. Contrary to the expectations, the findings from the corpus of those articles that specifically convey scientific knowledge on CC did not differ significantly from the mentioned findings.

The closer focus on the representation of science has not only confirmed that the causes were treated as a convention and sidelined—by putting more emphasis on the impacts and risks—, but also shown that their inclusion and thematization is carried out by the inclusion of skeptical arguments. These were still very few, and the polemic they created was mostly resolved by emphasizing the ‘consensus’ among scientists. By looking at the ways the voice of science was reconstructed, the anchoring of CC to real life facts and feelings of compassion (i.e. the disturbance of delicate species) was also corroborated. This study has also revealed the two main temporal aspects of representing environmental risks: While the expanded timescale of the natural sciences was superimposed on the individual timescales, the consequences of CC on human society were mostly put off to the future times.

In short, climate change was anchored to extreme ecological events—represented as its impacts—at the local level, and to dramatic risks with a somewhat de-territorial and trivial future semblance, being constructed as a dreadful threat being—or to be—dealt with at the ‘global’ level.

One of the two main actors involved in this representation was the institution of science, or rather, a particular representation of science. ‘Scientists’, as a general category entitlement (Potter, 1996), and their discourse as a monologue of a dominant voice (Ramos & Carvalho, 2008) were consistently depicted as consensual about the problem and certain about its implications. Indeed, there was no contradiction, no unresolved conflict about CC in the analyzed articles. This can be seen as a positive point, as CC was clearly depicted as a fact, rather than as immersed in a polemic or in uncertain

information. However, in the overall context it is employed –that is, construction of a climate of threat– it can also be seen as the avoidance or short-circuiting of the complex translation mechanisms between the matters of fact and matters of concern (Latour, 2004). By eliminating all conflict and debate from the highly political and anticipatory representations, the non-dramatic, cumulative and progressive aspects of CC were concealed, with potentially serious drawbacks in other social and temporal contexts (Foust & Murphy, 2009). In this sense, the opportunities opened up by the ‘teachable moments’ (Lieserowitz, 2004) engendered by the local extremes that bring the dangers of CC into the here and now (Poumadere et al., 2005) may have been missed.

The portrayal of CC as an ‘actant’, or rather as an ‘enemy’ (Swyngedouw, 2010), without elucidating the complex social-environmental mechanisms that give rise to it, and the means of their delineation and understanding, bears the possibility of producing inappropriate representations of the phenomenon, such as the ‘acts of god’ (Moser & Dilling, 2007). This external ‘other’ or the ‘enemy’ that hits the freshwater systems at the local scale, and that would cause a global scale catastrophe, was constructed mostly as the climate calamity itself, and sometimes CO₂ and the GHGs (Swyngedouw, 2010). Hence, what was called the dramatization of climate risks does not only bear on that scientific knowledge is represented without being explored and questioned, but it mainly draws on the representational context in which it is employed. The involvement of another very important actor, the governments/politicians, in the construction of this context and in framing the scientific discourse in particular ways –fully endorsing the need to deal with threat, but taking only symbolic and diplomatic steps (Erdogdu, 2010)– has also to be recognized.

The lack of governmental action and national level institutions that would function as mediating systems –connecting the global risks and responsibilities to local forms of causation and national exigencies– may be seen as powerfully influencing these representations. Without the necessary work of such institutions that would help in transforming the transcendent to immanent representations, and given its tabloidization in the recent decades (Christensen, 2010), the mainstream Turkish press mainly resorted to dramatization, constructing an image of a dreadful threat. The overwhelming depictions of ecosystem risk surely aimed at, or at least implied prevention; and the establishing of the dire risks and threats cannot be simply seen as dramatization (Carvalho & Pereira, 2008). However, the fact that these depictions to a large extent avoided thematizing the very

anthropogenic causes, responsibilities and particular actor or subject positions, and overlooked their connection to specific solution frames –e.g. removal of these causes, institutional transformations that entail changes in production and consumption patterns– can be seen as a populist reaction to the extreme weather events and the dramatization of impending risks.

Three of the several aspects that characterize the ‘post-political populism’ embedded in the CC discourse (Swyngedouw, 2010) can be used to elucidate this dramatization of climate risks. First, the “universalizing claim of the pending catastrophe is socially homogenizing” (p. 221). It involves the construction of an abstract subject, namely ‘humanity’, even further the ‘life on planet’ as faced with “the totality of climate change calamities” (p. 222), which does not help much in directing the public attention towards action (see also Foust & Murphy, 2009). Instead, secondly, “it reinforces the nature–society dichotomy and the causal power of nature to derail civilizations” (Swyngedouw, 2010, p. 222). In the case of Turkish press reporting, this involved not only representing CC as the enemy, but also its treatment as an ‘actant’, that does or effectuates things, especially on the natural course of the non-human world. Thirdly, although a transcendent subject is constructed or called for against this general, global, and even universal ‘other’, universalization as a positive project is foreclosed. The threat functions to conceal, rather than bringing about a “socio-environmental situation, an embodied vision, a desire that awaits realization... In that sense, populism does not solve problems, it moves them elsewhere” (p. 225).

The de-politicizing drama of climate risks and threats was probably the most noteworthy aspect of CC portrayals in the Turkish press that distinguishes the findings from the otherwise similar findings around the world, especially as to the representation of scientific knowledge (i.e. Portugal, Carvalho & Pererira, 2008; Ramos & Carvalho, 2008; India, Billet, 2010; Chile, Dotson et al., 2012). Most importantly, it involved the generalization of responsibilities to an implicit and generic human subject, while establishing the problem as the target of audience passions, and overlooking the solution frames. All these may partly be seen as the outcome of at least a decade of mainstream neglect and disregard of the internationally circulating information on global environmental change. The studies collected in this chapter have demonstrated that in order to catch up with the international public concern and engagement with CC –in the period of 2006-2009, but most evidently in 2007–, the mainstream Turkish press by and

large has targeted passions, rather than appealing to rationality and politics.

In this sense, the rather abrupt insertion of the climate drama into the Turkish public space by the mainstream press bears some aspects of environmental discourses (Harré et al., 1999). However, the diverse aspects, complexities, ambivalences and most importantly the reflexivity many times ingrained in this discourse had to be avoided in the rather short news articles that were mostly unable to handle these. And when reflexivity was eliminated, what was left in the calls for environmentally sensitive action was a sense of disturbance of nature. “In the name of indisputable facts portraying a bleak future for humanity...” the mainstream press portrayals by and large have de-politicized the “political passions to the point of leaving citizens nothing but gloomy ascetism, a terror of violating nature and an indifference towards the modernization of modernity” (Beck, 2010, p. 263).

CHAPTER 5

CLIMATE CHANGE AND SOCIAL CHANGE:
INTERVIEWS WITH NON-GOVERNMENTAL EXPERTS

CHAPTER 5. CLIMATE CHANGE AND SOCIAL CHANGE: INTERVIEWS WITH NON-GOVERNMENTAL EXPERTS

5.1. General introduction

The previous chapter focused on how climate change was represented in the Turkish press, in a developing country context characterized by long term neglect of the problem. It showed that when the issue finally became a part of the mainstream press agenda, its portrayals reflected high levels of interest in and dramatization of risks and threats, in a way that obfuscates all conflicts and contradictions. This was connected, among other factors, to the fact that Turkey has remained outside the ‘global climate change regime’ (Oels, 2005), aimed at directing the newly emerging ‘global risk society’ towards sustainable development. In this sense, the focus was on the processes taking place in the context of –delayed– concern and engagement with CC, and the efforts to catch up with the international agenda.

This chapter focuses on the forefront of CC information and policy, more specifically on how the non-governmental actors actively involved in the global climate change regime represent the problem. It conveys the findings of three consecutive studies on in-depth interviews conducted with experts and campaigners working for NGOs in Portugal and Turkey. The general goal is to assess how the conflicts and contradictions in mainstreaming CC are dealt with by these actors, which, in contrast to the mainstream press, constitute a persistent minority with sustained interest in the issue.

The interviews were composed of three parts, and the present chapter comprises three studies that focus on these parts. This general introduction and detailed description of the interview procedure is followed by the three studies:

The first study is an exploratory analysis of the terms and expressions obtained from the word-association task given at the outset of the interviews. It involves two quantitative techniques for the analysis of the ‘non-reflexive’ associations. The goal here is to gain an initial understating of and draw some preliminary hypotheses about how the –elements of the– representations are organized and structured (Guimelli, 1993).

The second study focuses on the ‘reflexive part’ of the interviews. The responses to the open ended questions asked in this part are scrutinized by a thematic analysis. The goal is to identify the organizing themes (Attride-Stirling, 2001) and organizing principles (Spini & Doise, 1998) of the reflexive representations, and to see whether and to what

extent these correspond with the findings concerning the non-reflexive representations.

The third study focuses on what will be called the ‘argumentative part’ of the interviews, by analyzing the reception of and argumentation on the two video excerpts inserted in the interviews. The study is guided mainly by the dialogical approach to social representations (Markova, 2003), its main goal is to see how the conflicts raised by the video-excerpts are dealt with by the interviewees, and how ‘strong views’ (i.e. views that are assumed in attitude research as to hinder multi- or inter-subjectivity) are negotiated, maintained and transformed (Billig, 1991).

The theoretical assumptions, specific research questions, and the analytical tools employed in each study will be introduced in the respective sections. Before these, it is necessary to set forth the rationale in focusing on the non-governmental actors as mediating systems between (expert) knowledge and (public) action, and briefly touch upon on some crucial aspects of this mediation.

5.1.1. NGOs and the governance of global environmental problems

The NGOs are key actors in raising public concern and engagement with CC; their openness to public and proximity to local populations, and their increasing involvement in national and international environmental arrangements (Büchs et al., 2011; Sonnenfeld & Mol, 2002) provide them a significant role in mediating between local and global levels of intervention and policy. Their role in translating new norms and proposals formulated at the global level to the local levels involves namely (1) the transition from knowledge to action; (2) building ‘epistemic networks’ around specific objects and objectives; (3) reframing dominant policy paradigms; (4) offering meaning making resources for the public (Jasanoff, 1997; van Rooy, 1997). They can thus be regarded as implementation organs that are subject to a global regime. Yet, they are also regarded as empowering organizations, which (5) become sources of informed concern and expertise, and keepers of a moral frame; (6) connect, organize and translate the local forms of resistance and innovation to transnational and global levels; and (7) seek to change the political institutions (Fisher, 1997; van Rooy, 1997; Demirovic, 1998).

In accomplishing these many times divergent roles, the non-governmental actors are faced with manifold conflicts built into the larger social and political systems, get into several discourse coalitions (Carvalho, 2000), and their decisions in dealing with these bring about the sheer diversity and the complex dynamic of the NGO world (Demirovic,

1998).

As was introduced in section 2.3.2, in the literature concerned with the role of NGOs in the environmental regimes, it is possible to find many distinctions aimed at contrasting ‘moderate’ and ‘radical’ tendencies (e.g. Dobson, 1990), or optimist and pessimist dispositions in facing the field of action. For instance, (radical) ecologism appears as pessimist, having lost hope (in environmental reforms) and trust (in the governments). “Optimists, however, just start constructing something... to get the building process going” (Mol & Spaargaren, 2000, p. 33). This of course is an over simplification, as Mol and Spaargaren have argued, which treats confrontation and reconciliation as matters of organizational outlook and attitude.

By paying attention to the basic entities, assumptions, agents and rhetorical devices of ecological discourse, Dryzek (2005) has offered another distinction between two main rhetorical positions in green discourse and movement: One that focuses on changing individuals (green consciousness), and another that focuses on changing society (green politics). According to this analysis, the foundation for the first discourse is *nature*, and it targets *ideas* to change the unnatural practices. The foundation for the second discourse is a wider horizon for *social, political and economic structures*, and it targets *social practices* to transform these in order to overcome the ecological crisis. While the first tends to appeal to emotions, the second appeals to social learning and rationality. For Dryzek (2005), the difference between green consciousness and green politics is many times “just a matter of emphasis, and the two join to constitute a green public sphere. Some greens endeavor to combine consciousness change and political change. At other times some contrasts come into play.” (p. 181).

The disparity between the approaches of ‘consciousness change’ and ‘political change’ (Dryzek, 2005) is comparable to the two sets of concerns Giddens (2009) has identified in CC politics. The first set of concerns depart from the risks imposed by CC, and bring forth the boundaries of nature⁴³, emphasizing the precautionary principle to pull back from these. The second set of concerns depart from the status quo, and bring forth critical societal issues (e.g. food security, energy security) at the face of these risks. While the first are characterized by the de-territorial rationality of science, the second are characterized by territorial and geopolitical rationalities. For Giddens, a *realistic* climate

⁴³ The scientifically constructed targets such as 2°C or 350ppm are good examples of such assumptions.

policy is bound to bring together and reconcile these two sets of concerns imbued with different types of rationalities. Instead of a one-sided focus on risks that entails “either a paralysing focus on the status quo, or endorsements of extreme reactions” (Giddens, 2009, p. 59), the actors of climate policy, he argues, need to recognize the geopolitical realities, and have to work with rather than against them.

When the question is put between the ‘is’ and the ‘ought’, the NGOs may be described by their attempts to open the status quo to diverse effects, and with their crucial role in de-territorializing the geopolitical realities and transforming the local meaning systems⁴⁴. In this regard, NGOs can be seen as the emissaries of a ‘global soul’ through which the politics of place is destabilized and prospects for the future are redefined (Doyle & Chaturvedi, 2010). Simultaneously, by their egalitarian ethos and proximity to local populations (Büchs et al., 2011), NGOs many times endorse more equitable solutions and radical measures (Lövbrand & Stripple, 2006; Grove, 2010). At the international level, their vision many times contradicts the realist geopolitical assumptions based on territorial conflict, and derives from a complex and interdependent ecosystem that entails the eco-political and cosmopolitan visions of world order based on connection and cooperation (Grove, 2010). Hence, their discourse is many times characterized by an oscillation “between the ‘scientific’ imperatives of deterritorialised-global understandings of climate change and reterritorialisation of climate space through geopolitical-geo-economic reasonings” (Doyle & Chaturvedi, 2010, p. 525).

To summarize, it is possible to identify two main concerns or pursuits which will be attended to in the discourse of the NGO actors:

(1) The deployment of (the boundaries of) nature, which involves representation of scientific knowledge and the de-territorial rationality of science. This requires to pay attention to whether and how scientific knowledge is employed to bring forward and legitimize the discourses of global risk, and mobilize a ‘world public’ in both strategic (Lohmann, 2009) and cosmopolitan (Beck, 2010) terms. The answer to this question allows comparisons with the previous findings for the mainstream press in Turkey.

(2) The representation of the existing state of affairs and geopolitical interests in relation to the impending risks and aspired social transformations. This requires to pay

⁴⁴ As shown in the previous chapter, such de-territorializing depictions of CC typically draw on the repeated spatial and temporal images of danger and threat, which many times tend to melt away the relevant cultural and political differences (Lohmann, 2009; Doyle & Chaturverdi, 2010).

attention to the endorsement of dominant policy paradigms and instruments (e.g. carbon offsetting, emissions trading), and to the particular discursive arrangements legitimizing the primacy attributed to the incremental changes in individual behaviors (consciousness change), and to more profound systemic changes (political change) in tackling CC (Dryzek, 2005).

5.1.2. Interviews: Why two countries?

Semi-structured interviews (N = 22) were conducted in two countries, Portugal and Turkey, with NGO experts and activists who are actively involved in CC information and policy. The inclusion of the participants from these two countries is useful for the reasons described below.

First, the inclusion of the NGO experts and campaigners from Turkey is expected to afford a better understanding of the cultural dynamics acting upon the representation of CC, and comparisons between the roles of different mediating systems in this country in relation to CC. On this front, contrary to what was found in the mainstream Turkish press –overlooking of all conflict and contradictions–, it is likely to encounter with discourses characterized by contradictions. “Given that environmental campaigners themselves have a complex and ambivalent attitude to scientific authority” (Yearley, 1996, p. 176), differences may be expected in the ways scientific knowledge is employed and techno-scientific solutions are represented. The NGO experts may also be expected to put together and reconcile the existing territorial and geopolitical realities with the eco-political visions of cooperation and inter-connectedness that often draw on the de-territorial rationality of science (Grove, 2010). Therefore, the studies on the interviews pay specific attention to conflict and reconciliations in summarizing and describing the reflexive articulations of the NGO experts.

Second, the inclusion of the NGO experts from Portugal is expected to help in distinguishing the global and culture specific aspects of CC representation. The two countries have quite different cultural and political histories, however, they share a similar history of environmental reforms, which mainly took place in the context of Europeanization, involving the NGOs increasingly after 1980s, and with problems identified in implementation (Nave, 2001; Schmidt, 2008; Adaman & Arsel, 2005). Furthermore, as was touched upon in the previous chapter, the mainstream press representations of CC in the two countries demonstrate many similarities, despite

disparities in the dramatization of risks (Carvalho & Pereira, 2008). Similarities include especially the ways the scientific knowledge is represented (Ramos & Carvalho, 2008), the overall prominence of governmental actors, the prevalent thematic categories – international relations and environmental consequences – and their articulations in global and local contexts (Carvalho & Pereira, 2008; Carvalho, Pereira, Rodrigues, & Silveira, 2011).

In this regard, if substantial differences are identified between the representations brought into play by the NGO actors in Portugal and Turkey, this would mean that the global and transcendent proposals have been integrated with local interests, exigencies and conflicts, transformed into immanent representations. If not much difference can be identified, this could be interpreted in the framework of the ‘global’ nature of the problem, and the involvement of these actors in the international agenda on CC, probably striving to transform the territorial rationalities and the prospects for the future in the two geopolitical and cultural contexts. Hence, the interview study is not primarily oriented to intercultural comparisons. The participants from the two countries –some of which were from the same international NGOs– are assumed as actors of a global regime (Oels, 2005).

5.1.3. Interviewees

The interviewees were reached by ‘avalanche method’ (Wagner et al., 2000), that is, by asking each interviewee the most active non-governmental actors in the field in their country. The age, gender and the country of origin were balanced between the interviewees. The mean experience in the organization the interviewees were employed was about 10 years.

The international NGOs included in the study are the WWF and Greenpeace⁴⁵. The national NGOs included in the study correspond to some extent: LPN in Portugal and TEMA in Turkey are the long-established NGOs which focus on CC more from a land-use perspective. The SPEA and FAPAS in Portugal, and DOGA Derneği in Turkey are the national partners of the Birdlife International, oriented to protection of species. GAIA in Portugal and Ecology Collective in Turkey are the more grassroots organizations oriented to environmental activism rather than protection. Beside these, Quercus and GEOTA are

⁴⁵ The NGOs have different levels of engagement in the two national contexts. Both of them have populous offices in Turkey with active campaigns, and their CC campaigners were interviewed. Whereas in Portugal these NGOs are not institutionalized at the same level and do not have active climate campaigns. The roles fulfilled by these NGOs in Turkey, as will be explained, is fulfilled by other national NGOs in Portugal.

the two NGOs that work on the CC information and policy in Portugal, carrying out awareness raising campaigns –corresponding to the efforts of WWF and Greenpeace in Turkey. In Turkey, two international organizations –the UNDP and REC-Turkey– were included in the study, since they fulfill some roles of the NGOs in the national context, especially in awareness rising and climate policy oriented campaigns. Other NGOs included from Turkey are the Water Foundation, Environment Foundation, and Green Economy Association.

Table. 14. Interview participants from Turkey

Int.	Gen.	Age group	Organization	Education
01	F	35-44	UNDP, WWF-Turkey	BS Business administration
02	F	35-44	UNDP	PHD Environ. engineering
03	M	27-34	Green Economy Association	MS Political science
04	F	27-34	Greenpeace, TEMA	BS International relations
05	M	55-	Environment Foundation	BS Law
06	F	27-34	WWF-Turkey	MS Sociology
07	M	55-	Water Foundation	PHD Hydrology
08	F	35-44	TEMA	MS International relations
09	M	35-44	Nature Association	BS International relations
10	M	35-44	Ecology Collective	PHD History
11	F	27-34	REC-Turkey	MS Environ. engineering

The relevant past affiliations of the interviewees are included in tables 14 and 15 as secondary organizations, such as in the case of the first interviewee, who worked for WWF for 10 years, and had recently started working for the UNDP when the study was conducted.

Regarding the level of education, 17 of the 22 interviewees had acquired post-graduate degrees, 6 of which were PhDs. The remaining 5 interviewees ‘only’ had bachelor degrees. One interviewee in each country had contributed to the IPCC reports. In short, the participants belong to the highly educated segments of the two societies. All interviewees had good command of English, they had taken part in several international meetings, and half of them had joined at least once to the annual Conferences of Parties to the UNFCCC.

Table 15. Interview participants from Portugal

Int.	Gen.	Age group	Organization	Education
12	M	27-34	LPN	MS Biology
13	M	27-34	GAIA	PHD Environ. engineering
14	M	55-	LPN	PHD Agronomy
15	M	27-34	WWF	MS Environ. engineering
16	M	45-54	GEOTA	PHD Environ. engineering
17	M	45-54	SPEA, LPN	MS Biology
18	F	35-44	Quercus	MS Environ. engineering
19	M	35-44	Quercus	PHD Human Ecology
20	F	27-34	Greenpeace, FoE, Quercus	MS Environmental Policy
21	F	27-34	FAPAS	BS Landscape design
22	F	27-34	GAIA	MS Sociology

5.1.4. Procedure

The interviews were conducted between September 2011 and February 2012. Except for three cases in which the interviewees did not have a regular office position, all interviews were conducted in the workplace of the interviewees, where possible at their own desks. A brief description of the goals of the study was provided first, taking permission to voice record. Then the personal data presented above were collected. The interview itself was composed of three parts (See appendix B for the interview guide).

(1) At the beginning of the interview, the participants were given a word-association task to collect the ‘non-reflexive’ associations.

(2) Then, open-ended questions (e.g. “Could you tell me about a time or a situation in which you felt particularly concerned with CC?” “Who are the most important actors of CC globally?”) were introduced. With these questions, the aim was to let the participants reflect on concepts, episodes and actors relevant to them (Flick, 1994, 2000). As the interviewees had time to elaborate their views, at times in response to further questions, this part was called the ‘reflexive part’ of the interviews.

(3) Finally, a video elicitation technique was used. In this ‘argumentative part’ of the interviews, two short video excerpts featuring particular characters –to be called ‘Alter’ in the analysis of this part– were presented to the interviewees. The video excerpts were selected from the World Wide Web, and the views offered by a ‘scientist’ and an ‘activist’ were assumed as arguments in an ongoing debate. (For the full transcription of the video

excerpts, see Appendix C). Using faces and arguments of real life figures this way has several advantages: First, it helps directing the interview towards real life situations –i.e. two people watching online videos– and breaks the formality of the interview setting. Second, it furnishes the presented discourse with a face –and identity– other than that of the interviewer, and may open up wider space for disagreements. Third, it allows the interviewer to engage in the debate with naïve questions, or from different perspectives. Fourth, it helps to present the controversial arguments in a more consistent and invariable manner, thereby to gather the interview data together, and increase reliability and validity (Harper, 2002). Using the video excerpts to challenge the hegemonic representations of CC and instigate conflict, this part of the interview aims at investigating “the argumentative aspect of rhetoric” (Billig, 1991, p. 46) on climate change, and how the presented conflicts were dealt with.

5.2. STUDY 4. Structural analysis of the non-reflexive part of the interviews

5.2.1. Introduction: Looking for the core of social representations

This section includes two exploratory analyses of the terms and expressions (evocations) obtained from the word association task given at the outset of the interviews. In order to systematically account for the evoked terms, the present study makes use of two techniques elaborated by the structural approach to social representations.

As introduced in section 3.2.5, the structural approach holds that social representations are organized around a central core, which stabilizes the meaning and maintains it throughout contextual shifts (Abric, 1993; Guimelli, 1993). The analytical techniques employed in this study are mainly used for distinguishing the central core of a representation from its peripheral elements. The two techniques draw on two assumptions: First, the more frequently and initially (readily) evoked terms by a group constitute the central core of the group's representation of a phenomenon (de Sá, 1996). Second, the central elements, being evoked more frequently, are characterized with greater number of associative connection to other elements (Wagner & Hayes, 2005).

The peripheral elements are conceived as the dynamic features of a representation, which afford the flexibility it requires across contexts (Abric, 1993; Moliner, 1995; Wagner, Valencia, & Elejabarrieta, 1996). These are the less frequently and subsequently evoked terms in a word association task. Being at the periphery, they are also characterized by smaller number of associative connections to other elements. Hence, they have less significance in the hierarchical structure and the definition of the representation.

Wagner and colleagues (1996) have demonstrated the prominence of societal discourse and cultural context in structuring the core of social representations. Their study suggests that analyses focusing solely on consensus (the central core), without paying attention to the *relationships* between the elements, fall short in assuming a structure for, and in capturing the variability of the representations. Then, besides their use in determining the central core, the two techniques mentioned above may also be useful for studying the variation of social representations within a group (Lahlou & Abric, 2011), or to cluster divergent patterns in associations. Different clusters of meaning may serve to explain the “systematic variations in the weight individuals or groups give to different dimensions underlying the structure of the field of representation” (Spini & Doise, 1998, p. 604). In this regard, the relationships between the elements of a representation become

more important than the order in which they are evoked. Thus, especially when the analysis of the evocations is not carried out with the assumption that there is only one representation in question, it has to pay more attention to the social significance of and relationships between the elements, not only to their frequency and order.

Drawing on these considerations, the goal of the present study is to systematically account for the evocations by treating them as “the associated objects, rather than the constituents of the representation” (Lahlou & Abric, 2011, p. 7). Seen this way, the analysis of the non-reflexive associations can be useful for constructing initial hypotheses concerning the relations between different meanings attached to climate change. Hence, evocation analysis is “a good start to the study of a representation, but certainly not an end” (Lahlou & Abric, 2011, p. 7).

5.2.2. Method

At the outset of the interviews, the interviewees were asked about the first things that come to their minds first when they think about climate change. A total of N = 108 terms were obtained, and treated with two quantitative techniques.

The first technique –evocation analysis–, developed by Vergès (1992), consists of systematizing the frequency and order of evocations. By combining the *frequency* of a term as evoked by a number of interviewees, with the *order* in which the term was evoked by each interviewee, it aims at illustrating the central and peripheral elements of a representation (de Sá, 1996). These elements are reported in a standardized manner, by constructing a table that consists of four quadrants: The 1st quadrant includes the terms that are both more frequently and initially evoked, which are conceptualized as the central core of the representation. The 2nd quadrant includes the frequently evoked terms that appear later in the order of evocation. The 3rd and 4th quadrants present the less frequently evoked terms, by distinguishing the more initially evoked terms from those that are evoked later.

The analytics software *Evocation 2000* (Scano, Junique & Vergès, 2002) was used for assessing the frequency and order of evocations. Before the analysis, the obtained terms were searched for synonyms and lexically similarity. Only minimal changes limited to the lexical basis of the terms were allowed. For instance, ‘effects on freshwater’ and ‘water’ were rewritten as ‘freshwater’. Hence, the terms were the unit of analysis, and the input for the *Evocation 2000*.

The second technique –similitude analysis– was also applied by the using a software: *Similitude 2000* (Junique, Barbry, Scano, Zeligier & Vergès, 2002). This technique is used for assessing the binary relations between the categorical elements of a representation. The similitude relations are demonstrated as co-occurrences of pairs of categories of terms in the answers of a single participant. The output is the total number of co-occurrences between the categories. The analysis produces a visual network of these elements by making use of the co-occurrences of the constructed categories of the terms (Camargo, Barbara, & Bertoldo, 2007).

A semantic categorization was carried out for the similitude analysis. Two guidelines were considered in the treatment of the terms: First, the categorization was intended to yield a sensible number of categories (i.e. neither too many nor too few). Second, coherence with the literature (Stamm, Clark & Eblacas, 2000; Smith & Joffe, 2013), and with the preceding studies on the press articles was sought. Consequently, 6 categories were formed for classifying the (N = 108) terms: *Causes, Impacts/Risks, Solutions, Politics/Problems, Urgency, and Ecosystem*. The categories of the terms used in the similitude analysis is provided in the results section (see table 16).

Due to the limited number of the obtained terms and expressions, the filtering criterion for the co-occurrences between the semantic categories was assigned as 3. This means that only the co-occurrences that exceed a minimum of 3 times were included in the similitude analysis. In mapping the co-occurrences of the categories, an accountable description of the evocations was sought. The similitude analysis then provides only the most significant relations between the categories for interpretive work.

5.2.3. Results: The consensual core

5.2.3.1. Evocation analysis

The maximum number of terms provided per participant was 8 and the minimum was 3 (mean order of evocation = 3,1). The majority of the participants provided 4 terms. The more initially evoked terms –those that were evoked earlier than the mean order of evocation– are placed on the left side of the Table 18, and those that were evoked later than the mean order of evocation are placed on the right side. Similarly, those terms evoked $f = 4$ times or more are placed on the upper half of the table, and those terms evoked $f = 3$ times or less are placed on the lower half. In other words, Table 16 demonstrates the terms that were evoked more than one time, organizing them according

to their order of evocation on the X-axis, and according to frequencies on the Y-axis.

‘Greenhouse gases’ (GHGs), ‘human impact’ and ‘urgency’ are the more initially and frequently evoked terms (1st quadrant). According to the structural approach to social representations, these terms constitute the central core of the representation. Although the term ‘GHGs’ are evoked later than the ‘Human impact’ and ‘Urgency’ on average (order of evocation = 2,33), it is evoked more times ($f=7$) than the latter two, and for this reason is placed over the top. According to this finding, the spontaneous associations highlight primarily the anthropogenic *causes* and also the *urgency* of climate change. In other words, that CC is human-made and that it requires urgent measures appear as its consensual and non-negotiable characteristics.

Table 16. Organization of the terms according to their frequency and order

	Mean order of Evocation < 3,1			Mean order of Evocation >= 3,1		
Higher frequency	<i>1st quadrant</i>			<i>2nd quadrant</i>		
		<i>f</i>	<i>order</i>		<i>f</i>	<i>order</i>
	Greenhouse Gases	7	2,333	Adaptation	4	4,250
	Human impact	4	1,500			
	Urgency	4	1,667			
	F >= 4					
Lower frequency	F < 4			<i>3rd quadrant</i>		
	Freshwater	3	2,667	Drought	3	4,000
	Sustainability	3	2,667	Social justice	3	4,000
	2° Celsius	3	2,667	Catastrophic effects	2	3,500
	Threat	2	1,500	Global politics	2	3,500
	Fossil fuels	2	2,000	Extreme weather	2	3,500
	Pollution of the atm.	2	2,000	Agriculture	2	4,000
	Species	2	2,000	Storms	2	5,000
	Effects on nature	2	2,500	Floods	2	6,500
	Desertification	2	3,000			

Another frequently recalled term is ‘adaptation’ ($f=4$), but due to its recall only after other terms, it has a lower evocation rank (order of evocation = 4,25), and appears on the upper right side of the table, in the 2nd quadrant. The terms mentioned so far, which are placed at the upper half of the table, reflect the consensus among the participants in representing climate change spontaneously. This part of the table displays the sites of agreement, rather than the sites of conflict.

The lower half of the table lists the less frequently evoked terms, by distinguishing these according to their order of evocation (3rd and 4th quadrants). According to the premises of the structural approach, the 4th quadrant gathers the most peripheral elements. Remarkably, the human social aspects of CC (social justice, global politics, agriculture) appear in this quadrant. In other words, those terms that relate to nature are evoked more readily (3rd quadrant) than those terms that relate to the society and politics (4th quadrant). This means, when associated spontaneously, the implications of climate change on nature appear to have a primacy over its implications on society⁴⁶. These peripheral elements reflect the non-consensual aspects of CC. It appears that while the causes of CC are more or less agreed upon and can be treated as a convention, the implications of the problem are subject to some disparity and variation.

These two findings, (1) the impacts and risks appearing at the periphery of the representation, and (2) the primacy of the implications that pertain to nature, over the implications for society and politics— indicate the need for further examination of the associated terms. What these findings suggest is an agreement on the human causes and the urgency of CC —the central elements—, and an active debate and perhaps disagreement on its implications, in which impacts and risks associated with nature seem as prioritized. Paying attention to the relationships between the terms associated with CC may help in exploring these initial considerations.

5.2.3.2. *Similitude analysis*

To carry out the similitude analysis (Junique et al., 2002), the N = 108 terms were clustered into 6 categories. Table 17 demonstrates all the evoked terms and expressions in the constructed categories.

Notably, the two most populated categories presented in this table below, the *impacts/risks*, and the *politics/problems* refer, for the most part, to the 3rd and 4th quadrants of the Table 18. That means to say, the category *impacts/risks* incorporates those terms that are primarily associated with nature, while the category *politics/problems* is composed of those terms that are primarily associated with society. These two populated

⁴⁶ It may be seen as problematic to divide a phenomenon that so profoundly merges the natural and the human, along with the largely exploited categories of nature and society/politics (Latour, 2004). However, when it comes to the implications of CC, there appears a clear difference in the order which these were associated to the problem. Let us take the example of ‘2° Celsius’ situated in the third quadrant: Although the figure reflects a (human) target to limit CC at adaptable levels, the acceptable level of human intervention is assigned by way of science, that is, by appealing to nature, instead of society and politics.

categories include the many terms and expressions that were designated in the previous analysis as non-consensual among the interviewees.

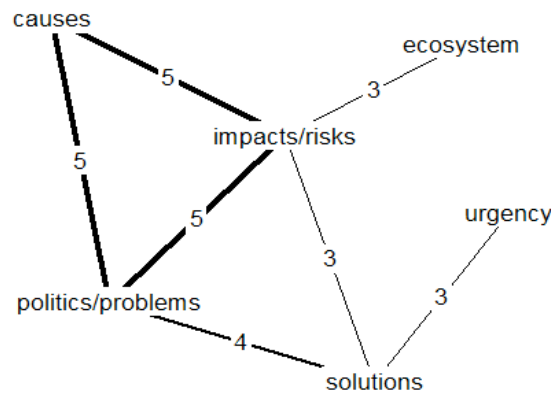
Table 17. The categories used in the similitude analysis

Category	Terms
Causes	GHGs, carbon emissions, pollution of the atmosphere, human impact, fossil fuels, cars, petrol, fertilizers, electricity
Impacts/Risks (<i>associated with nature</i>)	Warmer summers, extreme weather, irregularity, disruption, effects on freshwater, effects on soils, erosion, floods, desertification, droughts, biodiversity loss, treats to nature, treats to human life, treats to economy, agriculture, storms, sea level rise, melting ice, human health, food security, refugees
Solutions	Good policies, implementation, sustainability, mitigation, adaptation, efficiency
Politics/problems (<i>associated with society</i>)	Global politics, social justice, injustice, war, hegemony, power, interests, commodity, economic growth, industrialization, North-South, inequality, uncertainty, crisis of civilization, blocking of agreements and action
Urgency	Urgency, limited time, 2 ^o Celsius, ecological crisis, emergency, tipping point, already too late
Ecosystem	Equilibrium, metabolism, self-regulating organism, species, planet, global, interdependence

Including more than half of all the evoked terms and expressions, these two categories may be expected to have the highest number of co-occurrences with other categories. As illustrated in Figure 6, the category *impacts/risks* indeed has the maximum number of co-occurrences (16) and variety of ridges (4). Similarly, the category *politics/problems* has 14 co-occurrences with 3 other categories. These two apparently central categories form an equilateral triangle with the *causes*, the consensual central element identified in the previous analysis.

This triangle of relationships among the *causes*, *impacts/risks*, and *politics/problems* is accentuated in Figure 6 with thick edges, and it can be described as the central relational component of the non-reflexive representation(s). It may be the case that the interviewees agree upon the human causes of the problem, and connect to this consensual core two more important –if not central– elements, on which they agree less than they do about the causes: The ‘environmental impacts and risks’ and the ‘socio-political dimensions’ of climate change.

Figure 6. The visual network of the categories of evocation



To put it in other words, when categories of terms are taken as the analytical unit, there appears two main routes connecting the *causes* to the *solutions*: One appealing to nature (impacts/risks), another appealing to society and to politics (politics/problems). As nature and society may be conceived as two powerful resources for representing climate change, these two routes may be conceived as diverging ways of representing CC.

The similitude analysis offers a better understanding of the centrality of the human *causes* and *urgency*, the elements identified at the central core in the previous analysis. When their co-occurrences with other categories are examined, the *causes* remain a central semantic category, but *urgency* seems to lose its central position and appear at the periphery of the non-reflexive associations. However, this finding has to be considered by taking into account that *urgency* is among the most difficult to communicate aspects of CC (Moser & Dilling, 2007) and that it was articulated in the limited space provided by the word association task by way of only a few terms. Hence, it may still occupy a central role in the examined representations.

5.2.3. Conclusions

By using the analytical concepts and tools of the structural approach to social representations, this study has illustrated the central and peripheral elements and the most salient categories of the interviewees' spontaneous associations about CC. The low number of collected terms and expressions constitute the main limitation of the study. Hence, the results of the two analyses should be taken up with reservations, and treated as preliminary hypotheses to be reconsidered in the subsequent studies.

The two analytical techniques have yielded similar results as to the agreed upon or

consensual element: Climate change is human caused. When the frequency and order of the evocations were considered (first technique), ‘GHGs’, ‘human impacts’ and ‘urgency’ have appeared as the agreed upon elements. When the centrality of the elements were considered in terms of categories and co-occurrences (second technique), the *impacts/risks* and *politics/problems* appeared as the consequential meaning categories that are connected to the consensual category of *causes*, and that link the causes of CC to the apparently less consensual category of *solutions*.

Hypothesis 1: That climate change has human causes is the consensual central element of NGO experts’ representations.

Findings concerning other important elements were somewhat less clear. The two categorical elements *impacts/risks* and *politics/problems* that were illustrated at a central position in the second analysis, were designated at the periphery of the representation(s) in the first analysis. That they appeared as non-consensual elements at the periphery suggests that they are the unstable parts of the representation(s), being debated and negotiated (Wagner et al., 1996), for this reason they may be expected to gain more importance in the reflexive part of the interviews.

In scrutinizing the terms composing these two categories, they were distinguished as associated divergently with nature and with society. The categorical element *impacts/risks* was comprised almost only of those specific terms and expressions that concern the environmental consequences of CC, and that are functional in describing it (Moliner, 1995), e.g. ‘warmer summers’. Similar findings suggest that this category of concrete consequences probably has a central and definitional role in the lay representations of CC (Cabecinhas et al., 2006). They describe the problem by providing hard to challenge facts adopted from the scientific vocabulary, facts which mostly appeal to nature.

The other important (categorical) element *politics/problems*, on the other hand, was comprised of highly abstract and comprehensive terms, which demonstrate high evaluative power (Moliner, 1995). These judgment-oriented terms that refer explicitly to society and to politics, such as ‘commodity’, ‘inequality’, ‘hegemony’ may as well be used for describing CC, however, that surely would be a different description. Hence, it becomes a legitimate question to ask if the two important elements *impacts/risks* and *politics/problems* organize the field of representation in their relationship with each other and in their connection to the agreed upon or consensual element of human *causes*.

Hypothesis 2: The two important elements connected to the consensual core, the *impacts/risks* and the *politics/problems*, probably constitute two important meaning categories for the reflexive representations of climate change, in their divergent appeals to nature and to society.

The *urgency* ascribed to CC was a frequently and readily evoked element of the representation(s), and in the first analysis it was classified in the central core. However, in the second analysis it was only connected to the *solutions* –which makes sense– and was designated as peripheral. To understand this apparent contradiction, the nature of the word association task –the lack of time for reflection– may be taken into account. In their non-reflexive associations, the interviewees have mainly focused on the factual, concrete aspects of CC. In this sense, under the constraints of the task, they have resorted to an image of CC that resembles the image constructed by the mainstream Turkish press. Although urgency is not among the factual and concrete aspects of CC, it was represented as one of its crucial and consensual aspects. Therefore, it may gain more importance in, and be articulated more explicitly in the reflexive part of the interviews.

Hypothesis 3: Urgency ascribed to climate change solutions –independent of what those solutions may be– is probably a central and consensual element of NGO experts' representations.

To summarize, the *causes* of and the *urgency* imposed by climate change may be expected to gather the interview data together in a shared representation: Anthropogenic CC as a serious problem to be dealt with urgently. If this be the case, the interviewees would appear as a homogenous group (Abric, 1993) mainly concerned with establishing a hegemonic representation. As in the mainstream Turkish press articles, the concrete environmental impacts and dreadful risks would constitute powerful rhetorical resources for this pursuit. However, the following study should also take into account a potential divergence between the *impacts/risks* and the *politics/problems* as possibly dividing the interview data into two representations. If this be the case, the interviewees may appear as a heterogeneous group as to the implications of CC, putting divergent emphases on its *environmental* and *socio-political* aspects (Dryzek, 2005; Hulme, 2009), which suit respectively to its *descriptive* and *prescriptive* dimensions (Moliner, 1995).

5.3. STUDY 5: Thematic analysis of the reflexive part of the interviews

5.3.1. Introduction: Scrutinizing themes as patterns of meaning

The primary goal of the present study is to identify the main themes that the interviewees bring forward in response to the open ended questions of the second part of the interview. This involves organizing and describing the patterns of meaning –the main themes–, a process which has to stay in tune with the reasoning of the interviewees and the context of the interview (Feraday & Cochrane, 2006). In this effort, the hypotheses obtained from the foregoing study provide some guidelines. However, the nature of the data obtained from the semi-structured part, namely the reflexive arguments, fundamentally differ from that of the spontaneous and non-reflexive word associations. A first task, then, is to assess whether the previously formed categories, *causes*, *impacts/risks*, *politics/problems*, *solutions*, *urgency* and *ecosystem*, provide sufficient sense to summarize and organize the semi-structured part of the interviews.

The divergence between the *impacts/risks* and the *politics/problems* associated with CC in the previous study, and the distinction between its *descriptive* and *prescriptive* dimensions (Moliner, 1995) bear considerable similarities to other distinctions offered in the literature. For instance, Hulme (2009) has suggested a distinction between the lower-case ‘climate change’ and upper-case ‘Climate Change’, where the former refers to a *physical phenomenon* to be objectified, and the latter to *an idea* that is employed to achieve certain ends and accomplish a variety of claims. Lower case ‘climate change’ is rooted in and resorts to the “‘objective’ and impartial methods and tools of science”; while ‘Climate Change’ is “so plastic, it can be deployed across many of our human projects, and serve many of our psychological, ethical and spiritual needs” (Hulme, 2009, p. 327-328). The first assumes climate change as an environmental problem to be solved, while the second assumes Climate Change as a societal, or rather a ‘wicked problem’ that may help us solve our problems (Hulme, 2009).

Similarly, Hayden, Hatton, and Lorenzoni (2011) have identified in their discourse analysis of interviews conducted with UK stakeholders, what they label as *hegemonic* and *counter-hegemonic* discourses. According to this study, in connection to energy security concerns and technical solutions, the hegemonic discourses of climate change bring up “an ‘environmental problem’ leading to a need for an urgent technological fix to reduce climate change related emissions”. The counter-hegemonic discourses, on the other hand,

“support a wider agenda in which reflection by society is needed” (p. 142). In other words, while the former appeals to technical solutions requiring *delimitation* of the problem, the latter appeals to a necessity to change the societal focus and *expansion* of the political agenda.

Adger and colleagues (2001) have suggested a similar distinction across a series of environmental problems including CC. Their suggestion regards an opposition between the dominant *global environmental management* discourses, and the *populist* discourses in the debates concerning deforestation, desertification, biodiversity and CC. The dominant discourse is regarded as top-down, interventionist and technical, advancing mainly market-oriented solutions defined at the global level. The counter discourse, on the other hand, advocates community empowerment and local knowledge, and portray global capitalism and transnational corporations as villains (Adger et al., 2001). A crucial point the authors emphasize is that these confrontational discourses are many times interwoven and exhibit hard to distinguish points on a continuum.

These distinctions and their intersection echoes some of the distinctions outlined in the general introduction of the chapter –between ‘consciousness change’ and ‘political change’ discourses (Dryzek, 2005). From the perspective of the TSR, a fruitful question to be paid attention regards the *relations* between, and the *interference* of the representations that stem from these differences, rather than a crude distinction between the interviewees as (moderate) environmentalists and (radical) ecologists (Mol & Spaargaren, 2000).

The study then has a second goal, which regards the organization of and the relations between the themes, and organizing principles of the differences in representing CC (Doise, 1993; Spini & Doise, 1998). This means to examine whether the interviews are organized around one dominant theme and oriented towards a hegemonic representation, or competing representations constructed around different organizing themes (Attride-Stirling, 2001). To undertake this goal, the second hypothesis derived from the previous study, namely the divergent appeals to nature and to society, and the descriptive and prescriptive dimensions of the representation, need to be critically examined for their relevance in the reflexive part of the interviews.

After getting more familiar with the collected corpus and the discursive themes identified in the literature, the previously formulated hypotheses were converted into open ended questions, suitable for qualitative analysis. The research questions guiding the analysis are outlined below:

- (1) What are the most salient themes throughout the reflexive part of the interviews? Do the previously identified six categories apply to the interview data?
- (2) How are the themes organized? Which themes are more central, or function as the organizing elements of the representation(s)?
- (3) What are the points of convergence and divergence across the arguments and the interviews? Is it possible to identify one representation that gathers together all the interview data?

5.3.2. Method

Thematic analysis aims at identifying, analyzing and reporting patterns of meaning, by minimally organizing and describing the data in rich detail (Braun & Clarke, 2006). It is a widely used, but rarely labeled method, often reported with insufficient detail about the assumptions informing the analysis, and the decisions taken in the process of interpretation (Attride-Stirling, 2001). The researcher is many times rendered as passive in discovering the ‘emerging themes’ (Braun & Clarke, 2006). The present study treats the themes as preferences or commitments to certain concepts and patterns of meaning (Joffe, 2012) brought up by the arguments raised in the interview process.

The unit of analysis was arguments (particular conclusions sustained by explicit or implicit premises), and the themes were manually coded by using the software Atlas.ti. The reading and re-reading of the collected material and the recognition of patterns (inductive process) was combined with categories and assumptions derived from the previous findings and from the literature (deductive process), making explicit the demarcation of the themes (Joffe, 2012). While the data was examined with knowledge of previous findings, the analysis was kept in line with the reasoning of the interviewees, and in direct connection to the raw material, to be demonstrated by excerpts from the interviews (Feraday & Cochrane, 2006).

The re-reading of the interviews and preliminary experimentation with coding led to a series of decisions, in which both the meaning categories constructed in the preceding study, and in the literature (Stamm et al., 2000; Smith & Joffe, 2013) were reconsidered. A decision was taken to treat the *impacts* and *risks* associated with CC as separate thematic categories to be coded. This helps distinguishing between those aspects of the problem that have already taken place and argued as evidence for CC (its concrete impacts), and other aspects that are argued as probabilistic consequences that lie in the

future (risks). Another decision regarded the category *politics/problems*: Due to its intricate relationship with the theme *solutions* throughout the corpus, this category was not treated as a separate theme, but was assigned as one of the categories of solutions (socio-political solutions). A third decision regarded the inclusion of the theme *actors*, differentiated into 5 sub-categories. Finally, three more inductive codes were developed to reflect other prevalent themes in the corpus: *interconnectedness*⁴⁷, *urgency*, and *pessimism*. These decisions have yielded the eight themes that were used for summarizing the interview data. Full descriptions of the sub-categories of these themes that guided the analysis are provided in the code dictionary in Appendix D.

A reliability measure of the coding frame was established. A second coder, a PhD student in sociology, was trained by presenting the code dictionary, and by identifying and coding several arguments together with the first coder. The second coder then coded 10% of the interview transcripts. The results of the two separate coding initiatives corresponded on 76,2 % of the codes assigned to the arguments. Discrepancies were addressed in a discussion between the two coders, and amendments were made in the code dictionary.

Throughout the re-reading and re-coding process, attention was paid to how the thematic categories are organized in each interview and throughout the corpus. Finally, to systematically account for the variation in representing climate change, and to further explore the patterns of meaning located in the interview data, a Multiple Correspondence Analysis (HOMALS) was conducted. At this step, by using SPSS, the occurrences of the prevalent categories (e.g. societal risks, technological solutions) were re-coded into binary scale for each interview. If the interview included at least one argument that was coded for a category, the value of the category was set to 1. If no argument was coded for a category in the interview, the value of the category was set to 2. Re-coding the interview data this way has enabled the inclusion of more than one category for each theme (e.g. both technological and socio-political solutions), where necessary. To map how the coded categories of themes relate to each other and function as organizing principles (Spini & Doise, 1998), these were entered as variables to the HOMALS.

The HOMALS included all the categories outlined in Table 18 as variables, except for the ‘non-human causes’, ‘impacts-biodiversity’, and ‘risks-biodiversity’. Due to their

⁴⁷ Among these, *interconnectedness* stands for the reformulated version of the category identified in the preceding analysis, and labelled as *ecosystem*. The re-labeling was necessary, because, as explained below, and also in the Appendix 4, *interconnectedness* concerned not only ecological, but also human phenomena.

extremely low frequencies, the impacts and risks associated with biodiversity were merged with the ‘physical-environmental’ category of the corresponding variables, and the ‘non-human causes were excluded’⁴⁸. The remaining 19 active variables were included together with three supplementary variables: The age group, the country, and the field of study of the interviewees.

5.3.3. Results

The reporting of the results are organized in the following way: The frequencies of coded themes are presented first. Then, to map how these meaning units are associated with each other, the results of the HOMALS are demonstrated. Finally, some representative excerpts are provided to exemplify the arguments coded for the categories, and to interpret the results of the HOMALS.

5.3.3.1 The salient themes

As the frequencies of the coded themes demonstrate (see Table 18), the interviews were mainly directed towards the *solutions* offered to address climate change ($f = 175$). The ‘macro-policy instruments’ (e.g. international agreements, economic incentives, emission quotas, national action plans) was the most prevalent category (38,3%). The ‘socio-political solutions’ (e.g. changing major social institutions, political action, as well as the systemic barriers to action) was another prevalent category (29,7%). ‘Adaptation’ measures and policies were hardly discussed (4,7%).

The *actors* of climate change were the second most salient coded category ($f = 114$). Typically, answers to the question regarding the actors involved specific figures, be they individuals or organizations. The more salient figures were the IPCC, the UN, Al Gore, James Hansen, Nicolas Stern, Greenpeace, WWF, Quercus (in Portugal), as well as some governments, especially the US, the EU and China.

Only one interviewee asked for clarification of the question “Who are the actors of climate change globally?”. Was this to be understood as the actors contributing to the problem, or the actors devising solutions to it? The vast majority of the interviewees spoke of the actors that are part of the process of devising and implementing solutions. In this

⁴⁸ The category ‘non-human causes’ of CC was excluded at this step, not only due to its low frequency, but also by taking into account that it was only discussed together with the ‘human causes’. In the reflexive part of the interviews, the non-human causes were brought up only to refute the skeptical views regarding these.

sense, the interviewees took CC as a given problem to be dealt with by the *policy actors*, without the reception of the actors as those who contribute to the problem. Among all actors, ‘countries/governments’ was raised as the most prevalent category (33,3%). In some interviews, after mentioning the policy actors, those actors functioning as ‘obstacles’ –mainly the US, the oil industry– were mentioned. This result resonates with finding that the interviews were mainly directed towards the solutions of CC, rather than its causes.

Table 18. Frequencies of the themes and the categories

Themes	<i>f</i>	Categories	<i>f</i>	%
Causes	42	Non-human causes	3	7,1
		Human causes –simple	22	52,4
		Human causes –complex	17	38,5
Impacts	74	Physical-environmental	57	77,0
		Biodiversity	6	8,1
		Human-societal	11	14,9
Risks	45	Physical-environmental	20	44,4
		Biodiversity	3	6,7
		Human-societal	22	48,9
Solutions	175	Technological	23	13,1
		Macro-policy instruments	67	38,3
		Micro-policy instruments	25	14,3
		Socio-political	52	29,7
		Adaptation	8	4,6
Actors	114	Scientists	21	18,4
		Countries/governments	38	33,3
		NGOs	25	21,9
		The media	15	13,2
		Business/Industry	15	13,2
Interconnectedness	26			
Urgency	15			
Pessimism	15			

As hypothesized, the *impacts* and *risks* associated with climate change occupied a significant space in the interviews. If the these two themes were not distinguished from each other, they would appear more prevalent than the theme *actors*, even without a specific question addressing these. The distinction between these two themes were sought to reflect the temporality of the effects of climate change; those which are characterized by presence (i.e. already experienced), namely the *impacts* ($f = 74$), and those which reside in future times, the *risks* ($f = 45$). What distinguishes these two themes is not only that the impacts are represented more saliently than the risks. More importantly, a high

percentage (77,0%) of the arguments coded for the theme *impacts* concerned the physical and environmental impacts, while only 11 arguments (14,9%) coded for this theme were associated to humans and to society. The frequencies of the arguments coded for the theme *risks* demonstrate an entirely different picture: When the hazard is represented in the future, human society appears at least as vulnerable (48,9%) as the physical environment (44,4%). This finding resonates with the findings for the mainstream Turkish press: Humans are represented as vulnerable as other species and the environment only in the future times.

The relatively low frequency ($f = 42$) of the *causes* should be considered by taking into account the fact that the anthropogenic causes were mentioned and used as a defining element by all the interviewees. However this theme quickly subsided afterwards. This confirms that the human causes of CC constitute the consensual part of representations and they were taken for granted and not thematized. It can be said that the interviewees hold strong views concerning the human causes of CC, so much so that they did not need, in most cases, to expound on this theme. The non-human causes of CC were mentioned only three times, and in conjunction with the anthropogenic causes (7,1%). The distinction between simple and complex causes of CC allowed to identify that the causes were discussed mostly in simple or direct terms (e.g. GHGs, fossil fuels, 52,4%), rather than in complex and abstract terms (e.g. economic growth, humanity's relation with nature, 38,5%).

The theme *interconnectedness* ($f = 26$) consisted of the arguments emphasizing the intricate relations between, and interdependence of, natural and human systems. Connecting CC to other environmental problems, many interviewees emphasized that responses to CC should not take place at the expense of other environmental problems, and handled in a concerted way. The theme then reflects interconnectedness both as a descriptive concept, that is, a physical feature the earth's biosphere; and as a prescriptive proposal, a human necessity for and cooperation (Liftin, 1999).

Contrary to the third hypothesis drawn from the preceding study –regarding *urgency* being a central element, the theme was not a central or organizing element in the reflexive part of the interviews, it was hardly discussed explicitly ($f = 15$, coded in 8 of the 22 interviews). Still there are reasons to assume that *urgency* implicitly takes a more important place than was reflected in the interviews. First, when it comes to CC, urgency is among the elements that are most difficult to communicate (Moser & Dilling, 2007),

requiring for its efficacy both expertise on the side of the communicator, and inclusion of solution frames (Chess & Johnson, 2007). Second, when it is taken into account that there are conflicting claims about the implications of, and the uncertainties regarding CC, devising not an alarming but a sober tone appears as a requirement for effective persuasion, or even to be taken serious in the arguments raised. As many authors suggest, instead of sounding a climate alarm, “knowledge claims should be embedded within a broader discourse that simultaneously is *cautious* and optimistic” (McCright, 2007, p. 208, emphasis added). In alignment with such perspectives (e.g. Moser & Dilling, 2007), it can be said that the interviews were mostly characterized by cautious and restrained arguments in relation to the urgency of CC action.

Finally, *pessimism* (f = 15) was a theme with critical implications. The arguments coded for this theme were located only in 5 of the 22 interviews. Unsurprisingly, these were the interviews in which the socio-political solutions were propounded extensively, whereas technological solutions were hardly mentioned and the dominant macro-policy instruments (the Kyoto Protocol) were explicitly criticized. In other words, the interviews that were characterized by a discontent with the international regime concerned with CC and a plead for radical social change, were the interviews that the arguments exhibited clear indications of pessimism.

Among the categories of the coded themes, physical-environmental impacts (f = 57), macro-policy instruments (f = 67), and socio-political solutions (f = 52) were the most prevalent ones. High frequencies of these categories suggest that the second hypothesis drawn from the preceding study –the relationship between the *impacts/risks* and the *politics/problems* associated with CC having a central or organizing role in the reflexive representations– should be paid closer attention. More precisely, this involves a question concerning the relationship between the *already visible impacts* of CC, which have a definitional role in representing the problem, and the *solutions* theme, which, for the most part, was argued both in terms of existing ‘macro-policy instruments’ (including for instance the Kyoto Protocol, allowances, quotas, subsidies for certain sectors), and more thoroughgoing ‘socio-political solutions’ (thematized by notions such as commodity, equity, growth paradigm, capitalism). To examine how these themes and categories are organized in the interviews by connected to each other, the salient categories were entered as variables for a Multiple Correspondence Analysis (HOMALS).

5.3.3.2. Mapping the relationships between the thematic categories: HOMALS

The goal in conducting a Multiple Correspondence Analysis was to systematically account for the variation in representing climate change, and to illustrate how the meaning categories identified in the interview data are connected to each other. The analysis included almost all of the thematic categories as variables, and the exclusion of the three categories was justified in the method section.

The HOMALS yielded two first dimensions with high reliability scores (Cronbach's α_{dim1} .771; Cronbach's α_{dim2} .710), which were responsible for 35,6% of the inertia (eigenvalues: 3.708 and 3.051 respectively). The corresponding discrimination measures are presented on Table 19.

Table 19. Discrimination measures of the variables in the first two dimensions

Active variables	Dimension 1	Dimension 2
Human Causes -simple	.329	.145
Human Causes -complex	.344	.004
Impacts -environmental	.241	.016
Impacts -societal	.002	.644
Risks -environmental	.299	.002
Risks -societal	.114	.313
Solutions -technological	.007	.145
Solutions -macro instruments	.026	.377
Solutions -micro instruments	.192	.020
Solutions -sociopolitical	.521	.195
Solutions -adaptation	.311	.018
Actors -scientific	.152	.293
Actors -government/countries	.015	.033
Actors -industry/business	.276	.001
Actors -media	.079	.161
Actors -NGOs	.328	.104
Interconnectedness	.285	.005
Urgency	.032	.025
Pessimism	.155	.551
Country*	.021	.002
Age group*	.037	.377
Field of study*	.019	.018

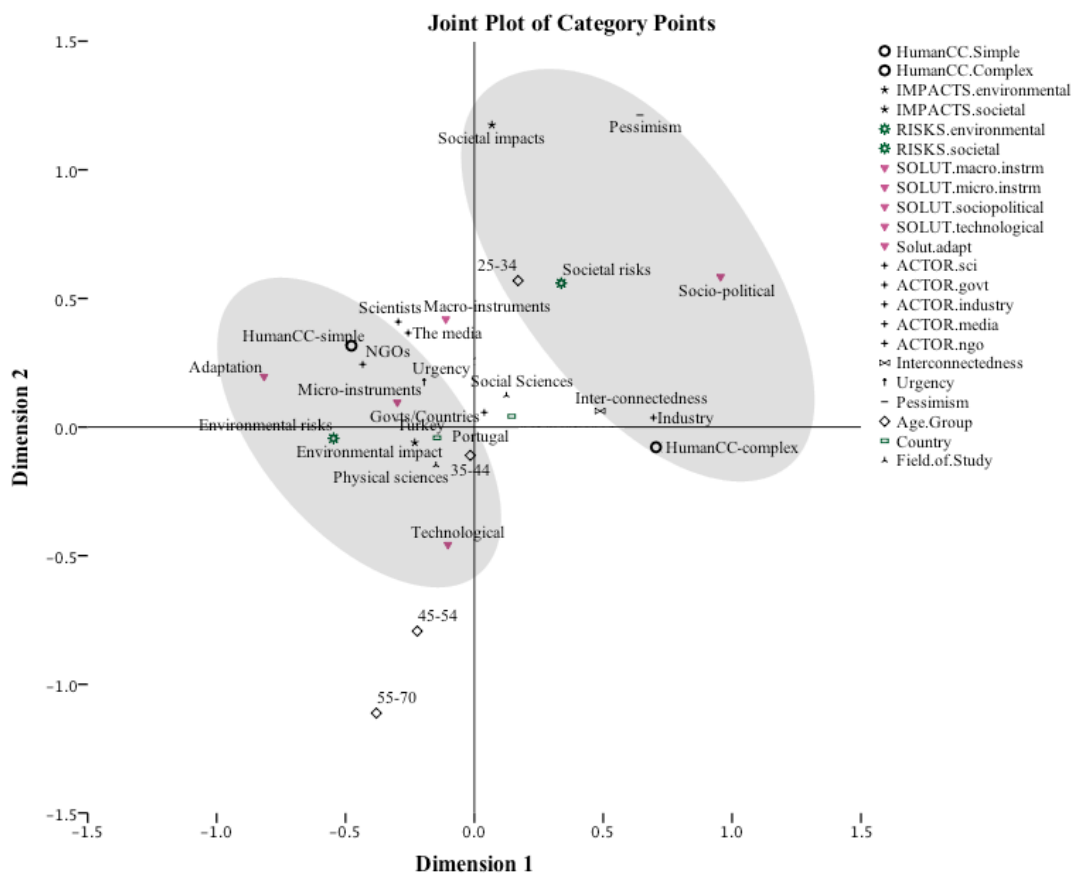
* Supplementary variables

As the table demonstrates, both *simple* and *complex causes*, the *environmental impacts* and *risks*, and *interconnectedness* discriminate in dimension 1. The *micro-instruments*, *adaptation*, and *socio-political solutions*, as well as the *industry/business* and the *NGO actors*, also discriminate on this dimension. The first dimension, encompassing

segments of all thematic categories, appears as the principal axe that illustrates the variation in the reflexive part of the interviews.

The variables *societal impacts* and *risks*, *macro-instruments* and *technological solutions*, the scientific and media *actors*, as well as *pessimism*, discriminate in dimension 2. The supplementary variables *country* and *field of study* of the participants do not discriminate significantly, as the active variables governmental *actors* and *urgency*. The only supplementary variable that discriminates significantly (on dimension 2) is the *age group* to which the interviewees belong.

Figure 7. Spatial representation of the first two dimensions yielded by HOMALS



As demonstrated in Figure 7, the first dimension clearly distinguishes (1) the *socio-political solutions* from all other variables concerning solutions; (2) *environmental risks* from *societal risks*; (3) the *simple* or direct causes of CC from its *complex* or indirect causes; (4) *industry/business* actors from all other actors. Among the active variables, the second dimension distinguishes the *technological solutions* from all other solutions, and the *environmental impacts* from the *societal impacts*. This dimension most significantly distinguishes the relatively older interviewees as tending to endorse technological

solutions, from the younger interviewees who seem to focus on the societal aspects and solutions of CC, which are associated with pessimism.

The projection of the variables on two dimensional space allows to identify two discursive constellations or ways of representing CC. Highlighted by the ellipse that is closer to the center of the plot, the first constellation encompasses the *simple causes* of CC, *environmental impacts* and *risks*, *technological solutions*, solutions regarding *micro-instruments* directed mainly to individual behavior, *adaptation*, and the *urgency* of the measures that relate to these. Among the actors, *government/countries* and *NGOs* are positioned in this constellation. Arguably, this constellation reflects the dominant or hegemonic representation of CC, bearing considerable similarities to the way it was depicted in the mainstream Turkish press. The representation is functional in establishing CC as an environmental problem that requires urgent action from the government and in this case also from the civil society.

Highlighted by the ellipse on the upper-right, the second constellation comprises all the variables that refer to the *societal* aspects –of the *impacts*, *risks*, *solutions*. Crucially, the indirect or *complex causes* associated with CC, which render the simple or direct causes (like CO₂) as mere symptoms, are situated in this constellation, as well as *pessimism*, *interconnectedness*, and *industry/business* actors. The positioning of these variables –and especially that of the variable pessimism– on the upper-right corner may be best conceived by their connection to the variable socio-political solutions: This variable reflected the profound structural changes that were prescribed as the ‘real’ solutions to CC. This counter-hegemonic (Hayden et al., 2011) or polemical representation draws on the socio-political implications, rather than the environmental consequences of CC, to redefine and re-organize the causes and solutions.

The HOMALS, then, affirms the hypothesis concerning the two ways of connecting the causes to the solutions associated with CC: (1) One that highlights environmental impacts and risks, to connect its simple causes to the technological solutions and micro-level policy instruments. (2) Another that highlights society and appeals to politics both in the articulations of the complex causes and the socio-political solutions, and to connect these.

That the first representation has the environmental *impacts* and *risks* associated with CC as its organizing themes can be substantiated by taking into account the frequencies of these two variables, which add up ($f = 86$ in total) to constitute half of the

arguments illustrated within this constellation. Whereas, the major part of the arguments illustrated within the second constellation represent the (socio-political) *solutions* (f = 52), above the (societal) impacts and risks (f = 33 in total). That means, the second representation brings into play the solutions theme more than the first representation, where the (environmental) impacts and risks appear with the organizing function.

The difference between the two representations cannot be accounted for by the country of origin, as the Portuguese and Turkish participants are not distinguished in the spatial representation. Neither their fields of expertise can be used for interpreting the difference between the two representations. So what is it that organizes the representations this way? The following section presents some exemplary extracts to make the two representations more intelligible, and to show how the themes were typically organized.

5.3.3.3. Organization of the themes: Two representations of climate change

The HOMALS designated two discursive constellations or ways of representing climate change: One that resorts to nature and constructs an environmental problem, another that resorts to society and constructs a societal and political problem. While the first is organized around the (environmental) *impacts* and *risks*, which are, for the most part, representations of scientific assessments that are appropriate for descriptions, the second is organized around the (socio-political) *solutions* and obstacles that are more appropriate for advancing prescriptions. Hence, they may be conceived as the descriptive and prescriptive dimensions (Moliner, 1995) of CC discourse and representation. To demonstrate the organizing function of environmental impacts and risks on the one hand, and socio-political solutions on the other, let us first focus on two interviews.

Excerpt 1: The causes are connected to the impacts (example for SR 1)

The first excerpt is from the interview 2, one of the interviews in which the already visible *impacts* were employed to connect and support the arguments concerning both the causes of and the solutions addressing CC.

Interviewer - Can you tell me a short story of climate change?

Interviewee - (...) increase in the GHG emissions has started in late eighteen, nineteenth century I would say.. mm.. and accumulation of these GHGs have been observed in the world, and it starts changing the... let's say meteorological conditions in the earth. Well, it's quite difficult to distinguish this from the natural phenomena as well, eeh... but we can

say that in the twenty-first century we have started to see the impacts, like the extreme weather conditions and.. So we have started to see the impacts of climate change, we have started to observe more in our life, in the twenty-first century. (Int. 2/38)

The excerpt starts with describing CC with the accumulation of the GHGs (coded for the category ‘anthropogenic causes -simple’), and in combination with other “natural phenomena”. This cautious formulation of the human *causes* primarily addresses a general, unrestricted public, and the doubt –raised by the so-called ‘skeptics’– on whether CC is caused naturally or by human activities. The interviewee admits that it is difficult to distinguish the two, and resorts to the already visible *impacts* of CC, which, as in the mainstream Turkish press articles, are employed to substantiate the problem, and as evidence for the material reality of climate change.

In short, the problem is described by its direct (simple) causes and effects, distributed in their logical order to centuries, with a restrained argument considering ‘what is’ as well as ‘what we can say’ about it. In this primarily informative and descriptive articulation, the environmental *impacts* are directly connected to the consensual core of the anthropogenic *causes*.

Excerpt 2: The causes are connected to the solutions (Example for SR 2)

Interview 14 differs from the interview 2 in many respects. First, its duration was much longer (110 minutes and 59 minutes respectively). Second, it was clearly directed to *solutions* (17 arguments from this interview were for coded for the theme solutions, 12 of which were coded for socio-political solutions), rather than to establishing the problem. Third, the interview was characterized by prescriptive arguments, rather than descriptive ones. Fourth, the interviewee had no longer occupied an active position in the NGO which he was one of the principal members for years. Last but not the least, the interview exhibited a remarkable dialogical form, proceeding with rhetorical questions and answers:

OK, global emissions increase, why do we have a global emissions increase? Because we burn fossil fuels. Why do we burn fossil fuels? Because we need to have fossil fuels to have economic growth... and as long as we will continue to pursue economic growth, we will burn as much fossil fuels as we can. (...) and this is for me the clear thing, until we reach to the point of where we are capable of targeting eeh... the problem of economic growth that sustains capitalism, this has also to be said, capitalism only survives with economic growth... (Int. 14/50)

The excerpt starts with questioning the *representation of the causes* of CC as was carried out in the first excerpt through the “increase in the GHG emissions”. Actively arguing to find the ‘real causes’ through rhetorical questions and answers, the interviewee arrives at the “clear thing”, implying that the rejoinder is over and the main prescription is to be asserted. It regards “the problem of economic growth”, and the “capability” to target the real problem. A foundational difference of this excerpt from the first one is that it gathers together new objects in connection with, and thereby expands the representational field regarding the *causes*. Such arguments resorting to notions such as economic growth, capitalism, humanity’s relationship with nature, which were coded for the thematic category ‘human causes -complex’, depict the increase in the GHG emissions as a symptom, rather than the cause of CC.

Continuing the quotation from the same interview will make more explicit the interference of the two representations identified in the foregoing analysis:

...basically, speaking of CC means saying: “OK, we have a problem that is scientifically consensual more or less, and, and.. (...) Now what we need is the politicians to act and so on and so...” I think this is the point where I go a bit outside it. I don’t want to speak about CC particularly, I want to speak about this whole economic system and the way it functions.. that generates problems such as anthropogenic emissions that generate CC.. that would bring problems to different parts of the world. So, CC is just one of the many eeh.. problems that we face nowadays. But it has been so much hyped, eeh.. in global politics that it became empty. It basically became empty by becoming hyped.. And it’s basically used, the whole language of CC is basically used to, eeh.. further advance the capitalist market and the commodification.

The argument is at odds with the idea that CC could be best dealt with by being normalized and drawn into the existing framework of social economic institutions (Giddens, 2009). The interviewee seems to have lost interest in the issue in accordance with seeing it as having lost its potential to fundamentally transform these institutions. Such arguments manifesting discontent and disengagement with the existing solution frames have been coded, in part, for the theme *pessimism*. Clearly, the discontent with the existing *solutions* is rooted in the way the –causes of– problem is represented.

The compelling aspect of these arguments are their explicitly dialogical form, manifest in the rhetorical questions in the first paragraph, and emphasized by the quotation marks in the second paragraph. Here, the interviewee imitates, quotes and re-constructs an

Alter, against which he then builds his argument. The dialogical Alter is the dominant representation of the problem, which focuses only on the emissions or the fossil fuels as the causes, and which is claimed to conceal the real causes of CC, transforming the problem into a “hype”. The striking difference from the first excerpt that was structured around the question “what we can say” about climate change regards these dialogical successions regarding “what has also to be said”.

Excerpt 3: Description of technological alternatives (Example for SR 1)

Well, one, one eeh.. no regret solution is energy efficiency, as I said. And that's one right.. at present, right now, the best solution. There are a number of other solutions that are being studied, eeh.. I think that biofuels and micro-generation in general... and other renewables are part of the solution, wind, geothermal, eeh, biofuels to a certain extent. Small hydro plants, eehm.. they all can play a role. We have a constellation of solutions, the one for which I had higher hopes, because it's the one that has been evolved more rapidly, is solar power. (...) I'd say, from the constellation that we have on the table, it is, I guess, the best hope. We'll know better within 5 or 10 years. (Int. 17/33)

The argument in this excerpt –coded for the sub-category ‘technological solutions’– departs from the “no regret solution”, and only after this irrefutable point (represented as such) about energy efficiency, less factual accounts are raised. These are presented as options that are “being studied”, which can all play their roles in the long term. A constellation of renewable energy solutions are “on the table”, rather than put down there in various forms, and represented in particular ways. That the interviewee has “higher hopes” towards solar power is not due to a personal preference, but ascribed to an observation of the current state of the development of the options. The disengaged and formal tone of the argument reflects the characteristics of the ‘expert rhetoric’, providing only the best solutions to the table, emphasizing their strengths and weaknesses. The argument is directed to build a shared understanding of the best and most feasible solutions, making them available to a general audience.

Excerpt 4: Prescription of more profound solutions (Example for SR 2)

Presented after the excerpt 3, the excerpt below demonstrates how the debate on energy alternatives take a different form, by being more engaged with political questions, and taking a prescriptive position:

...What we think about energy is.. depending on two pillars. The first one is that we have to change the way of production of the energy itself. I mean we have to stop eh producing energy in central.. in central methods. (...) Secondly, eh, the most important thing, one of the most important things in these issues is that what we need energy for.. as perhaps a political discussion.. and it also includes the control on the energy consumption, and changing the eh, public policies, governmental policies, macro, macro policies.. on this area. Eh it's also including urbanization and you know all those issues. So it is like a line cutting all the spheres of human life.. (Int. 9/61)

The excerpt includes two arguments that are presented as pillars to a radical transformation the way we produce and consume energy. Both arguments bring ‘what has to be done’ into the discussion, rather than the most practical or no regret solutions. The second and “most important” argument regards a comprehensive question about energy consumption: “what we need energy for?” By connecting “all those issues” to energy solutions, an amplified representation of an ‘energy revolution’ emerges “like a line cutting all the spheres of human life”. Again, the arguments about transforming the way energy is produced and consumed, rest upon the foundational transformation of the way energy is represented.

Against the fairly ‘technical’ engagement with the problem carried out through a “constellation of solutions” in the former excerpt, what we have in this excerpt is an expanded and explicitly ‘political’ reconstruction of the issues associated to energy. When connected to the distinctions offered in the literature (Adger et al., 2001; Hayden, et al., 2011), the former argument, framed by an expert rhetoric, depicts a gradual social change or transition that follows from technical and technological advances, while the latter introduces broad questions concerning production and consumption patterns, targeting major changes in macro policies, which stem from political decisions. Therefore the argument was coded for the ‘socio-political solutions’.

Excerpt 5: “I shouldn’t put them in a big group either”

One final example may serve to demonstrate how the two representations interfere with each other, in this case when discussing the industrial/business *actors* of CC:

CC is a reality, it’s happening, you have to do things to fight against it, but there is this other part of the story.. the big businesses, who are.. not so sensitive to the issue, obviously for the profit is more important.. and they use natural resources to, at no

*expense whatsoever. (...) But on the other hand, some businesses, I shouldn't put them in a big.. sey.. either, in a big.. eh.. group either, obviously because of this sustainable development debates, and eh greening the business debates, some businesses take steps. **It's not enough, but it's a start.** So, it's important not to see them in black and white issues. Eeh.. this climate change reality is, eh.. is perceived by more and more people and by more and more organizations; and just to get good reports or good.. hm.. valid something in the indices, in the international indexes, they do (laughs) try to take steps. **It's a step, it's not enough, but it's a step.** (Int. 8/60)*

The excerpt starts with emphasizing the “need to fight” against CC, and by placing the big businesses on the “other part of the story”, for they are not so sensitive to CC. Following the conjunctive “but, on the other hand”, the view towards the Alter is reformulated, and in this second part of the argument, the “other part” is no more represented as one homogenous group. Rather, they are recognized as differentiated, some of which take some positive –though not sufficient– steps. This second part of the argument closes with the recognition of the –efforts of the– other, and by admitting the importance of not seeing them “in black and white”. Further on, these organizations are depicted to “try to” take these positive steps “just to get good reports” or for the sake of a good image in international indices. However, finally, these insufficient steps are once more recognized: “it's not enough, but it's a step”.

In summary, the brief illustration of the organization of the themes in the descriptive/restrained and prescriptive/engaged arguments make more intelligible the results of the HOMALS, suggesting two interfering representations of climate change:

- (1) One directed at establishing the problem, by emphasizing its impacts (excerpt 1), and describing its existing solution proposals (excerpt 3);
- (2) Another directed at evaluating these solution proposals and the very representation of the problem, by resorting to a more comprehensive and political view of the causes (excerpt 2), and prescribing more profound solutions (excerpt 4).

As demonstrated by exemplary excerpts, the reflexive part of the interviews were characterized by accommodation and reconciliation attempts, as well as contrasts. The distinctions drawn in the literature –e.g. the *physical phenomenon* of climate change and the *political idea* of Climate Change (Hulme, 2009), the discourses of *consciousness change* and *political change* (Dryzek, 2005)– are connected, contrasted and reconciled many times by recognizing that all efforts have a part to play against this complex problem.

Hence, these representations should be conceived as two interpretative or rhetorical positions for a debate on CC carried out by non-governmental experts, rather than discrete discourses, views or attitudes.

5.3.4. *Conclusions*

This study has focused on the second –reflexive– part of the interviews, and identified 8 main themes and 22 sub-categories that summarize the reflexive arguments. Drawing on relationships between, and the correspondences among the themes and categories. and as emphasized by exemplary excerpts, two representations of CC were identified. The first representation is organized around the environmental *impacts and risks* (CC in connection to nature), while the second representation is organized around the sociopolitical *solutions* concerning climate change (CC in connection to society and to politics). These two representations were found to interfere with each other in the reflexive arguments, and they may be conceived as two rhetorical positions in a typical dialogue about CC, distinct in their presuppositions and implications.

The first involves a restrained description of the phenomenon. Its vocabulary is limited to that of environmental issues (e.g. greenhouse effect, climate sensitivity, resilience). The arguments are directed to a general audience to establish a major environmental problem, and raise awareness about the threats to nature (Dryzek, 2005). The audience being unrestricted, the restriction of the discourse may be considered in relation to –the attempts to persuade– this generalized dialogical Alter. In this venture, the impacts and risks become important resources for description and dissemination of the –scientifically delimited– problem and solutions. The main conflict to be dealt with is between the (particular) practices causing CC and nature. In this representation, the problem becomes fairly ‘technical’, enabling or constructing a hegemonic discourse of climate change (Hayden et al., 2011) that unites different stakes and interests (and to a large extent, the interviewees). Reconciliation and combination of different perspectives are sought, and the field of action is depicted as a field of compromises.

The second is an explicitly *prescriptive*, and more amplified representation of the problem. It has the first representation as its dialogical Alter, and is directed to challenge and transform not only the status quo, and the corporate actors (Adger et al., 2001) that it brings forward into the debate in association with the causes, but also the hegemonic discourses of climate change, which are seen as part of the problem (Hayden et al., 2011).

In this venture, an expansion of vocabulary is performed to adequately and thoroughly address the problem(s), enlarging the field of representation, and reconstructing CC in connection to –sometimes as a symptom of– wider socio-political problems. The main conflict to be dealt with is between the implications of CC and the social order (Dryzek, 2005), enabling ideological evaluations and prescriptions. The arguments are directed to transform the ways CC is widely represented, and social change is required in a wider scale than ‘simply’ mitigating the GHGs.

In this sense, the distinction between the two representations seems consonant with the two concerns identified by Giddens (2009) in relation to CC: While the first way of representing climate change involves attempts to reconcile between the impacts and risks posed by CC and the geopolitical status quo, the second focuses on and challenges the status quo with endorsements of more stringent or extreme measures.

Table 20. The distinguishing characteristics of the two representations

Representation	Environmental problem	Societal problem
Organizing themes	Impacts, Risks	Solutions (Socio-political)
Dialogical alter	General public	First representation
Directed mainly to	Raising awareness (Descriptions)	Societal change (Prescriptions)
Means of persuasion	Expert rhetoric	Activist rhetoric
Conflict is between	The nature and harmful practices	The implications of CC and social order

Drawing on the differences between their organizing themes, dialogical organization, aims and implications, means of persuasion, and the main tension or conflict they recognize, two divergent ways of representing climate change can be summarized as in Table 20. As demonstrated by exemplary excerpts, the two representations employ different means of persuasion in their discursive struggle for hegemony. The first representation furnishes a disengaged discourse aimed at building a shared understanding, a common space for action. For this ‘expert discourse’ to be effective, the recognition of the perspective of other parties –especially the lay perspective– is crucial (Baber & Bartlett, 2005), since its rhetorical power comes from the balanced consideration and impartial articulation of options.

The second representation, on the other hand, involves what can be called ‘activist

rhetoric'. Stevens (2006) has identified four characteristics of the 'activist rhetoric': Bridging, amplification, extension and transformation of representations, among which transformation emerges as the major goal. To transform its rhetorical counterpart, the second representation involved more engaged and vigilant arguments: While the problem was amplified and connected to many other problems, the solutions were expanded and radicalized through a less formal and alarmed discourse.

Social representations legitimize certain ways of seeing the world, beliefs and practices while de-legitimizing others (Gervais & Jovchelovitch, 1998). They are functional in both legitimizing and naturalizing the relations of power, as much as in challenging the perceived injustices, and transforming the existing relations (Howarth, 2001). In identifying two representations that are in many ways contrasted to each other, the main conclusion of this study is not merely about dividing the phenomenon, or the NGO discourse, into two parts. The main conclusion concerns a continuous interference, conflict and reconciliation of the two representations outlined above. To engage a variety of actors in diverse forms of action, it is necessary to devise and legitimize hegemonic representations of CC. While scientific knowledge and impartial consideration of options obviously play a crucial role in this venture, the rationalities employed thereby tend to flatten the differences between the extremely diverse groups, societies, and perspectives, putting together different actors and conflicting concerns for a common goal (as demonstrated in the previous chapter, this was the path undertaken also by the mainstream press in Turkey). Yet, at the same time, these hegemonic representations ignoring diverse stakes and legitimizing inequalities can be questioned, resisted and challenged –as in the second representation–, a task which some of the interviewees have explicitly assumed for the NGO actors.

Hence, the role of mediating systems in representing CC seems as bound by two main requirements: The first is the requirement to establish the problem in a way to motivate diverse forms of action, and 'mainstream' the solutions in a way to associate the immanent representations to diverse –consumption– activities. Here, the impacts and risks, and mobilization of science and nature gains more importance, as well as a communication strategy built on recognition, reconciliation, and optimism about human agency. The second is the requirement to urgently and effectively address the problem, rather than encouraging modest and incremental contributions built on individual concerns and consumption behaviors. As much as this means radically transforming certain

institutions, laws and practices, it entails active involvement and association of CC to other, explicitly political conflicts and problems. In their engagement with climate policy, action, and contribution to social transformation, the NGO actors seem to be inspired and constrained by both requirements.

For the TSR, movements across such contradictions, or “repositioning towards the knowledge claims of the manifold dialogical others” (Renedo, 2010) is not an exception, but an inherent characteristic of thinking. For rhetorical psychology (Billig, 1987, 1991), the dual nature of views offers strategic rhetorical formulations and back-and-forth movements in argumentation, even when the argument takes place among people holding strong views. Hence, the temptation to classify the interviews into clearly demarcated groups –such as those composed of discourses of environmentalism versus ecologism (Dobson, 1990)– may result in sidestepping the social psychologically relevant question: How do these two poles of the *dialogue* interfere with each other? This is the question addressed in the following study, focusing on the argumentative part of the interviews.

5.4. STUDY 6: Negotiating strong views: Rhetorical analysis of the argumentative part of the interviews

5.4.1. Introduction

The third part of the interviews are distinguished by the explicitly argumentative aspect incorporated in the interview process: After the open ended questions and answers were completed, the interviewees were asked to watch and comment on three video excerpts, each introducing an argument on controversial issues about CC. The present study focuses on two of these controversies to examine how a presented argument, or the discursive conflict created thereby, is dealt with by the interviewees. In this sense, after the non-reflexive word associations and reflexive reconstructions, the present study focuses on the argumentative (or rhetorical) aspect involved in representing climate change.

5.4.1.1. Conflict, reconciliation, and cognitive polyphasia

While hypothesizing cognitive polyphasia (see section 3.3.2), Moscovici (1961/2008) made an appeal for social psychology to “take an interest in movement of forms of reflection and their order” (p. 191). Following this appeal, the study reported in this section focuses on the specific discursive patterns that the interviewees employed in arguing about certain controversial aspects of CC.

The analysis is based on three assumptions. First, the movement of forms of reflection is better understood by examining discourse and argumentation (Jovchelovitch, 2007). One’s opinion on a controversial topic does not refer only to an internal feeling or an attitude, but involves both an essentially argumentative aspect and the contradicting themes that subsist in common sense (Billig, 1987, 1991). The analysis of argumentation is suitable for assessing the movements across the forms of reflection and the interference of representations in particular contexts; as it focuses on the dialogical and rhetorical aspects of speech acts in positioning against the counter-argument and addressing manifold others (Perelman, 1982; van Eemeren & Houtlosser, 1999).

Second, the dialogical triad of Ego-Alter-Object (Markova, 2003, 2008a; Bauer & Gaskell, 2008) provides an analytical framework to focus on these movements. As discussed in section 3.3, the dialogical approach to social representations holds that the *Subject* engages with an *Object* by way of an *Alter*, and that the never ceasing dialogue between subject positions that leads to the heterogeneity of action and representation

(Jovchelovitch, 2007). The present study attempts to draw on the dialogical encounters by providing a particular Alter to engender three episodes of conflict and elicit arguments.

Third, argumentative indicators can be of use in examining the arrangements of discourse and the order –and movement– of reflection. As was discussed before (see section 3.3.4), in argumentation analysis the conjunctive ‘but’ is used as an indicator of confrontations and reconciliations (Snoeck Henkemans, 1995). What the conjunctives and concessives –such as ‘but’, ‘however’, ‘yet’, ‘on the other hand’– indicate are the particular arrangements of discourse and arguments that bring together, compare, contrast, and reconcile different representations. The ‘Yes, but...’ discursive format is a typical example, through which a disagreement is prefaced by a signal of agreement (Billig, 1991, p. 178), and reconciliations are carried out (Castro, 2006). Hence, paying attention to ‘small words’ (Billig, 1999; Castro, 2006), and the organization of the argument around these, can be useful in exploring the modalities of communication and argumentation in dealing with the conflicts and controversies characterizing CC.

In short, to scrutinize cognitive polyphasia, it is necessary to identify and focus on conflict and the interfering currents or ‘phases’ of reflection, bound with different contexts, identities, normative requirements, and knowledge systems (Markova, 2003), and put in connection with each other in particular ways. Providing (video-elicited) episodes of conflict and controversy to the participants, the study has to pay attention primarily to the reception of these episodes.

5.4.1.2. Elicitation and reception of the argumentative episodes

The video elicitation technique employed in the present study draws on the assumption that the primary use of the images in social research is to facilitate “the discovery of cultural definitions and categorizations” (Harper, 1988, p. 86) embedded in an ongoing debate –on the part of the interviewee– that might be unintelligible to the researcher. In other words, the video excerpts are assumed with the power of delivering elements of the interviewee’s world, which may call forth un-anticipated associations and definitions. Insertion of visual material to elicit debate and information actively involves the interviewees in the process of interpretation of the presented content and grants them ‘the authority of definition’ (Harper, 1988).

Two examples of the use of visual elicitation in social representation research on common sense associations of electricity network and use (Devine-Wright & Devine-

Wright, 2009), and global warming (Smith & Joffe, 2013) have invited the participants to discuss the visual representations they were asked to draw. The visual material produced by the participants were used for engendering participation in a naturalistic and pleasant way (Devine-Wright & Devine-Wright, 2009), stimulating discussions, and to let them phrase and reflect on their engagement with the issue (Smith & Joffe, 2013).

The present study makes use of video footage circulating on the World Wide Web; the material is provided to the participants, instead of produced within the study. Furthermore, elicitation aimed mainly by way of the argument(s) presented in the video, rather than some focal or principal images. The images presented in the video excerpts depict only those people who provide the arguments (two scientists, an activist, and a news reporter, with respect to the three video excerpts). The main point is to make available a particular *Alter* that represents the debate in a particular way in a graphic setting; or in other words, to deploy the elements of a debate to which the interviewees had probably already been exposed and which the interviewer may be uninformed. Still, for this to take effect, it is important to develop a preliminary understanding of the field from which the controversial episodes are selected (Flick, 2000).

What may be implicit in the literature on elicitation is perhaps most explicit in the literature on audience reception. This thread of research has effectively updated the classic coding/decoding model of communication by emphasizing the social production of meaning, and the scope of indetermination at each point of the communicative process (Jensen, 1991; Schröder, 2000). Furthermore, and in a way that resonates with the contributions the TSR offered for social psychology, reception studies aimed to combine the semiotic and societal (ideological) explanations in the analyses of sense-making process, or ‘decoding’⁴⁹ (Schröder, 2000).

The crucial implication of the concept of reception for a video elicitation study is that the interviewees may take on the presented content in utterly different ways. For instance, two interviewees may hold a somewhat similar view as to the anthropogenic causes of CC, but have different assumptions as to the nature of the scientific knowledge. In other words, the reception of the representation as being hegemonic (the conflict as

⁴⁹ Furthermore, the three *decoding positions* (namely, hegemonic, negotiated and oppositional) identified “on this semiotic-ideological level” (Schröder, 2000, p. 238), also resemble the TSR’s conceptualization of the types of representations, namely the hegemonic, emancipated and polemic representations introduced in section 3.2.4.

being already resolved) or polemic (the conflict being at issue) is likely to have significant implications on the ways the presented conflict is interpreted.

What this suggests is the need to pay close attention to the context in which the arguments are constructed, and whether the presented conflict is actually elicited in the interviews. In other words, the elicitation of the presented (or assumed) conflicts hinge upon the reception of the assumed conflicts by the interviewees. While the connection between the text and the context is perhaps the most important concern in any analysis of discourse and argumentation (Van Dijk, 1977; Potter, 1996), it would be a major obstacle for the analysis if the assumed argumentative context is not taken up in somewhat similar ways by the majority of the interviewees. For this reason, the analysis that follows pays close attention to (1) the Object of representation and (2) the context in which the arguments are constructed, as well as (3) the reception type of representation –hegemonic, polemical or emancipated– involved in the presented episodes of controversy.

5.4.2. The material and procedure

Once the word association task and semi-structured questions and answers were completed, the interviewees were offered to view and discuss three short video excerpts, which were selected to introduce controversial arguments, and to institute ‘argumentative episodes’ about CC. The three video excerpts were selected from a large pool of material available on a popular video-sharing website (Youtube), and the following criteria were applied: First, three controversial episodes concerning CC were selected, these were:

- (1) a scientific controversy about the anthropogenic causes of CC;
- (2) a policy controversy about the effectiveness of the private-individual vs. societal-structural solutions concerned with CC;
- (3) a diplomatic controversy about the responsibilities of North-South countries in addressing CC;

In selection, those videos that communicate the content in a relatively simple and concise manner, and those that do not portray too many and complicated images were preferred. Indeed, all three video excerpts included almost only the ‘talking heads’, with very seldom use of other images. Furthermore, attention was paid to *how* the controversy is represented in the presented argument, i.e. if a direct *confrontation* was exercised, or some form of *reconciliation* was sought (Castro, 2006).

Video excerpt 1: The first video excerpt involved the voice of three scientists –and the images of two of them– who disagree with the scientific consensus on the human causes of CC, and question the authority and impartiality of the IPCC. The excerpt was from a documentary entitled ‘The global warming swindle’. The two ‘skeptic’ scientists directly confront the IPCC as being a political organization, its work as “a disturbing corruption of the peer-review process”, and its scientific conclusions as “the polemic”. The video excerpt was concluded with the phrase “*I’ve often heard it’s said that these’s a consensus of thousands of scientists on the global warming issue, and humans are causing it... well, I am one scientist and there are many that simply think that is not true.*” Indeed, the whole excerpt was organized in the ‘yes/no’ contrasting format (Castro, 2006), aiming at *replacing* the ‘fiction’ with the ‘truth’. Crucially, what was depicted as ‘fiction’ by the video excerpt is the current scientific knowledge about climate change.

Video excerpt 2: The second video excerpt featured a climate activist. The presented part of the activist’s argument started with challenging the carbon offsets as a “fictitious commodity”, which is used for “selling a peace of mind to people”. It is “very dangerous” to do so, it is argued, because of the over-emphasis on the “light bulbs and lifestyles discourse, that is, placing all of the responsibility on individual consumers”. Thus far, the activist’s arguments appear as strongly against the carbon offsets, however, at a second step, the utility of individual and societal changes were reconciled: “*Personal lifestyles have a role to play in how we respond to CC, but I think our choices as individuals are still very limited in the context of CC, without there being a more profound systemic change.*” This discursive format (‘yes, but...’) reflects the characteristics of propagation genre identified by the TSR (Castro, 2006). Hence, two rhetorical processes were involved in the video excerpt; one directed to conflict in the specific case of carbon offsets, and another directed to reconciliation in the broader debate on behavioral (consciousness) change versus social (political) change (Dryzek, 2005).

Finally, the third video excerpt featured a journalist reporting from the Copenhagen Climate Conference. The goal in presenting a news report from a major climate summit was to focus on the international diplomatic conflict. However, the preliminary analysis suggested that there were a series of problems as to the presentation and reception of the third video excerpt, causing the arguments to disperse into a huge variety of issues beyond the assumptions of the study. Thus, a decision was taken to limit the analysis only with the first two episodes of controversy.

Drawing on the findings of the foregoing studies, the interviewees were assumed to hold strong views concerning the controversial episodes. The first episode on the scientific controversy was expected to unite the interviewees, the second episode was expected to divide them. Along with the context, Object, Alter, goal, and the conflict elicited by the three video excerpts (Table 21), two hypothesis can be drawn for the two argumentative episodes:

H1. In the first episode, the interviewees, acting as one group, are expected to *reject* the argument about the non-anthropogenic causes. A clear distinction and conflict between ‘science’ and ‘non-science’ can be expected, with little or no indication of cognitive polyphasia.

H2. In the second episode, the interviewees are expected to *reconcile* the efficacy of individual level policy interventions and systemic/structural changes, with clearly discernible indications of cognitive polyphasia in the organization of the arguments. Moreover, the conflict created is likely to divide the interviewees into two groups, along with the two ways of representing climate change identified in the previous study.

Table 21. Outline of the three argumentative episodes

	1 st episode	2 nd episode	3 rd Episode
Context	Science	Policy	Diplomacy
Presented Alter	Scientist	Activist	News reporter
Object	The IPCC	Carbon offsetting	-
Conflict	Causes of climate change: Natural vs. anthropogenic	Efficacy of individual vs. systemic changes	-
Goal of the Alter	Reject	Reconcile	Diffuse

A notebook computer was used in the presentation of the video excerpts. After the presentation of each video, when necessary, a series of questions were asked, starting always with “What do you think the person in the video is saying?” The responses to the first two video excerpts suggest that the argumentative episodes were quite familiar to the interviewees, and were successfully instigated.

5.4.3. Framework guiding the analysis

The analysis of argumentation was carried out by focusing primarily on the reception of the presented arguments. That means, the first step was to understand what was being

represented (e.g. the conduct of scientists, the authority of the IPCC, the institution of science, or more than one of these in connection). Secondly, the focus was on how the arguments were organized (around the conjunctives), the positioning of, the relations between, and the movement of the reflection through particular exchanges among, the Subject and the Alter. In other words, the exercise of the discursive formats ‘yes/no’, ‘yes, but...’, and ‘and,...’ were assessed to distinguish how the created conflict was being dealt with (Castro, 2006). Thirdly, attention was paid to whether and how different ways of representing climate change –identified by the preceding study– interfere with each other in the two elicited ‘episodes’, and engender specific arguments. To rephrase, the analysis was guided by the following questions:

- (1) What is being argued about (the object of representation)?
- (2) How is the argument organized? What are argumentative positions of the interviewee against the elicited Alter? Is it possible to discern a clearly accountable order in argumentation around the conjunctives?
- (3) Does the argument indicate polyphasia (legitimization of the Alter’s view, and reconciliation between different priorities), or monophasia (de-legitimization of the Alter’s view, and rejection of the counter arguments and conflicting priorities)?

The following sections analyze the argumentation taking place in response to the views of others, and identify the salient ways of dealing with the created conflict in each episode, by using representative extracts from the interviews. The analysis then proceeds with a HOMALS, with the goal to connect the main findings for the argumentative part of the interviews with the findings for the reflexive part.

Finally, it is important to clarify the use of the analytical concepts, and how they are connected to the theoretical framework employed by the study (See section 3.3.4). Both the noun and the verb forms of *legitimization*, *reconciliation* and *negotiation* are employed to describe the encounters involving a *polyphasic* movement of reflection. Similarly, *de-legitimization*, *rejection* and *displacement* are used to describe those encounters that involve a *monophasic* state of mind. Besides these, there are two types of arguments that bring together and negotiate the conflicting representations, namely the *conventionalizing* and *thematizing* arguments (Mouro & Castro, 2012). While in the former typically the view of the Alter is re-presented as a convention and left un-discussed, in the latter an alternative view is raised, discussed and expatiated on to be endorsed and substantiated (Markova, 2008b).

5.4.4. Analysis

5.4.4.1. Argumentative episode one: *The scientific controversy*

The analysis identifies three argumentative strategies or three types of arguments, justifying the categorization by illustrative excerpts. These categories are then projected on the HOMALS conducted in the previous study, as a new variable called the ‘view of science’. This superimposition affords a discussion on how different representations of science are connected to the previously identified representations of CC.

As expected, all interviewees have adopted a –be it partially or thoroughly– denunciatory position against the arguments of the scientists featured by the first video excerpt. However, it is not possible to maintain the hypothesis that the arguments demonstrate no evidence for cognitive polyphasia. While some arguments have directly confronted, de-legitimized and rejected the presented argument(s), others have first – partially– legitimized the presented arguments and only partially then rejected them. In a third group of arguments, the presented conflict was avoided, and another conflict that implied the irrelevance of the presented argument was instigated. These three main strategies in addressing the controversial claims of the scientists featured by the first video excerpt are described below.

1st Strategy: Displacing and de-legitimizing the Alter

The first group of arguments typically referred to the scientific consensus, drawing on the evidence collected by the IPCC and endorsing the hegemonic representation of the anthropogenic causes of CC. The presented argument was clearly rejected, and in doing this a reified representation of science was employed, and dissociated from non-science.

Science was represented as the source of objective facts, or as a reified universe, and the intervention of the social actors in this universe was depicted as contamination. Consequently, the scientific knowledge on CC was represented as suffering from the contamination of powerful interests and ideologies (of others).

Excerpt 1: *I don't think that science has conflicts. People have conflicts. Because there are industries, there is this nuclear industry, there is this coal industry, there is this.. ehm other industries, and there are scientists, eh, engineers, making.. working for these industries, and also involved in these processes.. IPCC and other processes. So, in this world money talks. I mean, the corruption can influence these scientists. (Int. 4/86)*

In this argument, the conflicts within the scientific universe are depicted as only being imposed from outside to an otherwise pure domain. While the institution of science appears as clear (about the fact of CC), and unproblematic (about the ways the fact is obtained), the problems belong to the world in which “money talks”. The argument normatively distinguishes the world of science from the world of common sense, in a way that is similar to the Daily Mail readers’ online comments on ‘climategate’ –but from a diametrically opposite position– where the denigrated relations among money, science and politics are imputed only to the outgroup (Jaspal, Nerlich & Koteyko, 2012).

Having been part of this dispute for a long time, and also living in countries where the scientific consensus has been consolidated to a large extent, some participants have evaluated the elicited debate itself as “loss of time”, and refused to actively engage with, or take the claims raised by the ‘skeptics’ or ‘deniers’ seriously.

Excerpt 2: *I think this is a minority, I mean I hear more and more that this kind of lobbying is increasing in the US, **but** I don’t really.. I think we should take them seriously, **but** not that seriously. I mean, obviously regarding any environmental issue you can, you can find a couple of scientists or, or academics who has dr. and prof. in front of their names, who would say the opposite, **but** it doesn’t prove that they are right. (Int. 8/74, emphasis added)*

This excerpt emphasizes that the counter-claims regarding the causes of climate change are raised only by a minority. That this minority becomes influential in some other cultural-political territories –the US– is admitted, but this provides no reason take them so seriously. The reason that the claims of these “couple of scientists” do “not prove that they are right” could be conceived at least in two ways: First, this loud minority is far from the discursive environment which the interviewee is immersed in. Second and more importantly, one should pay attention to the practices associated with the Alter: “Lobbying” instead of researching or reporting, these people with academic titles are discredited by being depicted as practicing politics, rather than science.

Of the three conjunctives highlighted, the first one is used to construct an argument that clearly rejects what is heard, and to de-legitimize the (lobbying) Alter. The second ‘but’ phrase is used to correct the first, but not in a way to discuss their points of view. The part following the conjunctive ‘but’ appears as the conclusion of the argument: “not that seriously”. The last sentence of the argument reiterates the ‘yes/no’ discursive format, which focuses on the dichotomy, and rejects the view of the Alter (Castro, 2006): ‘Yes, you can find such people that oppose the scientific consensus, *but no*, they are not right.’

Hence, an explicit dissociation between science and scientists is drawn, where science is represented as exempt from the problems that may involve scientists. Indeed, several studies originating in the US, suggest that ‘climate skeptics’ are an organized movement connected to conservative think tanks (Jacques, Dunlap, & Freeman, 2008), and supported by the industries (McCright, 2007), to maintain the industrial capitalist order of simple modernization (McCright & Dunlap, 2010).

In both excerpts, the counter-claim depicting CC as a naturally occurring phenomenon is not recognized as legitimate, and explanations of how it is built to combat the scientific consensus is provided or at least implied. Because the anthropogenic climate change as an objective fact can not co-exist with the counter-view in a reified universe, the view of the Alter is directly rejected and displaced.

2nd strategy: “Yes, there are uncertainties, but...”

The second group of arguments adopt a similar –reified– representation of science, but admit uncertainties. They partly recognize the counter-view, but only to restrict it –to the universe of science. These arguments are typically structured in the ‘yes-but’ discursive format (Castro, 2006). In the first part of the argument, the Alter is represented with a legitimate view, however, following the conjunctive ‘but’, the limits of this legitimacy are drawn, and the view of the Alter is restricted. In this sense, the first part of the argument can be conceived as an ‘agreement preface’ (Billig, 1991), which functions to partially mitigate the disagreement, and increase the persuasive power of the second part of the argument.

Excerpt 3: *...[in order] to be sure, that the change in greenhouse effect, the gases caused this effect, you must cause this effect and measure. You could not make trials with land, with earth. So you have the probability, not.. you have, you are not sure 100%. You have the probability.. (...) So, I could not as a scientist say, as a scientist, this is caused by that. (hmhm) As a scientist I could not, **but as a politic, I must change the point of view**. Like Prof. Briu, yeah I think.. plausible, if it is plausible that this action of the man caused an effect that are irreversible, this action could not -not must not- could not take place. The same for that, this is plausible, not sure, **but** it’s plausible, that the gases.. **So**, the politics must take action. (Int. 15/114)*

Excerpt 4: *So, there are a number of unknown things, eh.. that, some of them are important for policymaking. **But** I am absolutely convinced that the cost of doing nothing, of ignoring*

*the problem, eeh, is much higher, eh, than the cost of trying to both adapt and mitigate CC. So, we, we have to learn more, **but at the same time**, we have to go on with mitigation and adaptation.* (Int. 17/117)

Notably, in both of the excerpts above, the ‘yes, but...’ discursive format is repeated twice. These sentences with highlighted conjunctives may be conceived as attempts to reconcile conflicting views (Castro, 2006). The third excerpt starts with admitting that the case of CC does not suit with the approach of experimental verification. Hence, the interviewee, positioning himself as a scientist, cannot strictly confirm that the causes are anthropogenic. In this first part of the argument, not only some credit is given to the counter argument, by being “not sure 100%”, but also science is represented as normally eligible to attain such certainty.

The twist comes with re-positioning as a political person; what could not be said as a scientist, can now be said: If the probability regards irreversible effects, precautionary action *cannot* be avoided (rather than “must be taken”, signifying an ethical imperative). According to Billig (1991), and Snoeck Henkemans (1995) this is the core of the whole argument, being placed after an agreement preface, and emphasized with stronger rhetoric. In other words, the first part of the argument –before the conjunctive– is uttered only as a function of the second part, as a ‘preface’ to it.

What is achieved by this ‘identity shift’ (Castro et al., 2010), and what is the use of ordering two “points of view” (of the scientist and the politician) in this way? It is precisely to *restrict* the view of the Alter to the universe of science, admitting that it has some validity and legitimacy in that universe, and by way of the contrast created between science and politics (or the scientist and the politician), to refuse its validity and legitimacy for striking political action. The conclusion of the argument, indicated by the conjunctive ‘so’, clarifies the main goal: political action cannot be suspended due to remaining uncertainties. At this point, one may suspect ‘yes, but,...so,...’ to be a particular arrangement of the ‘yes, but...’ discursive format.

The fourth excerpt employs a similar rhetorical organization, but with an economic reasoning, through an assessment of the “costs” of action and inaction⁵⁰. Here the

⁵⁰ This was a frequently represented argument in the interviews, which was submitted to the UK government in 2006 by its chief economist Nicholas Stern (2007). The ‘Stern Report’ estimated that without action, the overall cost of CC would equal about 5% of the global GDP each year, while directing 1% of this GDP to climate action could remove the worst effects of CC.

precautionary principle is represented more explicitly in terms of ‘measured action’ (Callon, Lascoumes & Barthe, 2011). That means to say, the scientific consensus appears less of an issue, when compared to the (cost) estimates of the possible outcomes of the policy process. This economic and political anticipation is used for overshadowing the scientific conflict created by the video excerpt: Yes, there are uncertainties; yes, “we have to learn more”, but what matters, what the interviewee is “absolutely convinced” comes after the conjunctive, in the second part of the argument: mitigation and adaptation. Again, what is not (yet) absolute in the theoretical domain –of science–, is depicted as absolute in the practical domain of climate politics.

Unlike the third excerpt where the identity position was shifted, in the fourth excerpt the reasoning is shifted (from truth to practical concerns), or provided with a new object (the relative costs of action and inaction). By moving on to the *higher costs of doing nothing*, that the data is not conclusive in every aspect is at once recognized and discredited. This is power of the ‘yes, but...’ discursive format; both affirmative and persuasive, responsive at once to the dialogical demands –reconciling two views that are represented as not necessarily in conflict–, and to one’s rhetorical goals (van Eemeren & Houtlosser, 1999).

3rd Strategy: Beyond black and white

The third group of arguments focused on the way science is represented in the video excerpt, rather than directly addressing the assumed conflict. Targeting what they identify as the basis of the counter-argument rather than its motives or implications, these arguments aimed to reject the view of the Alter by emphasizing the wrong assumptions abided by in the video excerpt. In this venture, science is represented as an inherently social form of knowledge, inseparable from politics. According to this view, expecting full certitude from science is problematic, and one should instead make the best out of the continuous encounter among theories and data. This involves some similarities to the second group of arguments described above, however there is a basic difference. In these arguments, the contradicting views are fully legitimate also in the universe of science. Hence, the view of ‘skeptical’ scientists is recognized and legitimized by a representation of science that advances through continuous conflicts, rather than a certitude that is to be attained only by scientists.

As the view of the Alter is recognized as legitimate in a consensual process, the

implication of these arguments is that the counter position also has to reconcile between different views, rather than simply rejecting the human causes of CC. This is most evident in the emphasis put on the problem of seeing the world in ‘black and white’:

Excerpt 5: *...It's often I see in these reports is they, they talk about.. as if science is black and white. So you know, those who say it's wrong, those who say it's right, and it's either wrong or right. **But actually**, in all science, the truth is probably in the middle, you know, somewhere in the middle. (Int. 21/51)*

Excerpt 6: *... we are,... ehm.. forced to, or educated to see the world, like black and white, like the good guy the bad guy, the eeh.. scientist says yes or says no. There is not, not.. nothing in between, there is no ignorance, there is no uncertainty, there is no indecision, we have to take one side or the other, we cannot take anything in the middle. And especially the scientists, they have to be.. they always know what is right. And so, this is very difficult to deal with. Of course if we are educated in this way, it is very convenient for, for oppressive governments, or for manipulating people. **But** it is very inconvenient for democracy and true empowerment of the people, and for critical thought and so on.. and for advancing knowledge, true knowledge. (Int. 14/56)*

In these arguments, a ‘gray’ zone of reconciliation and agreement is suggested against a black and white view of reality. The rhetoric of this group of arguments is built on *not* taking a position in the conflict presented by the video excerpt. In a way, the interviewee presents oneself at equal distance to both sides of the conflict. This becomes possible by a re-formulation of the conflict: on the one side there are those who conceive science in black and white terms, or as a matter of rights and wrongs –those who only try to dismiss the counter view, on the other side there are those who advance “true knowledge” through “critical thinking” about the opposing views.

In excerpts 5 and 6, this reformulation of the conflict is emphasized by the conjunctive ‘but’. Indicating the creation of the new conflict, the conjunctives bring together the two representations in a ‘yes/no’ format. This is more explicit in the former excerpt: First, the Alter is re-presented as depicting science in terms of either-or; after the ‘but’, the interviewee responds by submitting a new representation of science, which is entitled to “meet in the middle”. Here, science is explicitly depicted as a consensual process. The argument in the second excerpt employs the conjunctive to introduce a criticism of the ways the institution of science is used “for manipulating people”. If people are manipulated by “oppressive governments”, and through a certain –misleading–

representation of science, how can they know if CC is a real problem or not?

It is crucial to note that in both of the excerpts, the arguments initiated by assigning truth value to neither of the truth claims (be it black or white), turn to favor a process of advancing true knowledge in the closing. For the interviewees who recognize the plurality of views in science, true knowledge is still achievable through deliberative processes among these viewpoints. These deliberative processes with “critical thought” resembles an expanded policy framework through which concerned people (including both experts and non-experts) can join in negotiation processes for “advancing knowledge”. Or as Lahsen (2007) put it, “science ... *is* the politics of climate change” (p. 190, emphasis in original). In this sense, these arguments represent a continuity between the worlds of science and common sense, which sustain and validate each other. Since the social validation processes of the scientific claims so far have yielded global diplomatic treaties and diverse international efforts, the existing forms of action in the public/political sphere can be employed as resources for endorsing the validity of climate change:

Excerpt 7: ... if there was not a consensus about the CC issue, I think it was never been possible for parties to agree that we have to tackle with this issue. (Int. 19/65)

This short excerpt is an example of how the political consensus can come to sustain the scientific consensus: In validating a scientific claim, the existence of political action consensually adopted by the persuasive power of that scientific claim appears to confirm its validity. This way, by extending the scientific consensus to a political one, and thereby extending politics into science, it becomes possible to construct oneself at equal distance to the climate campaigners and to climate skeptics/contrarians.

Thus, the third group of arguments fit together well with the second group of arguments, since they (1) provide a distant, apparently ‘objective’ view that aims to reconcile the conflicting views about the causes of CC; and (2) at least partially de-legitimize the assumptions the counter view, which accompany the de-legitimization of its implications and premises. The main difference is that the second strategy locates the resolution of the conflict in the political universe, because the scientific –reified– universe is (yet) unable to *close* the debate; whereas the third strategy locates the resolution of the conflict in both scientific and political universes, because there are not essential differences between the two, and both are depicted as sites of deliberation and reconciliation.

Finally, it is of great importance to emphasize that the three identified ways of addressing the conflict elicited by the first video excerpt are not at all discrete or detached. In most of the interviews, more than one of these argumentative strategies were employed. It is even possible to order these three ways of addressing the counter view in an ideal-type argument that joins the three strategies, in the order they were presented in the above:

- 1) Focusing primarily on the featured scientists and their motives: “These people represent vested interests and an organized movement that attempt to impede climate action by destabilizing scientific knowledge, carrying out such lobbying activities”;
- 2) Focusing primarily on the implications of the presented argument and the conflict elicited thereby: “Yes, the scientific knowledge about causes of CC does not permit us to conclude definitively, *but* this does not matter at the face of the huge risks, we can and must act with what we already know”;
- 3) Focusing primarily on the way science is represented by the skeptical argument: “They are drawing on a black and white view of science in order to fuel this conflict, but this is not helpful, what matters is not certitude but social negotiation and action”.

These three arguments sustain each other, by pointing out the different aspects (respectively the motives, the implications, and the assumptions) of the counter argument. The identification of the three argumentative strategies employed to deal with the conflict elicited by the video excerpt makes it possible to assess whether and how these are connected to the two representations of CC (as an environmental problem, and as a societal problem). To do this, a new HOMALS, based on the previous study, is conducted.

The relation between the views toward science and the two representations of CC

To systematically assess whether different representations of science have a bearing on the way CC is represented, a new HOMALS was conducted by projecting the variable ‘view of science’ as supplementary to the HOMALS carried out in the preceding study. The new variable was assigned the three categories identified above, which refer to the three argumentative strategies employed to deal with the conflict, and the three representations of science brought to play in doing that. Only this supplementary variable is described below (Table 22) before the reporting of the results, as other variables are from the preceding study and their frequencies were presented in section 5.3.3.2.

The three categories of the variable ‘view of science’ were coded according to their relative prevalence in each interview. According to this necessary reduction, science

appears as a *reified* form of knowledge (and certain about CC) in the major part of the interviews (f = 11). Only in (f = 5) of the interviews science is represented as a *consensual* form of knowledge, in continuity with other forms of knowledge (always uncertain). Notably, four of these interviews were conducted in Portugal, and one was conducted in Turkey. Lastly, (f = 6) of the interviews in which science was both represented as reified (capable of true knowledge by itself) and admittedly as not have yet reached a consensus (yet uncertain) were coded for the category *reified & consensual* representation of science.

Table 22. The three sub-categories of the variable ‘view of science’

Variable	Category	f
View of science	Reified	11
	Consensual	5
	Reified & consensual	6

The variables included in the HOMALS are presented in Table 23, which displays the discrimination measures in the first two dimensions yielded by the analysis. The first two dimensions with the highest reliability scores (Cronbach’s α_{dim1} .756; Cronbach’s α_{dim2} .709) were responsible for 40,12% of the inertia (eigenvalues: 3.437 and 2.982 respectively).

Table 23. Discrimination measures of the variables in the first two dimensions

Active variables	Dimension 1	Dimension 2
Human Causes -simple	.259	.231
Human Causes -complex	.309	.025
Impacts -environmental	.220	.004
Impacts -societal	.042	.644
Risks -environmental	.264	.000
Risks -societal	.238	.215
Solutions -technological	.032	.115
Solutions -macro instruments	.020	.398
Solutions -micro instruments	.150	.047
Solutions -sociopolitical	.598	.097
Actors -scientific	.100	.384
Actors -NGOs	.311	.183
Actors -media	.047	.221
Interconnectedness	.255	.001
Pessimism	.295	.411
Country*	.020	.001
View of science* **	.239	.339

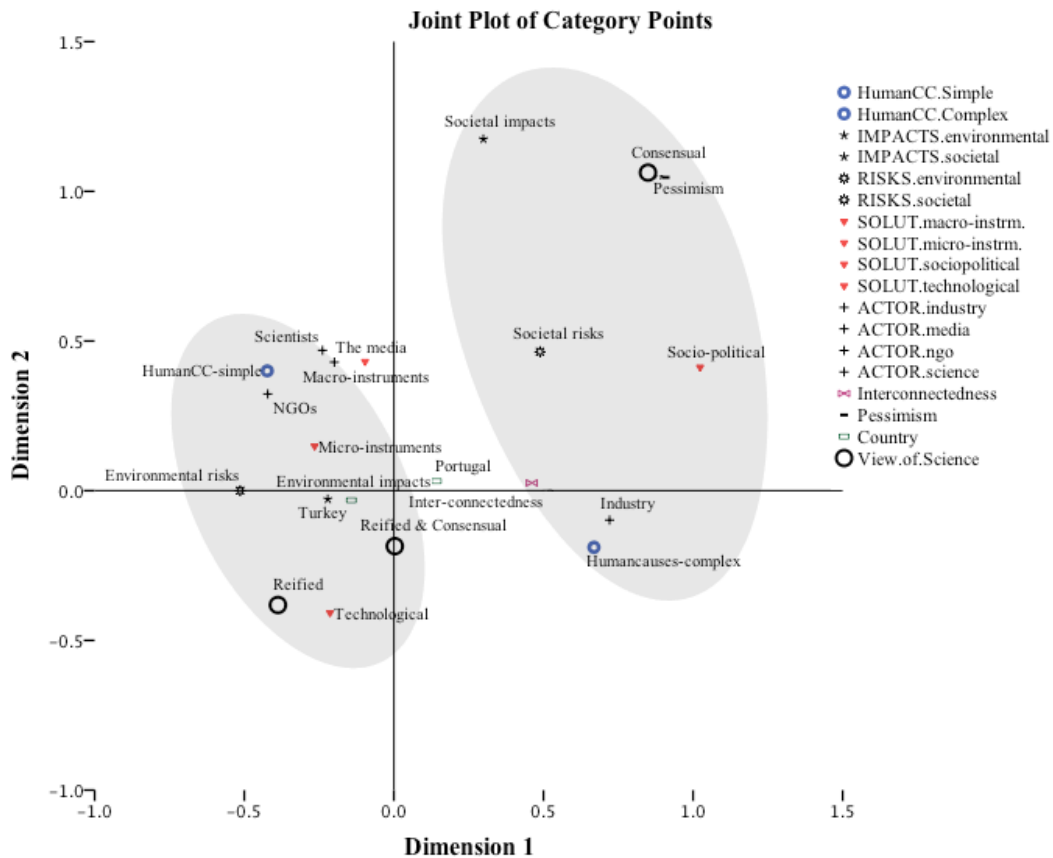
* Supplementary variables

** Variable derived from the arguments responding to the first video excerpt

As demonstrated by the table, exclusion of some of the variables (governmental actors, urgency, adaptation), which had discriminated with very low values in the initial HOMALS, did not significantly alter the discrimination measures, but has increased the percent of variance accounted for. The variables discriminating in the first two dimensions are almost identical with the HOMALS presented in section 5.3.3.2, and the majority of the variables still discriminate on the first dimension.

Resembling the HOMALS conducted without the variable ‘view of science’, the first dimension meaningfully distinguishes all variables with ‘environmental’ attributes from those with the ‘societal’ attributes. To repeat, this most explanatory dimension can be conceived as distinguishing between two representations of CC: The simple or direct causes, environmental impacts and risks, technological and micro-political solutions, and scientific, non-governmental, and media actors, with negative values are grouped on the left side of this dimension. The complex or explicitly political causes, societal impacts and risks, socio-political solutions, together with pessimism and industry/business actors have positive values and are grouped on the right of the Figure 8.

Figure 8. Spatial representation of the first two dimensions yielded by HOMALS



The newly projected supplementary variable ‘view of science’ has the sub-category *reified science* in the ellipse on the left; the sub-category *consensual science* is situated in the ellipse on the upper-right. The third sub-category *reified & consensual* (reconciliation of a reified science with acknowledged lack of consensus) is situated closer to the category ‘reified’ than the category ‘consensual’, in the ellipse on the right.

The HOMALS demonstrates how the identified representations of science is linked with the two ways of representing CC. When CC is represented as a societal problem, science (1) becomes part of the social negotiation processes, and (2) appears as an active effort of building a common understanding of CC, where the conflicting parties are expected “to meet in the middle”.

On the other hand, when CC is represented as an environmental problem, science (1) is distinguished from the social negotiation processes and assumed as a reified universe, and (2) is mobilized to determine the reality of the problem and resolve the conflicts. Here, the efforts and interests of others appear as contamination of the otherwise pure universe of science, and are de-legitimized as being non-scientific. The rhetoric of this clear distinction between science and non-science is constructed around the *motives* of the counter argument, and in this sense it directly confronts the Alter.

That the category *reified & consensual* is situated in the ellipse on the right, closer to the category ‘reified’ is not a surprise. The arguments coded for this category involve two contexts in which scientific knowledge is produced. First, in the context of conventional or ‘normal’ science, the scientific knowledge appears as the “neutral outcome of a steadily advancing pursuit of an objective and universal truth” (Hulme, 2010, p. 306). As admitted in these arguments, CC troubles this impartial outcome but not the pursuit itself, since “we will know better soon”. Second, in the context of ‘post normal science’, which is “no longer fit for [the] purpose” of informing the urgent political and policy decisions (Hulme, 2010, p. 306), other types of knowledge and reasoning are employed to achieve the consensus in the political sphere –i.e., by way of precautionary action. To put it differently, when truth cannot be achieved in the universe of science, it can be achieved in the political universe, by way of its extension to and guidance for the political decisions.

Finally, one point may be reiterated as a limitation of the analysis: As mentioned before, the three argumentative strategies and different ways of representing the science of CC have not been exercised strictly in different interviews. They have appeared, at times,

as following and sustaining each other. However, in coding for the three identified dimensions of the ‘view of science’, each interview was represented as manifesting one (more salient or dominant) representation of science. While this affords a clear and accountable illustration of the relations between the constructed categories of the study, it is only attainable with a reduction of the complex argumentative arrangements, which are characterized by multiple and vivid disagreements.

5.4.4.2 Argumentative episode two: The policy controversy

This section describes and analyzes those arguments that respond to the second video excerpt. First, the arguments of the climate activist featured by the video are summarized. At a second step, the analysis focuses on two conflicts brought about by the climate activist with illustrative excerpts. Thirdly, the developed coding frame is described and the newly constructed two variables are projected on the HOMALS carried out in the previous study. This superimposition affords the discussion on how different approaches to climate action are connected to the previously identified representations of CC.

As mentioned before, it is possible to identify two main argumentative conflicts presented in the second video excerpt:

- (1) One that focuses on the particular practice of carbon offsetting, in which the climate activists argues strongly against the utility and virtue of the carbon offsets,
- (2) Another that focuses on –connecting the first to– a more general conflict between the priority assigned to the individual and societal (or in the climate activist’s words, systemic) intervention strategies in governing climate change.

The majority of the interviewees’ arguments were directed to the second, more general conflict. More specifically, while three interviewees did not at all mention the carbon offsets, and most of them only briefly addressed the specific case of carbon offsetting, the conflict created between the individual and systemic intervention strategies in the governance of CC was debated in all the interviews.

Before analyzing the responses to the two interconnected arguments, it needs to be clarified that these two arguments should be conceived as a reduction of the diversity in the interviewees’ reception of the presented argument as a whole. It is then important, at first, to emphasize the diversity of the objects that were called into question to discuss the carbon offsetting and to connect it to the more general conflict between the individual and societal policy strategies: Among other objects, carbon trade, voluntary markets,

commoditization, planting of (eucalyptus) trees, efficiency, consumer society, recycling, responsibility (both individual and corporate), collapse of the economic system, unwilling governments, and the importance of culture and religion were touched upon and connected to the activist's challenge against the carbon offsets. The great variety of objects that were employed to discuss and evaluate the practice of carbon offsetting reflect the complexity and 'polysemy' of the object in question (Schröder, 2000).

To account for the diverse meanings attached to carbon offsetting, it is crucial to pay attention to how, i.e., with which resources and ends these meanings are constructed. In this venture, the analysis identifies, in its first step, the 'allocation of responsibility' as one of the most important resources in arguing about the utility and virtue of carbon offsets. The arguments addressing the utility of carbon offsets can be organized according to the different levels of responsibility allocated to the individuals in tackling CC. The first three excerpts below exemplify how responsibility is allocated differently in the three argumentative strategies through which the particular conflict on the utility of carbon offsets is dealt with by the interviewees.

Argumentative conflict 1: The three strategies in debating carbon offsets

1st Strategy: Representing carbon-offsetting as an inadequate solution

Excerpt 1: *I completely agree! You need systemic changes, not a system of cap and trade, and voluntary neutralization of carbon dioxide. It's my view, it's what we are working on, eeh.. on systemic changes. Without that we are not.. we are going in the software of the problem, we are not working in the hardware of the problem. If you only work on the software, without change the hardware, and eh.. the machine always work on the same way (Int. 19/74).*

The first excerpt exemplifies those arguments that start with a clear endorsement of the activist's argument. The "voluntary neutralization" or offsetting of the GHGs is depicted as a kind of "software update", while changes in the "hardware" are prescribed. The interviewee basically re-presents the argument of the climate activist in a persuasive way by using the metaphor of "the machine" that requires hardware updates, since the software updates that do not significantly alter how the machine operates are represented as insufficient. The use of the metaphor is clearly directed to emphasize need to change the system (the hardware) against the "soft" and superficial changes in voluntary individual behaviors (of carbon neutralization or offsetting).

Despite the rather passionate onset for which the interviewee did not wait for a question to be posed by the interviewer, in the discussion that followed the interviewee emphasized the importance of seeking a balance between one's "negative and positive contributions to greenhouse effect". This apparent contradiction was not explicitly discussed, and remains as a question concerning the interviewee's 'final' position against carbon offsetting. Yet, it constitutes a perfect case for the approach adopted in the analysis⁵¹: Even those interviewees who provided fairly clear-cut arguments, taking an apparently clear position in the conflict, have at times shifted their positions within the course of minutes. In a more general sense, some interviewees have offered conflicting or opposing arguments, without explicitly reconciling or negotiating the meanings attached to carbon offsetting and trading. The excerpt above is an example of other cases in which reconciliation was deferred to the more general conflict between individual and systemic policy intervention strategies, making it possible to offer clear-cut arguments concerning the neutralization or offsetting of unwanted GHG emissions.

2nd Strategy: Representing carbon offsetting as a tricky solution

Excerpt 2: *Yes, I agree with him... eeh.. **but** maybe one point. Eeh.. I wouldn't say I don't believe in carbon offsets, **but** as he mentions, carbon offset is being promoted as a eeh, thing that is really tricky. (...) It's tricky, it's dangerous, it's politically incorrect and it is taking people away from what the reality is. **But** instead if you were to combine carbon offset with an eeh.. let's say first accounting your carbon emissions, corporately, I'm only talking about corporately. If you were to first account your carbon emissions, then, eh produce an emission reduction strategy, by purchasing green power, by energy efficiency targets, by eeh restructuring your growth scenario and so on.. and provide some kind of funding to carbon offset mechanisms on unbearable, impossible eeh emission targets in order to provide more ambitious binding targets, then I believe that this fund with true mechanisms, like gold-standard, can feed the renewable energy investors. (Int. 6/87)*

The second excerpt provides a typical example of how agreement and disagreement are organized and ordered in the arguments. The first two 'but' phrases work together to compose the first part characterized by agreement. The first sentence merely signals that there will be one "point" that will limit the agreement. The point of

⁵¹ As mentioned before, both for the TSR and rhetorical psychology, the theoretical and empirical question does not concern the 'final' or 'true' position' of the interviewees. The basic point and novelty in this kind of social psychological approach is that even people holding strong views achieve a diversity of arguments from a number of subject positions, which can at times be in conflict with each other.

disagreement is introduced first in the successive sentence in a highly ambivalent form (“I wouldn’t say I don’t believe”, instead of “I do”), and quickly withdrawn –after the second ‘but’– by the *conventionalizing* argument (Mouro & Castro, 2012) representing the carbon offsets as a “really tricky” thing. The end of the first part of the argument is marked by the third ‘but; until this point the interviewee depicts carbon offsets as not only “tricky”, but also “dangerous”, “politically incorrect”, and re-presenting the activist’s argument, as “taking people away from” the reality.

“But”, the interviewee does not give up on the utility of carbon offsets: Although no virtue can be granted to carbon offsetting, under some conditions –thematized in the second part of argument– the offsets are represented as potentially useful. One can see, in these thematizing arguments, how much the interviewee struggles to delimit the conditions under which carbon offsets “can feed the renewable energy investors”. Most importantly, the offsets appear as useful “only” at the corporate context, due to the accountability they imply for the emissions of the corporations. Then, the whole argument appears as essentially in agreement with the Alter about “selling a peace of mind to people”, but with “one point” of disagreement which concerns the utility of the instrument in a different –corporate– context.

Hence, it is the third ‘but’ in the excerpt that separates the agreement preface (Billig, 1991) from the disagreement, which is of restrictive type (Snoeck Henkemans, 1995). That means to say, after agreeing with the climate activist in general, the interviewee draws attention to a different context in which the presented argument cannot be maintained. Hence, the interviewee appears as raising an amendment, which works as a restriction to the presented argument. In this venture, conflicting meanings attached carbon offsets are negotiated by distinguishing the individual and corporate contexts, and dissociating and reconciling the *actual* and *potential* uses of the carbon offsets.

3rd Strategy: Representing carbon offsetting as a legitimate solution

Excerpt 3: *...He thinks that personal action, individual actions contribute not that much to, to... offset the problem. And I can agree with him that the fundamental changes have to be made on a very big scale, **but** I would not diminish the role or importance of individual responsibility and how individuals can themselves try to offset. (...). In the beginning of the video he says that the offsets are just, just an issue of peace of mind, that’s not true. Because an offset can actually be an offset, even if it’s just a percentage of the emission*

you are responsible for. (...) So, it's a matter of scale, and you should not consider less of a contribution that one scale gives comparing to another scale. (Int. 12/92)

The third excerpt addresses both of the conflicts identified at the outset of the analysis. The argument that directly addresses the carbon offsets being “an issue of peace of mind” is inserted within the re-presentation of the general conflict between individual and “big scale” contributions. The interviewee “can agree” with the necessity of “fundamental changes” on a very big scale, but without diminishing the relevance of “individual responsibility” and level of action. The second conjunct of the ‘but’ phrase functions to restrict the presented argument (Snoeck Henkemans, 1995). And again, the disagreement, in the second conjunct, follows the agreement prefaced in the first conjunct (Billig, 1991).

This *thematizing* part of the argument refers to the activist’s argument concerning the misuse of carbon offsets, and rejects the view of the Alter. Here, carbon offsets are represented as a legitimate way of counteracting or balancing out the emissions “you are responsible for”. The disagreement is rooted in the meanings attached to the carbon offsets, and it is this particular (and complete) disagreement that entails the general (and partial) disagreement about the value of individual and “big scale” efforts. The closing of the argument sequence is marked by a ‘so’, and the importance of contributions at all scales are emphasized.

The foregoing three excerpts that focus on carbon offsets demonstrate three examples of how this particular object is discussed in different ways. While some interviewees agreed with the climate activist about carbon offsets being unhelpful or illegitimate ways of dealing with CC (excerpt 1), others have disagreed by maintaining that carbon offsets are just one “tool in the toolbox” and could be legitimately used for dealing with CC (excerpt 3). There were also those interviewees (excerpt 2), who admitted that carbon offsets are “tricky” business or malpractice, and who at the same time argued that they could still be helpful if used in a rigorous manner. That means to say, arguments employing the ‘yes, but...’ discursive format, and demonstrating some form of polyphasia about the particular conflict on carbon offsets were limited (N = 7), and this was in part due to carbon offsets not being explicitly discussed in all interviews. These three ways of dealing with the challenge against carbon offsets can be helpful for summarizing the variety of arguments elicited by the second video excerpt.

As mentioned before, the particular conflict about carbon offsets allowed the

interviewees to bring forward more or less clear-cut arguments, while the thematizing and reconciliatory arguments were raised in the more general context in which the focus was on systemic changes. This finding, signaled already by both the first and the third excerpts –that merged the two conflicts– is demonstrated below by focusing on four excerpts that expatiate on the individual versus societal (systemic) changes or policy strategies.

Argumentative conflict 2: The two strategies in debating societal change

The arguments focusing on the dilemma of societal change –the more general conflict between the individual and systemic changes– were characterized by reconciliation and negotiation attempts. Indeed, none of the interviewees completely rejected the use of either one of the ways of dealing with CC. Most of the arguments thematizing the conflict were closed by emphasizing that “we have to work both ways”, “use all the tools in the toolset”, and combine all the efforts and possible contributions. The individual and systemic changes were represented as “not canceling each other” and “two sides of the same coin”. Does this mean that the conflict sought between the individual actors and the system turned out to be irrelevant? Perhaps if the interviewees were asked by the researcher to comment on the apparent conflict, this would be the conclusion. However, providing an argument –presented by a climate activist– has afforded different outcomes. As will be demonstrated by the following excerpts, while virtually all the arguments aimed to reconcile the conflict elicited by the climate activist and negotiated the meanings attached to societal change –indicating polyphasia–, they did so by ordering the points of agreement and disagreement in particular ways.

1st Strategy: First agreement, then disagreement

Excerpt 4: ‘It is ethical, but not effective’

*Ethically what he’s saying is true, **but, actually** as when you consult, think about human psychology, I think that you need to push people.. eeh.. well **not need to but**, certain mechanisms might be more effective in achieving the results, I would say. **But of course** I’m saying that awareness-awareness- awareness as the first thing, not pushing like people, like you should do trade, you have to buy those, **but the first thing**, first thing is, you aware the people and they, of course they will start changing their lifestyle, and it will change everything actually. **So**, it should go from the bottom-up approach. (Int. 2/108)*

The fourth excerpt involves an argumentative sequence that demonstrates the

dialogical and self-reflexive nature of thinking through the mouth (Markova, 2003) on the policy strategies targeting CC. The sequencing of the arguments is carried out by four conjunctives, and it is only the first sentence that is organized in the ‘yes, but...’ discursive format. Here, the initial *conventionalizing* part (Mouro & Castro, 2012) briefly approving and legitimizing the view of the Alter, rests upon a dissociation of the ethical stance granted to the climate activist from the *actual* necessity: “you need to push people”. After a short pause, an amendment on this first reaction is issued by *thematizing* the reaction itself: The pushing, that is, using “certain mechanisms” to achieve “the results”, is defended by representing these as “effective” instruments. Yet, after another ‘but’ the amendment is further advanced: What was called “pushing people” before, is now represented as raising “awareness”. Once the argument is re-formulated this way, in the conclusion –marked by ‘so’– the interviewee resorts to another convention to further deal with the dilemma insitaged by the activist’s argument. The “bottom-up approach” is suggested both to cope with the conflicting view raised by the activist, because it appears more viable than creating profound systemic changes, and also to correct her own initial utterance, because the widely accepted “bottom-up approach” sounds a lot better than “pushing people”.

The excerpt demonstrates the importance of apparently simple choices of concepts and expressions, as each concept employed has the potential to re-define the disagreement, contribute to building different arguments, addressing manifold others. The curious question regards the way the interviewee manages to reformulate the initial utterance of “pushing people” as the “bottom-up approach”.

One answer to this question can be drawn from the implicit representation of societal change, and its relation to the geopolitical order (Giddens, 2009). While emphasizing the importance of awareness, the interviewee suggests that once “you aware the people... they will start changing their lifestyle, and it will change everything”. This type of “bottom-up approach” assumes (1) no resistance on the side of the people to the new information they receive, and (2) an un-problematic relationship to the political order. Hereby, political transformation is represented as a smooth and straightforward process that follows from the awareness of people. Without labeling such articulations on social and political transformation as optimistic, or naïve, let us direct attention to how the same question is represented in other interviews.

Excerpt 5: 'Changing society means changing each individual'

- *What do you think the person in the video is discussing?*
- *A language typical from the left side (laughs). The problem must be solved by the eeh.. organization of the society, politics. **Not only.** The politics are the reflection of the mirror of the position, individual positions. So, to change the politics, you must change each individual. So, if you don't take care of your house, you take care of not your... car, of.. you could not change the politics. Because the politics do what do people want. **So,** you must change the two things together. (Int. 14/125)*

The excerpt starts with an evaluation of the presented argument as a discourse from the left, which is represented as addressing the problems by attempting to change the “organization of the society”. Situated right after the representation of the view of the Alter, the “not only” phrase functions as a restrictive ‘but’ (Snoeck Henkemans, 1995). That is, the interviewee is in a partial disagreement and does not completely refute the relevance of changing the organization of society and politics. However, since “politicians do what people want”, the emphasis is put on the requirement to change the individuals, in order to change the politics. Instead of proceeding with a series of ‘but’ conjunctions to reformulate and withdraw one’s own argument –as in the previous excerpt–, the argument proceeds with a series of phrases initiated with “so”, advancing the disagreement, and thematizing the representation in a manner that is other-oriented (Markova, 2003). The last ‘so’ indicates the closing of the argument, confirming that the disagreement is partial, and intervention is represented as necessary on both individual and societal scales.

The argument is akin to the previous one (fourth excerpt) in that the politics is represented as the “mirror of individual positions”. It appears from these two examples that one way to confront the argument of the climate activist concerns a particular representation of political transformation and societal change, as a smooth and straightforward process that follows from the choices of individual actors. Although this strategy built on a particular argumentative order (first agreement, then disagreement) was dominant in the interviews, it is not the only way the responses were organized. The analysis now focuses on two more excerpts to exemplify how the same discursive format is employed to carry out concessions and reconciliations in which the agreement and disagreement are put in reverse order.

2nd Strategy: First disagreement, then agreement

Excerpt 6: 'Leaving it to the consumer choices is also not the solution'

*We, everybody wants systemic change **but** that could also be construed as another way of getting out of responsibility. (...) You know, I can feel comfortable knowing that eh unless... unless there is some kind of systemic change.. what I do personally won't matter anyway. Eeh.. I think that's **also** dangerous... **but**... eeh.. leaving it all to consumer choices.. is **also** no way to do it, because those consumer choices are not done in a rational, objective manner, eeh, there is a huge industry behind this.. eeh.. having an interest in the existence of this consumer society. Eeh.. **so**.. I think we would first have to dismantle this (laughs) to effect any eh real change about this issue. (Int. 3/74)*

The two 'but' phrases quoted in this excerpt demonstrate the two salient ways of reconciling the conflicting views of the individual and systemic changes. The first sentence resembles the two previously quoted examples (excerpts 4 and 5), in that the *conventionalizing* argument "everybody wants systemic change", is followed by thematizing how it can be interpreted as "getting out of responsibility". If the argument would be concluded by asserting that it is "dangerous" to do so, it could be classified together with the foregoing examples. However, the second 'but' indicates a further step in argumentation. The initial argument constructed against the activist's view becomes the –new– Alter for the second part of the argument. This second but phrase adopts the first disagreement –situated after the first 'but'– as its own agreement preface to revisit the first convention. Remarkably, at this step the choices of the individual actors are represented as "consumer choices". Hence, in the conclusion, "to effect any real change about this issue", the priority is given to address the "consumer society".

While reflecting on the unacceptability and ineffectiveness of "leaving it all to consumer choices", the interviewee suggests that "there is a huge industry behind" that kind of intervention. Indeed, this policy strategy is seen to be built on a global ethics of growth and efficiency, embedding the CC regime in the global hegemonic order without questioning its basic structures (Methmann, 2010). To better understand how this "huge industry" is represented, and connect it to the previously identified representation of a smooth and straightforward process of political transformation and societal change, let us consider one final example.

Excerpt 7: 'We have to be the change, but we are constrained by the system'

*...Systemic changes are more important.. I mean, it is very eeh... I'm also very Gandhian in this way that you have to, you have to be the change you want to see. **On the other hand** I think eeh.. in the current times it's very difficult to be change you want to be. Because you're very limited and constrained by, eeh.. how the system operates.. and.. the option space that this system provides to you. And, if you, if you become the change you want to be, eeh.. most of the times they say you become ineffective. (...) Meanwhile the capitalist system is still expanding and affecting millions of people worldwide everyday, more and more, and taking, bringing commodification even further. **So**... eeh, I think in some points it's important to make a change, on some points you have to find a balance between the capacity to do it, and system constraints. (Int. 14/76)*

In this excerpt, the interviewee first emphasizes two apparently conflicting conventions together: the higher importance of systemic changes, as well as the necessity to “be the change you want to see”. However, the opposition indicated by the phrase “on the other hand” seems to only target the second, “Gandhian” convention, and subsequently only the difficulty, the limits, and the ineffectiveness of “being the change” are thematized. That is, the second part of the argument suggests which of the previously represented conventions is adopted as the agreement preface (Snoeck Henkemans, 1995). In the closing the interviewee turns to “a balance between” the capacity to make a – personal– change and confronting the “system constraints”.

Crucially, both in the thematizing and in closing arguments, “the system” is depicted as “limiting” and “constraining” people by the “option space” that it provides, and as “still expanding and affecting millions of people”. What was previously depicted as equally relevant “scales” of intervention (Excerpt 5), or “certain mechanisms” to achieve effective results (Excerpt 4), in this argument can perhaps be identified with the “option space”, if not the “constraints” brought about by the system. As in the previous (Excerpt 6), in which the “huge industry behind the consumer society” was raised as an obstacle, the processes of political transformation appear as hindered by the “system constraints”. When compared to the argumentative sequencing of the fourth and fifth excerpts, the last two excerpts appear as drawing on a different representation of the required societal transformation, precisely because of how the socio-political order is represented.

In summary, while the arguments addressing the conflict between the individual and systemic intervention strategies are characterized by polyphasia, they also emphasize

different priorities –not rejecting but rhetorically reconstructing and restricting the alternative views of societal change. The primary resource employed in the emphases put on changing ‘the individuals’ and ‘the system’ concerns the representation of ‘the system’ itself, or the way the socio-political order and its actors are connected. When the societal relations are represented to follow smoothly from the choices of individual actors, it becomes possible to emphasize the agency of the individual actors, who are represented as *responsible* for the unwanted GHG emissions. When the societal relations are represented to be constrained and determined by the system, it becomes possible to target the systemic changes, which appear as the only *significant* solution that can be engendered. The findings suggest that this twofold representation of the climate policy strategies interfere in each interview, rather than being primarily a distinction between the interviews.

Yet, it is possible to hypothesize that the interviews characterized by arguments that prefaced an agreement with the activist’s view on the necessity of “profound systemic changes”, to then restrict it by *thematizing* the “bottom-up approach” are more likely to concur with the first representation identified in the previous study (an environmental problem to be addressed by technological and micro-policy instruments). The same hypothesis suggests that the interviews characterized by arguments that prefaced a disagreement with the activist’s view, to then agree with it are more likely to concur with the second representation identified in the previous study (a societal problem to be addressed by socio-political transformation). To test these hypotheses, and to connect the findings of the argumentation analysis to the findings of the foregoing study, in the following section, the argumentative strategies employed in dealing with the two conflicts identified above are projected onto the HOMALS plot resulted from the previous study.

Relation between the views toward societal change and the two representations

Focusing on how the interviewees dealt with the argument presented in the second video excerpt, the analysis of argumentation has demarcated a particular conflict concerning the utility of carbon offsets that was connected to a more general conflict about fostering societal change. The argumentative strategies employed in dealing with the two interconnected conflicts were identified. These are summarized below, and transformed into variables to be projected onto the HOMALS plot obtained from the previous study.

The arguments addressing the first conflict were classified into three groups, (1) those that treat carbon offsets (or trading) as legitimate ways of tackling CC,

- (2) those that treat them as illegitimate,
- (3) those that negotiate and reconcile the meanings attached to the object (polyphasic arguments).

Whereas, the arguments addressing the conflict created on the comparatively general context of policy intervention (that were shown to rest on the ascription of responsibilities, first to consumers/individuals, second to the system/society) were found to be characterized by reconciliations and polyphasia. By drawing on the on the conjunction, order and organization of the arguments, two strategies in negotiating the meanings and reconciling the conflicting views were distinguished. While the first (1) prefaced an agreement that is followed by disagreement with the climate activist – emphasizing the importance and the priority of individual lifestyle changes; the latter (2) prefaced a disagreement with the climate activist, representing possible limitations or restrictions that can be considered about the argument raised in the video excerpt, and continued on with –partially– disagreeing with the previously represented disagreement. Hence, rather than a *partial disagreement* with the activist, a *partial agreement* was pronounced.

A multiple correspondence analysis was conducted to explore how the categories identified above are connected to the findings of the previous study, and relate to each other. This was done by projecting the categories identified above –into which the arguments addressing the two elicited conflicts were coded according to their organization and order of reflection– as supplementary variables to the HOMALS carried out by the variables of the previous study (on the reflexive part of the interviews).

Table 24. The two variables drawn from the analysis of argumentation for HOMALS

Variable	Category	<i>f</i>
Carbon offsets	Legitimate	7
	Illegitimate	5
	Characterized by polyphasia	7
Societal change	Emphasize the actors	10
	Emphasize the system	12

The first of the two newly projected variables is called *carbon offsets*. It is comprised of three categories that reflect the representations of this particular practice as (1) legitimate, (2) illegitimate, and (3) characterized by polyphasia. The second variable,

named *societal change*, involves two categories that reflect the *priority ascribed to*, or the *emphasis put on* (1) the individual “actors”, and (2) the “system” in reconciling the efficacy of individual lifestyle changes with the efficacy of more profound systemic changes. As demonstrated in table 24 that provides the frequencies of these categories, only the first variable has ($f = 3$) missing values. These are the interviews that the carbon offsets were not discussed at all.

Table 25. Discrimination measures of the variables in the first two dimensions

Active variables	Dimension 1	Dimension 2
Human Causes -simple	.259	.231
Human Causes -complex	.309	.025
Impacts -environmental	.220	.004
Impacts -societal	.042	.644
Risks -environmental	.264	.000
Risks -societal	.238	.215
Solutions -technological	.032	.115
Solutions -macro instruments	.020	.398
Solutions -micro instruments	.150	.047
Solutions -sociopolitical	.598	.097
Actors -scientific	.100	.384
Actors -NGOs	.311	.183
Actors -media	.047	.221
Interconnectedness	.255	.001
Pessimism	.295	.411
Carbon offsets*	.229	.077
Societal change*	.166	.148

* Supplementary variables

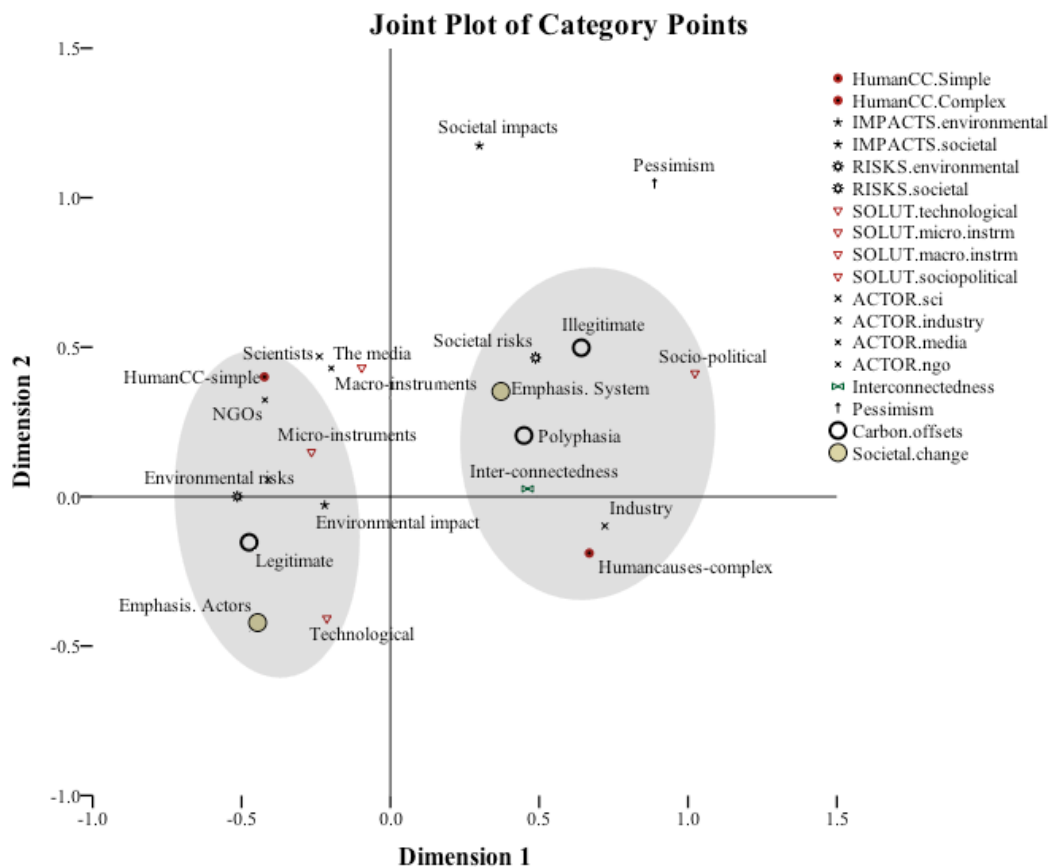
When these variables derived from the argumentative part of the interviews are projected onto the plot of the multiple correspondences among variables derived from the reflexive part of the interviews, the first two dimensions (with reliability scores of Cronbach’s $\alpha_{\text{dim1}} .756$; Cronbach’s $\alpha_{\text{dim2}} .709$) explained 40,1% of the inertia (eigenvalues: 3.437 and 2.982 respectively). Table 25 presents the extent to which each variable discriminates in the two dimensions.

As the table demonstrates, both variables derived from the context of the second argumentative conflict discriminate better on the first dimension. According to the findings of the previous study, climate change *as an environmental problem* (constructed by the thematic categories situated on the left side of the plot) was distinguished from climate change *as a societal problem* (constructed by the thematic categories situated on

the right side of the plot). As shown in Figure 9, the categories of the newly projected two variables correspond with these two representations or discursive constellations, in a way that confirms the hypotheses.

Firstly, concerning the carbon offsets, the newly constructed categories (legitimate and illegitimate) correspond with the older ones constructing the two previously identified representations. The category *legitimate* is situated together with the *micro-instruments*, which was the category that illustrated the emphasis on micro-level or individual choices and contributions as solutions to CC. Hence, that the first representation legitimizes the dominant policy paradigms –a finding of the previous study– is confirmed.

Figure 9. Spatial representation of the first two dimensions yielded by HOMALS



The new finding involves the third sub-category of this variable that stands for the reconciling arguments, which were characterized by polyphasia. It appears that the representation of carbon offsets as illegitimate, problematic, or “tricky”, and yet also as with “potential utility under certain circumstances”, corresponds with the representation of CC as a societal problem. In other words, the interviewees who described the basic

features of CC, depicting the problem through a hegemonic discourse (Hayden et al., 2011) did not need to negotiate the meaning and the utility of carbon offsets, while those interviewees who adopted a counter-hegemonic discourse to resist to and challenge the representation of the problem as being merely environmental, have tried to reconcile conflicting meanings attached to carbon offsetting.

Then, the interviewees who represent CC primarily as an environmental problem did not have a hard time to reject the (presented) argument against carbon offsets, while the interviewees who represent climate change primarily as a societal problem –that requires more profound solutions– dealt with the conflict by reconciling the opposite meanings ascribed to carbon offsets. The point here is not that a particular representation or information is not available to some interviewees, it is that social representations work both to legitimize and to challenge certain practices, which acquire different meanings in connection to the social order (Howarth, 2001, 2006).

Secondly, concerning the ways to foster societal change, those arguments which prioritize need to change ‘the actors’ in order to effectuate ‘systemic changes’ are clearly distinguished from the arguments which prioritize the ‘systemic changes’ to allow the changes in ‘consumer’ choices. As hypothesized, the arguments that emphasize the actors correspond with the first and more dominant representation of CC –as an environmental problem, a problem to be dealt with everyone. Whereas, the arguments that put the emphasis on changing ‘the system’ correspond with the representation of CC as a social and political problem. To repeat, both type of arguments responding to the video excerpt are characterized by polyphasia, in that they recognize the importance and the necessity of policy intervention in both levels, and the emphases are priorities identified by the study by depending on the order and the relation of the representation of the two views of societal change at the face of climate related risks.

5.4.5. Conclusions

To investigate whether and in what ways polyphasia is a defining characteristic of climate change talk, the analysis of arguments that responded to the video excerpts in the third part of the interviews focused on the ‘small words’ (Castro, 2006), and more specifically, on the conjunctives of confrontation and concession (Snoeck Henkemans, 1995). Specific attention was paid to the ‘Yes, but...’ discursive format, in order to make intelligible the movement of forms of reflection (Moscovici, 1961/2008), and the processes of negotiation

of meanings embedded in the CC discourse.

In the context of the conflict on the scientific knowledge about the human causes of the problem, instigated by an Alter who dismissed the position typically advanced by the NGOs, the hypothesis was that a monophasic movement of reflection would dominate the responses. However, many interviewees have also employed other strategies in handling the ‘skeptical’ argument: They combined the conventionalizing arguments that admitted the uncertainties and the limits of scientific knowledge on CC, with the thematizing arguments that called into question the political implications and consequences of these. They also called into question the assumptions embedded in the presented argument as to the image of scientific knowledge. By appropriating the presented argument into their vocabulary, they redirected the topic away from the presented framework (Billig, 1999, p. 53). Through these two strategies, the interviewees avoided direct confrontation with the skeptical scientists; in a way, the controversy they raised was rendered obsolete. The point was that science itself could be unable to fully contain CC, yet scientifically informed precautionary action –and not inaction– was needed to contain it. Hence, the main rhetorical element in this movement was the “precautionary principle”.

In the context of the conflict on the policies directed at fostering societal change, as hypothesized, reflection and argumentation took a highly polyphasic fashion. It was the superimposition and reconciliation of different perspectives and priorities that characterized the arguments. The general conclusion is that, in their interference along the successive ‘phases’ of argumentation (van Eemeren & Grootendorst, 2004), different policy priorities, different solution prospects, and levels of intervention were put both in and ‘out of phase’ with each another, at times in combination and alliance, at other times “in opposition and conflict and striving for dominance” (Markova, 2003, p. 111).

The findings concerning the ‘Yes, but...’ discursive format confirm the previous findings in the literature (e.g. Mouro & Castro, 2012). In both of the argumentative episodes, the non-governmental experts have employed the discursive format on many occasions, and with different ends. In most of these occasions, the argumentation was carried out to reconcile the conflicts that were provided by the video excerpts, seeking a balance between them, and emphasizing mutual recognition and collaboration. Typically, the initial affirmative conjunct of the argument conventionalized the view presented by the Alter, appropriating it into the argument (Billig, 1991) to most of the times partially

disagree with or restrict it. The conjunctives indicted the end of the affirmations, and were followed by the second conjunct thematizing the disagreements. It appears that the function of the thematization is twofold, and depends on the starting point of the analysis: If the analysis focuses on conflict (Billig, 1991), the conventionalized view of the Alter appears as a preface to thematize the disagreement in a way that is more persuasive. In this sense, the discursive format is essentially rhetorical. If the analysis focuses on reconciliation (Castro, 2006), the initially conventionalized view appears as negotiated by being applied to different contexts, assigned newly introduced limits, and thematized with a series of amendments. In both cases, the arguments are other-oriented, that is, they address the view of the Alter by appropriating it into different contexts and vocabularies (Markova, 2003). In short, the discursive format comprises both agreement and disagreement.

In assessing which of the above was the goal, or at the fore of a particular argument, the closing of the argument –where available– was at least as informative as the content of the second conjunct (Snoeck Henkemans, 1995). These utterances were marked mainly by the connective ‘so’, and in some cases worked as a clarification starting with ‘I mean’, which mostly have introduced a resolution of the conflict, and implied that a view was being endorsed. The implication is that the successive phases of argumentation typically advanced through the phases indicated by ‘Yes-But-So’, enabling the consideration of the argumentative sequence ‘Yes-But-So’ as an extension to the ‘Yes, but...’ discursive format. This extension makes it possible to delineate a core argument – indicated by the conjunctive ‘but’– embedded in a preface and a closing, or between a departure and a conclusion (Van Emereen et al., 2007). Further investigations of such sequences as movements in reflection, or analytical ‘phases’ of a rhetorical argument may contribute to a better understanding of cognitive polyphasia.

Proceeding from above, it can be said that whenever the conflicting views were not explicitly reconciled at the closing (e.g.; “so one must balance between...”, “so, it is not a matter of black and white...”), this closing ‘phase’ typically endorsed the thematizing argument, and not the convention. This finding was only to be expected, since the discursive format (1) is constructed upon social conventions or ‘common places’, against which criticisms and justifications are raised (Billig, 1991), and (2) typically employed to resist against a norm or a convention (Mouro & Castro, 2012). The main finding of the present study is that, when criticisms and justifications are provided, and a particular

resistance is already issued against a norm (a scientific fact, a dominant policy paradigm), that is, in an argumentative context, the discursive format is constructed upon the present(ed) view, conventionalizing it, be it the norm, or the criticism. This shows how the discursive format is fundamentally other-oriented, being employed to rhetorically engage with the other's argument.

A final remark about the 'Yes-But-So' argumentative sequence concerns what is meant by its increased rhetorical power. For Mouro and Castro (2012), the power comes from the fact that the potential disagreements with the rhetorically endorsed view are mitigated in this type of discursive organization. Similarly, Billig (1991) emphasizes that people holding strong views will try to organize their arguments as agreeable as possible for others, and mitigation of the disagreement serves precisely that. The findings of the present study suggest that 'the preference for agreement' (Billig, 1991) is bound with the argumentative context and the type of the representations involved, and appears as a part of the 'culture of reconciliation' embedded in the geopolitical and geoeconomic discourses of CC. When the discursive challenge was against a scientific fact (a hegemonic representation that was endorsed by the interviewees), it was easier for the interviewees to issue clear-cut arguments; yet, agreement prefaces were still employed in many interviews. When the discursive challenge was against a normative policy instrument (a polemic representation which seemed to divide the interviewees into two groups), virtually all the analyzed arguments were cautiously organized and formulated without sharp edges, in an attempt to compromise wherever possible. Hence, it was not only in the consensual domain of politics, but also in the more-or-less reified domain of science, 'a preference for agreement' and 'a culture of reconciliation' was perhaps the most influential sanction on the ways the arguments were forged.

The culture of reconciliation, as crucial as it is for attaining any democratic and consensual process in the governance of global environmental problems, seems to take much of the political conflict and differences, and more importantly the "instrumental power relationships out of the equation" (Doyle & Chaturvedi, 2010, p. 533). Yet, the overall tendency for reconciliation can also be seen as an expression of accumulated experience of the non-governmental actors in the negotiations and coalitions of climate policy. Following Billig (1991, 1993) it is conceived as a rhetorical pursuit of persuasion, in which the strong views are offered in a way which others can more easily agree. It is especially explanatory of the discursive sequencing 'Yes-But-So' when these strong views

are seen to be constructed “rhetorically from matters of agreement” (Billig, 1991, p. 179). Further yet, it may also be conceived as reflecting the interference of the perspectives held by the non-governmental actors of CC, whose “life-worlds are substantially fuzzy and liable to casuistic judgments required by the extreme complexity of real situations” (Jesuino, 2011, p. 56). Hence, overall, it is the complexity and the broad implications of the of the problem, the meanings and solutions associated with it, and the normative requirements of the system of social relations within which these are continuously reconstructed, that seem to organize the cognitive operations at the individual level to show ‘phasic’ characteristics.

5.5. General discussion of the interview study

The interviews carried out with the non-governmental experts and campaigners on CC were composed of three parts and were analyzed in three consecutive studies. The three studies focused, with different theoretical assumptions, goals, and analytical tools, on the non-reflexive part of the interviews (the word associations), the reflexive part (the responses to the open-ended questions), and the final argumentative part (in which two argumentative episodes were created by using a video elicitation technique).

The first study focused on the word associations of the interviewees, and identified the central elements of the representation. The results showed that the *anthropogenic causes* were the definitional element and the consensual core of the representation. Two other central elements were the constructed categories of *impacts/risks* and the *politics/problems* associated with CC, that connected the *causes* of CC to the category of *solutions*. It was hypothesized that the descriptive power of the *impacts/risks*, in its appeal to nature, may both work together and compete with the evaluative power of the *politics/problems*, which in its appeal to society and politics, provided the second route associating the causes of CC to its solutions.

Building on these findings, the second study obtained that the reflexive part of the interviews was mainly directed to thematize the *impacts/risks* and *solutions* associated with climate change. The human *causes* were treated as a convention, and only shortly discussed. Drawing on the organization of the themes around the *impacts/risks* and *solutions* (Attride-Stirling, 2001), as well as their dialogical form, their assumptions and goals, and their divergent orientations to description and evaluation, two representations of CC were identified:

- (1) The first one, aiming to describe and substantiate CC as a serious environmental problem by highlighting its impacts and risks, and emphasizing the conflict between the nature and harmful practices, was called an ‘environmental’ problem.
- (2) The second one, targeting the first way of representing as its dialogical Alter, prescribing a wider agenda of socio-political change, and emphasizing the conflict between the implications of CC and the social order, was called a ‘societal’ problem.

The first representation bears similarities to the mainstream press representations of CC scrutinized in the previous chapter, especially in its emphasis on the dire impacts and risks (what is, and what is anticipated). However, instead of being dramatized, the

risks were cautiously articulated, and were connected to solutions and the necessity of precautionary action (what ought). That means, instead of “transforming a world of reason into a world of imagination” (Markova, 2008c, p. 41), the anticipated or imagined futures were transformed by NGO actors into restricted, reasonable arguments, seeking balance and compromises.

The second representation, on the other hand, takes the agreed upon or existing solutions as granted (what is), and introduces a wider agenda of societal change (what ought), connecting the first representation to the existing political order, and rendering it, so to say, ‘mainstream’ or hegemonic. However, these two representations of CC are not necessarily in direct opposition with each other, nor have they distinguished the interviews into two clearly delimited groups. Rather, their dynamic co-existence and interference (Moscovici, 1961/2008) can be seen as the main resource for cognitive polyphasia characterizing most part of the arguments, especially about the solutions. This was especially evident in the recurring discursive format: “Yes, it is a step, but it is not enough” or “It is not enough, but it is a step”.

In the third study, this discursive format, and the interference it indicates between competing representations was taken as the object of study. Two argumentative episodes were created by providing an Alter that raised (by way of two video excerpts) controversial arguments about (1) the anthropogenic causes of, and (2) policy strategies offered to tackle CC. Even in the reified context of science, and fairly clear scientific knowledge (hegemonic representation) of the anthropogenic causes, the interviewees employed the ‘Yes, but...’ discursive format to rhetorically order and increase the persuasiveness of their responses. By conventionalizing the view raised by the Alter, they were able thematize their disagreement in way that is more acceptable (Billig, 1991, Mouro & Castro, 2012). In the explicitly political context of policy strategies (polemic representations), reconciliation and negotiation of meanings, and the use of this discursive format characterized almost all the arguments.

By scrutinizing the uses of the ‘Yes, but...’ discursive format, it was suggested that the discursive format is employed by and large as an argumentative sequence, having a closing indicated many times by a ‘So’. In other words, the successive phases of argumentation have advanced typically through the phases indicated by ‘Yes-But-So’. In their interference along this succession, the different policy priorities, different solution prospects, different representations of science, and the different domains of knowledge

were shown to be put both in and ‘out of phase’ with each other (Markova, 2003). The closing of the argument, wherever available, was decisive as to the relations between the two conjuncts of the discursive format, indicating at times the orientation to reconcile the conflicting views, at other times that a view was being defended (van Emereen et al., 2005). Overall, the main resources for the cognitive operations to show ‘phasic’ characteristics may be seen as the complexity of the problem, the wide implications of the policy strategies devised to address it, and the complex system of social relations continuously re-constructing these (Doise, 2011).

In sum, together these studies corroborate that the core element of human causes of CC is treated as the convention, and established as a hegemonic representation (Jaspal & Nerlich, 2014). Although they were only briefly mentioned and hardly discussed in the whole of the interviews, the human causes and responsibility are located at the core of the non-governmental expert representations. When it was introduced as a polemic, the skeptical argument did not even create a striking polemic. Instead, it was rather smoothly appropriated into the restrained and carefully organized discourse of the interviewees.

The hegemonic representation of human responsibility was accompanied by two – to a certain extent – emancipated representations brought to play by two rhetorical positions. The whole corpus of interviews was characterized by the back and forth movements between these rhetorical positions and the interference of the two representations. While the expert rhetoric generally rendered the representation brought about by the activist rhetoric as a polemical representation, it was contained and appropriated, rather than being displaced or delegitimized. On the other hand, the activist rhetoric aimed precisely at displacing and transforming the expert rhetoric, rendering it as a hegemonic representation. Yet, to be able to accomplish this discursive mission, the hegemonic representation of CC was brought to play and legitimized at least to some extent.

A critical question posed at the outset of this chapter regarded the implications of the necessity to work with the existing geopolitical realities (Giddens, 2009), if the ultimate pursuit was to change them. The quest for more profound or ‘systemic’ changes – structuring what was called the polemical representation of CC above, brought about by the activist rhetoric – being so thoroughly interwoven with the hegemonic representations of dominant policy paradigms and with the expert rhetoric can be understood in this framework. The polyphasic character and ordering of the arguments arguably reflect “the

structural ‘split mind’ of a government model committed to economic growth driven by consumerism on the one hand, and shared obligations for transition to a sustainable society on the other” (Webb, 2012, p. 119).

As it was this government model that characterized the specific cultural and political contexts which the participants from Portuguese and Turkish NGOs had to address, their arguments seem structured not by the national level and local scale exigencies, but by global and de-territorial visions and aspirations, embedded in both scientific and socio-political rationalities of transformation.

Finally, in representing and endorsing the global and cosmopolitan visions and aspirations, and in reconciling these with the existing status quo organization of power and the geopolitical order, the interviewees strictly avoided the propaganda genre of communication. Environmental ‘governance’ is seen as both a part of and contributing to the evasion of blatant conflict and propaganda from public discourse (Doyle & Chaturvedi, 2010; Mouro & Castro, 2012). It means that, especially in the governance of issues of diverse concern like CC, propaganda has become an inadequate means of persuading others. Probably for this reason, the interviews were characterized by the combinations of diffusion and propagation, put into play by the interweaving of expert and activist rhetorics. In other words, the NGO discourse on CC seems to almost completely given up on propaganda, which largely aims at a monologue, and follow the pursuit of persuasion, which “in order to be effective, relies on dialogue” (Markova, 2008c, p. 40).

CHAPTER 6

CONCLUSIONS AND INTEGRATED DISCUSSION

CHAPTER 6. CONCLUSIONS AND INTEGRATED DISCUSSION

The project for this thesis was built around a proposal to examine how mediating systems (re)present climate change to the public, and help make this intangible phenomenon part of common knowledge and practices. In exploring the mainstream press and NGOs as two mediating systems of CC knowledge and action, a social representations perspective was employed and refined by contributions from other approaches such as rhetorical psychology (Billig, 1991) and the risk society (Beck, 1992). Specific attention was paid to the reflexivity (as well as the lack of reflexivity) and the rhetorical reconstruction of the news and views about climate change.

Chapter 2 aimed to establish the relevance of such a perspective. The first part of this chapter introduced a fundamental characteristic of climate change as its ‘lack of object-ivity’. This was depicted as one of the reasons why the phenomenon remains a matter of controversy and conflict, and one of those objects “that are as much defined by what they are not (but will, at some point, have become) than by what they are” (Knorr-Cetina, 1997, p. 16).

For most of the sociological perspectives that were only briefly mentioned in this chapter, CC is not an ‘environmental’ problem that can be delimited as ‘out-there’; rather it is seen as an incomplete object, a societal risk “around which our collective and personal identities and projects... form and take shape” (Hulme, 2009, p. 326). For most of the psychological research, on the other hand, CC is an objective environmental problem to be dealt with through a realist approach, and by focusing on the drivers of and barriers to environmentally significant behavior. The models of behavior change that were shortly reviewed in this chapter, which highlight the powerful influence of the social context and norms on environmental behavior, were depicted with a focus on individual consumption and conformity to a predetermined context of social transformation. In this framework, the focus on the drivers of individual behavior was seen to entail a neglect of the relations of production and political relations, i.e. how the existing institutions function in the (re)production of the social context (Rathzel & Uzzell, 2009; Castro, 2012). Following the calls for expanding the focus on values, beliefs, attitudes and individual perceptions about CC, the proposal set forth in **Chapter 2** was to pay attention to not only how these function in their place, but also to the “the forces and practices by which they are put into place” (Rathzel & Uzzell, 2009, p. 348).

In accordance with this proposal, a social representation approach was employed to examine the work of two of those institutions and actors (the mainstream press and NGOs) that simultaneously reproduce, maintain and attempt to change the social context in which the values, beliefs and behaviors related with CC take shape. Since these efforts are by and large carried out in discourse and communication, **Chapter 3** has specifically emphasized the dialogical approach to the study of social representations, as well as the more discursive and rhetorical counterparts (e.g. Billig, 1991; Potter, 1996) of this perspective in social psychology.

6.1. Discussion of the findings in the mainstream Turkish press

The first empirical chapter focused on how climate change was represented in the two most-widely read mainstream Turkish newspapers, between 1999 and 2009 . The specificities of the Turkish political and cultural context led to an expectation that CC would still be an *emerging* public concern in the period covered.

Study 1 confirmed that the country provided an exceptional case as compared to many other countries, in which the mainstream press and public attention to CC arised only after 2004, when the national government signed the UNFCCC. The quantitative analysis of coverage showed that the reporting gradually increased after this year, and a peak was reached in 2007, when the country was affected by severe droughts. The study also found that the term ‘global warming’ was used more often until 2009, and in this year when the government ratified the Kyoto Protocol, ‘climate change’ was used more than ‘global warming’ to denote the phenomenon. Overall, this preliminary study established that the changes in press attention to CC bear a relationship with and are responsive to the government’s policy and local ecological extremes.

Having been ignored to a large extent for a significant period, when CC finally surfaced in press reporting and public discourse, its representations in the two analyzed mainstream newspapers showed some salient characteristics, which were viewed with the guidance of and in comparison to findings from other countries, and in a temporal context. The main findings are discussed in the framework of the three stages of reporting (Downs, 1972): a pre-problem stage (1999-2005), the stage of alarmed discovery (2006-2007), and a maintenance stage (2008-2009).

6.1.1. Climate change enters the public sphere as a diplomatic affair

In the analysis of the news articles carried out in **study 2**, attention was paid to the qualitative characteristics of the three stages of reporting (McComas & Shanahan, 1999). While the salient characteristics of the alarmed discovery and maintenance stages were not substantially different, the study showed that especially until 2006, that is, in the pre-problem stage, the mainstream news reporting was mainly based on intergovernmental events and international relations. This means that CC first gained (a limited level of) press attention as an issue of international politics and diplomacy⁵², reflecting the pressures put on the Turkish government by the international institutions, foreign governments and political actors.

This finding is compatible with the findings from the press of other industrializing countries (Carvalho & Pererira, 2008; Shanahan, 2009; Mercado, 2013), and points out a critical difference from those countries where the issue gained prominence much earlier, before the launch of the international framework of action (Carvalho & Burgess, 2005; Jaspal & Nerlich, 2014). The emergence of CC as a matter of intergovernmental events and international relations can be said to have overshadowed the portrayals of the relationship between climate science and politics. In other words, the established global political process served the image of a broad consensus that superseded to a large extent the definitional power of the institution of science in establishing the problem. As will be discussed below, this has been consequential in how the science of CC is reconstructed in the Turkish press.

Study 2 has also pointed out the overall prominence of (both Turkish and foreign) political figures among other social actors depicted in the news articles. When considered together with the continued saliency of the frame of international politics after 2006, this indicates the importance of the role of the (inter-)governmental institutions and politicians in bringing the issue on –and effectively setting– the media agenda (Trumbo 1996, Carvalho, 2005, Dotson et al., 2012). In the Turkish political context, this agenda setting function mostly contributed to the construction of a ‘global’ problem, to be dealt with at

⁵² That the reporting of the two newspapers –one that tends to neo-conservative, the other to neo-liberal worldviews– was not distinguished by this study may be taken into consideration here. It was initially hypothesized that the reporting of the two newspapers would not significantly differ, and this would be due to CC being treated as a ‘global’ issue, distant to the national political context. In this regard, study 2 confirmed that CC was still an emerging issue, not (yet) connected to local and national political conflicts, treated differently by neo-liberal and neo-conservative worldviews.

the intergovernmental level. Remarkably, this also means that the representation of the solutions –or rather the global framework of action– associated with CC have temporally preceded the representations of its causes and consequences. Before discussing how the relations between the global and local levels of action and solutions were constructed, let us first see how CC became an ‘earthly’ problem, after initially being represented as an abstract phenomenon at the intergovernmental and international level.

6.1.2. Global warming strikes: Dangerous climate change here and now

2007 was an extraordinary year in terms of concern with CC in Turkey, when the tranquility of the public sphere and the ‘coolheaded’ outlook of the mainstream press were considerably perturbed. The increase in the volume of articles (**Study 1**), and the qualitative changes, e.g. in the tone of reporting (**Study 2**), had already begun in 2006, and manifested the qualities of an ‘alarmed discovery’ especially in the first months of 2007. A ‘teachable moment’ (Lieserowitz, 2004) was created by the coincidence of regional scale extreme droughts with the scientific, political and cultural developments at the global level.

The ‘teachable moments’ are seen as the critical episodes of CC representation, when the dangers and risks previously represented both at temporal and spatial distances suddenly appear ‘here and now’ (Poumadere et al., 2005). Examples from the US (e.g. Lieserowitz, 2004) and France (Poumadere et al., 2005) suggest that these episodes hinge on local extremes such as heat waves and droughts.

The portrayals of dangerous CC ‘here and now’ can be conceived in terms of concrete and abstract, and immanent and transcendent representations (Harré, 1998), to show that the alarmed discovery of the problem and the swift increase in public attention cannot be directly attributed to the extreme droughts. Rather, it can be said that the droughts provided concrete local images for CC –e.g. shrinking lakes, disappearing wetlands– that was otherwise being circulated as an abstract representation at a distance from the Turkish context, with its associated transcendent proposals hardly reconstructed with a certain degree of local and national relevance. In turn, it was these abstract and transcendent representations (brought to play for instance by the release of the 4th IPCC Report, the movie *An Inconvenient Truth*, *The Stern Report*) which provided the means to depict the droughts as the already visible impacts of CC.

Both **Study 2** and **Study 3** have shown that the construction of local ecological

extremes as manifestations of ‘a serious threat’ entailed the anchoring of CC to these concrete dramatic events. These (re)signification processes of meteorological and ecological events by new scientific knowledge took place in other countries much earlier, for instance already in 1988 in the US press (Ungar, 1992). While in France it was the 2003 ‘European’ heat wave that gave way to the amplification of the risks and dangers brought into the national context (Poumadere et al., 2005), the Turkish public seems to have waited until the droughts of 2006-2007 for a sudden shift from attenuation to amplification of CC risks. The reason this shift –and the bringing of the threats here and now– was deferred so long cannot be explained by the intrinsic qualities or magnitudes of ecological events. Instead, it must be seen as powerfully influenced by the cultural and political context, which seems to have allowed the connection between the abstract and concrete representations to be made only after 2006.

6.1.3. Dramatization of the climate change threat

The anchoring of CC to its consequences –constructed both as present and in the future– can be conceived in the context of the overall prominence of the tangible impacts in representing this intangible problem (Smith & Joffe, 2009; Jaspal & Nerlich, 2014). Concrete images of impacts increase the newsworthiness of a story, and allow the media to solidify the tangibility of the threat by “providing the viewer with a concrete example of the impacts climate change can have” (Smith & Joffe, 2009, p. 658). Is this bringing of the intangible and distant threats closer to the lifeworlds of their audience, and this creation of a sense of urgency and action not part of what is expected from the mediating systems? Furthermore, if the –scientifically constructed– scenarios help people anticipate the likely consequences that are indeed alarming, is it adequate to call their representations in the press ‘dramatization’?

These questions reflect a quandary for both journalists and researchers. On the one side, the press (or the mediating systems) is expected to represent –the scientific consensus on– the human causes, the likelihood of their effects, for instance on the magnitude of weather extremes, and the serious risks unchecked CC is likely to bring about. In this framework, the creation of a sense of urgency and effective action on CC are seen as hindered by the representations of uncertainty and skepticism (e.g. Antilla, 2005; Moser & Dilling, 2007). On the other side, alarmism and dramatization are seen to have serious drawbacks concerning the understanding of the scientific basis, create

inappropriate representations, and stifle the sense of agency required to tackle the problem (Boykoff & Boykoff, 2007; Moser & Dilling, 2007; Foust & Murphy, 2009).

As initially shown by **Study 2**, and corroborated by the findings of **Study 3**, what was called dramatization of CC in the mainstream Turkish press involved:

- (1) an over-emphasis on the tangible impacts and future risks, in comparison to the human causes, solutions and responsibilities,
- (2) an inflated certainty in associating these to CC, brought about by the removal of all types of uncertainties, conflicts and complexities,
- (3) an appeal to nature and to emotions, in an alarming tone of reporting,
- (4) the construction of CC as an external ‘other’, or an agent itself which disturbs the delicate species and natural course of events, and,
- (5) mentions of human agency without an identifiable agent.

These aspects were all to be expected –to some extent– in the period of alarmed discovery, but contrary to the hypothesis which drew on the narrative characteristics of the stages of reporting (McComas & Shanahan, 1999), the alarmist tone in reporting and the dramatization of risks and dangers remained a general tendency in the collected corpuses through all the stages.

The climate drama staged by the mainstream Turkish press comprised two powerful images. The first was a local image in which ‘global warming strikes’, bringing the threats to ‘here and now’. The second ‘global’ image was based on future scenarios of the terrible consequences awaiting the world. These bear some resemblance to two of the eight discourses Doulton and Brown (2009) identified in the UK quality press. The first discourse of a ‘striking disaster’ entailed the imposition of the need for action without identifying an agent: “look what’s happening already, something must be done” (p. 194). The second discourse of ‘potential catastrophe’, in the UK, concentrated “much more on what must be done to reduce the impacts of climate change” (p. 194). Mainstream Turkish press representations displayed some difference from those of the UK press. First, the shock and the concreteness of what was witnessed at the local scale almost completely overshadowed ‘what must be done’. Second, the image of the ‘potential catastrophe’ also barely involved the frames of causation and action in relation to CC, this time in a reversed formula: ‘if something is not done, look what will happen’.

The relative downplay of crucial dimensions of CC –the human causes,

responsibilities, solutions— and the inflated certainty in reporting its potential negative consequences, led to the construction of a powerful ‘actant’, an extra-human force (Foust & Murphy, 2009), a new ‘enemy’ to be dealt with. Although the need for urgent action was at least implicitly present, and CO₂ and the GHGs were many times mentioned, the enemy was almost “always vague, ambiguous, socially empty or vacuous” (Swyngedouw, 2010, p. 223). This does not mean that the problem was represented as uncertain; on the contrary, it was almost ‘out there’, however, having been reduced to its dramatic consequences.

From a rhetorical perspective that takes into account the cultural, political and temporal context of the Turkish press reporting, dramatization can be seen as functional in keeping up with the hegemonic representation of ‘a global threat’, established years before in many other countries (Carvalho & Burgess, 2005; Jaspal & Nerlich, 2014). In other words, in this specific context, dramatization may be seen as a response to—at the same time as attracting—an unprecedented level of attention, through which the seriousness of the problem was established. However, paradoxically dramatization downplays the seriousness it establishes⁵³, namely by reducing the complexity of the causes of the problem and the policy information, as well as the power relations and conflicts to a simple image—of crisis (Boykoff & Boykoff, 2007).

In sum, that the action implications of the powerful images of crisis were confined to do ‘something’, to be done by ‘someone’ must be viewed in connection with the journalistic and cultural context, the position of the national government, and above all the temporality of social representations. Without a hegemonic representation of CC that would function as a social convention, the thematizations of its implications and the responsibilities these would involve could not be put in place. Once this is achieved, what was left by and large un-discussed until 2009 (i.e. the responsibilities of different actors, conflicts between scientific voices) may be expected to come to the fore of mainstream press representations. The shift from ‘global warming’ to the less emotive term ‘climate change’ to denote the problem, which took place in 2009, suggests that after this year significant changes may be expected in the press reporting of CC in Turkey.

⁵³ As mentioned in study 2, dramatization is seen as an important journalistic norm that interacts with the preference for novelty, and that influences what counts as news as well as the content of the news story (Boykoff & Boykoff, 2007). It is seen as a tendency to reconstruct a story by bringing to the fore its expressive and shocking aspects, and trivialize the content, while concealing the complex, unceasing and continuous aspects of the issue. The goal is to produce episodic spectacles and entertainment, in a way that is directed to the passions of the audience rather than knowledge and rationality (Bauer et al., 2001).

6.1.4. *Scientific authority and certainty*

A repeatedly examined question regarded the representation of scientific knowledge about CC, which was specifically focused on in the second part of the **Study 3** in order to see whether and how the uncertainties characterizing the problem were dealt with, and how the voice(s) of science were reconstructed. Findings of the **Study 2**, and the two parts of the **Study 3** corroborate each other, and point out the un-discussed authority ascribed to scientific expertise. This involved the rhetorical use of ‘category entitlements’ (Potter, 1996), or the use of generic entitlement categories such as the ‘British scientists’. This anonymous plurality of the ‘experts’ both represented the consensus achieved among the experts, and the distance –both actual or spatial, and symbolic– between the source and the audience reconstructed by the news articles. In short, as in many other countries that are not appointed as primarily responsible in reducing GHG emissions, the mainstream Turkish news articles clearly depicted “an image of a unified scientific community” (Ramos & Carvalho, 2008, p. 229) that has achieved consensus and certainty.

This can be acknowledged as a generally positive point in depicting scientific knowledge on CC, when compared to the perpetuation of controversy and contestation, and the production of new polemic representations, in upholding the media’s balancing norms (Boykoff & Boykoff, 2004). However, the anonymous and authoritative voice of science was hardly ever employed so as to open up space for the heterogeneity of views, voices and stakes, or emancipated representations. Scientific achievements and their means of production were mostly left un-discussed, and scientific knowledge was employed to simply circulate a hegemonic representation, namely that there *is* a problem.

Hence, the reconstruction of the voice of science as a monologue had an important role in establishing the ‘global threat’ and the dramatization of risks. First, what was called inflated certainty, in this context, referred especially to the portrayal of future risks as impending outcomes (that will happen) rather than as anticipation of likely consequences (that may happen). Human agency or the potential to avoid these scenarios was not completely erased, but was obscured behind the picture painted by the powerful monologue of science. Second, ‘emotional anchoring’ (Höijer, 2010), or the appeal to emotions rather than rationality to represent CC, was carried out by depicting the disturbance of animal species, and other temporal and spatial images of irreparability (Zagacki, 1999), for instance dried lakes and melting ice shelves. These expressive representations involved an appeal to nature, and the avoidance of complex political

questions and challenges.

In summary, (the deterioration and disturbance of) nature and (the tragic but somewhat avoidable) future have constituted the two important resources for representing CC in Turkish press. In helping to establish the hegemonic representation of a ‘human caused threat’, the rhetoric of science was mainly employed to mobilize these two powerful resources in a way of sounding the climate alarm and creating a spectacle of CC, rather than making intelligible the highly contested knowledge claims and future prospects that concern the many levels and scales at which the human activities interact with the environment. The following section places the dramatization of CC in the framework of a disconnect between these levels and scales –of causation, consequences and action.

6.1.5. A disconnect between the global and the local

The dramatization of CC, and the involvement of the representation of scientific knowledge in this pursuit, can be put into context and better understood by considering how the global and local aspects of CC were reconstructed in the press articles.

To do this, the findings of the **Study 2**, namely that only the concrete impacts associated with CC were represented in local and national contexts, should be recalled. While the ‘causes’ of CC could not be included in the HOMALS conducted in this study – due to the extremely low frequency of this category–, the only category that remained at the ‘local’ side of the two dimensional distribution was the ‘land and water management’ issues. When the ‘causes’ were included –in **Study 3**–, they remained in what was previously designated as the global end of the distribution, together with other category nodes that represented the ‘science of climate change’.

On the other hand, as discussed above, CC was mainly associated –especially in the pre-problem stage– with the intergovernmental agenda directed to formulate solutions against CC at the global level. This also meant that the agency for action and the solutions against CC were primarily constructed at the ‘global’ level, or outside the country. The assessment of the linked public and policy issues in **Study 2** showed that this trend was maintained in the later stages of reporting, given the overall prominence of ‘international relations’ over other issues like health, transport, and education.

Having been observed also in different contexts (Rathzel & Uzzell, 2009), and especially in the press of those countries that are permitted to increase their GHG emissions (Billet, 2010; Mercado, 2013), these findings probably reflect a more general

trend. For instance, in the Portuguese press reporting of CC, Carvalho and Pereira (2008, p. 151) have found “a disconnect between the ‘global’ problem” and its local forms of causation. Furthermore, the agency and responsibility for solutions were found to be ascribed to the political system in a general manner, without putting the concrete Portuguese political institutions into the picture.

The construction of the impacts inside, and the causes and solutions outside the national borders is reported to take place in the form of an explicit conflict and political confrontation in the press of other countries such as India and Argentina. The risk-responsibility divide identified by Billett (2010) in the Indian press referred to the representation of the impacts in the country, while ascribing the responsibilities to take action against, and the causation of CC, to other –industrialized– countries. Similarly, this international ‘othering’ (Joffe, 2004) was reflected in the confrontation between ‘us and them’ over the responsibilities of industrialized and industrializing countries in the Argentinean press (Mercado, 2013).

A conflict between the ‘common but differentiated responsibilities’ of North and South was not pervasive in the mainstream Turkish press representations. Yet, this conflict may be seen to subsist in the disconnect between the local image of CC constructed (mainly by the images of drought) as a bio-physical or environmental threat, and a global image of CC as a diplomatic and political problem, to be solved at the intergovernmental level. Such a disconnect provides some further explanation for the high levels of dramatization in the news articles. In other words, the dramatization of CC that permeated the overall news discourse can be seen as crucially depending on the dissociation of the local image of ‘climate threat’ from the global image of CC politics and solutions.

6.2. Discussion of the findings from the interviews with the NGO experts

The second empirical chapter presented three studies on the in-depth interviews conducted with the NGO actors actively involved in CC communication and action. The involvement of these actors in CC information and policy radically differs from that of the mainstream press. This difference was acknowledged by depicting the NGOs both as mediating systems and sub-political actors (Beck, 1999), with conflicting roles and positions in the CC debate. In accordance with their ambivalent relation to the scientific authority (Yearley, 1996), and the dialogical nature of the interview setting, the discursive representations of these actors were expected to involve more conflict, contradiction, and

higher levels of reflexivity, and also to make more intelligible the findings obtained from studies on the mainstream press.

The three consecutive studies conducted on the interview data were focused on the non-reflexive (word associations), reflexive (open ended questions) and (video-elicited) argumentative parts of the interview. The analyses of these parts employed the three approaches to the study of social representations, respectively the structural, genetic, and dialogical approaches.

6.2.1. Consensual core: The human causes and responsibility

The structural analyses of the non-reflexive word associations in **Study 4** helped constructing some initial hypotheses concerning the central and peripheral elements of CC representation(s). The two analytical techniques employed in this study yielded similar results concerning the centrality of the human causes: The evocation analysis yielded the human *causes* and *urgency* as the central elements, and the similitude analysis yielded the *causes*, *impacts/risks*, and *political problems* as the central elements. Consequently, a consensual core, constituted by ‘a human caused problem’ was hypothesized, as connected with two other important but less central representational systems: ‘environmental impacts and risks’, and ‘socio-political problems and barriers’.

These preliminary findings were re-examined in **Study 5** by employing the categories constructed by the previous study as thematic categories of reflexive representations. When the first degree descriptions –the frequencies of the thematic categories– were considered, the *causes* appeared with less importance in the representations. The more salient themes were the *solutions* (mainly the ‘macro-policy instruments’ and ‘socio-political solutions’), and *impacts* and *risks* (both of which comprised ‘environmental’ and ‘societal’ sub-categories). *Urgency* did not emerge as a salient theme in the reflexive representations.

These initial findings were reconsidered by paying attention to the relations between the thematic categories, and by taking into account that hegemonic representations, or the taken for granted knowledge, prevail only implicitly in communication and discourse (Moscovici, 1998/2000d; Markova, 2008b; Mouro & Castro, 2012). Hence, the anthropogenic *causes* were not regarded to have a minor importance in the reflexive representations simply by depending on their relatively lower frequencies. Instead, the human causes and responsibility were conceived to constitute the

consensual, taken for granted part of the reflexive representations. In other words, that CC is an anthropogenic problem was treated as a convention, an essential aspect of the representations, and therefore was only shortly –but carefully– mentioned, and as in the news articles from the mainstream Turkish press, was not discussed or thematized further.

NGOs, as well as other sub-political actors of environmental governance, are many times criticized for introducing alarming discourses, amplifying risks, and endorsing extreme measures (Giddens, 2009). However, **Study 5** did not obtain findings concerning high levels of alarmism and a strong emphasis on the need to urgently address the problem. The retreat of *urgency* from the reflexive representations –after being frequently and readily mentioned in the free association task– may be conceived from a rhetorical perspective. Possibly, by being conscious of the potential drawbacks of alarmist discourses, the interviewees –most of which were highly experienced in CC governance processes– restrained their arguments in a way to avoid clear-cut contrasts, one-sided judgments, and explicit emphasis on the urgency to act against CC.

The two representational systems connected to the consensual core in **Study 4** were re-examined in **Study 5**, and were designated as organizing themes (Attride-Stirling, 2001). The (environmental) impacts and risks, and (socio-political) solutions were found to function –to some extent– as the organizing principles of interindividual differences (Spini & Doise, 1998) in representing CC. Some interviews –bearing some resemblance to the press representations– were organized around the *impacts* and *risks* associated with CC. These were used for connecting the human causes (GHGs, fossil fuels) to a series of solutions, which were represented as complementary to and in synergy with each other. In other interviews, the human causes (economic growth, consumerism) were more directly connected to the solutions, without thematizing the impacts and risks. In these interviews, the representations were organized around *solutions*, which were thematized, compared to each other, and distinguished as ineffective and ‘better’ solutions. The following section discusses how the interview data was organized around these two themes or representational systems.

6.2.2. Divergent thematizations: Appeals to nature and to society

Study 5 highlighted how the interviewees distinguished between two representations of climate change. In the first, CC was depicted as an environmental problem, to be dealt with by combining various mitigation options and technical solutions. In the second, it

was constructed as a societal problem, to be dealt with by profound social transformations and political solutions. While in the first representation, which emerged as the more dominant or widely shared one, they resorted to nature and to science as a way to afford impartial, ‘objective’ and moderate arguments, in the second they resorted to society in a way to afford explicitly political and at times confrontational arguments.

Both representations involved or hinged upon the consensual core of the human caused problem. Yet, they parted in the articulation of these causes (simple or straightforward causes such as GHGs, and complex causes such as economic growth), as well as in the solutions offered to tackle the problem, and as mentioned above, in the organization of—or the discursive connections achieved among—the themes.

The representation of CC as an environmental problem involved an expert rhetoric, which, to be effective, requires an awareness of the lay perspective (Baber & Bartlett, 2005). This meant to focus on the problem, striving to make intelligible its diverse aspects (thematizing mainly the impacts and risks associated with CC, as well as the ways to deal with these) for the Alter, the general public. The efforts to offer simple, ‘impartial’ arguments many times entailed the construction of a generic human subject, a ‘global soul’, and some degree of evasion of relevant socio-political questions and conflicts (Doyle & Chaturvedi, 2010). The problems regarding the field of action and existing policies were mainly depicted as problems of management, requiring better integration of diverse perspectives, and ‘good governance’. This is coherent with the literature:

‘Good governance’ involves the assumption that, as a rule, social and economic problems are to be tackled by adopting a technocratic managerialist approach that denies itself to be a particular political choice. Yet, at the same time, this approach habitually works to obscure the irreconcilability of some significant antagonistic interests—and hence to discourage potential challenges to powerful vested interests. (Weltman & Billig, 2001, p. 380)

The main goal of those interviewees who resorted to CC as a societal problem was to reinsert and thematize the socio-political questions and conflicts avoided in the first representation. This was done by employing the features of the activist rhetoric (Stevens, 2006), namely to extend and transform the more dominant representation of an environmental problem through more engaged and at times confrontational arguments. In this sense, the second representation could not be brought into play without its dialogical Alter, the first representation. In other words, the second representation can be said to

have the function of a reflexive reconsideration of whether the solutions offered in the first representation were adequate or sufficient to tackle CC.

6.2.3. *Back and forth between the two representations: Cognitive polyphasia*

The two representations mentioned above bear considerable similarity to the discourses of ‘consciousness change’ (the first representation) and ‘political change’ (the second) as identified in the ecological movement (Dryzek, 2005). As emphasized by Dryzek, the difference between them was many times a matter of emphasis, meaning that both types of changes were represented in most of our interviews, bringing forth both conflicts and reconciliations. The two representations, then, were in a dialogical and rhetorical relationship, and often in intersection or interference with each other in the majority of the interviews.

In the present work, the theoretical and analytical interest in scrutinizing these representations was precisely to look at how they interfere with each other, rather than using them to classify the interviews and interviewees into ‘radical’ and ‘moderate’ groups. In doing this, premises of rhetorical psychology (Billig, 1987, 1991) and argumentation theory (Snoeck-Henkemans, 1995) were combined with the dialogical perspective (Markova, 2008b) of the TSR. This decision was taken seeing that the most part of the arguments were directed to avoid overt conflicts, and bring together and reconcile divergent views. In other words, since the mutable and rhetorical nature of these views do not permit clear-cut (inter-individual) distinctions, specific attention was paid to the polyphasia in cognition and argumentation, by focusing on the ‘phases’ and the organization of the arguments.

In the reflexive and argumentative parts of the interviews, the conjunctions of apparently conflicting views and reconciliations mainly relied on a specific format of polyphasia (Mouro & Castro, 2012): The ‘Yes, but...’ discursive format was employed for hedging the disagreements, and to achieve balanced and hence more persuasive arguments (Billig, 1991). In complex argumentative sequences involving a series of ‘but’ and other conjunctives, the interviewees brought into play both representations, moving back and forth between, and negotiating different solutions, policy proposals, as well as the conduct of their own (countries) and others. Hence, this discursive format, and the conjunctives of conflict and reconciliation were taken into the center of the analysis in **Study 6**.

6.2.4. *Rhetorical organization of the arguments in the two argumentative episodes*

In the analysis of the argumentative part of the interviews, that is in **Study 6**, the focus was on the rhetorical organization of the arguments against the views presented in two episodes by two video-excerpts. In examining how the interviewees dealt with the arguments presented by two skeptical scientists (first episode), and a climate activist (second episode), special attention was paid to the ‘Yes, but...’ type of discursive organization as a specific format of polyphasia (Mouro & Castro, 2012). In both episodes, the polyphasic arguments were mainly ordered in the following way: (1) first a *conventionalizing* argument, offering partial agreement with the presented view (Yes), (2) then *thematizing* arguments, issuing partial disagreements with and restricting the presented view (but).

In the episode of scientific controversy, this was carried out by thematizing the *implications* of the presented argument; first legitimizing it as a scientific argument, then delegitimizing its implications in the world of politics: ‘*Yes, scientific knowledge on CC is not (yet) absolutely certain, but we cannot permit this to hamper political action, we must act with what we know*’. In thematizing the disagreements, an ‘identity shift’ (Castro et al., 2010) from scientist to politician, as well as the knowledge on environmental and economic consequences of CC were put into play.

This type of confrontation with and reconciliation of the conflicting views on the human causes of CC was one of the three rhetorical strategies identified in this episode, which, by conducting a HOMALS, were connected to the two representations identified in **Study 5**.

Another strategy followed by the interviewees in responding to the first video excerpt was to focus on the *motives* of the skeptical scientists, depicting them as carrying out ‘lobbying’ activities, rather than scientific ones: ‘*We know these people, but this not science*’. The *reified* image of science, employed for clearly distinguishing the scientific and political motives, and to delegitimize the presented views (Alter) were associated with the first representation.

A third strategy was to focus on the *assumptions* of the skeptical scientists as to the nature of scientific knowledge, depicting them as having a fallacious ‘black and white’ view of science: ‘*We should stop expecting everything from science, and overcome this black and white, who is right who is wrong approach, the truth is probably somewhere in the middle*’. The *consensual* image of science, employed for emphasizing that the debate

was both scientific and political, and legitimizing the presented views (Alter) while delegitimizing their core assumptions, was associated with the second representation.

Hence, the results of the HOMALS confirmed the description of the first representation as an environmental problem, and the second representation as a societal problem. While both representations necessarily draw on the scientific knowledge, the first tends to reify and clearly distinguish it from society, to depict an objective environmental problem. The second representation, on the other hand, tends to open science to social interests and negotiation processes, depicting the problem as matter of social and political relationships.

The interviewees' responses in the second argumentative episode, created by the controversial views of a climate activist on 'carbon offsetting', was thoroughly characterized by polyphasic arguments and the use of the 'Yes, but...' discursive format. The policy controversy concerning the carbon offsets involved three groups of arguments, which again were connected to the two representations identified in **Study 5** by conducting a HOMALS. Those arguments that legitimized carbon offsetting were associated with the first representation, while those arguments that delegitimized carbon offsetting were associated with the second representation.

The polyphasic arguments that negotiated and reconciled the meanings attached to carbon offsetting were organized to first partially agree with the Alter and hedge the disagreements, and then to thematize the disagreements: *'Yes, carbon offsets are not the best solutions to tackle CC, but they can be part of the solutions if applied rigorously'*. Or in the reverse order: *'Yes, these type of measures may help getting people involved in tackling CC, but this is not enough, the use of balancing out our emissions is insignificant against the challenge of CC'*.

6.3. Main limitations and scope for further research

This section looks back on some limitations of the studies and contributions outlined above, and looks forward for ways to overcome these in future research.

To start with the shortcomings of the studies on press representations, first, most of the findings discussed in **Chapter 4** were obtained from a quite limited fraction of the Turkish press, that is, from those articles published in four 'serious' news sections of two mainstream newspapers. For a more complete understanding of how CC is depicted in the

Turkish press, further inquiries should pay attention to other sections of the newspapers such as the opinion articles, which may potentially involve higher degrees of thematization and polemic, and allow more conflict to be brought in. Furthermore, taking note of not only the mainstream newspapers, but more diverse sources from the Turkish press (i.e. right leaning and left leaning press) is necessary to account for how different groups and ideological cultures take hold of and deal with the problem⁵⁴.

Second, collecting a ‘representative’ corpus of articles allowed **Study 2** to offer some broad descriptions and comparisons of the salient trends in mainstream reporting of CC in Turkey, but these trends were obtained at the expense of idiosyncratic characteristics of particular episodes. Most remarkably, what was called the ‘alarmed discovery stage’, engendered by a combination of ecological, cultural and political events and developments that mainly took place in the last months of 2006 and the first months of 2007 could not be accounted for with precision. In other words, the designation of the alarmed discovery stage as a two-year period was a limitation of this study that has restricted the relevance of the findings concerning this critical episode of CC coverage in Turkey. This critical episode should be paid closer attention in further studies, for instance by building a month-by-month corpus, distinguishing the contributions of international and local events in the upswing of coverage, and focusing specifically on how the images of drought were connected to CC. Arguably, the qualitative differences between the stages of ‘alarmed discovery’ and ‘maintenance’ –which could not be discerned by the study– would only be possible by such closer inspection.

Third, the content analysis strategy followed could have been accompanied by a second, more discourse oriented analysis. Such an approach would help overcoming the drawbacks of coding the articles into ‘either-or’ categories of content, and potentially identify whether and to what extent the ‘both-and’ (Beck, 2010) characteristics of CC were represented in the news stories⁵⁵. Experiencing such drawbacks in the HOMALS

⁵⁴ In this regard, a study that compares the coverage of CC in 6 newspapers that are connected to marginal left-wing and right-wing ideological groups was conducted. Despite the data collection and preliminary analysis and classification of the articles were completed, the results of this study could not be included in this thesis due to constraints of space and time.

⁵⁵ In this regard, coding for the ‘communication genre’ as a variable (with categories of diffusion, propagation, propaganda) has broadly shown that combination of and contrast between different types of knowledge and divergent views were very limited, and that the articles have mainly communicated their content in the diffusion genre. However, what was combined and contrasted, and what was simply transmitted as uncomplicated information could not be made intelligible, since the ‘communication genre’ was coded as a property of the article, rather than being analyzed as a relation between the various categories of content and types of knowledge.

conducted in **Study 2** –in which the categories with extremely low frequencies had to be excluded in order to avoid a radically skewed distribution– the content analysis in **Study 3** was performed as a preliminary to the analysis of how the scientific voices were reconstructed in the news discourse. As demonstrated by this study, at least when depicting the scientific knowledge on CC, the articles in both newspapers have resorted to a monological, episodic framing of the problem, rather than covering its ongoing, ‘both-and’ aspects. However, the inferences drawn from the content analyses as to this trend were limited by the coding strategy employed in these analyses that only permitted first-degree descriptions (Rouquette, 1993). The lesson to be drawn for future studies is the need to pay attention to multiple aspects and levels of discourse, even when the data does not seem to offer these, precisely to be able to account for it empirically.

In connection to the above, a fourth limitation of the studies on press portrayals can be considered by drawing on the findings that the mainstream Turkish news articles have depicted a rather simplified and dramatic image of CC⁵⁶, and were oriented to stir emotions. This leads to a question concerning the adequacy of looking only at the linguistic and discursive features of the mainstream press representations of phenomena like CC. In other words, it highlights the relevance of taking into account also the images accompanying the articles, which have a powerful potential in stirring emotions, objectifying the problem, and concretizing the risk messages for the public (Smith & Joffe, 2009; Höijer, 2010). For the future, paying attention to the visual and emotional aspects of CC portrayals is likely to be particularly beneficial⁵⁷ especially in those studies that look into the popular press and to the emergence phase of social representations.

Although the interview study as a whole was administered with more experience – as compared to the studies on the Turkish press– and a better understanding of the research challenges in examining CC, it was not without certain shortcomings.

The strategy followed in linking the non-reflexive part of the interviews (**Study 4**) to the reflexive part (**Study 5**) was to draw some initial understanding and hypotheses from the word-associations obtained in the former, and to make use of these in the

⁵⁶ In this context, it is also relevant to recall that according to some authors, even when detailed knowledge and messages are provided, people usually attend to and digest simple images of hazards, rather than the detailed content of the news (Mazur & Lee, 1993; Mazur, 1998).

⁵⁷ This in turn necessitates reaching at the hard-copies of the newspapers, instead of collecting the articles from custom the built online archives of the newspapers, which at the same time would lead to overcoming certain inconsistencies met in these archives, and improve the analysis by providing more information about the context of reporting, e.g. location in the page, headlining.

analysis of the latter. That means, instead of allowing the interviewees to reflect on, connect and thematize their word-associations, how these pertain to the reflexive articulations was decided by the researcher during the analysis. An alternative and useful strategy, employed by other social representation researchers (Smith & Joffe, 2013), could be structuring the reflexive part of the interviews around the word-associations collected at the outset, and thereby linking these two parts in the course of the interviews.

Another limitation regards the extent to which the inter-individual differences in representing CC were accounted for. Given the limited number of interviews conducted, the studies were focused more to the questions of ‘how’, rather than the questions of ‘who’. Consequently, **Study 5** could only discern a relationship between younger/older age, and no significant differences between the two countries, genders, and educational backgrounds as to the endorsement of the two identified representations. Since the two representations appear as linked to ideological cultures, arguably, even a rough distinction between the NGOs included in the study –for instance those oriented primarily to environmental protection and to environmental activism– could afford more explanation as to the individual differences in how CC is represented. In this regard, there are many questions that need to be addressed with systematic empirical research: ‘Who is more likely to bring up and put emphasis on the socio-political aspects of CC? Which organizations, identities, ideologies are associated with the restraining of CC communication to ‘objective’ facts concerning an environmental problem?’ By whom, when, and with what ends the environmental and socio-political aspects of CC are contrasted, and confrontations are brought into a debate characterized by reconciliations and recognition of others’ views?

Last but not the least, a question remains on how well the studies on the Turkish press and the interviews with the NGO actors were connected. The strategy I followed to connect the analyses of the two mediating systems was to include open ended questions in the interviews about the contribution of the national media organizations in making CC intelligible for the public. As it turned out, this strategy obtained no more than conventional answers, mostly regarding the lack of sustained and serious media attention⁵⁸. Arguably, this was due to not drawing detailed enough questions from the

⁵⁸ In this regard, it may be recalled that the responses to the (third) video-excerpt –which was used in an attempt to instigate a third argumentative episode– featuring a media reporter covering the Copenhagen Climate Summit was excluded from the analysis. This was mainly because the interviewees focused on different aspects of this video-excerpt, which hampered the instigation of an argumentative episode.

studies on press –for instance on the relationship between the media coverage and the approach of the national government– which could lead to more fruitful discussions in the interviews. In consequence, the connection between the analyses of the press and the interviews, and the ways CC is represented by the two mediating systems remain to be synthesized. This is the task taken in the following section.

6.4. Integrated discussion: Mediating systems in making climate change public

This thesis project was mainly preoccupied with how the incompleteness and the ‘lack of object-ivity’ of CC are dealt with by the two mediating systems. A first step in summarizing the findings on these dealings regards the appeal to emotions and to dramatic events in the mainstream Turkish news articles, in contrast to the compelling ‘reflexivity’ of the NGO actors in representing climate change.

As discussed above, in a general appeal to nature and to emotions, the mainstream Turkish press has mainly depicted CC as a dramatic threat, resorting to conventionalizing representations and avoiding thematizing ones (Markova, 2008b). This was done by employing science as a powerful monologue, removing virtually all conflict and contradictions from the news stories, as well as the differentiated responsibilities and agencies to deal with the problem. The interviews conducted with the NGO experts, on the other hand, were characterized by a persistent appeal to rationality, and the dialogical recognition of many others and reconciliations between multiple perspectives to CC. According to Beck (2002), ‘dialogic imagination’, the defining characteristic of the emerging global society around the perplexing risks, “corresponds to the coexistence of rival ways of life in the individual experience, which makes it a matter of fate to compare, reflect, criticize, understand, combine contradictory certainties” (p. 18). With years of experience in CC negotiations and policy, the interviewees can be said to have provided some of best examples of the encounter of different cultures and rationalities in the form of the ‘internalized other’ (Beck, 2002).

Why such a contrast between the two mediating systems? How can we understand the reflexive and polyphasic representations brought to play by the NGO actors against the non-reflexive and monophasic representations by the mainstream press? To start with the ‘simplistic’ press representations, first, it has to be recognized that CC, with its enormous scope and intricate dimensions, is not a topic that can be covered in a short article (Dotson et al., 2012). Second, the cultural and temporal context of CC representations in Turkey

were taken into consideration: A simplified image of CC was functional in establishing a convention, a hegemonic representation (Jaspal & Nerlich, 2014) that could lead to thematizations of its more complex and conflicting dimensions in the later cycles of reporting. Finally, considering the journalistic and political context, that is, the tendency toward sensational news journalism (Christensen, 2010) and the high levels of political parallelism of the media (Kaya & Çakmur, 2010) in the country, as well as the decades of reluctance of the Turkish government, the overly simplified image of CC can be understood also as a political product that reflects the (geo)political power relationships.

As to the reflexivity of the non-governmental experts, the first point to be recognized regards the nature of the interview setting: The availability of more time and space –in comparison to the production and scope of a news article– and the provoking questions are probably involved in the difference between the representations brought to play by the news articles and the NGO actors. Secondly, the articulation of contradictions and ambivalences may be seen as a necessary response to the heterogeneity of perspectives and the deeply contested process of generalization of new ideas and norms. In their efforts to offer concrete content to transcendent representations, NGO actors actively involved in the policy processes are faced with a multiplicity of positions, meanings and stakes, rather than a broad audience and straightforward acceptance (Howarth, 2006; Castro, 2012). Their complex polyphasic arguments can be seen as efforts to both contain, and remain reasonable and relatively impartial in this multiplicity.

The rhetorical function of these impartial, reconciling, polyphasic arguments may also be discussed with regard to the changing relationships between the communication genres propagation and propaganda. Citing the second edition of Moscovici's influential work, Doise (2011) has pointed out the changing dynamics of the meta-system of communication relations, namely the increased currency of propagation. Even if the preference for propagation –over propaganda– is limited only to some discursive domains, environmental discourse is surely one of these (Harré et al., 1999; Castro, 2006; Rathzel & Uzzell, 2009; Mouro & Castro, 2012). In the last decades, not only the dismissal of the alternative perspectives, even the very use of the notions of argument and critique has been increasingly depicted with a pejorative sense (e.g. Tannen, 1998), and communicative action is emphasized with the importance of mutual understanding and recognition of the others' perspectives (e.g. Jovchelovitch, 2007, 2011). As a consequence, especially in the multi-level governance contexts and issues of diverse

concern like CC, propaganda has become an impossible means of persuading others. In short, the binding and reconciliation of conflicting perspectives may be seen as a rhetorical strategy built on “a skillful capacity to segment knowledge about ourselves and society and to rationalize the inconsistencies and contradictions experienced” (Webb, 2012, p. 117) in a way that is more acceptable and persuasive for others (Billig, 1991).

At a second step, what was called above the reflexivity of the NGO actors, and the lack of reflexivity of the mainstream news articles must be put into the specific communicative contexts of press reporting and the NGO discourse. Here we can see that what is expected of the two mediating systems, and the dialogical Alter they construct in undertaking these expectations are fundamentally different. It appears that the mainstream press in Turkey has confined itself to merely providing new information on CC –in the diffusion genre of communication and in an episodic manner, without the need to thematize this information. Reflexive reconsideration of the knowledge they pass onto the public is probably not what is asked of them and what they assume as their task in reporting about CC. This specific context of Turkish press reporting can be said to have led the mainstream news articles to characterize their audience –their Alter– as an undifferentiated public, a single ghost, that is assumed to conform to the main guidelines of a debate with ‘global’ meaning dimensions constructed elsewhere.

The NGOs engage with this debate not by constructing a unified, undifferentiated Alter, but by reconstructing the multiple perspectives and layered investments of manifold others. As mentioned above, their main strategy in undertaking what is expected of them, namely the transformation of public consciousness and policies, has been to reconcile between the conflicting views, knowledges, beliefs and exigencies that stem from the global and local contexts.

At a third and final step, the dramatization/simplifications carried out by the mainstream press and rationalization/reconciliations carried out by the NGO actors can be viewed in connection to the expansion and contraction of the scope –or the elements– of the representations. In the press representations, as well the dominant representation brought into play by the NGO actors, the vocabulary was limited to the ‘objective’ elements provided by the sciences and those consequences of CC that are represented as ‘out there’. The reflexive reconsideration of this hegemonic representation of CC by NGO actors was carried out by inclusion of a whole new set of explicitly political vocabulary, and an expansion of the scope of representation. Although this expansion –entailing the

transformation of representations, which is its main goal– was connected in **Study 5** to the activist rhetoric (Stevens, 2006), the dynamics of contraction-expansion of the scope of representation(s) is probably a question that is much more complex.

Recalling here the example of the ‘Do the math’ campaign mentioned in the introduction chapter, in which the grassroots activists and campaigners of the 350 movement strived to depict an utterly simplified image of CC, may help seeing that the contraction or restriction of the representation(s) may also be carried out by the activists, and those who are thoroughly involved in the transformation of representations.

This thesis has contributed to the efforts to make intelligible this complex and compelling question by drawing on the extent to which natural and socio-political, the epistemic and the normative, and global and local are connected to each other by two mediating systems of CC representations. In this context, it suggests the following: The broader the audience and the more ‘global’ and undifferentiated the Alter are, the more contracted, simplified and restrained are the representations.

The tendency to simplify and contract the representation(s) can be seen as a rhetorical effort to build consensual commonplaces of CC knowledge and action, rather than a distorted view of the problem. However, to furnish practicable solutions in industrializing countries like Turkey, this global environmental problem has to be localized and interwoven with layered investments, stakes, interests and ideological projects. The process of extending this hegemonic representation, binding it with new transcendent proposals and polemical representations will probably involve a series of thematizing ‘but’s and ‘however’s, yet the social actors may be expected anytime to resort to the consensual core of the representation with regard to their goals and audiences.

Let us be clear that this process, which can be said to only have started in many industrializing countries like Turkey, will not be smooth and uni-directional. The issue will probably be increasingly territorialized in these countries along with the efforts of the mediating systems, but it unavoidably will remain as a ‘global’ problem. The ‘lack of object-ivity’ of climate change will probably be reduced by this mediation and boundary work, but in this process scientific knowledge claims may expected to be increasingly contested and destabilized. Climate change will probably be recognized increasingly as a social and political problem, but its demarcation will continue to depend on its concrete consequences and ‘impacts on nature’. The debate may be expected to slowly move from a battle over truth to how to collectively and practically decide and act within uncertainty,

but simultaneously, the norms and the authority of science will continue to provide the most powerful rhetorical resources in confrontations. Overall, this work suggests that representations of climate change are likely to be characterized by back and forth movements of reflection, resorting to different types of reasoning, norms, and rationalities.

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APPENDIX A

THE CODE DICTIONARY USED IN THE CONTENT ANALYSIS

APPENDIX A

The Code Dictionary

used in the content analysis of news articles (Study 2 and Study 3)

1. Newspaper

1.1. Hurriyet

1.2. Zaman

2. Keyword

2.1. Global warming (+science)

2.2. Climate change (+science)

3. Section (The section of the newspaper the article is published in)

3.1. World

3.2. Economy

3.3. Politics

3.4. Agenda

4. In-direct

4.1. Direct: Coded if the article directly deals with the issue.

4.2. Indirect: Coded if the article only mentions and does not directly deal with the issue.

5. Date (The date the article is published)

6. Source/Author (Source provided in the end of the article)

6.1. Newspaper: Coded if the article is signed by the newspapers name.

6.2. Author: Coded if the article is signed by a specified author.

6.3. National press agency: Coded if the article is signed by a national press agency.

6.4. International press agency: Coded if the article is signed by an international press agency.

7. Length (of the article)

7.1. Short article: Coded if the article covers one event or reports on one subject, and is comprised of less than 3 paragraphs.

7.2. Mid-length article: Coded if the article covers an event or subject by referring to different sources, contexts, and is comprised of more than 2 paragraphs.

7.3. Long article: Coded if the article covers more than on subject or event, and is divided into subsections by subheadings.

8. Scale (Geographical scale or geopolitical level)

8.1. Local: Coded if the article reports a local issue or event without connecting it to other issues or contexts.

8.2. National: Coded if the article reports a national issue or depicts the content in the national context.

8.3. Global: Coded if the article reports a global event or depicts the content in the global context. Polar regions, oceans, all international meetings are by definition global.

Level overrides scale, if a drying lake is reported together with the need to build a national plan, code national; if the risks at the Turkish coastline are explained by a Japanese scientist, code global.

9. Dimensions (Dimensions of understanding of climate change)

9.1. Causes: Coded if the article primarily reports about the causes of CC

9.2. Impacts: Coded if the article primarily reports about the events that are associated with CC as its consequences and that have taken place.

9.3. Risks: Coded if the article primarily reports about the future events that have not yet taken place, and that are likely to take place as consequences of CC.

9.4. Solutions: Coded if the article primarily reports about any action, attempt, proposal, or policy that target mitigation of or adaptation to CC.

10. Actor (Main actor depicted, can be both the object and the subject of the article)

10.1. Scientist: Coded if the actor is explicitly designated as a researcher, expert, scientist, or with academic titles.

10.2. Politician/government: Coded if the actor is a government, political organization, or a representative of these.

10.3. NGO: Coded if the actor is a non-governmental organization (the UN is not an NGO).

10.4. Corporate/business: Coded if the actor is a corporate or business organization, and/or designated as a member or representative of the industry.

10.5. Celebrity: Coded if the actor is not explicitly designated in connection to any directly relevant institution, and the actor relates to CC is a widely-known, popular figure.

10.6. Non-human: Coded if no actor is specified other than non-human species or CC itself, and/or these entities are depicted as ‘actants’.

10.7. Common people/consumers: Coded if no actor is specified other than the generic human subject, and/or people in their daily activities.

11. Discursive source (Main source referred to in the article, used only in Study 3)

11.1. Scientist: Coded if the subject of the article is explicitly designated as a researcher, expert, scientist, or with academic titles.

10.2. Politician/government: Coded if the subject of the article is a voice representing a government or any political organization.

10.3. NGO: Coded if the subject of the article is a voice representing an NGO.

11.4. International organization: Coded if the subject of the article is a non-profit international organization.

11.5. Corporate/business: Coded if the subject of the article is a designated as member or representative of the industry, corporate or business world.

11.6. Another publication/journalist: Coded if the content of the article is provided by another publication or journalist, and this is stated in the text of the article.

12. Theme (The main issue raised in the article in a way that characterizes its content)

12.1. Technological/scientific: Coded if the article depicts issues related to scientific research, findings or controversies, and/or new technologies.

12.2. Politics/economics: Coded if the article depicts issues related to national or international politics, economy, and business.

12.3. Ecological/meteorological: Coded if the article depicts issues related to weather events, biodiversity, and/or long term ecological phenomena.

12.4. Culture/society: Coded if the article depicts issues related to human activities, social and cultural developments.

13. Linked issues (The public and policy issues linked to CC)

13.1. Agriculture: Coded if the article links CC to practices and policies about agriculture, fishing, animal farming.

13.2. Energy: Coded if the article links CC to the macro-policies about energy production, and distribution. Energy consumption and saving activities *not* coded to this category.

13.3. Health: Coded if the article links CC to practices and policies about human health and well-being.

13.4. International relations: Coded if the article links CC to political/diplomatic relations and/or cooperation/conflict between or among countries.

13.5. Macro-economy: Coded if the article links CC to macro-economic issues and policies.

13.6. Land and water management: Coded if the article links CC to management of land and water, and/or water related issues at any level, including consumer/household water saving.

13.7. Science and research: Coded if the article links CC to issues and policies about science, technology and research, and/or practices of scientists.

13.8. Social order: Coded if the article links CC to issues about the organization or transformation of society, and/or macro-scale, societal policies (e.g. migration, poverty).

13.9. Attitudes/behaviors: Coded if the article links CC to micro-scale policies and issues, changes in lifestyles, consumption and/or citizenship behavior.

14. Tone (Tone of reporting)

14.1. Alarming: Coded if the article represents an image of consensus among scientists, placing an emphasis on the dangerous or alarming consequences of CC.

14.2. Neutral/balanced: Coded if the article depicts neither the dangerous outcomes (alarmism) nor the uncertain causes (skepticism), and/or the scientific knowledge on the anthropogenic and its potential consequences causes are not expounded on.

14.3. Skeptical: Coded if the article represents a skeptical view in a way that highlights uncertainties and create suspicion about CC, and/or if a balance between conflicting expert sources was sought in a manner that depicts controversy.

15. Genre (Communication genre mainly used in the article)

15.1. Diffusion: Coded if the article depicts its content by drawing on one perspective only, and/or if the article does *not* compare, relate the available perspectives to each other, providing an integrative frame.

15.2. Propagation: Coded if the article depicts its content by drawing on, comparing, negotiating, reconciling different perspectives, types of knowledge, or contexts.

15.3. Propaganda: Coded if the article depicts its content by contrasting two perspectives, types of knowledge, or contexts, endorsing one against the other.

16. Title (of the article)

APPENDIX B

THE INTERVIEW GUIDE

No:

Duration:

Date:

Comments:

Once again thank you for your willingness to participate in this interview, and for sparing the time in your busy schedule. This research is conducted by myself and Prof. Paula Castro from the Lisbon University Institute, and supported by the Portuguese Science and Technology Foundation. It is about how people and the media see climate change. The results will be used for academic purposes only, and will not be disseminated otherwise. Your contribution will remain anonymous.

I ask your permission to record our conversation, in order to be able to remain true to the ideas you provide.

Because the research is conducted in an international frame and in different countries, I will ask you to try responding in English. Wherever you feel more comfortable you may switch to your mother tongue. If you do not want to continue the interview, or if you wish to make a pause, please let me know in order to stop anytime you like.

In this interview, I will ask you repeatedly to talk about situations and debates concerning global warming, in which you have accumulated experience. For this set of interviews we are interested in how people and organizations understand climate change and act about it. I am interested in what climate change or global warming means to you, as an expert on the issue. I am also interested in what are your perspectives on associated issues, and I would like to be more informed by you about climate change both globally and in your country.

0. Before we start, can you just tell me a bit about yourself?

Gender

Age

Experience in the organization

Previous work experience

Field of education

Cities previously inhabited

Ever been to any UN summits or to the Conferences of Parties?

1. To start with a warming up question, what are the first things that come to your mind when you think about climate change?

2. There are many different definitions of climate change. Can you tell me a definition or explanation of climate change that reflects specifically your own position?

- Can you remember when and where did you first learn about global warming or climate change?
- Could you please tell me about that time and situation?
- From whom? Where? What did you first think when you first learned what it was?
- What else do you remember of that time that might have contributed to your understanding?
- Can you tell me a short story about or an episode that describes what climate change is and means for you?

3. There are times when people are more concerned with an issue than in other times. Could you please tell me about a time or a situation, in which you felt particularly concerned with climate change?

- What have been the most important developments, according to you, if you try to recall the major events regarding climate change in the last years/decades?
- Did the meaning of climate change differ for you along the last years, compared to the times you had first learnt about it?
- In the last years, has there been decline or growth in your interest and concern with climate change?
- What part does climate change play in your life today? Could you please recount a situation for me, which makes this clear for me?

4. When you look back, what have been your (most trusted) sources of information about climate change?

- Can you explain me, as you see it, the most important / influential actors of CC in the world?
- Can you explain me, as you see it, the most important / influential actors of CC in your country?

5. Are you happy with the way your country is contributing to climate change issues?

- Is the government in your country taking action? What type of action? Are you satisfied with the government action?
- Is the European Union taking action? What type of action? Are you satisfied with it?
- How do you view the debate about climate change taking place in your country? Do you think the people (the general public) are involved in it?
- How do you think different political parties or movements view or approach climate change in your country? Do you think it is different in other countries?
- There are many predictions and scenarios about the future of the warming. Are there any predictions or developments that you expect in the future?

6. How is climate change being depicted in the media of your country, in your view? And do you think it is different in other countries?

- How would you like to see climate change reported in the media of your country?
- In a previous study, we have seen that the climate change debate in the media mostly takes place in the future tense. When do you think is more relevant for the “time” of climate change, it is happening now? It has already happened? Or will it really happen for the coming generations?

7. Now I am going to show you a few short clips on climate change available on the WWW. I will ask you about your views of the ideas provided or matters discussed. Can you please respond to the arguments offered?

7.1.

UN and Global Warming - 01:30 to 3:30 (duration: 2m00s)
This is a 2 minutes excerpt from a 75 minute documentary by Michael Durkin, called "The Great Global Warming Swindle" (UK, 2007).

- What do you think the video is saying?
- What do you think is the key message of this video?
- The scientists featured by the video, what do you think of them?
- Can you please tell me about your personal view on this issue? How did you develop this stance?
- In a previous study, we have seen that the climate change debate relies very heavily on science. What do you think about this observation?
- Is there anything else that caught your attention? Any other issue that you can think of which this video reveals or points at?

7.2.

Carbon Offsets - A Peace Of Mind? (Kevin Smith) - 00:00 to 02:20 (duration 2m20s)
is uploaded to YouTube by user WhatProductionsUK, who has also uploaded several short interviews alike. The featured activist, Kevin Smith is working with the Carbon Trade Watch, an NGO which focuses on the trading of the carbon emissions.

- What do you think the person in the video is saying?
- What do you think is the key message of this video?
- How is your overall view of the person in the excerpt? Do you like him?
- Can you please tell me about your personal view on the issue raised by the video?
- Do you think systemic changes are more important than changes in the personal habits, or the other way around?
- For people like Kevin Smith, climate change cannot be solved with a logic of making profit. Still, there are many others who think people are only going to change their lives if they see a personal profit. What is your personal position in this debate?
- Is there anything else that caught your attention in this excerpt? Any other issue that you can think this message reveals or points at?

7.3.

Developing Nations Boycott Climate Talks; Protests Continue - 00:25 to 02:02 (duration 1m40s)
is uploaded to YouTube by user Fal2Grace, a news footage from MSNBC on 14th December 2009. Video features NBC's Ann Thompson reporting from the Copenhagen Climate Summit.

- What do you think the news here are about?
- What do you think is the key story of this news footage?
- Can you please tell me about your personal view on the topic raised by the video?
- What is your view of the process of UN summits, or the Kyoto Protocol?
- What is your view about the North-South debates in UN politics?
- How do you view your own country within this system and process of negotiations?
- Is there anything else that caught your attention in this video? Any other issue that you can think this video reveals or points at?

8. Anything else you would personally like to add or comment, or questions to ask?

Thank you very much for your co-operation and your time.

APPENDIX C

THE TRANSCRIPTIONS OF THE VIDEO-EXCERPTS USED IN
THE INTERVIEW STUDY

APPENDIX C

Video excerpt 1: “United Nations and Global Warming”

http://www.youtube.com/watch?v=c_NM5SLcNwM

Presented part: 01:28 to 3:34 (duration: 2m00s)

The excerpt is from a 75 minutes documentary by Michael Durkin, titled “The Great Global Warming Swindle” (UK, 2007).

(Scientist 1) - I was horrified.. to read.. the second and the third assessment reports, because there was so much misinformation, without any kind of recourse or virtually without mention of.. the scientific literature, the truly scientific literature.. the literature by specialists in those fields.

(Voice over 1) - In a letter to the Wall Street Journal, Professor Frederick Seitz, former president of America’s National Academy of Sciences, revealed that the IPCC officials have censored the comments of scientists. He said that:

(Voice over 2) - “This report is not the version that was approved by the contributing scientists”.

(Voice over 1) - At least 15 key sections of the science chapter had been deleted. These included statements like:

(Voice over 2) - “None of the studies cited has shown clear evidence that we can attribute the climate changes to increases in greenhouse gases. No study to date has positively attributed all or part of the observed climate changes to man-made causes”.

(Voice over 1) - Professor Seitz concluded:

(Voice over 2) - “I have never witnessed a more disturbing corruption of the peer review process than the events that led to this IPCC report”.

(Voice over 1) - In its reply, the IPCC did not deny making these deletions, but it said there was no dishonesty or bias at the report, and that uncertainties about the cause of global warming had been included. The changes have been made, it said, in response to comments from governments, individual scientists, and non-governmental organizations.

(Scientist 1) - When I resigned from the IPCC, I thought that was the end of it. But when I saw the final draft, my name was still there. So I asked for it to be removed. Well, they told me, that I had contributed, so it would remain there. So I said no, I haven’t contributed, because they haven’t listened to anything I’ve said. So in the end it was quite a battle, but finally, I threatened legal action against them, and they removed my name. And I think this happens a great deal, those people, who are specialists but don’t agree with the polemic.. and resigned, and there have a number of them I know of, they are simply put on the author list and become part of this ‘2500 the world’s top scientists’.

(Scientist 2) - I’ve often heard it’s said that these’s a consensus of thousands of scientists on the global warming issue, and humans are causing a catastrophic change to the climate system... Well, I am one scientist and there are many that simply think that is not true.

Video excerpt 2: “Carbon Offsets - A Peace Of Mind? (Kevin Smith)”

<http://www.youtube.com/watch?v=uk9Ev91jjQ8>

Presented part: 00:00 to 02:10 (duration: 2m10s)

The excerpt is from one of the several short interviews The featured activist, Kevin Smith is working with the Carbon Trade Watch, an NGO which focuses on the trading of the carbon emissions.

(Activist) - Carbon offsets are a fictitious commodity that have been created to exploit the rising levels of climate consciousness.

It's nonsense because you can't neutralize your emissions once they're out there. There's no magic wand that you can weave to make them go away.

Eh, it's.. they are essentially selling a peace of mind to people, to think they don't have to worry about the choices they make, which is very dangerous.

It's continuing to overly emphasize the 'light bulbs and lifestyles discourse', that is, placing all of the responsibility on individual consumers.

I think personal lifestyles have a role to play in how we respond to climate change, but I think our choices as individuals are still very limited in the context of climate change, without there being a more profound systemic change, in the way we organize our societies and economies... to meet the threat of climate crisis.

And I think the more emphasis we put on individuals, we're moving away from what really needs to happen, in terms of people to come together in communities, to start organizing, to, to create political pressure for the bigger systemic changes that need to happen, in moving away from the growth based model, reigning in.. eh at the corporate self-interest...

Apart from anything, it doesn't make any kind of economic sense whatsoever. When you give that money to an offset company, eeh.. a proportion of that, no matter how small or big, is going to be taken up in terms of the executive salaries and the PR budgets and so on.. It is incredibly ineffective, and you're much better off just giving that money directly to a project that's bringing about change in a hands-on way.. some progressive community-led renewables project either here in the UK or, in a Southern country. It's a much more effective way of using your money, you can see it as a voluntary tax you're paying.. rather than eeh.. pretending that it's somehow neutralizing or effecting your emissions.

APPENDIX D

THE CODE DICTIONARY USED IN THE THEMATIC ANALYSIS

APPENDIX D

Code Dictionary

used in the thematic analysis of the reflexive part of the interviews (Study 5)

1. Causes

- 1.1. Non-human causes: Arguments are coded to this category when they talk about natural, non-human causes of climate change
- 1.2. Human causes -straightforward: Arguments are coded to this category when they talk about the human causes of climate change by simple or straightforward connections, including concrete actions such as burning of the fossil fuels or increase in the GHGs.
- 1.3. Human causes -complex: Arguments are coded to this category when they talk about the human causes of climate change by complex or comprehensive connections, including abstract notions such as humanity's relation with nature, modernism, and capitalism.

2. Impacts

- 2.1. Physical-environmental: Arguments are coded to this category when they talk about the –already experienced– impacts of climate change on the physical and environmental systems.
- 2.2. Biodiversity: Arguments are coded to this category when they talk about the –already experienced– impacts of climate change on non-human species and biodiversity.
- 2.3. Human-societal: Arguments are coded to this category when they talk about the –already experienced– impacts of climate change on human society and institutions.

3. Risks

- 3.1. Physical-environmental: Arguments are coded to this category when they talk about the –anticipated– risks of climate change associated with physical and environmental systems.
- 3.2. Biodiversity: Arguments are coded to this category when they talk about the –anticipated– risks of climate change associated with the disturbance of non-human species.
- 3.3. Human-societal: Arguments are coded to this category when they talk about the –anticipated– risks of climate change associated with human society and institutions.

4. Solutions

- 4.1. Technological: Arguments are coded to this category when they talk about limiting GHG emissions by means of technological applications, e.g. increasing efficiency.
- 4.2. Macro-policy instruments : Arguments are coded to this category when they talk about limiting GHG emissions by means of economic measures and incentives that target the industry and governments, e.g. Kyoto Protocol

4.3. Micro-policy instruments: Arguments are coded to this category when they talk about limiting GHG emissions by means of individual –consumer– behavior changes.

4.4. Socio-political: Arguments are coded to this category when they talk about major structural changes that involve transformations in the social and political institutions.

4.5. Adaptation: Arguments are coded to this category when they talk about adaptation to the consequences of climate change, instead of mitigating them.

5. Actors

Arguments are coded to the subcategories below when they mention:

5.1. Scientists and scientific institutions (e.g. the IPCC)

5.2. Governments and politicians

5.3. NGOs and the civil society

5.4. Media organizations

5.5. Business and the industry

5.6. International organizations (e.g. the UN)

6. Inter-connectedness

Arguments are coded to this theme when they emphasize the connectedness of ecological systems, human systems, and/or various environmental problems, and/or that one problem cannot be dealt with at the expense of another.

7. Urgency

Arguments are coded to this theme when they emphasize that action has to be taken within a specified duration (e.g. until 2020), or rapidly.

8. Pessimism

Arguments are coded to this theme when they talk about the field of action (on climate change) with a disengaged or pessimistic way. Defeatism in action (e.g. it's already too late) and excoriation of various forms of agency (e.g. NGO work is irrelevant, UN process is hopeless) go into this category.

Vita

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Date awarded 2007

Title of qualification awarded MS in Science and Technology Policy Studies

Principal subjects/occupational skills Sustainability, Philosophy of Technology, Ecological Modernization, Discourse Analysis

Name and type of organisation providing education and training Graduate School of Social Sciences,
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Title of qualification awarded BS in Psychology

Principal subjects/occupational skills Social Psychology, Social Representations, Inter-group relations, Ideology

Name and type of organisation providing education and training Department of Psychology,
Middle East Technical University, Ankara

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Title of qualification awarded - (Transferred to Department of Psychology)

Principal subjects Elementary courses of Faculty of Engineering

Name and type of organisation providing education and training Geological Engineering,
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Publication and communications

Scientific Publications Uzelgun, M.A. & Castro, P. (2014). *Climate change in the mainstream Turkish press: Disconnect between global and local meaning systems*. Submitted for publication to *Mass Communication and Society*.

Uzelgun, M.A. (2014). Sosyal temsiller: Nerede bulunurlar? Submitted for publication to *Eleştirel Psikoloji Bülteni*.

Uzelgun, M.A. & Castro, P. (2014). Voice of Science on Climate change in the Mainstream Turkish Press. *Environmental Communication: A Journal of Nature and Culture*, 8, 326-344. Doi:10.1080/17524032.2014.898674

Uzelgun, M.A. (2007). *Expert Discourse on Turkish Climate Policy*. Unpublished MS Thesis. Ankara: Middle East Technical University. Accessible at: <http://etd.lib.metu.edu.tr/upload/12608249/index.pdf>

Scientific Communications Uzelgun, M.A., Castro, P. (2013, June). *Lidando com visões opostas sobre alterações climáticas no contexto do consenso científico*. Paper presented at the Simpósio Nacional de Investigação em Psicologia, Aveiro, Portugal.

Uzelgun, M.A., Castro, P. (2013, August). How do non-governmental experts deal with different approaches in governing climate change? In S. Batel (Chair) *Are we asking the right questions? Discussing the relation between individual and social change in response to climate change and associated environmental issues*. Symposium conducted at the Annual Conference of the British Psychological Society, Exeter, UK.

Uzelgun, M.A., Castro, P. (2012, June). *Between radical pursuits and moderate commitments: Cognitive polyphasia in the climate change debate*. Paper presented at the 11th International Conference on Social Representations, Evora, Portugal.

Uzelgun, M.A., Castro, P. (2011, May). *Representing the end of the world: Climate change as science and rhetoric in the Turkish press*. Paper presented at the International Society for Political Psychology Conference 'Cooperation and Human Societies: Towards a Multidisciplinary Political Psychology', Istanbul, Turkey.

Uzelgun, M.A., Castro, P. (2010, August). *Science and rhetoric of climate change*. Paper presented at the Summer School of the European Association of Social Psychology (EASP), Aegina, Greece.

Uzelgun, M.A., Castro, P. (2010, April). *Social representations of climate change in the era of global governance: The case of Turkey*. Paper presented at the International 'Conference Tearing Down the Walls: Rethinking the Political in Political Psychology', Belfast, UK.

Examples of non-scientific publications "Tipping-points of Climate Change" in Birikim, National Journal, December 2009.

"All These Babies are to Win" in Three Ecologies, October 2008.

"Changing Climate, Changing Environmentalism" in Express, National Journal, January 2008.

Professional background

Occupational field: Environmental Information and Policy

Date	2006-2007
Position held	Environmental Information Programme Officer
Main activities and responsibilities	Collection and communication of diverse national environmental information, Content preparation and process responsibility of the publications
Name and location of employer	Regional Environmental Center (REC) Turkey , Ankara International Organization

Date	2002-2006
Positions held	Publications and Multimedia Editor
Main activities and responsibilities	Contract based production and editing of visual media and documentaries, Coordination of international projects
Name and location of employer	Videa , Ankara Non-Governmental Organization
Date	2000
Position held	Office Volunteer with compensation
Main activities and responsibilities	International networking, Campaign organization, Maintenance of the organization's Local Exchange Trade System (LETS)
Name and location of employer	European Youth Forest Action (EYFA) , Amsterdam International Non-governmental Organization
Date	1999
Position held	Local Projects Assistant
Main activities and responsibilities	Collection and organization of local and regional environmental data, Organization of public participation events in protected areas
Name and location of employer	WWF Turkey , Ankara International Non-governmental Organization
Personal skills and competences	
Mother tongue(s)	Turkish
Other language(s)	English (fluent); Portuguese (Intermediate)
Examples of social and organisational skills and competences	Member of organizing commission, 5º Encontro de Investigação em Psicologia Social e das Organizações . ISCTE-IUL, May 2010 <i>Participant</i> , Climate Change: Science, Impacts And Responses . Programme of The Centre For Professional Development, Imperial College London, March 2006 <i>Participant</i> , Long-Term Policies: Governing Social Ecological Change . International Conference of the Social-Ecological Research Programme, Berlin, February 2008 Member of organizing commission, Communicating Climate Change to Public . Seminar series of REC-Turkey and British Council, Ankara-London, Fall 2006 <i>Participating Artist</i> , Timescapes Video-installation . Kunst-Werke Berlin, December 2005 <i>Curating Artist</i> , F-Type Aquarium Experiment: Back to Life . Public Installation, Ankara, May 2002 (documentation accesible at http://xurban.net) <i>Member of organizing team and lecturer</i> , Media activism: The role of the witness and the editor . Seminar series, Free Universtiy Ankara, Fall 2005 <i>Member of organizing team</i> , Ecotopia International Gathering . Ljubljana, February 2000