Narratives of Climate Change.

Outline of a systematic approach to narrative analysis in cultural sociology.

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Summary (English)

This study addresses in particular research gaps in cultural sociology and in the analysis of climate change communication. Narratives have long played a significant role in cultural sociological analysis of empirical data. However, a systematic approach to social stories has yet to be developed and presents a gap in recent research in the realm of young cultural sociology. Following among others Smith's model of genre an integrated model of cultural narrative analysis aims at integrating vital elements of narrative theory to construct a systematically advanced analysis tool. Thus, this study provides a possibility to make narrative analysis fruitful for cultural sociology by acknowledging and integrating the binary structure of social discourse as paradigm of cultural sociology. It thus pays tribute to the understanding of culture as an independent variable in the analysis of social phenomena. It shows how narrative analysis can benefit from cultural sociology's understanding of culture. This model is applied to the discourse about climate change. The debate about the ecological crisis has found its way into research programs of social sciences for some time now and the concept of narratives is embedded in various existing studies. However, these studies often focus on either media coverage of climate change and here often on the perception of climate policies or the perception of climate change in the eyes of laypeople. With its methodical and theoretical design this study addresses this gap in climate communication research by focusing on the messenger's perspective and by emphasizing the cultural structures beneath climate change talk. In the first place, this study aims at answering the following research questions:

1. What does a systematic approach to narrative analysis in a cultural sociological perspective look like?

2. How can narrative analysis advance our understanding of climate change communication?

The first research question aims at contributing to the development of cultural sociology by providing a systematic approach to narrative analysis which acknowledges cultural sociology's paradigms and understanding of culture. The second question focuses on the empirical interest of this study, i.e. to advance our sociological understanding of climate change communication and which role culture structures play here. Narratives are resolved into their three main spheres: structure,

content, and form and even further into the single characters and settings inside and outside the narrative with the idea that each sphere contributes in its own way to the presentation of the topic.

The explorative, qualitative research design allows for including the empirical multitude of the data, i.e. the possible topics in climate change discourse. 15 narrative, problem centered interviews with climate advocates were conducted. This is how the study focuses on the perspective of *the messenger*. Instead of analyzing public perceptions or media articles, here the stories told by people who are – professionally or otherwise – involved in climate change activities are at the center of the analysis. Against the backdrop of an expert sphere, i.e. shared perceptions of a global phenomenon such as climate change and to avoid stereotypical national stories climate advocates from both the U.S.A. and Germany were interviewed; where appropriate, national specifics were addressed in the analysis. This leads for example to the narrative of climate change as a partisan distinction as a typical U.S. American narrative. All in all 5 main narratives could be identified: one narrative with the sole focus on the environment as a value in itself, another narrative placing climate change in the scene of humanity and solidarity, another narrative that deals with historical responsibility; the remaining two narratives are further divided into two more sub-narratives: the fight against climate change as an economic topic is seen with positive consequences on the one hand and negative consequences on the other, and lastly, climate change as political topic plays a role both as a tool for partisan distinction and as a way to reflect on the role of a nation.

The topics of these narratives are not just derived from a simple content analysis, but are a result of the interplay between structure, content and form of the narratives. The hierarchies between characters, the distribution of power among them, the setting between the characters within the narrative (hero – villain – victim) and that between those outside the narrative (storyteller – audience) constitute the topic of a story. The analysis shows how narratives exist in different settings simultaneously in one actor-group, and how the same set of characters can change their role depending on the structure of a particular narrative.

This study shows how the, sometimes highly emotional, discourse about a social phenomenon can be reduced to its core structures, thus allowing the analysis to uncover cultural meanings beneath these stories. This could provide further research,

on the one hand in the realm of climate change communication it could be interesting to see how the developed analysis model can be applied to media coverage as a form of "closed" stories. On the other hand, transferring the approach of this study to other social topics could help to advance the model itself and to allow for an even more systematic and comprehensible understanding of narratives.

Summary (German)

Die vorliegende Studie adressiert insbesondere zwei identifizierte Forschungslücken, zum einen im Bereich der kultursoziologischen Forschung (in Form einer jungen U.S. amerikanischen Ausdifferenzierung)[1], zum anderen im Bereich der sozialwissenschaftlichen Analyse von Klimawandel Kommunikation. Die Analyse von Narrativen spielt seit geraumer Zeit eine signifikante Rolle in der kultursoziologischen Analyse empirischer Daten. Eine tiefgehende Durchsicht der vorhandenen Literatur zeigt jedoch, dass ein systematisierter und nachvollziehbarer Ansatz fehlt. Mit dem integrativen Model einer Analyse kultureller Narrative knüpft diese Studie u.a. an Smiths Genremodel an um die basale Annahme einer binären Struktur des öffentlichen Diskurses in die Narrationsanalyse zu integrieren und diese damit zu einem fruchtbaren Analysetool für Kultursoziologie weiterzuentwickeln. Damit wird dem Verständnis von Kultur als einer unabhängigen Variablen Rechnung getragen. Das entwickelte Analysemodell wird, aufbauend auf einer systematischen Darstellung des Forschungsstandes sozialwissenschaftlicher Studien zum Thema Klimawandel einerseits und der Ausarbeitung theoretischer Grundlagen von Kultursoziologie und Narrationstheorie andererseits, auf den Diskurs zum Thema Klimawandel angewandt.

Dabei nimmt sich die Studie einer Forschungslücke im Bereich soziologischer Analyse der aktuellen Klimawandeldebatte an: hier existierende soziologische Studien widmen sich zumeist entweder einer Medienanalyse oder der Untersuchung von Wahrnehmung und Einstellung der Öffentlichkeit gegenüber Klimawandel. Damit liegt der Fokus eines Großteils der Studien auf der Rezeptionsseite. Die Perspektive des Senders wird dabei außer Acht gelassen. Die vorliegende Studie will diese Lücke schließen indem sie qualitative Daten von Klimawandel Experten untersucht. Aus der

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[1] Zur besseren Lesbarkeit dieser Zusammenfassung wird hier mit dem Begriff der Kultursoziologie auf die relativ junge Entwicklung einer U.S. amerikanischen Cultural Sociology verwiesen.

Identifikation dieser beiden Forschungslücken heraus werden damit folgende Forschungsfragen gestellt:

1. Wie kann Narrationsanalyse aus kultursoziologischer Perspektive systematisiert werden?

2. Wie kann die Analyse von Narrativen unser Verständnis von Klimawandelkommunikation voranbringen?

Die Bearbeitung der ersten Forschungsfrage möchte einen Beitrag zur Weiterentwicklung der Kultursoziologie leisten, indem Narrationsanalyse und Kultursoziologie auf einander bezogen werden und die ihnen zu Grunde liegenden theoretischen Prämissen miteinander in Verbindung gebracht werden. Die zweite Forschungsfrage soll einen Beitrag zum empirischen Verständnis von Klimawandelkommunikation leisten.

Narrative werden in ihren einzelnen Elementen untersucht, wobei Struktur, Inhalt und Form als drei einander ergänzende Bereiche eines Narratives betrachtet werden und aus eigenen Sub-Elementen bestehen, wie einem Setting und einem Ensemble von Charakteren innerhalb und außerhalb eines Narratives.

Das explorative, qualitative Design der Studie ermöglicht eine Offenheit gegenüber der empirischen Vielfalt der Daten, d.h. gegenüber einer Vielzahl von möglichen Leitmotiven in den Narrativen im Klimawandeldiskurs. Im Rahmen der Studie wurden 15 narrative, problem-zentrierte Interviews mit Klimawandel-Experten analysiert. Damit löst die Studie ihr Versprechen ein, den Fokus auf den Sender von (Klimawandel-) Botschaften zu legen. Klimawandel-Experten sind im Kontext dieser Studie Personen, die sich, beruflich oder privat, im Kampf gegen den Klimawandel engagieren. Unter der Annahme, dass unter Klimawandel-Experten ähnliche generelle Vorstellungs- und Wahrnehmungsmuster herrschen und um einen a priori gegebenen nationalen Bias zu minimieren, wurden Experten sowohl in den USA als auch in Deutschland interviewt. Dies heißt jedoch nicht dass nationale Spezifika in der Datenanalyse ignoriert wurden.

So zeiget sich bspw. ein Narrativ, das die Kluft zwischen Republikanern und Demokraten in den USA beschrieb, als spezifisch U.S. amerikanisch. Insgesamt konnten fünf Hauptnarrative identifiziert werden: eines konzentriert sich insbesondere

auf den Wert von Natur und Umwelt, ein weiteres setzt den Klimawandel in Bezug zu Menschlichkeit und Solidarität. Ein drittes nimmt sich der historisch gewachsenen Verantwortung westlicher Staaten an. Zudem lässt sich der Bereich nationaler Wirtschaftsstärke als ein Leitmotiv herausarbeiten, Klimawandel spielt zudem natürlich auch eine Rolle im partei-politischen Diskurs.

Die Analyse zeigt, dass die Leitmotive Ergebnis eines Zusammenspiels zwischen Struktur, Inhalt und Form eines Narratives sind und sich aus der Beziehung zwischen den Charakteren und dem spezifischen Setting ergeben. Damit kann gezeigt werden wie der Diskurs um selbst emotionale Phänomene auf seine narrativen Strukturen reduziert werden kann um die dahinterliegenden kulturellen Muster offenzulegen.

Hieran lassen sich weitere Forschungslücken aufzeigen. Zum einen könnte es interessant sein das hier entwickelte Narrationsmodel auf die mediale Berichterstattung zum Thema Klimawandel anzuwenden, da diese der geschlossenen Form von Narrativen stärker Rechnung tragen. Darüber hinaus scheint es interessant historische Ereignisse mit Hilfe des Models zu analysieren, da diese oftmals bereits über eine relativ feststehende öffentliche Lesart verfügen. Dies könnte eine Weiterentwicklung des Models fruchtbar vorantreiben.

1   Introduction

"We are all stories in the end. Just make it a good one, eh?!"
The Eleventh Doctor
(BBC's Doctor Who, Season 5, Episode 13)

In June 2014, the *Süddeutsche Zeitung*[2] devoted a large article in its weekend editorial to the concern that global climate change will turn 200 million people into climate refugees. The conclusion in this article was that rich industrialized nations must not shy away from their responsibility any longer. A couple of months later, in December 2014, in the context of the UN climate conference in Lima, Peru, the online edition of German news magazine *Der Spiegel*[3] launched an article describing how industrialized countries are more and more refusing to accept the role as scapegoats in the debate about climate change. Another article in the *Süddeutsche Zeitung*[4], this time in the science section and also in the context of the UN climate conference in Lima, scrutinizes the concept of the "two-degrees Celsius goal". The article claims that the decision to define an increase in global mean temperature above two degrees Celsius above pre-industrial levels as the start of dangerous climate change was mainly politically motivated.

These three articles should serve as example how one aspect of a phenomenon can be turned into opposing stories in the public sphere. Both headlines lay out a cast of characters, including their respective roles in the play about an ecological crisis, assign blame and guilt and draw attention to those who suffer. The problem of changing environmental conditions are spun into a web of meaning, the problem gets translated into a story with all the requirement elements: heroes, villains, victims, an object of struggle, a beginning, middle, end, and morale of the narrative.

As empirical research interest, this study aims at exploring how these stories are build and how their internal structure relates to the statement they propose. To do so, the theoretical research interest lies within a contribution to cultural sociology by developing a model for a cultural analysis of narratives. I will analyze narratives about

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[2] „Wohin? Bis zum Jahr 2050 wird der Klimawandel 200 Millionen Menschen zu Flüchtlingen machen. Die reichen Länder können sich nicht länger um Ihre Verantwortung drücken.", Süddeutsche Zeitung, issue no. 141; June, 21st/ 22nd 2014.

[3] "Jetzt wird es teuer. Blockade bei der UN-Klimatagung", Spiegel Online, December, 13th 2014.

[4] "Hier sind Drachen. Wie Wissenschaft und Politik eine Erwärmung um zwei Grad als Grenze zum gefährlichen Klimawandel definiert haben.", Süddeutsche Zeitung, issue no. 281; December, 6th, 7th 2014.

climate change based on qualitative interviews. Seven main narratives are identified in the stories climate advocates tell about the environmental crisis. Climate advocates here are interviewees who deal – professionally or unprofessionally – with the topic of climate change, mostly in their home region. Consequently, the interviews conducted for this study do not represent the community of climate change experts. However, these advocates are a vital part of the public discourse on climate change. Thus, the way they talk about the issue is elementary to understanding climate change communication.

Climate change as a macro-environmental issue meets the criteria of "super-wicked problems" (Lazarus 2009: 1159; Turnpenny et al. 2009), i.e. problems that are characterized by uncertainty over consequences, diverse and multiple engaged interests, conflicting knowledge, and high stakes. Climate, as a common pool resource (Renn 2011), poses one of the most pressing policy problems our society is facing today. However, climate change seems to be the first environmental crisis in which experts appear more alarmed than the public. "People think about 'global warming' in the same way they think about 'violence on television' or 'growing trade deficits', as a marginal concern to them, if a concern at all (Hamblyn 2009: 234). The impacts of a changing climate are hard to grasp and solutions to the problems are diverse, complex, and controversial. Public perception of associated risks plays a huge role when it comes to support for climate policies and this perception is culturally determined: "Culture affects how humans understand the world, because we make sense of the world by cultural means" (Arnoldi 2009: 107). Berger and Luckmann (2007) famously stated how our reality is the result of social construction, a collective effort to make sense of the world as we see it. The way we construct this reality by means of social communication has been subject to a wide range of sociological research. Goffman (1974) introduced framing as a means to read and understand situations and activities in social life. Chabay stresses the role of cognitive structures in his concept of a mental model, which is "a person's internal, personalized, intuitive, and contextual understanding of how something works" (Chabay et al. 2012: 331). Boholm provides the concept of culture as shared schemata that allows us to process meanings and order information due to defined categories, relationships and contexts (Boholm 2003: 168).

In this study, I will focus on narratives as a way people are giving meaning the world. The perception guided through narratives entails that people perceive their world through pre-modern, pre-structured myths (Smith 2012; Alexander & Smith 2003a).

1.1 Research questions

The study's research question is twofold:

1. What does a systematic approach to narrative analysis in a cultural sociological perspective look like?
2. How can narrative analysis advance our understanding of climate change communication?

It is important to note that it is not this study's main concern to contribute to policy consulting and thus does not target policy makers, even though there are some lessons learned to be learned from this study. Its main concern is to contribute to a cultural understanding of communication of abstract topics, like climate change and to show how cultural sociology and narrative analysis resp. narrative theory can benefit from each other. The study thus does not offer an external observer to evaluate climate advocates' communication strategies but follows Max Weber's characterization of sociology as the science whose object is to interpret the meaning of social action and thereby give a causal explanation of the way in which the action proceeds and the effects which it produces[5].

The main issue here is how real life events are narrated in the civil sphere exemplified through the discourse of climate change. In accordance with the premises of cultural sociology, the study assumes that people do not perceive the world objectively, as raw facts, but in the form of stories that are told and the stories they pass on. Public discourse thus is not so much a battle over the facts of a specific situation or event(s), but a battle over the interpretation of those facts. For the study of climate change narratives there are a number of questions that unfold in this light, both in theoretical and empirical nature.

The theoretical research interest thus unfolds with the analytic structure of narratives: a systematic model needs to acknowledge the evolving character of narratives (i.e.

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[5] In original German: "Soziologie soll heißen: eine Wissenschaft, welche soziales Handeln deutend verstehen und dadurch in seinem Ablauf und seinen Wirkungen ursächlich erklären will" (Weber 1984: 19).

considers how narratives are re-shaped in an ongoing debate) and needs to be able to represent narratives within civil discourse on three levels: *structure* as the most basic and textual units of a story, *form* as the overarching frame a story is set in, and *content* as the main topic the story is telling. Cultural sociology's understanding of culture is that it poses an independent factor in social life, and is not to be reduced to an outcome of economic, ecologic, or societal forces. Thus, the analysis of narratives in a cultural sociological perspective has to cover specific elements in order to (1) accommodate the presumptions of cultural sociology, (2) to depict a narrative in its entirety, i.e. understand how the three levels of structure, form, and content interact with one another, and (3) to provide the possibility of interrelating different narratives. This combines insights from narrative theory within the realm of literary studies and hermeneutics and the realm of social studies within cultural and sociological theory. A model of narrative analysis bound in cultural sociology will offer a way to analyze the cultural patterns of stories that are told within the civil discourse about politically relevant events.

On the empirical side, the study wants to contribute to our understanding of climate change communication. Despite the scientific consensus about the dangers of climate change (Cook et al. 2013) communicating this consensus seems to have little impact on human actions, as most people go about their daily lives without concerning themselves too much about the dangers a changing climate can bring (see for a discussion about the lack of individual action for example Leggewie & Welzer 2010: 88-99; Kuckartz 2010; for empirical data on environmental behavior in light of climate change see especially Bormann et al. 2014: 60-90). Only few changes in everyday behavior have been recorded to date to stop climate change. This problem needs to be – and indeed is – tackled from various disciplinary viewpoints, from policy studies, over economics, communication research, to behavioral sciences, and environmental and cognitive psychology. Here, I will focus on the narratives that are developed by climate change advocates[6] and told to an attentive or inattentive audience.

The study does not investigate the audience's reaction to or ignorance of these stories, but focuses on the climate advocates' perception of possible audience

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[6] The term "climate advocates" describes in this study those who are in one way or another involved in climate mitigation and climate adaptation activities. The term especially refers to the interviewees in this study.

responses. However, it is important to stress at this point that these advocates are not studied as spin doctors, as manipulators of the public opinion. While a sense of what might be requested from the public is surely involved, this is not a study that tries to unmask communicators in terms of an ethnographical "what is really going in the background of climate change public relations". On the contrary this analysis does not question the motifs and arguments that are being made.

The underlying structures of narratives provide information of how a specific story will resonate in the public discourse. Putting the different narratives in relation to each other will help to identify points of conflict between these stories. The arguments for taking action against climate change are well thought and understandable when considered on their own, but in relation to each other we see how the different stories are inconsistent when compared to each other.

1.2 Addressing research gaps in narrative analysis and climate change communication

The concept of narratives and their analysis appears frequently in cultural sociological studies; a convincing and systematic approach that considers cultural sociology's paradigms like the binary structure of civil discourse and the relative autonomy of culture, however, is missing. The study seeks to address this gap in existing research by providing a systematically more advanced model of narrative analysis to cultural sociology, developed by Alexander (2003b) with widespread contributions from various scholars (Smith 2008; Giesen 1999; Jacobs 1996a; Kane 1991; Lipp & Tenbruck 1979). In turn, this might enhance the theoretically grounded research on narratives. Smith (2005) draws a clear connection between cultural sociological presumptions and traditional interest in narratives and their role in the civil discourse in his analysis of war narratives. His Structural Model of Genre allows for treating culture as an independent variable, not as an instrumental and merely functional factor in social life. However, discussing this model in chapter 4.3.2 I will show that this model, while acknowledging cultural sociological request for relative autonomy of culture, lacks in analytic clarity. A positivist model by Jones and McBeth (2010) provides an analytically convincing approach to civil discourse but neglects its textual characteristic, thus ignoring benefits to be gained from literary theory. I argue with Paschen et al. that the concept of narrative must not "be limited to a discursive framing device, [because this] neglects its critical theoretical and methodological

insights" (Paschen & Ison 2014: 2). An enhanced model will have to aim at providing both: being clear enough to be of use to empirical analysis, as well as acknowledging that narratives are subject to independent cultural "forces".

Secondly, I wish to add to the understanding of environmental communication, especially in the field of climate change. Much existing discourse analysis addressing the topic of climate change focuses on media representation of the discourse (Boykoff 2008; Boykoff & Boykoff 2004; Downs 1972), the debate between climate sceptics and climate advocates (Hoffman 2011; The Pew Research Center 2007a), or takes an instrumental stand on the issue by asking how climate change communication should look like in order to achieve agreements (manipulate) within the civil society (Hart & Nisbet 2011; Moser & Dilling 2011; Moser 2010). Focusing on media representation is valuable to see which information the wider society gains, however, this field analyzes communication elements that have already been processed and are shaped according to the rules of the media landscape. Focusing on the tensions and arguments made between climate advocates and their opponents enhances factual understanding of pro-/ con arguments and might help to address them properly (if one's goal is to better climate change communication). But this approach neglects that mistakes have been made in the communication process before the pro-climate arguments are re-told by the media. A purely instrumental in-order-to-approach won't reveal the cultural process of civil discourse, because it is too strongly focused on providing recipes for communication handbooks. With the help from cultural theory social sciences can contribute to the understanding of environmental communication by considering that communication processes are not at all specific to one subject but follow inherent rules that need to be uncovered. For this, narrative analysis can "help investigators think about 'non-rational' characteristics of environmentally relevant situations" (Shanahan et al. 1999: 417).

This analysis will not provide a rulebook for successful climate change communication, but will show the challenges climate advocates are facing in terms of narrative construction and the narrative inconsistencies that are produced in the process. The aim here is to hold true to the demands of cultural sociology, i.e. acknowledging the relative autonomy of culture, and doing so by treating social facts as texts, as it was famously suggested by Clifford Geertz (Geertz 1973a: 452).

1.3 Outline of the study

The study is structured as follows: the current state of research explores approaches to the topic of climate change from social sciences, cultural studies, communication research, survey research on attitudes and beliefs that play a role in the discussion of climate change.

Following this, two chapters will deal with the theoretical foundations that underlie this study. First, I will expound the origins of cultural sociology ("young American Alexander School", Emirbayer 2004) in the cultural turn and the renewal of cultural sociology, which was also promoted by German sociologists in a rather pioneering special issue of the *Kölner Zeitschrift für Soziologie and Sozialpsychologie* (Tenbruck & Lipp 1979). A discussion of the pivotal analytic elements of cultural sociology, the relative autonomy of culture and the concept of binary codes follows. From here, I will show the possibilities a narrative theoretical approach to social facts holds for uncovering the patterns in social discourse. Alongside a conceptual hierarchy of structure, form, and content, I will especially describe three models of narrative analysis, Labov and Waletzky's Structural Model of Narrative (Labov & Waletzky 1997), Smith's Structural Model of Genre (Smith 2005), and Jones and McBeth's Narrative Policy Framework (Jones & McBeth 2010). With a discussion of their contributions and shortcomings I will outline an Integrated Model of Cultural Narrative Analysis, which will be applied to climate change narratives. The methodologies of this study will lead into the presentation of the narratives I identified within my qualitative data. After a discussion of the findings, the study closes with a review of potential lessons for policy makers and climate change communication strategists, a critical reflection of the analysis as well as the research process and an outlook on further theoretical as well as empirical research in the realm of narrative analysis in a cultural sociological context.

2   Current state of research: social sciences approaches to climate change

"The crucial role of science often lies in how it is 'represented' and how it is employed within social movements, interest groups, regulatory agencies, epistemic communities, international organizations and regimes, and so on. Scientific knowledge thus often tends to be enmeshed with social symbols, political ideologies and discourses, social movements 'frames'. How this occurs makes an enormous difference in terms of environmental policy and politics."
(Buttel 2000: 28)

Climate change can be seen as a problem beyond the capability of natural sciences, since conditions of climate change are embedded in socioeconomic structures and in a social and cultural value system (Trumbo & Shanahan 2000; Hoffman 2010). This study aims at examining culturally bound narratives that experts construct about climate change, not only as means to an end (motivating people to commit to climate mitigating action) but as cultural context for a scientific phenomenon. In order to systematize this starting point of public discourse, it is prerequisite to see what storylines have already been assigned to climate change text and talk by social and cultural studies. The landscape of social and cultural studies on climate change is wide and marked with different labels. Following the understanding of climate change studies within the realm of social sciences and humanities, the status and significance of the topic in German and U.S American public discourse is of interest, since expert communication constantly evolves against the backdrop of frequently published surveys. It is only a small step from the question "Do people care about climate change?" to the question of a proper distribution of knowledge about climate change. Findings from these studies do not agree with the observation of ever rising CO_2 emissions, thus, an explanation is needed. Here, the state of research touches on results from social-psychological studies to (1) understand communication challenges climate change experts are facing and (2) to review to what extent experts consider this phenomenon. Individual beliefs and attitudes are influenced by media discourse where a framing of the debate takes place, videlicet outside the scientific sphere. It seems like journalists have found their (culturally determined) way of coping with the issue, following different norms of journalism, both universal and

specific to national context. Science communication takes place to a large amount in newspaper articles, TV reports, and online commentaries, reflecting scientific results, lay people's opinion, political demands and contextual analysis. If experts want to be heard in this cacophony they need to understand the mechanisms of media reporting; one, and maybe the most important one, being how to tell and sell a story.

2.1 Social Sciences and the phenomenon of climate change

If we look at the outcomes of social science approaches to climate change, we realize that a rather large body of work has emerged, even though a lot of studies still open with the remark that climate change as a topic has been surprisingly missing from the realm of the social sciences (Grundmann et al. 2012; Büscher 2010b; Lever-Tracy 2008; see for a discussion of this perception also Renn et al. 2011). Hagner (2010) and Lever-Tracey (2008) diagnose a lack of enthusiasm and interest in future-oriented questions for the social sciences and humanities, as they are seen as teleological and not part of the sociological research agenda. But the environmental crisis just represents at its core those kinds of long-term challenges. Lorenz (2013: 45) points out a paradox between the emphasis on a phase of awakening and the amount of publications on the topic within the last years. He suggests that sociology, in order to find its role within the debate, will first have to systematize the work that has already been done. A study that will add to the sociological treatment of climate change thus is in need of such a systematization of social scientific work on the issue. The goal for this chapter is therefore to organize the large amount of publications regarding its implications to an examination of climate change narratives.

Scholars from various fields within the humanities and social sciences have considered the phenomenon of global warming from all kinds of angles, from environmental sociology and the sociology of culture, political sciences, communication research, as well as social psychology and political economy (Trumbo & Shanahan 2000). Studies in these fields have scholars left wondering, why the public does not seem to be capable of recognizing climate change as a huge challenge and acting accordingly. When it comes to climate awareness, public attention is failing (Norgaard 2011: 209). And, as Grundman et al. (2012) point out, these sociological approaches are key elements in the debate about climate change. The anthropogenic climate change is an example for a dialectical relationship between nature and humans and should thus be part of the social sciences and

humanities where a fundamental framing of the debate can take place. However, it holds true that climate change did have a rather difficult stand within the social sciences and humanities in the beginning of that debate. Even though the fight against global warming could be considered as the ultimate collective action problem (Smith 7.30.2009) and as such as the ultimate problem for the social sciences, it was mostly handled by natural scientists in the first 100 years after its political discovery. But with the arrival of the phenomenon in social and cultural studies, reasons for its long absence were debated: Welzer et al. note that climate change has long been considered an object of the natural sciences that had to be investigated with climatic models and tackled with technological solutions (Welzer et al. 2010a: 9). Although Niklas Luhmann (2004, 1986) had already concerned himself with ecological communication and Ulrich Beck has published his much noticed "Risk Society" (1986) sociology had a difficult time taking on the phenomenon of climate change, and even when it did, sociological arguments were barely heard in the public debate, as Büscher and Japp (2010) point out. Scholars give different explanations about social science's hesitation toward the problem, one, however, standing out: Stehr and von Storch among others ascribe it to the embarrassing experiences social sciences made with climatic determinism (Stehr & Storch 2009: 161; Lever-Tracy 2008: 452). Climatic determinism reduces societies and societal action to a mere puppet of respective climatic conditions. According to the authors the idea of climatic determinism was prominently laid out in the 18th century when the philosopher Montesquieu stated that there is no best form of the state, but that jurisdiction and governmental institutions always have to coincide with the given circumstances and the nature of men. Following this statement Montesquieu claims that the dependence of the human state of character from its surrounding climatic conditions explains different societal and cultural phenomena (Stehr & Storch 2009: 54). The question of coherence between climate and societal progress influenced ongoing research and about 100 years later, Ellsworth Huntington published the probably best known essay on the consequences of climate on societies in "Civilization and Climate" (1971). Huntington argues for the weather – and hence the climate – as THE causal factor throughout human history. This idea was based on studies about the production rate in factories in New England. Huntington put these numbers in relation to the temperature at the day of recording and draws conclusions about the ideal outdoor temperature, which, according to his calculations, lies at 15°C.

Nowadays this argumentation has been widely criticized. Against Huntington's study and his conclusions one can argue about the inadequacy of the data (Sorokin 1928) and that the author is determined to the climate as the only causal factor, neglecting the influence of social and economic dynamics. On that note: adaptation to a specific climate was a long time conceived as something inherent to a people and described as destiny. Above all that, climatic determinism neglects the self-determination of societal scope of action and thus contradicts Durkheim's argument of the social fact he develops in "The Rules of Sociological Method": "The determining cause of a social fact must be sought among the antecedent social facts and not among the states of the individual consciousness (Durkheim & Lukes: 134; see also Mauelshagen & Pfister 2010).

Despite all this criticism, the idea of an explanatory power of natural – and thus constant and non-influenceable – factors was too persuasive to vanish from the scope of scholarship. This is most prominently displayed by Jared Diamond's "Guns, Germs, and Steel" (1997) and "Collapse" (2009). The success this work had ("Guns, Germs, and Steel" was rewarded with the 1998 Pulitzer Price) points to the fact that it allowed environmental problems to be taken seriously ever more in the scholarship of social science and humanities, even though the critics might have been right about rejecting the rigorism of early climatic deterministic studies (Sluyter 2003).

Another reason for sociology's ignorance of the climate problem might lie in Max Weber's formula for a sociology that is guided by the value-free-principle (Weber & Parsons 2003) – even if it is a misguided interpretation of Weber's concept of sociology[7]. The politicization of climate change makes it almost impossible to approach the subject value-free, especially within the disciplines of social sciences.

Climate change has been introduced into a variety of branches, which in the following shall be displayed with broad brushes.

2.2 Knowledge-theoretical approaches to climate change

Knowledge-theoretical approaches to the issue of climate change can be found among cultural theory and philosophical tracts, dealing with issues like:

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[7] For a deeper discussion of Weber's principle of *Wertfreiheit* and its consequences for the sociological discipline see Gouldner (1975), esp. chapter 1 "Anti-minotaur: The myth of a value-free sociology" and chapter 11 "Romanticism and Classicism: Deep structures in social science".

- The socio-cultural interpretation of climate change as a social phenomenon (e.g. Büscher 2010a; Leggewie & Welzer 2010; Heidbrink 2010)

- Diagnosis of the culture-nature-relationship (e.g. Chakrabarty 2010; Priddat 2010)

- Reflections on globalization and herein global justice as it is presented in questions of climate justice between nations and even continents (e.g. Clausen 2010; Messner 2010;

- Social-ecological explanation of interdependencies between natural and cultural processes (Becker & Jahn 2006; Fischer-Kowalski & Weisz 2005).

One paradigm coming from the realm of humanities is to understand the relation between causes and responses to climate change and culture. This is one of the core competencies humanities and social sciences can contribute to the debate about climate and environmentalism: re-defining and re-evaluating the dialectical relationship between nature and humans. Environmentalism has long left the niche where it is "just" about nature itself but managed to draw direct connections to fundamental social issues like human rights, social justice[8], and political economies (Eyerman & Jamison 1991).

This relationship between nature and culture is the main interest in social ecology. In fact, the modern categorical differentiation between nature and culture is a fundamental precondition for the development of social ecology in the 1980s (Becker & Jahn 2006: 29). However, social ecology aims at avoiding a naturalistic or culturalistic conception of society-nature interaction (Fischer-Kowalski & Weisz 2005: 114). Based on this, social ecology describes social-ecological phenomena by analyzing interdependencies between social and natural processes (Becker & Jahn 2006: 189). "We assume that culture (conceived as systems of recursive human communications) and nature (conceived as systems of the material realm) are dichotomous, and we attempt to construct a kind of interface between these two realms that is capable of explicating interactions." (Fischer-Kowalski & Weisz 2005: 135). Figure 1 shows the interaction between cultural and natural sphere with humans as communicators and living beings at the center of the intersection. Here,

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[8] In the debate about climate change the term climate justice argues for a proportional burden sharing of the costs the ecological crisis will cause (Birnbacher 2010).

communication is influencing the cultural sphere of causation, which in turn is constituted by culture; the natural sphere encompasses the whole of the material world.

Figure 1: Social ecology - the interaction between cultural and natural spheres of causation
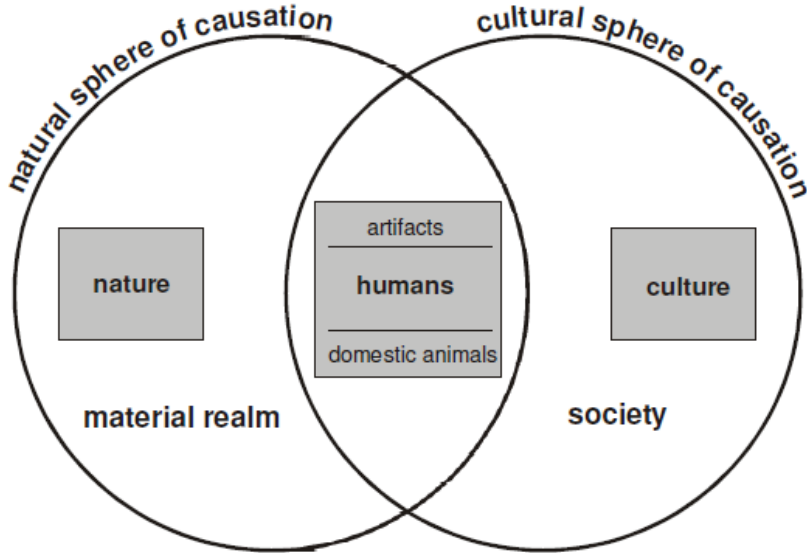
(Source: Fischer-Kowalski & Weisz 2005: 137)

This interaction sets out to fill the epistemological gap between society and nature, identified by scholars within the realm of social ecology. Drawing on ecology, Fischer-Kowalski conceptualizes the nature-society interaction as societal metabolism (Fischer-Kowalski 1997), a term that has been used before in Marx and Engels' description of the labor process, as well as in other contexts in the realm of social geography and cultural and ecological anthropology (*ibid.*: 122-124).

The use of biological terms as applied to social phenomena is justifiably still a controversial topic; however, the concepts approach to nature-society-interaction brings the idea of anthropogenic influence on nature into the debate. Entering the debate about climate change, this development is taking a step further when a system as complex and seemingly robust is altered by human influence. Chakrabarty (2010) even calls this age the "anthropocene", that is, an era in the history of the world, where human influences on ecological developments are highly significant. Climate change means that boundaries of ecological imperialism that characterized especially the industrial revolution are reached and that human superiority is challenged by revolting nature. That twists human history to the end of the theological creation myth according to which man was called to govern nature and all

ecological things. Priddat (2010) argues that the notion of an anthropogenic climate change keeps up this interpretation of the nature-men-relationship ex negativo without acknowledging the active role of nature. Human history was never thought as environmental pawn and against better judgment climate politics are undertaken in terms of political bargaining about safeguarding of national interests and exploring divergences. The debate about climate change itself and fundamental semantic meaning of terms, used in the debate thus becomes subject to knowledge-theoretical reflection (Daschkeit & Dombrowsky 2010, Büscher & Japp 2010). Büscher (2010a) claims the ecological crisis to be more a self-endangerment to the human race than an endangerment to earth and nature, and that a philosophical framing has to emphasize this. Not only the relation between ecological sphere and anthropogenic sphere are widely discussed, but also the idea of a global climate change is questioned. Clausen (2010) identifies three dimensions – rapidity, radicalism, and rituality – along which he analyzes the development and intersection between local, global, and *glocal* climate situation, arguing against a "global climate catastrophe", since worldly developments are not intertwined in all three dimensions. Priddat makes a similar point when he describes territorial instability as consequence of regional differentiation. Politics under the impression of climate change do not lead to a strong clannishness but on the contrary to decentralization because of varying impacts of climate change in different parts of the world. Clausen suggests using the term of multiple cultural catastrophes, not least because in the end, every cultural sphere has to fight its own climate crisis within its own possibilities and abilities. The globalization of global warming is also subject in Messner's (2010) reflections about the discourse itself, where he states three steps in development: the first globalization discourse (globalization 1.0) gave rise to dissolution of economic boundaries, leading to an economic globalized world. The second step, globalization 2.0, leads to shifting power-relations. Finally, globalization 3.0 is fed from a debate of climate and development, centering around globally significant but locally limited tipping points.

Leggewie and Welzer make a central claim that climate change in regard to its consequences ought to be subject of social sciences and cultural studies (Leggewie & Welzer 2010: 31-33). The authors depict global environmental changes as rooted in a global cultural crisis people are embedded in; therefore, a cultural change is needed if climate change shall be tackled sustainably. Leggewie and Welzer argue

that this will be the biggest challenge we will be facing, since habitual and cultural courses are difficult to reflect about. The ability not to question our lifestyle on a daily basis is what keeps a society going, but it also is the reason, why a necessary cultural change will be difficult to achieve. Culturally determined values, norms, and visions of life stand in the way of changing societal habits (Minkmar 2010). Evermore, Heidbrink points out that climate change is even a consequence of a modern cultural understanding of nature as being subject to rational disposability[9], thus climate change is to be treated foremost as a cultural project (Heidbrink 2010: 52). As such climate advocates – that is everyone who is committed to preventing global warming and environmental exploitation – need to take into account that global change deals with culturally different perception patterns. These shifting baselines go for timely changes, when following generations have a different mental image of nature than generations before and also goes for differences in the ways people are used to deal with nature (Leggewie & Welzer 2010: 35).

From this short description of studies with knowledge-theoretical approaches on the issue of climate change it becomes clear that the debate needs a humanistic perspective that can take into account cultural challenges that come with the territory (Minkmar 2010). An examination of cultural stories about climate change and the fight against it will contribute to this approach.

2.3 Studies of attitudes, beliefs, and knowledge about climate change

One of the most pressing questions social scientists seek to answer is to which extent laypeople are concerned about the impacts of climate change. Climate change challenges human comprehension for various reasons. Future climate change scenarios are often subject to probabilities, which are difficult for human to comprehend. Another problem is the time-spatio distant character of climate change, i.e. the fact that most people do not perceive climate change in their daily lives. A third problem lies in the way people talk about climate change in simplified mental models, which leads to misunderstandings, such as confusing climate change with

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[9] This modern understanding of nature, rooted in the beginnings of the industrial revolution, supersedes a cultural pattern of men that originally did not put nature into an inferior role. Hunger (Hunger & Wilkens 2010) claims that climate change will force societies to re-think their relationship with nature and the value of its resources. This deduction might be depicted as naïve, since work on technical solutions to global warming is already undertaken. It also takes off from the assumption of a balanced nature-man-relation and the industrial revolution as a turning point within this relation, thereby omitting Christian heritage of 'govern the earth' that influenced western societies' culture and handling of nature.

other environmental problems and thus misunderstanding causes of and solution to climate change. In addition, individuals judge information with a social frame, i.e. information is evaluated based on the trustworthiness of the source and in relation to one's social networks and their attitudes and beliefs towards the issue at hand (National Academies Press 2010: 102-103). Studies from social psychology, environmental psychology, sociological attitude research, cognitive psychology, and science communication examine questions like

- Which attitudes and beliefs do laypeople have towards climate change messages and environmental mitigation and how concerned are people about climate change (e.g. Leiserowitz et al. 2010; Hanson 2009; Leiserowitz 2009; TNS Opinion & Social 2008a; The Pew Research Center 2009; Lorenzoni & Pidgeon 2006)?

- What do people know about the processes within the climate system and causes of and possible solutions to climate change (e.g. Leiserowitz & Smith 2010; Bostrom et al. 1994)?

- Which requirements are necessary for climate change communication in order to address people sustainably (e.g. Bolscho 2010; Leiserowitz 2007; Aufermann et al. 1973)?

All of these questions can be answered from different perspectives and through a variety of methods. In the following I will present some significant examples of these approaches. For a study that concerns itself with the question how experts tell the story of climate change, it is important to have some background information about how laypeople and the public in general perceive this phenomenon, since they are the audience climate advocated have in mind when they tell their stories of climate change.

2.3.1 Attitudes and beliefs towards climate change

There exists a multitude of surveys on national, EU-, and global level regarding people's attitudes towards climate change, partly with contradictory results, partly incomparable because of differing methods, differing questions, and differing definitions of key-terms. "These scholars wonder with some urgency why the public fails to appear concerned. They wear the hats of environmental sociology, social psychology, and science communication" (Norgaard 2011: 209).

The first question to answer with survey methods is how strongly people are concerned about the ecological crisis. Only if people pay attention to the topic and start to worry about it, they will demand and support political instruments on climate mitigation and will themselves start to get active in the fight against climate change. However, findings of reports concerning this issue differ strongly in the evaluation of people's concern and belief.

A 2013 survey by the PEW Research Center, conducted among 39 countries, revealed that on average respondents ranked global climate change among the top global threats, running third place in Germany, Great Britain, and Russia, and – despite the financial crisis – even second in Greece (The Pew Research Center 2013). While 54% of respondents in Canada perceive climate change as top global threat, only 40% of U.S. Americans do. Similar results can be found in PEW's survey on attitudes towards global warming where only 19% of Americans who have heard about the issue are personally worried a great deal, situating American concern on the same level as Chinese concern (The Pew Research Center 2007a). The study shows that global warming does not rank as a top-tier issue for most Americans. A ranking of the policy priorities for the president of the USA and congress sees taking action on global warming on the fourth-lowest rank on the list among 23 tested items. In a poll in 2009 even across partisan lines (global warming being occupied mostly by Democrats) fewer Americans are convinced that there is solid evidence global warming is happening (The Pew Research Center 2009).

But even if climate change is not presented as a main concern in the USA, 63% of respondents agree that America's energy policy should focus on developing alternative sources of energy, such as wind, solar, and hydrogen technology (The Pew Research Center 2011).

There are also surveys published showing a rising concern about environmental topics including climate change. A 47-nation survey conducted in 2007 showed an increase of concern about environmental problems in 20 of 35 countries, among which are Germany and the USA, with a double-digit increase among U.S. Americans, from 23% in 2002 to 37% in 2007 (The Pew Research Center 2007b). Leiserowitz states that a large majority of Americans believe that climate change is a fact (61% of respondents believed, that global warming is happening) and perceive it as a serious problem (Leiserowitz 2003: 23-24; Leiserowitz 2007: 44; Leiserowitz et

al. 2010). Comparing Gallup polls, Lorenzoni and Pidgeon emphasize a development of rising concern in the USA, stating that between 1989 and 2003 24% to 40% of respondents worried a great deal (Lorenzoni & Pidgeon 2006). A closer look at surveys conducted in Europe and especially in Germany reveals a rising concern about global warming: The regularly conducted and published survey on environmental awareness in Germany describes Germans' attitudes towards climate mitigation and environmental protection. The 2012 survey showed a rising concern over environmental problems (35% of respondents ranked ecological concerns second in a list of most pressing political issues). 64% request the German government to increase their engagement in this field (Rückert-John et al. 2013: 18, 20). This report also supports the perception that environmental protection traditionally plays an important role in German society (Bolscho 2010): between 1990 and 2012 concern over environmental problems is considerably high (an average of 30% ranked the environment as most important political issue; Rückert-John et al. 2013: 19). A report released in 2010 states that 20% of respondents rank environmental mitigation (including climate mitigation) among the top two concerns German politics is facing today, assigning it rank three following labor market policy in first and economic and financial policy in second (TNS Opinion & Social 2008a).

Findings in representative surveys often have to acknowledge how short term changes in attitudes and opinion are related to different reasons. Concerning attitudes towards climate change, these reasons might include information fatigue resulting from intensive media coverage of the topic, influence of recent weather, such as unusual weather events or hot or cool weather conditions, or exhausted media coverage of related political and social events, such as climate summits, the coverage of Al Gore's climate change documentary "An Inconvenient Truth", or the climate gate scandal (Ratter et al. 2012: 6-7). Probably due to the impacts of the financial crisis the Standard Eurobarometer 2012, a biannual report inquiring attitudes and opinions of EU citizens towards varying issues on the political agenda, shows a decrease concerning the urgency of climate change in the public opinion. Only 5% of respondents rank climate change among the two most pressing issues their country is facing today, allocating climate change an overall rank of 11. The topic of climate or the environment in general does not even appear within the 3 – 4 top concerns in any nation. These numbers fit into a development that has been noticed quite a while. In 2009 the authors of the Standard Eurobarometer state that

"as observed in previous surveys the environment is seldom seen as a national concern. When it comes to problems the European Union is facing today, respondents rank climate change only on 13, the environmental in general only on 12. Asked for their personal affection, only 9% of respondents count the environmental crisis among their two most important topics, followed by the items crime, housing, immigration, and terrorism. The highest scores for this topic are recorded in Sweden (20%), Denmark (16%), and France (10%)" (TNS Opinion & Social 2009:10). Comparing results from 1998, when the Kyoto Protocol was agreed upon and protecting the environment was seen as the 4th most pressing issue the European Union had to tackle, we can most certainly frame this development as a decrease in public attention (Public Opinion Analysis Unit of the Directorate-General for Information 1998). In 2008, under the impression of new developments in European climate policies[10], a Special Eurobarometer on European citizens' opinions on climate change was carried out (TNS Opinion & Social 2008a) inquiring especially about attitudes towards climate change and EU climate policies (Fieldwork March – May 2008). In this survey 63% of respondents rank climate change/ global warming among the two most pressing issues the world is facing today, allocating the topic second following "poverty/ lack of food and drinking water". The Standard Eurobarometer that was conducted at the same time (Fieldwork March – May 2008) paints a different picture: Here, climate change or the environment does not even make it into the top ten of nation's top two concerns, as perceived by EU-Citizens. Citizens of Sweden, Denmark, and Maltese see the protection of the environment as one of the top concerns by 5%, which is above EU average (TNS Opinion & Social 2008b).

The research teams around The Yale Project on Climate Change Communication at Yale University, USA as well as the George Mason University Center for Climate Change Communication, USA, are looking into the American beliefs and disbeliefs of climate change. They identified six groups of Americans concerning their attitudes towards global warming. Figure 2 describes the percentage of Americans in relation to the degree of belief in global warming.

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[10]"In 2007, European leaders agreed on a reduction of greenhouse gas emissions by at least 20% (or 30% if other main international actors take on commitments) by 2020." (TNS Opinion & Social 2008a: 2).

Figure 2: Proportion of the U.S. adult population in the Six Americas

Alarmed   Concerned   Cautious   Disengaged   Doubtful   Dismissive
18%   33%   19%   12%   11%   7%

◄──►

Highest Belief in Global Warming   Lowest Belief in Global Warming
Most Concerned   Least Concerned
Most Motivated   Least Motivated

n=2,129
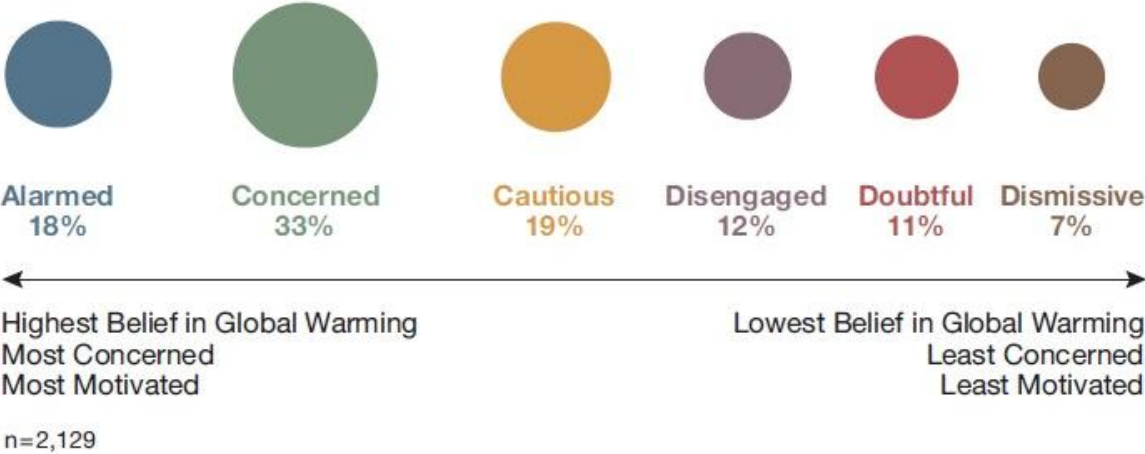
(Source: Leiserowitz 2009: 3)

The Alarmed are a group about 14% (in 2012: 13%) of Americans, who are most concerned about global warming, and who are most motivated to take action. The largest group of Americans, the Concerned (33%, in 2012: 26%), understands that global warming is indeed happening, but is less certain than the Alarmed. The Cautious (19%; in 2012: 29%) are not as concerned as both of the first groups and do not perceive it as a personal threat. The Disengaged (12%; in 2012: 6%) are characterized as the group that is most likely to change its mind about climate change, because they are not strongly mentally involved in the debate. 11% (in 2012: 15%) of Americans belong to the Doubtful and are evenly split among those who believe that global warming is happening, who do not believe in that, and those, who do not know. However, they agree upon the idea that there are natural causes to a changing climate and that people will not be harmed by the consequences of global warming. The last group, the Dismissive (7%; in 2012: 10%) are actively engaged in the issue, just like the Alarmed, but – of course – at the other end of the scale. They strongly believe that global warming is not happening, therefore any harm to anyone and thus not a problem the government should concern itself with (*ibid.*; Leiserowitz et al. 2012). This elaborate report shows how different beliefs and attitudes towards climate change are solely in the United States.

2.3.2 Knowledge about climate processes, causes of, and solutions to climate change

Studies have shown that respondents lack at accurate knowledge when it comes to climate change and follow flawed mental models. "[…] many Americans confuse or conflate climate change with stratospheric ozone depletion, leading them to advocate spurious solutions like ban on aerosol spray cans, which continue to be associated with ozone depletion" (Leiserowitz 2003: 54). Based on the work of Global Warming's Six Americas described above, Leiserowitz et al. (Leiserowitz & Smith 2010) examined the identified groups in terms of their knowledge about climate change. Due to the phenomenon's complexity the authors built categories of different scientific areas, inquiring the understanding of the processes within the climate system, the causes, consequences and possible solutions to global warming, regional distribution and historical development of human-caused global warming, and the field of practical knowledge that enables individual and collective action (*ibid.*: 4). The authors emphasize that the results (lack of detailed knowledge) is not only showing the grade of public knowledge about climate change, but that they "likely reflect the unorganized and sometimes contradictory fragments of information Americans have absorbed from the mass media and other sources" (*ibid.*: 5). This study dealt with the knowledge of adults (18+ years) and was supplemented in the following year with a similar report on climate knowledge of American teens (Leiserowitz et al. 2011). A comparison reveals only a slight difference between both groups: for example 54% of teens and 63% of adults approve of the statement that global warming is happening, 46% of teens and 49% of adults understand that emissions from cars and trucks contribute to a changing climate, and 62% of teens see switching from fossil fuels to renewable energy sources globally as a possibility to reduce global warming either a lot or at least some, compared to 63% of adults (*ibid.*: 2). However, both studies also identify some gaps where more and detailed information is needed: Only 7% of American teens are able to estimate the amount of carbon dioxide in the atmosphere today (about 390 parts per million), and only 17% have heard about coral bleaching, only 18% of ocean acidification. Similar results are brought up by inquiry of adults: Even among the group of the Alarmed only 13% know how much carbon dioxide there is in the atmosphere. Another finding contains some misconception when it comes to causes and thus possible solutions to global warming. 63% of the Alarmed and 49% of the Concerned believe the ozone layer to

be a significant contributor to a changing climate; thus they agree on the statement that banning aerosol spray cans would reduce global warming (39% of the Alarmed and 23% of the Concerned). Interesting enough the rate of misconception in those groups who disagree with or somewhat not believe in the idea of an anthropogenic climate change (the Dismissive, the Doubtful, the Disengaged, and the Cautious) are significantly lower (only 1% of Alarmed think that global warming can be reduced by banning spray cans, 4% of the Doubtful, 3% of the Disengaged, and 13% of the Cautious). However it is important to notice that these answers may not result from a higher knowledge of the issue, but from a general rejection of the idea of human causes to climate change, if climate change even exists at all. These reports only contain descriptions of numbers and results, and do not provide a contextual interpretation. Here, Bostrom et al. (1994) and Read et al. (1994) pursue the examination of U.S. American public understanding and conception of climate change. The study of Read et al. was conducted as a follow up analysis on the results of the first study which developed mental models of the understanding of facts about global warming among laypeople. Both studies however come to the result that "laypeople display a variety of misunderstandings and confusion about the causes and mechanisms of climate change" (*ibid.*: 982) and like Leiserowitz et al. the authors argue that this lack of knowledge and misconception restricts people's ability to differentiate between effective and ineffective strategies to address global warming (cf. Leiserowitz et al. 2011; Leiserowitz & Smith 2010; Bostrom et al. 1994: 969). In comparison, the above mentioned Special Eurobarometer 300 inquired about the level of how informed citizens feel about climate change and state that more than half of Europeans feel informed about the issue, the level rising with a higher education and higher concern about it. More than one forth of respondents do not feel that they are sufficiently informed about different causes, possible impacts, and efficient ways of fighting climate change (TNS Opinion & Social 2008a: 18).

2.3.3 Studies on requirements for successful climate change communication

Beliefs and attitudes towards climate change also influence how people perceive the risks that are brought on by global warming. From the perspective of risk perception, scholars examine questions like:

- How do people perceive and estimate the risks related to global warming (Whitmarsh 2008; Leiserowitz 2007; Leiserowitz 2005)?

- How do people react to the uncertainties within climate change research (Renn 2008)?

If people are faced with uncertain consequences of risks and if they do not have the resources to address these risks properly, they tend to resolve this cognitive dissonance in order to go on with their every-day life (Aronson 2008). This observation has to be considered when talking about successful ways of climate change communication examining the role of fearful messages. Operating with fear as a motivational tool can be risky: it is difficult to sustain fear in the long term, also because the audience might become desensitized to fear appeals. Drawing on results from social psychology and behavior studies discussed earlier, scholars point out dangers that lie in using fear as a motivator. Painting overly dramatic pictures of doom and the devastating effects of climate change might draw public's attention for a short time, but if clear and applicable guidelines are not provided people are only left helpless and scared (Moser & Walser 2008) and – confronted with a sheer irresolvable challenge – will retreat and switch off all-together (Ereaut & Segnit 2006; Hamblyn 2009: 235). Fear appeals are likely to jeopardize audience's trust in those organizations that use fear in their messages and fear appeals might lead to unintended reactions (O`Neill & Nicholson-Cole 2009: 360-361). Aronson points out another danger fear messages carry exemplifying this by an experiment conducted among students of UCLA in 1986 by Darrin Lehman and Shelley Taylor (2008). College freshmen have been informed about the likelihood of an earthquake taking place in the Los Angeles area and then were assigned randomly to different dormitories. One half moved into newly build houses that were relatively safe seismically, the other half lived in older, more vulnerable buildings. After some weeks researchers asked both groups about their knowledge on earthquakes and surprisingly found out that those students living in the older dorms had significantly less knowledge on appropriate behavior in case of an earthquake than the other 50% of students. What happened? Aronson argues that even though the students were plenty scared when they first heard about the likelihood of an earthquake they were not provided with strategies. So in order to go on with daily life, students started to play down the chance of becoming victim to natural disasters. They thus dissolved the cognitive dissonance they faced; simply going into denial about the problem. This experiment shows that knowledge and information alone will not lead to a behavioral change; on the contrary, it might even become counterproductive if no guidance is

provided. Recommendations for taking action have to be effective, concrete, and doable, otherwise a message of fear will not produce reasonable responses to danger, but instead it will produce denial (*ibid.*: 859; also cf. Moser & Dilling 2011: 40 and Moser & Dilling 2004). In this scenario the threat of an earthquake is only a vague idea; most students may never have been victim to natural disasters. Maybe the experience has to be more drastically life-like than pure information can be? O'Neill (2009) and Moser (2011) object the use of fear loaded messages since audiences often reject fear messages as manipulating and attention grabbing messages do not necessarily empower action (*ibid.*). Similar to Aronson O'Neill argues that fear messages, even though they capture a lot of attention via shocking and sensational pictures, may leave people feeling helpless and overwhelmed, so going into denial or frustration with the issue is a likely outcome (O`Neill & Nicholson-Cole 2009: 374). If fear messages and dangerous threats do not have the "right" outcome, then what about the actual experience of natural disasters? Whitmarsh (2008) investigates this question by intersecting the question of the role of knowledge and experience to the question of risk perception, examining people's perception of climate change after they were victims to flood events, which may or may not be caused by the impacts of global warming. The author examines the role of direct experience in perception of and individual response to the likely outcomes of global warming. The data for this study was conducted in the UK in 2003 and was based on the hypothesis that people who already experienced flooding and damages to their possessions will pay more attention to the possibilities and dangers of future floods. This thesis is based on the assumption that direct and personal experiences influences individual risk perception (Bickerstaff & Walker 1999), that attention towards a risk rises if this risk has already been personally experienced (Keller et al. 2006), and that people perceive local risks as more threatening (Hinchliffe 1996). However the author comes to the conclusion of no significant differences of knowledge about global warming between flood-victims and non-flood-victims. There was also no significant difference concerning response and perception of possible impacts of climate change. Whitmarsh offers an explanation for the rejection of the hypothesis that floods and climate change are perceived as somewhat divergent issues: floods are directly experienced by those who were damaged and require a sudden and urgent solution; climate change however is a long-term problem with solutions that are less simple and obvious. The time-spatio distance of climate

change's consequences makes it thus especially difficult in every-day life to worry enough about the issue to actually alter human behavior (Weber 2008). The high level of uncertainty that surrounds climate change leads to an indefinite dimension of action, preventing a significant and sustainable change in cultural lifestyle. Even though respondents in surveys often attribute great importance to topic of environmental concerns, acting accordingly does not follow. This phenomenon is characterized by the value action gap (Owens & Driffill 2008; Kollmuss & Agyeman 2002; Blake 1999), or, as Giddens calls it: the Giddens' Paradox (Giddens 2009: 2; 113). This value-action-gap poses a dilemma to psychological as well as to sociological scholarship and carries important clues for climate change communication. Here, the question is why people do not act according to their – survey-tested – knowledge (Leggewie & Welzer 2010: 74). One explanation lies within the spatio-temporal divergence between causes and impacts. Kuckartz identifies 3 dimensions that influence action – or especially – non-action (Kuckartz 2010: 151):

(1) The dimension of space: people will only alter their behavior if the consequences of that behavior are spatially directly tangible. Kuckartz argues that since there are no real severe impacts of climate change to be feared in Germany, willingness to pay is comparably low.

(2) The dimension of time: people tend to prioritize needs alongside the degree of urgency among other factors. As Giddens puts it: "People find it hard to give the same level of reality to the future as they do to the present" (Giddens 2009: 2).

(3) The dimension of community and the tragedy of the commons (Ostrom 1990; see also Renn 2011: 161-165): climate mitigation is non-exclusive, i.e. it produces benefits for a community of people (Ernst 2010: 136; Zahran et al. 2008); the necessary sacrifices are yet suffered by a majority. People also justify their lack of taking action with reference to the limitation of their scope, pointing out that industry and politics have to take on the vanguard role in order to achieve actual results.

In his widely noticed "The Politics of Climate Change" Anthony Giddens applies the basic idea of the value-action-gap on macro-level reflections, concerning himself

solely with the history and current state of climate, environmental, and energy politics.

> "The Giddens' paradox lies in the observation that "no matter how much we are told about the threats, it is hard to face up to them, because they feel somehow unreal - and, in the meantime, there is a life to be lived, with all its pleasures and pressures. The politics of climate change has to cope with what I call 'Giddens' paradox'. It states that, since the dangers posed by global warming aren't tangible, immediate or visible in the course of day-to-day life, however awesome they appear, many will sit on their hands and do nothing of a concrete nature about them. Yet waiting until they become visible and acute before being stirred to serious action will, by definition, be too late." (Giddens 2009: 2).

A specific sociological observation lies beneath these explanatory factors: the observation that attitudes and norms are not just the primary guiding principles but context of action has to be considered as well (Leggewie & Welzer 2010: 74-79). The question why people do not act according to their knowledge thus has to be answered with regard to individual as well as social barriers (Nicholson-Cole 2005; O'Neill & Hulme 2009). Hence, we are able to handle our value system the way the situation requires it, for example a justification for a decision can be brought into accordance with our values and norms by considering extraordinary circumstances.

Experts who want to alert an audience to a topic like climate change have to take into account all these different levels of engagement and interests and, like it is with almost every complex, scientific topic, they have to deal with different level of knowledge about the issue. Summarizing, it is safe to state that climate change communication is challenged by these differing and partly contradicting results of survey research.

There might be differences in the focus of surveys, in the methods, or the item categories, but it nevertheless shows inconsistencies in a comparison of the results. This makes is difficult for science communication to draw solid conclusions for further communication strategies. It describes especially how divided scholars are when it comes to estimating the level of concern climate change causes in the public sphere.

2.4 Discourse-analytic studies: media logic, scientific reporting and science communication

A deeply sociological approach is the analysis of societal discourse. Studies in this field primarily focus on the discourse taking place in public media:

> "In research on the public understanding of climate change, we operate under the global hypothesis that cycles in media coverage embody narratives that guide public understanding. […] Communication research has delved into the narratives told by the mass media, which some argue have emerged as modern society's primary storytellers, having in many ways replaced society's dependencies on direct information and oral traditions" (Trumbo & Shanahan 2000: 201).

In her forthcoming book "Risk and anthropology", Åsa Boholm sees collective narratives about events as communicated through news media (Boholm in press)[11]. News coverage of climate change – or any other topic for that matter – plays an important role in bringing the topic into the civil sphere, elucidating the issue to laypeople, and producing political pressure. Here, key questions look like:

- To what extent is climate change covered by the media (e.g. Schmidt et al. 2013; Schäfer et al. 2011; Weingart et al. 2000)?

- What does media coverage of climate change look like (e.g. Myers et al. 2012; Maibach et al. 2010; Nisbet 2009; Ereaut & Segnit 2006)

- Which challenges does climate change pose for the realm of science communication (e.g. Hart & Nisbet 2011; Bauer et al. 2007; Downing & Ballantyne 2007; Nisbet & Goidel 2007)?

Trumbo identifies climate change as an outstanding example of new environmental problems. Thus, climate change poses a challenge to media coverage that has to deal with its specifics of being a long term issue with global consequences, while at the same time its 'happening' stays invisible to most of the audience (Trumbo 1996: 269). Knowledge about climate change is mostly distributed and perceived through mass media (Nelkin 1987 and Wilson 1995, all cited in: Lowe et al. 2006: 436). Looking into news coverage regarding climate change it becomes obvious that the

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[11] Boholm (in press) differentiates three basic modes of knowledge about risk: everyday experience, science driven scenarios, and collective narratives.

logic of media reporting and the logic of scientific reporting do not always coincide. There is a large body of work on media reception, reporting, gatekeeper influence, and communicator-recipient-relation (Gans 2005; Bell 1991; Tuchman 1978; Galtung & Ruge Mari H. 1965). For this study's purpose I will particularly report the results of research that examines how the issue of global warming is treated in the media. A first step is to examine how much attention media are paying to the topic, i.e. how much space environmental topics get in newspapers and how often reports occur (see for example: Weingart et al. 2000). Schäfer et al. (2011) report 6.894 articles appeared in German newspapers between 1996 and 2010[12]. Interestingly enough, the focus in media studies seems to lie within print media, while online news or even TV shows are less frequently evaluated. An exception is Boykoff and Boykoff's (2008) study of U.S. American television news coverage on global warming. Some analyses even compare numbers of articles, wording, and journalistic practices in an international context (Boykoff 2008; Nissani 1999; Mazur 1998; Bell 1994).

Media reporting follows different rules than scientific reporting, thus it is likely that the case of climate change gets presented in a different way as it occurs in the professional debate. Messages thus need to be tailored to a specific medium and its designated audience, "using carefully researched metaphors, allusions, and examples that trigger a new way of thinking about the personal relevance of climate change" (Nisbet 2009: 15). In public debates, issues get organized according to the frame they best fit, which, in turn, depends on the 'debate genre'. Within politics and lobbyism issues are framed in order to reach decisions and to identify policy options. On a technical expert level frames need to present technical details as more accessible to enable experts on a social level to turn them into persuasive stories. And journalists use frames to present interesting news reports (*ibid.*). Journalistic work is not merely the distribution of scientific knowledge. It rather underlies various cultural influences, political expectations, and narrative requirements. Variations in media's reinterpretation of climate change facts can be explained by considering the role of value orientation. Carvalho and Burgess (2005) follow up this assumption with a content analysis of climate change reports in three UK newspapers, covering the release of the IPCC's assessment report in 1995. The authors describe how The

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[12] For a profound overview of studies that have explored media attention to climate change, see Schmidt et al. 2013: 1235-1237.

Independent and The Guardian followed the conclusions of the IPCC[13] report and mobilized public concern, while The Times attempted to discredit the work of the IPCC and to persuade its readers that climate change did not present any significant risk to society. This study shows "that coverage of climate change has been strongly linked to the political agenda on this issue, and particularly to public pronouncements and discursive strategies of prime ministers and other top governmental figures" (*ibid.*: 1467). Aside from political interests that can be either promoted or hindered, reports on climate change are often accompanied by inaccurate scientific facts and a sense of alarmism (*ibid.*; Post 2008). This sense of alarmism is underlined in a report by the institute for public policy research (Ereaut & Segnit 2006), where 10 different linguistic climate change repertoires within newspapers are found. The sheer number of repertoires alone shows the key finding of a contradictory, confusing, and chaotic discourse from this study, represented in Figure 3: Opposing arguments in the climate change discourse

Figure 3: Opposing arguments in the climate change discourse
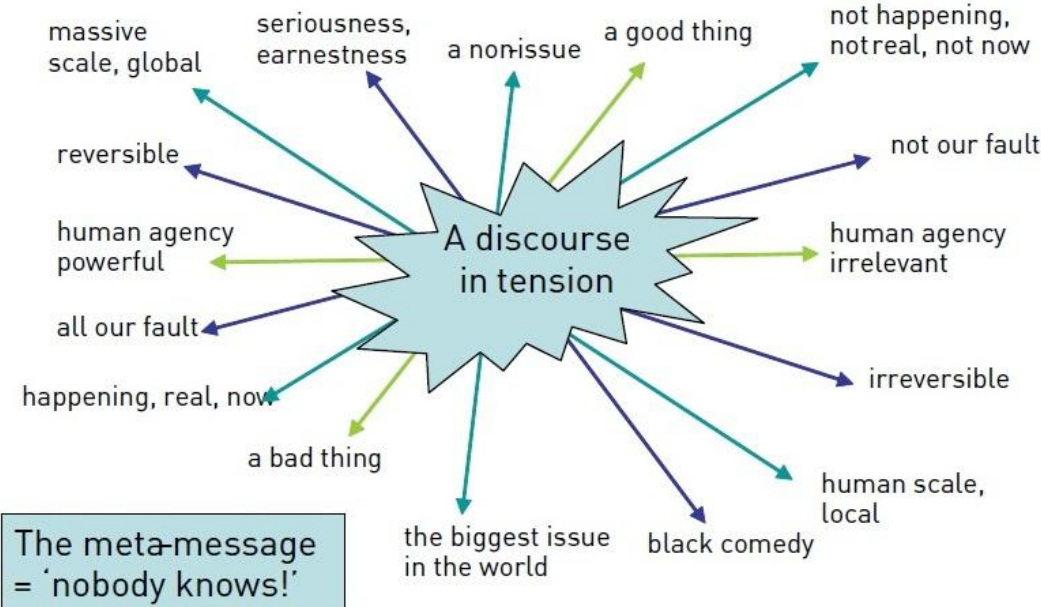
(Source: Ereaut & Segnit 2006: 10)

The debate in UK mainstream media is filled with different voices and contradicting opinions, with a lean towards the left side, where climate change is perceived as

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[13] IPCC is the abbreviation for International Panel on Climate Change.

anthropogenic, massive, and real. However, the authors summarize different repertoires as three categories, one with an overall pessimistic perspective, containing an Alarmist repertoire, and two others: the optimistic repertoires and the pragmatic optimistic repertoires. The latter are ascribed as "it will be alright" attitude, whereas the first characterized by a doom-perspective, perceiving climate change as the biggest challenge the world is facing today and seeing the earth passed the point of no return (*ibid.*: 13).

Storch and Krauss undertake a transcultural analysis of media coverage in U.S. American and German newspapers and argue that "even though there are significant differences in the public understanding of climate change […], the media in both societies use a similar framework of vulnerability, even if it is constructed in culturally different ways" (Krauss & Storch 2005: 2). These cultural differences are especially found in varying wording and the implications of that choice of wording, the U.S. American media referring with the term 'global warming' to a tendency toward warmer mean temperatures while German media's 'Klimakatastrophe' pictures climate change as a somewhat broader term, emphasizing a construction between disastrous weather events and the consequences of a changing climate. The authors exemplify this on the report of the Elbe River flooding in August 2002, where a regional newspaper reported that "now the flood finally reached our backyards. This flood confronts us with the 'why', with the sins we have committed, with the search for its origins. Even without scientific certainty we know that the flood is a consequence not only of cosmic changes, but of our own way of living" (*ibid.*: 3). Schäfer et al. (2011) and Grundmann (2007) identify specific events as points of time that lead to an increase of reports on global warming, such as international climate summits like the Copenhagen Summit in 2009 or when a new IPCC report is released. Those events draw public attention towards environmental problems and for a short period of time, climate negotiations about CO2 reductions and cap and trade are 'breaking news'.

2.4.1 Media coverage of climate change I: the issue attention cycle

According to Downs` issue attention cycle news coverage on these events leads to a different relation to public attention. It is what he calls the post-problem stage, the 5th phase within the cycle, which mostly refers to public attention towards ecological problems. Downs identifies three characteristics inherent to those problems that

eventually pass through the entire issue attention cycle; all of which are a perfect fit for environmental issues: only a numerical minority is suffering from the problem (A); causes for those sufferings are largely due to benefits for a majority (B); the problem is not able to deliver dramatic and exciting footage, like pictures and videos, to compete with other news (C) (Downs 1972: 41).

Figure 4: Down's issue attention cycle
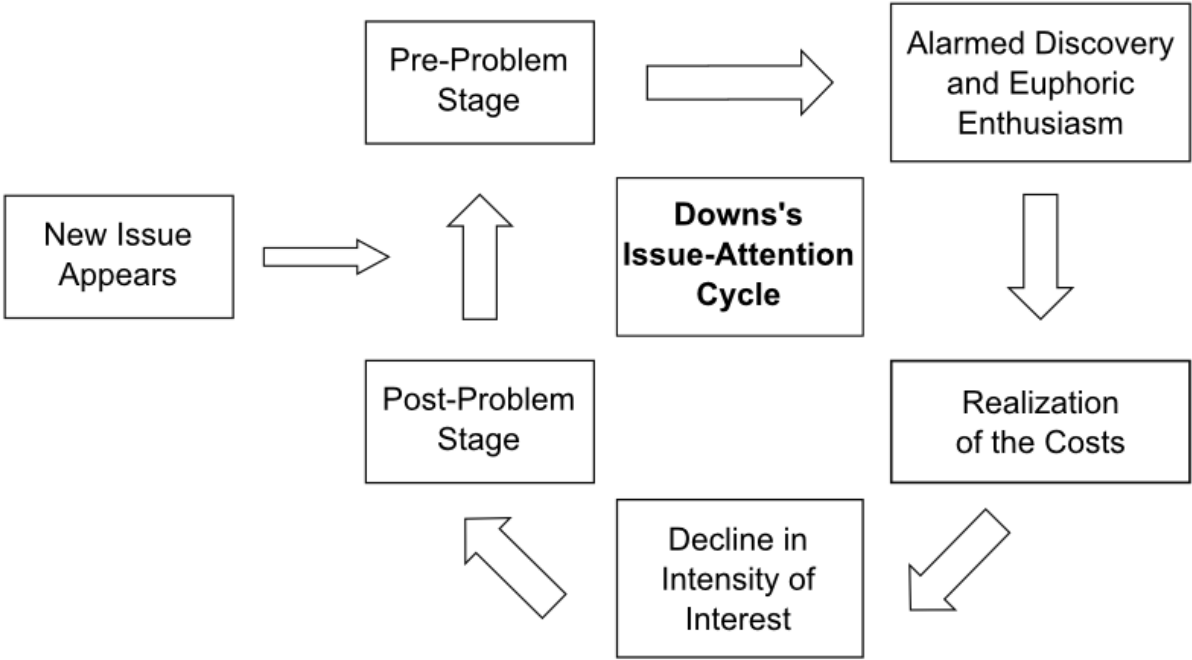
The cycle starts with the pre-problem stage (1), where an undesirable social condition exists, but only alarms experts or specific interest groups, while public attention is not yet focused on this issue. In stage two, 'Alarmed discovery and euphoric enthusiasm' (2), public attention rises highly due to a series of events that bring about the specifics and harmful consequences of a problem. Calls for immediate and effective action are being made, often on the political level. Those claims are getting fewer when stage three hits: 'Realizing the cost of significant progress' (3). Public opinion, often via media reports, starts to understand the financial and maybe social sacrifices that have to be made to make change happen, which leads to a decline of intense public interest (4), due to three reactions: having the solution's high cost in mind some people get discouraged, others try to avoid the problem because they feel threatened but helpless in the face of the challenge. Still others simply become fed up with the issue. What follows is aforementioned stage 5,

where other issues of national or international interest capture the public's attention. However, institutional structures which were created in the wake of debate about the problem are not simply vanishing again. Thus social debate does not just return to pre-problem status quo, but keeps the once heatedly debated issue in the loop, although on a lower level (Downs 1972: 40-41).

The model provides valuable insights into societal mechanisms which are involved in news processing. The identification of five stages can be used in media studies to enrich the analyses with a systematizing tool that might present occurrence of climate change reports in a different light and helps to portray a topic's media career (Trumbo 1996: 274). Trumbo (1996) takes the issue attention cycle as basis for an examination of newspaper coverage on global warming in five major national newspapers, The New York Times, The Washington Post, The Los Angeles Times, The Christian Science Monitor, and The Wall Street Journal. He identifies two pivotal points in time that influenced the media life of the issue: "mid-1988 when Hansen testified before Congress and mid-1992 when the Earth Summit concludes" (*ibid.*: 272). The author traces the five stages of Downs' model in news coverage of climate change. Although different intervals agree with the model's predictions, like the pre-problem stage that lasted until Hansen's Congressional testimony[14], ringing in the second stage of alarmed discovery when media coverage escalated and politicians attended to the matter, the author concludes that the predicted higher-level attention at the end of the circle did not occur. "The amount of media attention during the first six months of 1993 is similar in volume to that of the first half in 1988" (*ibid.*: 275).

However, the model also has been criticized for being too restrictive, linear, or omitting additional factors, oftentimes from the realm of media analyses (Grundmann & Krishnamurthy 2010; Brossard et al. 2004; McComas & Shanahan 1999). McComas and Shanahan (1999) examine in a quantitative content analysis the amount of articles dealing with global warming in The Washington Post and The New York Times between 1980 and 1995, and reject Downs' model as too restrictive by pointing out that social phenomena do not move linearly from stage to stage but are subject to a dynamic change of external social factors[15]. Concerning the

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[14] In 1988, climatologist James E. Hansen elaborated the trend of global warming before Congressional committees in the USA. His testimony helped to raise broad awareness of the issue.
[15] Alternatives to Downs: Ungar's explanation of attention to global climate change focuses on the social scare that the hot summer of 1988 precipitated: real world events attract social attention, the

characteristics Downs identifies, the authors claim those features to be not specifically inherent to features inherent to environmental problems. Thus, these characteristics do not make them subject to the issue attention cycle, but "these features were also narratively constructed by media covering the issues" (*ibid.*: 9). Brossard et al. (2004) support this critique in their cross-cultural comparison of newspaper coverage of global warming in France and the USA, covering editions between 1987 und 1997. The characteristics of the media attention cycle could not be found in French news covering, but seems to only apply to U.S. American media. The way of telling the story about climate change in the news, however, seems to a bigger extent influenced by journalistic culture[16]. French journalists used a different set of protagonists than U.S. American media: French newspapers emphasized the conflicts between the USA and Europe, whereas U.S. American media focused on the debate between scientists and politicians, with a clear tendency towards domestic politics. This finding gives way to the principle of balanced reporting leading to a biased portrayal of the ongoing debate about climate change, as will be shown in chapter 2.4.2. Taking off from the results from Brossard's study, Grundman et al. (2010) amplify the study's scope by adding the public discourse of two European countries, Germany and the UK. They state that they could not find any evidence for Downs' issue attention cycle, but detect an overall rise in news coverage of Germany, the USA, UK, and France over two decades and an excessive rise after 2004.

2.4.2 Media coverage of climate change II: the norm of balanced reporting

With new data from two more countries the authors confirm Brossard's et al. (2004) diagnosis of culturally different reporting on the issue, supporting the observations made for France and assigning similar results to German and British newspapers. European media debate is characterized by an emphasis on political implications of environmental problems, with frequent references to the U.S. American role in the process. U.S. American media focuses more on the ongoing scientific debate about existence, nature, and cause of global warming. Considering the large consensus

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real world impacts of the drought of 1988 brought global warming into view as a legitimate threat to personal wellbeing. This social scare catalyzes demand for news, to which the media responded (Ungar 2007).

[16] Concerning journalistic influence on scientific reporting also refer to the realm of gatekeeper research, e.g. Joch Robinson (1973).

among climatologists it seems curious that a huge proportion of media reports would still concern itself with the search for evidence for an anthropogenic climate change.

However, it does fit into the logic of media discourse. Especially in the USA, journalists consider balanced reporting (norm of balance) an important feature of journalistic work (Lever-Tracy 2008; Boykoff & Boykoff 2007; Rahmstorf & Schellnhuber 2007; Krauss & Storch 2005). This norm always aims to find two viewpoints to an issue and to give similar importance to both 'sides of a story'. "One might think, that the authority of the IPCC, and the fact that we are dealing with scientific issues, would pretty much dictate what journalists can do in terms of 'spinning a story'. However, there is considerable variance between such alleged facts and their representation to a mass audience" (Grundmann & Krishnamurthy 2010: 128). Storch and Krauss state: "The media, following the U.S. norm of 'balance,' typically present the problem of anthropogenic climate change as a conflict between two opposing schools of thought—and give both schools similar space in advocating their views" (Krauss & Storch 2005: 4). Similarly, Boykoff and Boykoff (2004) discover media biases in a content analysis of reports in The Washington Post, The New York Times, The Los Angeles Times, and The Wall Street Journal; the authors conclude the analysis on a slightly negative tone, claiming that "[t]hrough overwhelmingly 'balanced coverage' of various decisions regarding action due to global warming, the prestige press thereby implied that the division between various calls for action was relatively even. In light of the general agreement in the international scientific community that mandatory and immediate action is needed to combat global warming, U.S. American prestige press coverage has been seriously and systematically deficient" (*ibid.*: 134). Rahmstorf and Schellnhuber (2007) find that the picture, the media are painting about the debate is inversely proportional to the development of the actual scientific debate and Trumbo argues that scientists left the debate when public attention increased and such missing out in getting their message into mass media (Trumbo 1996: 281).

2.4.3 Science communication: critiquing the deficit model of information

An expert opinion thus might have the power to get more information – and especially scientific "true" information – into the discourse and thus increase people's knowledge on the issue. But does more information about the issue really lead to people paying more attention to climate change and ultimately change their

behavior? At first glance this seems to be an effective path to take in the fight against climate change, since the survey on knowledge of adults (Leiserowitz & Smith 2010) brings about that the less concerned (The Dismissive, the Doubtful, and the Disengaged) also posses less knowledge of climate facts. However, neither Leiserowitz nor Bostrom et al. (1994) and Read et al. (1994) draw the conclusion that more information and knowledge would automatically lead to a higher interest in the debate or even to a change in behavior. There are a few examples in history where this solution has worked, for instance, if we look at the case of cigarette smoking: After a large scientific consensus evolved that cigarettes in fact do harm people's health, a communication campaign started in a lot of countries. Eventually, cigarettes and cigarette smokers were banned from public buildings, school yards, pubs, and restaurants, often enough with public support. Within the last years, social acceptance of smoking declined and fewer young people started smoking (Orth & Töppich 2013). When it comes to climate change, however, the case is different (Hoffman 2010). Priddat (2010) argues that the opposite effect would be the case. He takes off from the assumptions of Rawls' "Veil of ignorance"[17] and draws the conclusion that the more nations (i.e. governments) know about the impacts and consequences of a changing climate on their own regions, the less they are willing to share the cost with those nations and regions that suffer mostly from the impacts. Even though this study makes an important point it omits that global communities are connected on different levels, like the economy, scientific knowledge exchange or simply the fact of human solidarity. These are aspects that drive the climate change discourse as I will show in the following narrative analysis in chapter 6. The role of more and better information on the subject was widely discussed within the realm of science communication, where the deficit model of science communication was first put forward and then widely criticized.

In this short chapter I will describe the deficit model of science communication even though today its shortcomings are uncovered, because critique of this model is the starting point of what Krimsky (2007) calls the stages in the evolution of risk communication and because it shows how complex the communication of risks and long-term problems is. Risk and science communication underwent a change within

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[17] The veil of ignorance implies that a just society would be possible if no member knows anything about the background or motifs of the other members (such as race, gender, social background). This way all members of a society would have to agree on a set of rules that are not compromised by special interests (Rawls 1999).

the last 30 to 35 years (1996). According to Fischhoff (1995), Leiss (1996), and Krimsky (2007) identify three stages of risk communication. The first, the phase of establishing accurate science for the purpose of educating the public, is covered by the information deficit model. The second acknowledges the fact, that simply telling people about a problem is insufficient, and brings the task of persuasion into the communication process. The next step is to change the relationship between communicator and audience from top-down to partnership. Thus, the aim is to engage risk managers, scientists and laypeople in a social learning process (Council of Canadian Academies 2014).

Complex scientific issues such as climate change and related topics pose challenges to "classic" communication strategies, that cannot be met by simply steering the public debate in a scientific adjust direction. Some have already been mentioned in chapter 2.4.2 as impediments for environmental behavior with regards to a long distance problem like global warming. In addition communicating the threads of a changing climate have to deal with invisible causes, with modern humans' disconnection from nature and with delayed or even absent gratification for taking action (Moser & Dilling 2011: 33-34). Scientific information gets transformed within a public discourse, not only through media requirements described above but by being embedded in individual perspectives, values, and views. Thus scientific communication often is at risk of generating boomerang effects, increasing political polarization about highly controversial debated issues instead of leading to a public agreement on scientific consensus (Hart & Nisbet 2011: 6). A lot of work has been put into analyzing public's understanding of science. Bauer et al. (2007) put forward a classification of research paradigms, identifying three groups characterized by research problem and the proposed solutions.

Table 1: Paradigms, problems, and proposals [in 25 years of PUS research]

Period	Attribution Problems	Proposals Research
Science Literacy 1960s onward	Public deficit Knowledge	Literacy measures Education
Public Understanding After 1985	Public deficit Attitudes Education	Knowledge-attitude Attitude Change Image Marketing

	Trust deficit	Participation
Science and Society 1990s – present	Expert deficit	Deliberation
	Notions of Public	Angels mediators
	Crisis of Confidence	Impact evaluation

Here I will limit reviewing this body of literature to what the authors call "science literacy". This paradigm pinpoints to the idea of a public deficit of knowledge about a scientific issue, i.e. a difference between expert opinions and lay people's perception of a complex issue. This model draws researcher's attention to the content of climate change messages, whereas the media studies focusing on the norm of balanced reporting (sensational media model) concentrate on structure of communication (Jones 2010: 63). Jones refers to Kellstedt's specification of the model in regard to the issue of climate change. The fundamental assumption of the deficit model of public knowledge is that "scientific assessments of risk are both correct and objective, and then, by implication, the public's perceptions of risks are both inaccurate and subjective" (Kellstedt et al. 2008: 144, cited in Jones 2010: 55-56). Thus, the model promotes increasing information campaigns and getting the "right" information across.

However, various scholars have criticized and rejected the information deficit model (Hart & Nisbet 2011; Bauer et al. 2007; Downing & Ballantyne 2007; Nisbet & Goidel 2007; Nisbet 2005; Gardner & Stern 2002; Goidel et al. 1997). Lowe et al. argue that the approach of a knowledge deficit "failed to place the issues in their wider social and cultural contexts underestimating the depth of public thought and knowledge of risks they face" (Lowe et al. 2006: 435-436)[18], Owens (2000) also emphasizes the importance of framing, when she argues against top-down-communication as inherent to the deficit model. Nisbet and Hart refer to other critics when they reject

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[18] This study stands out among most of other media studies since it does not examine newspaper articles or TV reports, but looks into the impact of popular culture, i.e. movies, and shall thus be described here to more detail: Lowe et al. interviewed focus groups in the UK before and after a viewing of the blockbuster movie "The day after tomorrow", which depicts consequences of an abrupt climatic change, giving rise to a new ice age. The researchers asked respondent to estimate the likelihood of extreme impacts, their overall concern about climate change, their motivation to personally take action and the just distribution of responsibility for the problem of climate change. Even though most viewers saw the movie as fiction and not scientific fact, a significant amount was more committed to taking action than before seeing the movie. But, this movie as well works with fear and the authors here come to a similar conclusion as Aronson (2008), Ereaut and Segnit (2006), and others discussed in chapter 2.3.3, which is that a terrifying message is not helping to change behavior if precise, effective, and doable strategies are offered.

the model by taking into account "strong value and ideological orientations [that] may act as perceptual screen" (Hart & Nisbet 2011: 3). Studies show that it is not so much insufficient information that prevents taking scientific information seriously or even utter change in behavior, but deeply held values and beliefs, benefits and incentives, social support and peer pressure play a huge role in foster those changes (Downing & Ballantyne 2007; Gardner & Stern 2002; Semenza et al. 2008; Takahashi 2009; all cited in: Moser & Dilling 2011: 164). Thus, it is urgent to widen the scope of science communication research to understand how audience's attitudes work with the characteristics of informational science messages. Communication research needs to not only take into account mass media as communicators, but consider other sources like social environment consisting of friends, families, workplace affiliates, etc.

The deficit model perceives distribution of information too static when it ignores the fact that people do not just take on an opinion they have read in newspapers and heard in TV- and Radio-reports. This is also reflected in Paschen and Ison's (2014) critique of the study by Shanahan et al. (1999), where respondents were asked to select the one narrative out of a variety of constructed environmental narratives, that most reflected their values. This design again establishes the static and hierarchical transmitter-recipient-relationship "by restricting their participants to a passive, receptive role rather than letting them produce their own narratives" (Paschen & Ison 2014: 6). For successful communication strategies social identification and political partisanship are powerful obstacles, which have to be taken into account. In the USA this is especially an issue between Republican and Democratic views. Al Gore's popular documentary on global warming "An Inconvenient Truth" turned the issue almost completely into a Democratic topic. Political elites, whose ideological orientations tend to be stronger than those of the general public, show a huge politically fed divide when it comes to existence, causes of, and solutions to climate change (Hart & Nisbet 2011; Dunlap & McCright 2008). The strong polarization among political beliefs stains public opinion, especially considering the highly emotional presidential election campaigns in the USA. "As beliefs about climate change become strongly associated with partisan orientations individuals are more likely to pay attention to and interpret information in ways that reinforce their political views" (Hart & Nisbet 2011: 2). Ideological polarization prevents an objective scientific debate, more than that: it shows in a nutshell that problems, no matter how 'scientifically objective' they may seem are not negotiated in a vacuum, but are

embedded in issue cultures and bridging metaphors (Ungar 2007: 81). Thus, putting culture into the central assumption of communication analysis can help us understand the background noise (Norgaard 2011) of climate change debate.

Results of these studies are important to understanding expert communication, because it is safe to assume that experts are aware of media requirements and consequential challenges for communicating climate change. If they want to be heard they have to obey these rules.

2.5 The role of culture in climate change research

Those discourse-analytic studies we saw in this last section perceive individuals as recipient of climate change messages, influenced by mechanisms of media and mass communication. Bearing the findings of these studies in mind – the critique of the information-deficit-model, and the norm and logic of media reporting – the next section of literature overview takes the debate one step further in so far, as it acknowledges the role of culture as the place where individuals make sense of their world (Alexander 2003c).

Norgaard summarizes the connection between a micro perspective and a macro perspective approach as follows:

> "Most existing studies on public response to climate change – coming from environmental sociology, social psychology, or science communication, from survey works on attitudes and beliefs to psychological studies on mental models – use individuals as their unit of analysis. Yet […] social context itself can be a significant part of what makes it difficult to respond to climate change. Although studies from this literature are essential, studies of perception that focus solely on individuals are unable to grasp the meaning of differences across cultures, subcultures, nationality, or the influence of political economic context on how individuals and communities think, feel, and imagine" (Norgaard 2011: 209).

The following literature I am presenting here deals with the cultural implication of the climate change phenomenon, when the discourse is understood as a set of stories – or, as Daniels and Endfield (2009) put it: a Big Story – , that partly contradict, partly agree with each other and that bring different aspects of the problem into the debate. The following studies prominently deal with questions like

- Which role does culture play in the perception of climate change? (e.g. Leiserowitz et al. 2010; Osbaldiston 2010; Krauss & Storch 2005)

- What is the cultural and social background of climate change stories? (e.g. Norgaard 2011; Ney & Thompson 2000)

- What are the characteristics of climate change narratives? (e.g. Smith 2012; Jones 2010; Verweij et al. 2006, Smith & West 1996)

With these questions, the respective authors open up the possibility of reading climate change as social text and set the stage for an analysis of its cultural structures. We have seen the importance of communication in the previous section, now it is time to understand the consistency of single communication elements.

Shanahan et al. argue, that "narratives are important to an understanding of environmental issues. […] Narratives are a separate and distinct type of communication that people use to make decisions about environmentally relevant issues" (Shanahan et al. 1999: 408). The authors conducted a mail survey, which featured different narratives on an environmental issue, but ended up with inconclusive findings in this explanatory study. However, the authors claim that the results show "that narrative assessment of environmental concern should receive further attention [… since] the use of narrative techniques improves the predictiveness of attitude-behavior models" (*ibid*.: 416-417).

2.5.1 Cultural studies and cultural theory approaches

Cultural studies

In her study "Living in denial" Norgaard (2011) puts forward an ethnographic approach to understanding culturally and socially bound perception of climate change impacts in a small Norwegian town she calls *Bygdaby*. The study stands out from the body of climate change literature because it does not use an instrumental approach but in a Geertzian sense of thick description digs deep into socially and culturally constructed (collective) emotions towards ecological changes, and thus commences in this review the transition towards a cultural sociological view on climate change. Norgaard traces cultural strategies to dissolve the dissonance between ecological awareness and supporting national economic policy, which is especially important to a country like Norway where being in touch with nature is part of the national identity

(*ibid.*: 146-151). On the center of the study stands the idea of "denial work", that is the social effort that is put into denying the consequences of climate change not only on a personal level, but even more importantly on a collective level. "Ignoring" a threat thus is not passive, but becomes active work, conducted collectively. Non response to climate change is produced through cultural practices of everyday life, allowing for normalization by use of cultural narratives: "Various narratives, most either produced or reinforced by the national government and echoed by citizens, serve to legitimate and normalize Norwegian climate and petroleum policy" (*ibid.*: 140) and to minimize Norway's responsibility for the problem of climate change. Norgaard identifies three categories: the narrative "Norway is a little land" and the narrative "We have suffered" both refer to Norwegian identity and history, describing the nation's relatively small contribution to global CO_2 emissions because (1) of the small population and (2) of its economic history, that Norway has – until recently – always been a poor country. The third narrative "America as a tension point" stirs the debate away from Norway itself and brings in additional characters as projection surface by pointing out other nation's bigger faults (*ibid.*: 142). Norgaard's description of Norwegian discourse is in line with studies on attitudes and beliefs stating that people are in fact concerned about climate change and have knowledge available, but at the same time "don't really want to know and in some sense don't know *how* to know" (*ibid.*: 207; italics original). But it takes the question of non-response to climate change a significant step further by taking into account cultural constructions of collective emotions when examining why people do not care (enough) about climate change and change behavior patterns accordingly. Although studies have considered the role culture plays in the perception of issues like climate change (Krauss & Storch 2005) they yet focused on the cultural impacts of individual perspectives, using, as cited in Norgaard above, the individual as unit of analysis. Norgaard's approach and the studies I will introduce in this section however assign culture the role of a gateway for the examination of climate change discourse, thus acknowledging the texture of societies.

Cultural Theory

Placing critique on the norm of balanced reporting and the deficit model of information as explanation of laypeople's lack of awareness and lack of willingness to fight climate change, Jones argues that "individuals do not process information in a

vacuum; rather, individuals bring their life experiences and their understanding of the world to bear when determining what information to accept, what information to reject, and, most importantly, what that information means" (Jones 2010: 64). Bringing the idea of culture as action- and value forming concept into the climate change debate, scholars have turned to Cultural Theory, as it was prominently laid out by anthropologists Mary Douglas and Aaron Wildavsky (1983, c1982) in their study on cultural risk perception and in Douglas' analysis of the social meaning of dirt (Douglas 2004), thus showing how essential social history and cultural context is for examining everyday life practices. With her work on pollution, Douglas already hints at the importance of cultural beliefs in social organizations, which is further explored in the grid/ group model. The model takes into account that societies are based on systems of classification (Smith 2001: 83). Douglas argues that the perception of purity vs. pollution can only be understood with a consideration of the wider classification that is at work in a society. "Things, that did not fit into orthodox classification systems and which violated or crossed symbolic borders tended to be seen as polluted" (*ibid.*: 83). These observations inform the four-cell-typology that explores the importance of systems of classification for social organization.

Figure 5: Grid-group dimensions and the five myths of nature
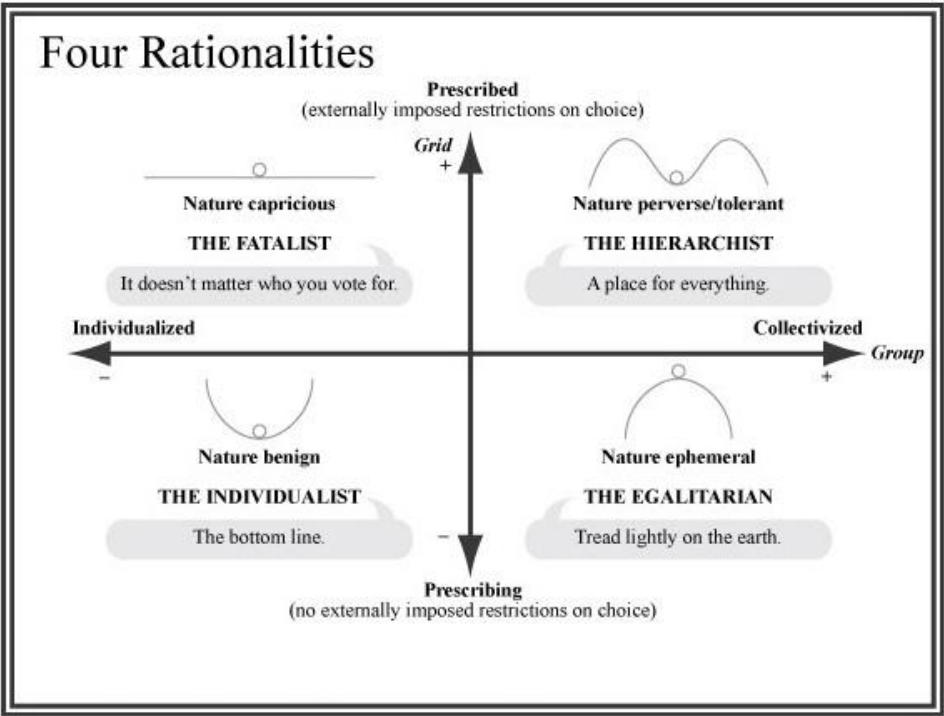
(Source: Schwarz & Thompson 1990: 9)

Within Cultural Theory there are four ideal types of value orientation created, along the two dimensions of group and grid. Chai et al. summarize this analytic model: "The Douglas model proposes that an individual's behavior, perception, attitudes, beliefs, and values are shaped, regulated, and controlled by constraints that can be categorized into two domains: group-commitment and grid-control" (Chai et al. 2009: 195). Grid/ group analysis is "a way of checking characteristics of social organization with features of the beliefs and values of the people who are keeping the form of organization alive. *Group* means the outside boundary that people have erected between themselves and the outside world. *Grid* means all the other social distinctions and delegations of authority that they use to limit how people behave to one another" (Douglas & Wildavsky 1983, c1982; italics original). "Grid measures preferred levels of group interaction, while the dimension of group captures the degree that these groups are expected to constrain the individual's beliefs and behavior" (Jones 2010: 67). Cultural Theory allows placing individuals along the dimensions of grid and group, with 'grid' as a dimension of individuation and 'group' as a dimension of social incorporation (Douglas 1982 190), creating five types: fatalist, hierarchist, individualist, egalitarian, and hermit. Policy studies focus mostly on the first four types, arguing that the hermit's worldview does not have consequences for social life (Thompson et al. 2013: 22). The four types then can be assigned a specific perspective on nature.

The four myths of nature (see Figure 5) serve as simplest models of ecosystems, partially representing reality (Thompson et al. 1990: 26). The individualist in the grid/ group fourfold table sees nature as friendly and harmless (myth: *nature benign*). The world is perceived as forgiving, allowing for trial and error strategy when faced with uncertainty. The egalitarian's myth of nature (*nature ephemeral*) can be seen as the opposite to the individualist's perspective. Here, nature is perceived as unforgiving and terrifying, and can be brought out of balance with smallest steps. Thus, societies have to treat nature with great care and timorous forbearance. The myth of *nature perverse / tolerant* encourages the hierarchist to be suspicious of unusual occurrences, since nature is only forgivable to some extent. Thus, societies have to ensure that exuberant behavior towards nature and its resources does not exceed a certain level. The fatalist sees nature and the world as random, leading to the attitude that societies are best off by treating unusual occurrences as singular events. Here, social managing institutions do not learn and progress (and do not have to), whereas

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the myths of nature benign, nature ephemeral, and nature perverse / tolerant require learning process when coping with environmental crises (*ibid.*: 26 – 38).

Leiserowitz (2003) and Jones (2010) take cultural theory as basis for their studies on climate change opinions among Americans (see ch. 4.3.3). Both studies aim at operationalizing cultural theory to "test the theorized relationship between cultural worldviews and risk perception of global warming" (Leiserowitz 2003: 53) resp. to "operationalize […] narrative theory […] seeking to determine if cultural narratives help explain variations in climate change opinion related dependent variables" (Jones 2010: XI). In a critical reflection on cultural theory, Leiserowitz criticizes Douglas' focus on the strictly causal relationship between social relations and cultural worldviews: "While Douglas argued that social relations *determine* worldviews (strong social constructivism), most subsequent scholars argue instead that the two are *dialectically* related" (Leiserowitz 2003: 46). Leiserowitz concludes – in line with the critique of communication research as aiming at "one size fits all" – that multiple strategies are needed for successful climate change communication, relating to different groups of audience, those who are skeptic[19] about the existence and causes of global warming or those who lack of scientific understanding, as well as to different implications of climate change, like climate change as a threat to human health issues which did not show as especially troublesome to respondents. Based on successfully constructed indexes for the worldviews of egalitarianism and fatalism the study supports Cultural Theory's prediction that egalitarians are more concerned about environmental risks, that climate change activists would be significantly more egalitarian than the average of the U.S. American public, and that fatalists' risk perceptions, policy preferences or individual behaviors do not vary significantly from the mean. Indexes for hierarchical and individualistic worldview however did not show internal consistency (*ibid.*: 191-192). The fourfold typology of forms of social solidarity emerging from cultural theory were in recent scholarship combined with the study of narratives – or stories – which lead to understanding synergies between both approaches.

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[19] See also Hoffman (2011) for an explicit treatment of climate skeptics.

Ney and Thompson (2000) point out three dominant stories about global climate change[20]:

- *Profligacy*: The first story centers around "profligate consumption and production patterns in the North as the fundamental cause of global climate change" (*ibid.*: 71) and is part of an egalitarian setting. This story embeds the case of climate change into a wider societal context of the logic of profit motif and focus on economic growth, with the villain found in exactly these structures of industrialized countries. On the other site, those organizations that understand how humans and nature are linked and that can see beyond short term satisfaction in western capitalist culture are the heroes in this tale. The moral of the story thus lies in a change of culture, where we "move from the idea of a waste society to the concept of a conserving society" (*ibid.*: 73).

- *Price:* Ney and Thompson head the second big story line with the term "prices". This economic tale locates climate change in the realm of technical solutions and makes natural resources subject to market forces. Resulting here is a technical discourse about nature instead of a debate about comprehensive cultural change. However, that does not exclude a discourse about a sustainable economy. In order to achieve such a green economy sufficient funds will be necessary which again can only emerge from economic growth. In this story, rational individuals are capable of making their own decision, locating this story within the idea of individualism, misguided policy makers, which are meddling with market forces, are found to be the villains of the story, whereas those organizations which understand the economics of resource consumption are the heroes. The moral can be summed up in the demand "we have to get the prices right" (*ibid.*: 74), meaning that the market will take care of reducing consumption of natural resources with the help of financial (negative or positive) incentives.

- *Population:* The third big tale takes place in a hierarchic setting and is described by the tag "population", which pretty much pinpoints the core of the

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[20] Here, the fatalist's worldview is missing from the analysis, the authors do not offer an explanation for this. Jones, at another occasion, simply remarks that "it is common in CT scholarship to exclude fatalists form analysis" (Jones 2010: 68). A possible, however weak, explanation at least in this context could be that the fatalist's worldview is more introversive and does not influence social life as much as the other's do.

story: uncontrolled population growth necessarily leads to an over-consumption of natural resources, and is thus identified as the villain. As a consequence the moral of the story is to rationally control global population growth. The heroes in turn are those actors that are equipped with the organizational capacities and moral responsibility to tackle the problem. Thus the combat against climate change should be left in the hands of experts.

Based on this previous work, Verweij et al. (2006) also follow the three (four) ideal types of social solidarity when turning back to Ney and Thompson's classification.

- *Profligacy: an egalitarian story.* In this story, earth is seen as vulnerable to over-consumption (setting), a villain is easily identified in industrialized countries whose consumerist lifestyle makes use of natural resources with no or little regard to the consequences nature and people in poorer regions of the world have to suffer. Heroes in this story are activists and NGOs. Climate change is thus perceived as a morally and ethical issue (*ibid.*: 822).

- *Lack of global planning: a hierarchic story*. In this view climate change is seen as a serious thread, however, it emphasizes the long term characteristic of the issue, meaning that there is still time to provide solutions, placing climate change within a setting of a tragedy of the global commons. The alarmist notion, which is embedded in the first story, is missing here. NGOs, scientists, and politicians who sustainably work towards a non-carbon age at a well-wrought and responsible paste are the heroes in this story. Those individuals and organizations that do not subscribe to intergovernmental treaties to meet climate change are thus the villains in this story (*ibid.*: 824).

- *Business as usual: an individualistic story*. Supporter of this view see climate change as a scare made up by international bureaucrats and scientists trying to expand influence and secure research funding. The eco-system is understood as robust to human influences (setting), decision makers who do not act as puppets to this scare are heroes while those are the villains that feed the myth of a soon destroyed earth and scare the public. Climate change,

if it exists, can be met with clean technical and innovative solutions (*ibid.*: 825).[21]

These three stories, conflicting and clashing as they are, represent one of the biggest cultural impediments in dealing with climate change: they are not reducible to one another, and as immanent value orientations, cannot be proven wrong or right (Thompson 2003). In other words: "[…] people are arguing from different premises and […] since these premises are anchored in alternative forms of organizing, they will never agree" (Verweij et al. 2006: 821). Thus, climate change will always be subject to at least three different stories any policy process has to deal with that by taking into account each segment that is singled out in every story. Keeping in mind that these stories are based on ideal types that are lacking analytic purity in real life it is worth looking into other stories and narratives that surround climate change. Pursuing this approach with narratives and narrative structures in the center I will give a quick overview of further studies examining narratives of climate change.

Studies that examine the way climate change is culturally treated in social debate are discordant when it comes to the proper term that should be used. This depends of course on the author's scientific school and its perspective, but overall it seems like most of the terms are interchangeable in the realm of this study. Heyd (2010) for example speaks of *cultural frameworks* when he describes societal dominant prerequisites that influence the perception of climate change[22]. However, he also starts from cultural theory paradigms, as do the above presented studies which make use of the terms *story* and *narrative*. At the same time we find Liverman's analysis (2009) focusing on the term of *narratives*, but in a broad social scientific sense, lacking of narrative theory paradigms, such as identifying specific narrative elements. Hence the depicted narratives rather resemble characteristics of discourse sequences. Especially in Verweij's et al. (2006) study we can see the results of the so-called narrative turn in social sciences research, revealing narrative structures within social dispute and thus offering tools for discourse analysis. Studies dealing with narratives feature different empirical approaches, from looking into newspaper

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[21] On a more specific aspect of social consequences of global warming, Bettini (2013) examines storylines that emerge in the discourse about climate refugees. Based on an analysis of different reports, the study detects four discursive families: a capitalist, a humanitarian, a radical, and a scientific discourse. Even though the study is purely explorative – dealing with only four reports – it is worth mentioning in this context, since it is looking into discursive dealing with climate change.

[22] Heyd focuses not only on the perception side but even further on the cultural possibilities of answers to climate change.

articles (both as representations of the social debate as well as journalistic influence), to using large-scale survey data on climate change opinion and knowledge through in-depth interviews as focus groups. The turn towards narrative analysis offers new tools to examine climate change as s social phenomenon, "narratives have a natural dramatic arc to them, and thus may predict how audience's attention for stories will wax and wane" (Trumbo & Shanahan 2000: 201), it offers a new approach into the old question what is missing from the climate change story that will capture people's attention. Not only media coverage of the issue entails a translation of scientific facts into meaningful and easy-to-grasp stories by orchestrating facts around a dramatic structure, including a storyline, characters, a setting, and a theme[23], but also social debate, consisting of written, oral, and visual text, works that way. Trumbo and Shanahan argue for such a narrative turn in climate change discourse analysis when they state: "If public understanding of this issue is built on a narrative construct, than policy and regulatory strategies that rely on an authority located in public opinion could be seriously misinformed" (*ibid.*: 203). Liverman argues similarly that an analysis of narratives of the climate change discourse might reveal ineffective and unequal policy strategies based on obscured historical geographies. "The narratives have been employed to design an international response to climate change that has been influenced by powerful political interests and has embraced the neo-liberal project of market environmentalism" (Liverman 2009 280). The author names key sequences within climate change history: one refers to the manifestation of a dangerous climate change in the earlier days of climate change discovery; another one describes the controversy about human influence on climate. This contains an answer to the question of allocating responsibility and blame, ranging from a global collective to nation states through companies and individuals. International treaties however are based on nation states. This in turn leads to the third sequence, which emphasizes market solutions to climate change, such as carbon trading (*ibid.*: 287, 288, 292-295). Drawing from these findings Liverman makes out a newly emerging direction of climate change as an investment opportunity, putting climate change into the realm of market environmentalism.

While the above studies look into the evolution of narratives and their social and cultural setting, Bravo (2009) focuses in his study on people`s reception of narratives,

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[23] Additional work on media usage and construction of narratives can be found in Jacobs (1996b), Gronbeck (1983), and Darnton (1974).

more precisely on Arctic citizen's reception of a dominant climate change narrative that orchestrates the relationship between industrialized and developing countries with respect to climate change impacts. Although the study of the analysis lacks proper analytic systematization, it stands out from the realm of climate change narratives because firstly, it focuses on the reception and secondly, emphasizes an aspect that is often neglected in cultural studies but emerges more and more in development studies: the perspective of industrialized countries on poorer regions in the world, attributing a dominant role to western societies. In the case of the Arctic that Bravo is examining, the narrative of the environmental crisis produces "a new Arctic regional identity in which citizens, particularly indigenous groups, are simultaneously portrayed as being an 'at-risk community' [and] a victimized community lacking the agency to fight back" (*ibid.*: 257-258). The study thus inherently inquires after the relationship between actors that is presented in different narratives, even though this question here is covered underneath demands of development studies.

The cultural theory approach allows for culture to take a major role in the drama of global climate change. Authors presented in this section apply cultural studies to the phenomenon and hence create a cultural field for policy implications. But climate change is not understood as a cultural phenomenon in terms that a changing global environment is not a problem in itself, but becomes a problem only through cultural lenses. For this I will at last introduce climate change and environmental studies in the realm of cultural sociology.

2.5.2 Cultural sociology approach towards climate change: analysis of narratives

The evolution of narratives shows that natural sciences only deliver raw facts, which in turn are in need of social and cultural interpretation to become social facts (Smith 2012: 758; Hoffman 2010: 295-296). That is what some representatives of the humanities and social sciences point out, when they talk about the interpretational sovereignty that the social and cultural sciences need to claim back (Leggewie & Welzer 2010; Welzer et al. 2010b; Hagner 2010). Scientific findings about the development of global climate do not offer a dogma or axiomatic truth but merely deliver information bits and pieces that are subject to societal discourse. Studies described above offer valuable insights when it comes to understanding, how

culturally transformed communication within society portrays climate change. Media logic, communication challenges of climate change as time-and-spatio-distant phenomenon, and the need for narration of scientific facts have all been presented as strategic tools to a solution for successful climate change communication (e.g. Hart & Nisbet 2011; Jones 2011; O`Neill & Nicholson-Cole 2009; Moser & Dilling 2007; Downing & Ballantyne 2007). However, climate change is still seen as something outside the social and cultural realm which in fact has to be dealt with in a manner that is processible for our social way of thinking and acting, but it still does not understand climate change itself as cultural. It is looked at as a fact from natural sciences and thus per se as outside the cultural system. Yet, cultural studies and approaches from the realm of sociology of culture miss the opportunity to acknowledge natural sciences – and their products – as part of the socio-cultural system. Yes, it is true that climate exists with or without human action, but its meaning is a priori culturally embedded. In other words: climate change as social phenomenon, no matter how 'natural' it is, is spun into a deep web of meaning and constitutes as such a cultural and social object. This is where a cultural sociological perspective comes into play. Climate change has to be considered as "a meaningful social fact, [… it is] signifier and drama in a surprisingly complex cultural field" (Smith 2012: 745). Before laying out the basic assumptions of cultural sociology and its advantages in understanding social communication about climate change, I will present statements developed in studies coming from a cultural sociological perspective.

Sociologists and other representatives of the 'soft' sciences often settle for the role of interpreters of quantitative survey, "data mongers, and policy critiques" (Osbaldiston 2010: 7), or are pushed into that role in the dialogue with 'hard' science. Contrary to that, Osbaldiston sees cultural sociology in a supporting role for the development of climate change adaptation and –mitigation policies and frameworks. He points out that "cultural sociology holds the key to unlocking knowledge on how myth, narrative, and public discourse […] interact with 'hard' data and dominant paradigms" (*ibid.*: 7). Such a cultural perspective might even widen our understanding of the relationship between knowing and acting on that knowledge, as is shown in the value action gap and the critique on the knowledge deficit model. Myth and symbolism influence just as much people's course of action as cognitive information do; that is by serving as a filter for raw scientific data. This provides a cultural interpretation of the fact that

different nations, different communities, NGO's, and politicians react in very divergent ways to the same basic information about global warming (Smith 2012). Considering questions like those addressed in chapter 2.3.1 cultural sociology can help to understand how scientific knowledge interacts with cultural discourses. Knowledge and insights into the working of social groups and subgroups and cultural structures of communication enables cultural sociology to provide deep findings in this area, fruitful for subsequent policy strategies. Those findings are not only drawn from data on climate change discourse but from putting well known paradigms of sociological theory to use in understanding modern communication about such a contemporary phenomenon. This can be seen in Smith's essay on narrating global warming (*ibid.*) as well as in Smith and West's study on public discourse about droughts in Australia (Smith & West 1997; Smith & West 1996), where Durkheim's paradigm of social solidarity rooted in collective representations is seen in public disaster text and talk. Drought is presented as the outside enemy that is threatening the social group. "Drought, then, is the alien force against which society must unite" (*ibid.*: 95). This cultural construction of nature appears in coding each drought as unprecedented and special, even though drought years are a fairly regular phenomenon in Australian (weather-) history. Smith and West see a consistency with Durkheimian functional theory, "which predicts that collective representations will sometimes outstrip reality in the interests of social solidarity", with droughts operating as a signifier in a 'people against nature' narrative (*ibid.*: 95). Australian drought discourse thus can be understood as moral drama in Durkheimian terms, setting itself apart from standard moral panics literature which "suggests that most national cultures make use of human enemies as scapegoats in such solidarity-engendering narratives" (*ibid.*: 97). However, natural disaster events epitomize several characteristics suitable for this cause. For once, natural disasters cannot initiate a counter narrative; they are, as Smith and West put it: mute. As such, they display a phantom objectivity, i.e. they happen beyond party politics. People perceive droughts as something that really happens. Even though this perception is changing over time, especially among agricultural elites and environmentalists, disasters like cyclone, floods, earthquakes etc. are still considered to be more closely connected to human agency. Devastating consequences from an earthquake, like collapsed buildings, can be traced back to insufficient construction, floods can be hold back by proper dam building and flood protection measures; opposite to that droughts in the Australian mind just happen

and have to be dealt with. This perception can be understood with reference to Australian mythology where droughts have always played an important role. This is one of three key variables that distinguish droughts from other natural disasters (Smith & West 1997):

- *The variable of mythology*: the specific climate and characteristics of landscape have always played a significant role in Australia's identity construction, especially to contrast the nation from Europe and Britain. Contemporary discourse about droughts thus can make recourse to tales anchored in the nation's history which allows newspaper articles and political speeches to expect common understanding of droughts from the audience.

- *The variable of time*: unlike other sudden and unprecedented natural disasters droughts last a significant duration, and thus provide the opportunity for public discourse to construct them as national enemy. Its frequent occurrence assures that debate does not completely vanish; on the contrary it allows for a coherent and ongoing tale.

- *The variable of space*: droughts are widespread events, stretching state boundaries and different regions, thus, they fit for a national narrative.

There are a number of analytic findings from Smith's and West's study that can be applied to the case of climate change, even though the study is not entirely pertinent. For example, it is safe to say, that global warming is not 'mute', but rather a highly politicized issue with many different actors raising their voices in the debate. Also, global warming is not a frequently occurring phenomenon, but an ongoing process over time with more or less visible consequences to the date. The resulting events like floods etc. are timely limited; the process itself however is not. On the other hand, global warming is per se a widespread – indeed global – process in need of global efforts and thus stressing the variable of space. Most important in this study is how the authors embrace the perception of natural disasters with a cultural approach by investigating the socio-cultural meaning of droughts. Similarly, Smith analyses the ongoing debate about climate change in cultural terms (Smith 2012). The drama of climate change is analyzed according to its narrative structures, referring to the Structural Model of Genre (Smith 2005: 24), which displays different genres – ranging from low-mimetic to tragic, romantic, and apocalyptic – in combination with a variable

of characteristics, featured within a specific genre. Similar to the critiques of the information deficit model discussed in chapter 2.4.3, Smith declines the assumption that the more scientific facts are known, the more societies start to worry and take action. He points out that knowledge about the chemical processes of global warming are merely one side of the story. Modern societies are still influenced by pre-modern doubts and anxieties, wrapped in myths and narratives. Scientific information thus provides the basis for a new societal narrative, but before it becomes relevant to a wider public (that is outside the scientific circle) it needs to be transformed into another set of codes, it has to become storied (Smith 2012: 746). The story of climate change has – according to Smith's analysis – undergone a genre shift throughout the last few years. During the 1980s, little attention has been paid to the subject, due to a lack of assured facts. As long as knowledge on the matter is still vague, there seems to be no need for immediate political action. Smith categorizes this stage as a romantic minimization of the problem.

As TV-shows and newspapers picked up the notion of a changing global climate, scientific concepts became familiar to laypeople, using formerly exclusive scientific concepts in everyday conversation and thus getting engaged in the whole debate. The topic is no longer set in a scientific context but becomes politicized and socialized, "news work is not merely an instrumental task of filling the news hole. […] Instead, news work requires the transformation of discrete events into meaningful narratives" (Jacobs 1996b: 392-393). Reflecting the growing influence of environmentalism, an apocalyptic genre guess took over the debate, putting huge pressure on the 1997 UN meeting in Kyoto and producing high expectations for its outcomes. The rise of an apocalyptic genre can also be seen in the rise of climate change symbolism. For years now, the image of a drowning polar bear – prominently displayed in Al Gore's environmental documentary "An inconvenient truth" – stands as a pars pro toto for those devastating consequences a changing climate is likely to bring and that fuels environmentalist's demand for immediate political action. To keep a story in a collective memory, it needs a symbol that people can associate with the more complex, wider background (Espeland & Micheals 2012; Trumbo & Shanahan 2000: 202). Cultural structures are not only textual, but are supported and strengthened by symbols and signs (Alexander 2003c: 24). For climate change, the

polar bear has become the picture, and the 2°C[24] target, that was so vividly proclaimed by scientists, policy makers, and environmental activists, became the significant simple number. It is a telling example how scientific coherences get illustrated by symbols in order to carry understandable meaning. When the UNFCCC[25] agreed in 2010 to keep the target of 2°C, the number that was first put forward by economist William Nordhaus in the 1970s; the number gained new media attention, evolving as a symbol a wider public can recognize. Media coverage of the 2010 UNFCCC introduced the 2°C as a symbolic figure to the public debate on global warming. As much as the polar bear it became more than just a number, it became a collective representation. Similar transformations can be seen with the Occupy Wallstreet Movement in 2012, where the number of 99% has become a shared symbol for everyone engaging in the protest ("we are the 99%"), just like the 10% figure has been used for illustrative purposes within the modern gay rights movement and gay identity politics (Espeland & Micheals 2012). Symbols – like those numbers or iconic pictures – support the story making process that takes place when a public discourse around scientific data emerges. Public debates about events or topics are non-linear processes, interpretation of the known speculative facts is itself subject to discussion, and it is a struggle over meaning. Interpretation is made within different arenas and with differing accentuations.

The discussion of this study will come back to this literature overview to compare findings. It is important to keep in mind that the above described studies deal with narratives, stories or frames from the perspective of an audience, instead of climate advocates' perspective. Table 2 gives an overview of topics and terminology in academic literature on climate change communication as it is relevant for this study. This table will also partly guide the discussion of findings in chapter 7.

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[24] As a result of the 2010 UN climate summit in Cancún the UN member states agreed on the target that the average global surface temperature must not increase of 2° Celsius over the pre-industrial average to avoid dangerous anthropogenic interference with the climate system.
[25] UNFCCC is the abbreviation for United Nations Framework Convention on Climate Change.

Table 2: Overview terminology and topics in climate change communication literature

Author	Terminology	Key findings
Norgaard 2011	stories	3 stories supporting climate change denial (Norway is a little land; We have suffered; America as a tension point)
Jones 2010	narratives	Cultural narratives as explanation for variations in climate change opinion
Ney & Thompson 2000	stories	Egalitarian story of profligacy Individualistic story of price Hierarchical story of population
Verweij et al. 2006	stories	Egalitarian story Hierarchic story Individualistic story
Liverman 2009	narratives	Narrative of climate change as investment opportunity
Trumbo & Shanahan 2000	narratives	Symbols in narratives: polar bear as climate change symbol
Bravo 2009	narratives	Narrative of a victimized community (Arctic identity)
Osbaldiston 2010	narratives	unlocking knowledge how myths, symbols influence perception of climate change
Smith 2012	narratives	apocalyptic narrative of climate change
Smith & West 1996 and Smith & West 1997	narratives	people against nature narrative: droughts as outside enemy in Australian society
Bettini 2013	narratives and discourse	doom and gloom narrative of climate refugees: humanitarian or national security agenda
Daniels & Endfield 2009	stories	one big story
Ereaut & Segnit 2006	frames and repertoires	alarmist repertoire optimistic repertoire pragmatic repertoire
Hamblyn 2009	narratives	climate change developed from environmental news story to a narrative of human responsibility
Maibach et al. 2010	frame	climate change developed from an environmental problem to a political problem to a human/ public health issue

McComas & Shanahan 1999	stories	climate change developed from a scientific problem to a political problem
Michaelis 2000	narratives	modernism: climate change as optimization problem with a technical solution
		romanticism: climate change as problem of the modernist attitude (consumerism, etc.)
		European humanism: climate change is a result from the failure to nurture virtues like humility and continence
Moser & Dilling 2007	communication	rejecting the fear approach to climate change communication
Myers et al. 2012	frame	a public health and national security frame for climate change
Marshall 2014[26]	narrative	identity markers in narratives for successful climate change communication

(Source: own illustration)

2.6 Conclusions from the state of research

This overview of social scientific research and literature on climate change allows for drawing two main conclusions:

(1) Social scientific research on the topic is fed by various research traditions, spanning from survey research, to communication and discourse research, to cultural theoretical studies of self-referential research on the role that social sciences can play in the academic debate about climate change

(2) Social sciences focus for most part on laypeople and their perception of climate change as a thread and their perception of normative directives towards a more environmentally friendly lifestyle

First, I have shown in this section that the landscape of this literature is wide, unsystematic, and consists of disagreeing research results. Especially when it comes to quantitative surveys on attitudes and beliefs towards climate change (see chapter

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[26] Recently, research on narratives with regards to climate change has found its way out of the purely academic interest and into applied studies. The Climate Outreach and Information Network (COIN) managed an event where narratives were tested in discussion groups with laypeople (Marshall 2014). In this applied study, narratives were used in terms of content or topics, centering around one specific issue like national Welsh identity.

2.3). These problems lie within the nature of the subject, since climate change is on all its different levels a "super wicked problem" (Wiesenthal 2010: 184-185). Results in surveys differ from one another in statements, whether or not climate change is a topic of concern to the general public. Following this disagreement in basic social research, it is not surprising to see authors disagreeing on social solutions to climate change. If basic data on people's attitudes are that ambiguous, it is difficult to figure out where in fact the problem lies within addressing climate change and thus formulating solutions – and solutions easy to grasp for policy maker at that – becomes almost impossible. Following that, as the second main conclusion, most research on the subject addresses the receiving end of directives, i.e. laypeople. This shows a misbalance between the major role experts play in the debate of climate change and the room they take up in social research, not as contributors, but as research objects. Opinions of experts and laypeople obviously differ a great deal and in the history of social scientific climate change research the information deficit model took this conjuncture on most prominently. But, as is shown in chapter 2.4.3, the model was widely criticized for its simplifying conclusion that more information will automatically lead to a deeper understanding of the problem and thus to effective and voluntary action on all levels of society. Additional to research on successful ways to introduce new environmentally friendly directives into a broader public, research on the societal discourse on the topic reveals textual patterns within the debate, especially in media coverage. These studies introduce new concepts into the research field, like the idea that societal discourse is organized in narratives. Here, the idea of a cultural context finds its way into the research realm, aside from those self-referential debates, presented in chapter 2.2. In these analyses the importance of culture as a factor is acknowledged in so far as the focus is no longer on individual reception of climate change media reports, but turns towards a collective understanding of climate change as a social fact.

This direction is continued in studies conducted with the background of cultural theory and cultural sociology, where climate change is understood as a cultural phenomenon that happens within the cultural and social sphere of a society. Both approaches, cultural sociological and cultural theoretical, have in common, that the analysis focuses on climate change text and talk as the unit where cultural presumptions towards climate change become manifest. Studies investigate these presumptions in everyday conversations as well as in media coverage.

For the analysis of narratives among climate change advocates in this study, the take away from this literature review – besides a deeper understanding of the sociological perspective on the topic – are themes and motifs which are likely to be found in the empirical data and thus offers points of reference for the analytic reading of the interview data.

3 Theoretical foundations I: cultural sociology and cultural theory

> *"The world has an irremediably mystical dimension. To explore it, we must go beyond the 'sociology of' culture to a cultural sociology, one that gets inside the mysteries of social life […]. The promise of a cultural sociology is to do just that."*
> *(Alexander et al. 1993)*

Before portraying the origins of cultural sociology – or as it has been put in the recent past – the Alexander School of Cultural Sociology (Emirbayer 2004) it is almost mandatory when writing about a phenomenon in cultural perspective to take part in a broadly led but often fruitless discourse about one's own term of culture (Thurn 1979: 422) in comparison to the huge amount of definitions, discussions, and essays that already exist on what culture is and – more often – what it is not (Knorr-Cetina & Grathoff 1988). Even recurring to the classics in sociology cannot be considered fruitful because of their rather undetermined use of the term (Lipp & Tenbruck 1979: 395; Thurn 1979: 438). Clifford Geertz famously pointed out the heterogeneous landscape of cultural concepts, as demonstrated in Clyde Kluckhohn's "Mirror for Man" (Kluckhohn 1949 (1971 printing), cited in Geertz 1973c: 5), where you can find no less than eleven approaches to a definition of culture within the first chapter. Williams states, that "culture is one of the two or three most complicated words in the English language. This is so partly because of its intricate historical development, in several European languages, but mainly because it has now come to be used for important concepts in several distinct intellectual disciplines and in several distinct and incompatible systems of thought" (Williams 1976: 87). The diversity of the concept of culture in sociology and its surrounding disciplines (from a sociologist's point of view) is represented by a number of collected volumes that deal with various manifestations of the term and its meaning in different disciplines (e.g. Moebius & Quadflieg 2006). Instead of adding to this debate, here I will draw on a four-table-scheme of different culture-concepts (Moebius 2009: 16-19; Reckwitz 2008: 19-28) in order to provide a common ground of what follows in this study as a cultural analysis of climate change narratives.

Table 3: Concepts of culture

Term	Description	Authors/ scholars (selection)
Normative concept of culture (*der normative Kulturbegriff*)	– Opposition of cultural structure and civil structure – Culture as criterium for demarcation – Coined prominently in works concerned with criticism of modernity	– Immanuel Kant
Universalistic concept of culture (*der totalitätsorientierte Kulturbegriff*)	– Opposition of cultural structure and natural structure (culture vs. nature binary) – At the same time stressing man as a cultural being → culture becomes an anthropogenic universal – Coined prominently in history studies and cultural anthropology	– Edward B. Tylor – Arnold Gehlen
Differentiation-theoretical concept of culture (*der differenzierungs-theoretische Kulturbegriff*)	– Realm of special practice; concept of „sociology of culture"-tradition Includes every aspect of social life, that deals with cultural production (art, music, media, literature) – Coined prominently in works of structural functionalism	– Talcott Parsons – Theodor W. Adorno – Pierre Bourdieu
Meaning- and knowledge-centered concept of culture (*der bedeutungs- und wissensorientierte Kulturbegriff*)	– Emphasis on meaning and structure, including symbolic order – Evolved within the cultural turn – Coined in and based on phenomenology, pragmatism, semiotics	– G.H. Mead – Ludwig Wittgenstein – Claude-Levi Strauss – Emile Durkheim

(Source: own illustration)

The following study is based on the meaning and knowledge-centered concept of culture. Cultural codes and the web of meaning are conceptualized as expression, manifestation and reproduction of symbolic order. Central to this concept of culture is the assumption that these codes are contingent, thus allowing to focus on performative and culturally constructed characteristics of social phenomena (Moebius 2009).

3.1 Origins of cultural sociology: the cultural turn

This meaning- and knowledge-centered concept of culture is essential to the renewal of culture in German sociology in the mid-1970s. Tenbruck, Lipp, and Thurn argued explicitly against a differentiation-theoretical concept of culture, one that reduced culture to peripheral matters of social life (Lipp & Tenbruck 1979: 395; Tenbruck 1979: 399). The concept of culture entails implications for a research program in a renewed cultural sociology: subject of analysis was no longer reduced to unique social practices, but was taking socially constructed meaning, origins, emergence, and expression of symbolic order. "The study of symbolic action is no less a sociological discipline than the study of small groups, bureaucracies, or the changing role of the American woman; it is only a good deal less developed" (Geertz 1973c: 213). The knowledge-theoretical origins of the strong program in cultural sociology (Alexander & Smith 2003b) are rooted in the process of the cultural turn, which brought a different trans-disciplinary perspective into social sciences, intertwining literary studies, humanities, and social sciences.

The following chapter reflects the development of the cultural turn in light of the requirements of cultural sociology. There are of course various ways to understand and interpret the cultural turn, its prerequisites as well as its consequences for the progression of the sociological discipline. Exploring and describing all of these possible different ways of interpretation and going into each scholarly contributor in sufficient depth would exceed the realm of this study; therefore an adequate discussion of – for example – Marxism's influence on the cultural turn is missing here[27]. Instead, I will offer a description of the process of the cultural renewal in sociology, focusing on the importance of literary theory, linguistics, and the elements that will later allow for a conceptual understanding of cultural autonomy (see chapter 3.2.1).

3.1.1 The concept of meaning in cultural sociology

Alexander, Smith, and Sherwood trace the prerequisites for the cultural turn back to Durkheim's later works on religion (Alexander et al. 1993), arguing against the project of demystification within the social sciences, i.e. bringing substantive meaning and culturally-mediated belief into the social studies.

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[27] See for example Fredric Jameson's collection of texts investigating the implications of the cultural turn in relation to postmodern theory development (Jameson 2009).

> "Durkheim's idea was to put meaning and culturally-mediated sentiment at the center of the social studies. While he never gave up on the idea of a social science, in his later work he increasingly wished to change it in a fundamental way. He wanted social science to give up on what we will call the project of demystification" (*ibid.*: 10).

That is not to neglect rationality within the scientific method, but to acknowledge irrationality, mysteries, and the importance of rituals in social life. The term meaning making is central to cultural sociology. However, it is not the only place in the history of social sciences that dealt with the question, how people make sense of their world. In a social constructivist perspectives Berger and Luckman argue in their work "The social construction of reality" (2007) that social life is constructed due to people's ability to create mental representations of each other's action, thus creating roles to take on in social interaction. These roles become institutionalized, leading to a socially constructed reality. Outside of sociology, socio-linguistics approached the question of meaning-making with reference to the social function of language. Searle focuses in the "The construction of social reality" (1995) on specific terms and how they gathered their respective meaning. This approach is close to Saussure's work on semiotics and the differentiation between langue and parole (see ch. 3.1.3) as both subscribe social relevance and power to language and, in Searle's terms, speech acts.

A cultural re-reading of Durkheim's "The elementary forms of religious life" – newly translated by Karen E. Fields (1996)[28] – shows that in his later works Durkheim objected the thesis of the disenchantment of the world (cf. also the so-called "late-Durkheimian tradition" in Alexander & Seidman 1990). This thesis is most prominently presented in Max Weber's notion of the iron cage (*stahlhartes Gehäuse*) in modern capitalist societies. Here all substantive meaning has been replaced "with a form of rationality that is highly formal and empty of any significance other than instrumental effectiveness in the service of goals that can no longer be questioned" (Ashley & Orenstein 2005: 287). Durkheim endeavored to describe, interpret, and understand religion in its simplest (most primitive) form, but actually found the principals of ritual conduct that is common even to the most advanced religions. These findings allow for a broader conclusion that they are "not specific to totemism

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[28] For a review, focusing on the cultural perspective of this translation see Alexander & Smith 1996

but can help us to understand what religion in general is" (Durkheim & Fields 1996: 418). Taking this observation further – from religion as subject to rituals still carried out in contemporary societies – Shils and Young (1953) apply Durkheim's analytic differentiation of the sacred and the profane found in religious rituals to modern creation of collective (national) identity: They write in their analysis of the coronation ceremony of Queen Elizabeth II "[…] the Coronation was the ceremonial occasion for the affirmation of the moral values by which society lives. It was an act of national communion" (*ibid.*: 67). This essay is pivotal in the (cultural) sociological turn against the thesis of the disenchantment of the modern world because it showed how rituals even today are guided by a collective belief. "In retrospect, Edward Shils' now classic essays on the sacred, charisma, and public ritual mark a crucial turning point in the fate of the elementary forms, even if it was not recognized as such in their times. By applying Durkheim's ideas to contemporary societies Shils redeemed Durkheim's claim that a theory developed in relation to Aboriginal totemism was still relevant" (Alexander & Smith 1996: 586). Thus, it seconds the role of culture in contemporary societies, even though Shils and Young interpret the performance of the ritual in an instrumental way, when they conclude that rituals serve a stabilizer of the social system, whereas Durkheim used his observation of rituals as a way to explore concepts of cultural meaning.

The cultural turn within the social sciences and the humanities manifested in two major works in 1973 (Bonnell & Hunt 1999b: 2): Hayden White's "Metahistory: Historical Imagination in 19th Century Europe" (1973) and Clifford Geertz' "The Interpretation of Cultures: Selected Essays" (1973c). Bonnell and Hunt argue that with this turn towards a new concept of culture, sociology as well as historical studies did no longer trace back cultural elements in research to its more fundamental components in the material world of economics and social relations (Bonnell & Hunt 1999b: 26). White states that the "significance of the cultural turn in history and the social sciences inheres in its suggestion that in 'culture' we can apprehend a niche within social reality from which any given society can be deconstructed and shown to be less an inevitability than only one possibility among a host of others" (White 1999: 316).

The turn social sciences take here, indicates a shift from a research method in the tradition of classicism towards social research in the sense of romanticism (Fuente 2007; Jacobs & Smith 1997). These terms trace back to Gouldner's work on style

thoughts in the history of social sciences, contrasting professional sociologists as Classicists and ethnographically bound sociology as Romanticism (Fuente 2007: 119). Gouldner states that "romantic and classical syndromes refer to enduring deep structures that underlie the theories of sociology even today. They are embedded in and help to differentiate various schools of thought […]. We can, then, think of Romanticism and Classicism as syndromes or latent dimensions that underpin sociology and the other social sciences. We can think of them as different genotypes underlying certain phenotypes" (Gouldner 1975: 358-9). In his essay on the history of sociology and sociology of sociology, the author assigns each *style of sociological thought* its role and characteristic: classical sociology will engage in the investigation of the universality of the governing norms and values, society's functional requisites, whereas a romantic style of sociology will be more interested in the relativity and historical character of the standards of society. "If Classicism tends toward *structuralism* in social science, Romanticism tends towards *historicism*" (*ibid.*: 359; italics original). This argument is in line with Bonnell's and Hunt's observation of the cultural turn questioning the strictness of social categories (Bonnell & Hunt 1999b: 6-8). In this programmatic orientation social sciences are now seeking to offer interpretations of the social world that bear in themselves the opportunity to elevate an understanding of this social world, precisely because they are no longer bound to necessary and strict social categories in order to claim explanations. Social sciences need to understand cultural objects and practices in terms of the "non-material qualities that they possess" (Fuente 2007: 121). With Hayden White's work on historical representation (White 1973; White 1987) and Geertz' semiotic approach to culture, the paradigm of causal explanation of social problems was seriously challenged. Stemming from a structuralist perspective, culture is treated as language with its meaning rooted in structural codes (Bonnell & Hunt 1999b: 8-9). Re-interpreting scholars like Kenneth Burke and Northrop Frye, White argues for an understanding of historical text in terms of a poetic act (White 1973: 30). This term stresses the influence of language, genre, and its usages when researching and writing about historical processes. Each historian – and following that each social interpreter – prefigures the field of research by the selection of a linguistic mode he chooses to present his interpretation. In turn, this linguistic mode shapes the mode of explanation.

3.1.2 Semiotics in cultural sociology: Clifford Geertz

Similarly, Geertz opened up the understanding of social interpretation towards a semiotic approach, towards the understanding that the "culture of people is an ensemble of text" (Geertz 1973c: 452; cf. also Alexander & Smith 2011). "[W]e owe a large debt to Clifford Geertz. He opened up space for the cultural turn by demonstrating more clearly and persuasively than anyone before that social action should be considered as embedded in an implicit cultural text" (Smith 2011: 27). A semiotic approach within this realm of social research as interpretive effort "aid us in gaining access to the conceptual world in which our subjects live so that we can in some extended sense of the term, converse with them" (Geertz 1973c: 24). Understanding culture as semiotics amounts to understanding culture with Max Weber's interpretation of the embeddedness of social processes:

> "The concept of culture I espouse, [...] is essentially a semiotic one. Believing with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law, but an interpretive one in search of meaning. It is explication I am after, construing social expressions on their surface enigmatical" (*ibid.*: 5).

With this, Geertz emphasizes the shift from an explanatory endeavor of social processes to an interpretive understanding of social processes by ways of a deep characterization of those social processes, or, as Geertz famously put it: by the ways of *thick description*. For Geertz, the formal description of a pure act of doing something subscribes to the notion of thin description, whereas the interpretive effort made by Ego to understand Alter (and to rule out other possible interpretations of Alter's movement) represents thick description[29], ethnographical work of understanding (Geertz 1973d: 6-7.). Understanding this methodological program in terms of styles of thought, thick description owes its programmatic stance to the kind of romanticism that was brought to light by Gouldner, "the hero here is the Romantic poet-cum-philosopher who provides rich insights into the most mundane of objects and practices" (Fuente 2007: 122). Symbols, rituals, events, historical artifacts, social

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[29] Geertz describes the difficulties of social interaction by taking the example of winking (with reference to British philosopher Gilbert Ryle: If someone winks it can be described purely as the contraction of eyelids. With further interpretation this muscle movement gains deeper meaning and becomes an act of communication (Geertz 1973d: 6-7).

arrangements, and belief systems were designated as texts to be interrogated for their semiotic structure, i.e. an internal consistency of these elements is in fact part of the system of meaning (Bonnell & Hunt 1999b: 2-3). Meaning is constructed only through a community of speakers, "neither outside nor inside the speaker's head" (Martin 2006: 67). Based on these new views on the social, new questions and challenges arose: the dependency of quantitative methods on strict social categories was widely criticized. That provoked another dilemma within the range of methods concerning the judgment of interpretation. With a possible collapse of explanatory paradigms the cultural methods seemed to have lost any foundation. "If culture or language entirely permeated the expression of meaning, then how could any individual or social agency be identified" (Bonnell & Hunt 1999b: 9)?

3.1.3 Semiotics in cultural sociology: Ferdinand de Saussure

The understanding of collectively constructed meaning is rooted in the linguistic turn that accompanied the arrival of semiotics in the social sciences. The displacement of the social in favor for the cultural allows for analyzing social phenomena in terms of Saussure's differentiation of *langue* and *parole* (1986, c1983)[30]. With this differentiation, Saussure emphasizes the autonomy of language, rooted in the depiction of language as a sui generis phenomenon. *Langue* (language) is the linguistic system that underpins *parole* (speech). *Langue* refers to the abstract and systematic rules and conventions of a signifying system that provides the basis for *parole*, thus making speech possible in the first place. *Parole* thus is the meaningful utterance, the concrete and empirical cases of language use. "It is only when language is ordered, by the rules of grammar and syntax, into utterances - strings of speech embodying propositions - that significance emerges and communication is possible" (Geertz 1973b: 354). It is the individual, personal use of language (the linguistic system) as a series of speech acts, whereas *langue* is independent of individual users. *Parole* thus describes what people may say in particular times and places; *langue* enables them to do so in the first place. In his work on semiotics "Course in General Linguistics" (1986, c1983) Saussure exemplifies this contradistinction with the game of chess: the individual moves a player may choose in the realm of the rules of the game, are cases of how chess might be played (or: of how the rules of chess might be applied), the actual outline of the game is actually its

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[30] For a discussion of Lévi-Strauss' work in this context see Geertz (1973b).

set of rules. Without these chess would not exist. The rules are the linguistic systems, *langue*; the individual moves can be understood as personal acts of speech, *parole*.

Saussure was interested in the study of *parole* only in the sense, as it helped to unravel the structure of *langue*, where the main concern of his studies lies. This outline of structuralism offered implications for the further development in the study of culture. Saussure showed how the arbitrary nature of language demands within its study to understand the linguistic system as autonomous. This characteristic holds true not only for the linguistic system, but also for any conventional signifying system. As Saussure famously wrote:

> "It is […] possible to conceive of a science *which studies the role of signs as part of social life*. […] We shall call it *semiology* (from the Greek *semeîon*, 'sign'). It would investigate the nature of signs and the laws governing them. Since it does not exist, one cannot say for certain that it will exist. But it has a right to exist, a place ready for it in advance" (*ibid.*: 18; italics original).

In cultural theory this hope for a science of signs is acknowledged: "These developments, known collectively as structuralism, promised an universal science of meaning that was capable of recognizing the shared complexity and capacity for innovation evidenced in human activity across cultural differences defined both ethnologically and hierarchically (Martin 2006: 67). With Saussure's work on semiotics the structure of social meaning was stripped down to its core elements of symbols and signs. This deconstructive aspect contains the significance the development of the cultural turn has for the research agenda within the social sciences, "its contribution in making us recognize that the social reality of any given society is merely one possibility among others" (Bonnell & Hunt 1999b: 24). Using this concept, culture as well could be treated as linguistic system. "All behavior got its meaning from often unconscious or implicit structural codes embedded in it" (*ibid.*: 8). A structuralist perspective perceives the text as the primary unit of analysis (Jones & McBeth 2010). As much as literature studies promoted the idea of a reciprocal relationship between a text's content and its form, cultural theory picked up the idea and translated it into the dependency of social categories on culture and language, thus raising questions of the objectivity of scientific knowledge (Bonnell & Hunt 1999b). This question was further analyzed in Hayden White's work on historical

representation. The role of language in shaping meaning is found in various scholarship of discourse analysis, whereby the term of discourse is repeatedly subject to critical reflection (Hajer 1993; Roe 1994).

The shift towards a new, semiotic understanding of culture in society did not remain in the realm of theory debate within sociology, literature, and historical studies. The reality of this new understanding had its "this-worldly" outcome when the editors of "Contemporary Sociology. A Journal of Reviews" decided to re-name the sociology of culture section in "cultural production" (Martin 2006: 70).

The cultural turn also raised one pivotal concern: the shortcomings of a vague – or weak – concept of culture. This is where the strong program of cultural sociology sets off.

3.2 The strong program in cultural sociology vs. the weak program of culture

One argument against this take on culture in social life is that its definition becomes too broad to work with. Referring to Eagleton in his discussion about the widely used term of ideology, "any word which covers everything loses its cutting edge and dwindles to an empty sound" (Eagleton 1991: 7) I want to stress that a strong approach to culture does not depict everything to be cultural, but that cultural forces are differentiated from other processes that shape human life (Spillman 2002: 8-9). The understanding of culture within the realm of European cultural theory, emphasizing "the role of discourses and myths, symbols and signs, codes, rituals, and beliefs in shaping social life" (Smith 1998: 4) can be found in contemporary (American) cultural sociology. However, insights in this formative sociological thought "did not gel to make a theory of culture central in sociological thinking" (Spillman 2002: 5).

Scholarship on culture has often been focusing on culture as a specified realm of social life (cultural practices) thus implementing a material backdrop to the concept. Those concepts of the culture-term are depicted as treating culture "as a feature of entire groups and society" or as a "separate realm of human expression" (*ibid.*: 2-3). With the first concept of culture, social actors refer to a division between inside and outside of a social group, they subscribe to a culture, or a subculture, thus defining the inner peer group against an outside group of culturally and/ or regionally strangers. The latter concept assigns a cultural characteristic to specific activities or material artifacts. But this way, scholars that subscribe to one or the other definition of culture are not actually talking about culture itself, but about a stand-in for culture. Sociology of art for example treats art as cultural practice in relation to society and thus concerns itself with questions of the role art plays in today's society, about funding for public art programs, about artists' influence on societal transformation and so forth. These approaches to culture are not to understand the process of meaning making and making sense of the world. Rather, these approaches seek to understand how meaning is created, i.e. "how the ideal structures of culture are formed by other structures – of a more material, less ephemeral kind" (Alexander 2003a: 5). To depict culture in terms of subculture and the dichotomy of inside and outside leads to analyzing rather social than cultural structures (Gross & Rayner 1985: 1). When people think and talk about culture they most commonly refer to cultural practices, defined with the terms of high culture (e.g. opera), or pop- and

mass culture. These cultural practices echo an idea of culture that emerged in the 19th century and still influences contemporary scholarship on culture (Spillman 2002: 4). As outlined above, these understandings of culture and its relationship to society has their unique and featured place within sociological theory. However, considering contemporary debates about the place of culture in sociology, we will need to differentiate this approach as the weak concept of culture from the strong program in cultural sociology. Here, culture is understood not as material expression of social action, or causal explanation of group interactions, but as processes of meaning making (*ibid.*; Alexander et al. 2011; Lamont 2000; Smith 2005).

Tenbruck and Lipp (1979) describe the task of cultural sociology as the effort to establish a connection between "the social" and "the cultural", that is: cultural sociology is not to be a new special area within the realm of sociological sub-disciplines. Rather, its perspective has to penetrate the canon of general sociology. Cultural sociology's task thus is to avoid adding to the differentiation of cultural sections, but to uncover patterns of meaning, which determine social action through all social areas. The necessity for a new definition and implementation of sociological interest in culture stems from a reductionistic perception of social phenomena, which excludes the reality of culture in social processes and segregates the social from the cultural. The social thus cannot be left as an independent part of society, but has to be put into relation with the cultural in order to establish a sufficient theory of social processes (Tenbruck 1979: 400)[31]. Thurn (1979) refers to Max Weber and Georg Simmel as those scholars that, in the end of the 19th century, opened up the concept of culture towards including every-day-life-phenomena ("*Überwindung der latenten Alltagsablehnung*"), not to be confused with cultural practices in terms of high, pop, or mass culture. A contribution to this orientation is the analytic setting of the term culture that becomes a concept of composition in both works, with meaningful openness and analytic intentionality. This outline of the prerequisites of cultural sociology is surprisingly in line with Alexander's idea of a relative autonomy of culture at the core of the strong program in cultural sociology (see chapter 3.2.1). Tenbruck

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[31] In original German: „Eine Kultursoziologie kann […] das Gesellschaftiche nicht als einen autarken Eigenbereich stehen lassen, sie muss gerade auch zeigen, wo eine Theorie der Gesellschaft ohne Rekurs auf kulturelle Tatsachen zu kurz greift. Die Kultursoziologie darf bei gegebener Lage des Faches nicht ein neues Sondergebiet sein, sie muss ihre Tatsachen und Perspektiven in die allgemeine Soziologie einbringen" (Tenbruck 1979: 400).
And: „Die Kultursoziologie geht davon aus, dass das Fach in gegebener Lage nicht sowohl eine Spezialdisziplin ihres Namens als vielmehr die Berücksichtigung der Kulturwirklichkeit in der allgemeinen Soziologie benötige" (Lipp & Tenbruck 1979: 395).

argues against a simple transfer of known schemes on to cultural phenomena, which would foster results from a *Bindestrichsoziologie* (what Alexander calls the *sociology of- approach*):

> "In the history of the social sciences there has always been a sociology of culture. Whether it had been called the sociology of knowledge, the sociology of art, the sociology of religion, or the sociology of ideology, many sociologists paid respect to the significant effects of collective meanings. However, these sociologists of culture did not concern themselves primarily with interpreting collective meanings, much less with tracing the moral textures and delicate emotional pathways by which individuals and groups come to be influenced by them. Instead, the sociology of-approach sought to explain what created meanings; it aimed to expose how the ideal structures of culture are formed by other structures—of a more material, less ephemeral kind" (Alexander 2003a: 5).

Similarly, Tenbruck emphasizes the importance of cultural meaning of social processes. That is, that sociology must not reduce its unit of analysis to society as the only real entity, but has to acknowledge culture in the same way. Thurn adds with reference to Max Weber's recognition of those forces that promote modern differentiation (e.g. how it was prominently put in his works on protestant ethics), that the European development of culture fostered the sociology of culture approach (1979), much as Spillman hints at the idea of culture in 19th century Europe (2002). For Weber it seemed inadequate to speak of a homogenous cultural entity among the western world. Thus, the development in society gets its representation within sociological differentiation of approaches to cultural phenomena. Both units work reciprocally. Weber's concept of culture is an anthropogenic one that targets at social intention of creating meaning and assigning significance[32], the way people make sense of their world (Gross & Rayner 1985: 1). Cultural sociology sees culture as a web of meanings, the way actors assign significance to their action and the world they are set in. Social action is not rational, reasonable, and sensitive, but dedicated by unconscious rather than conscious reasons. Alexander justifies the need for a

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[32] In original German: „Die empirische Wirklichkeit ist für uns ‚Kultur', weil und insofern wir sie mit Wertideen in Beziehung setzen; sie umfasst diejenigen Bestandteile der Wirklichkeit, welche durch jene Beziehung für uns bedeutsam werden, und nur diese" (Weber 1988: 175).

truly cultural sociology by pointing to these unconscious reasons that lead people's lives:

> "Modern men and women go about their lives without really knowing why. Why do we work for such a long time every day? Why do we finish one war only to fight another? Why are we so obsessed with technology? Why do we live in an age of scandal? Why do we feel compelled to honor those, like the victims of the Holocaust, who have been murdered for an unjust cause? If we had to explain these things, we would say 'it just makes sense' or 'it's necessary' or 'it's what good people do'. *But there is nothing natural about any of this.* People don't naturally do any of these things. *We are compelled to be this way*" (Alexander 2003a: 3; italics added).

Referring to Freudian psycho-analysis, the task of cultural sociology now is "to bring the unconscious cultural structures that regulate society into the light of mind. […] Its goal is to bring the social unconscious up for view. To reveal to men and women the myths that think them so that they can make new myths in turn" (*ibid.*: 3-4.). It is important to note that despite the emphasis on cultural autonomy this cultural sociology acknowledges compulsory forces in social life; those social structures that determine social action. However, it refuses to a reduction of sociological explanation to these compulsory forces (*Erklären*). These compulsory forces do not only appeal externally to the actors, but they have an inside, an internal meaning to the actor, which is socially produced. The necessity to understand those non-compulsory forces that bear meaning to the actor and guide our social life is at the center of such a cultural approach to sociology (*Verstehen*). Central to cultural sociology are collective emotions and ideas, it sets off from the linguistic turn in philosophy, the rediscovery of hermeneutics, the structuralist revolution in the human sciences, the symbolic revolution in anthropology, and the cultural turn in American historiography (*ibid.*: 6).

For Spillman social life is cultural in the sense that it is comprised of shared meaning (Spillman 2002: 8). Alexander adds: "To believe in the possibility of a cultural sociology is to subscribe to the idea that every action, no matter how instrumental, reflexive or coerced visa-à-vis its external environments, is embedded to some extent in a horizon of affect and meaning" (Alexander & Smith 2003b: 12). To uncover this collective meaning (Alexander 2003a: 5) culture must – first and foremost –

analytically be treated as an independent variable. Considering sociology of culture concepts, Alexander states: "All too often meaning remains a sort of black box, with analytic attention centered on the circumstances of cultural production and reception" (Alexander & Smith 2003b: 20-21.).

3.2.1 The relative autonomy of culture

Cultural sociology is based on an understanding of culture as independent and autonomous. This understanding and the idea of a binary structure of social life are two major analytic elements on the center of the strong program in cultural sociology. In order to understand the process of collective meaning making and the struggle over interpretation, cultural sociology turns to linguistic theories. It can do so precisely because of its presumptions of binary structures and cultural autonomy. To develop a model for cultural narrative analysis resting on these presumptions it is necessary to introduce both elements here.

Treating culture as an independent, autonomous force in social life is central to cultural sociology, as "meaning is accessible to analysts only if they interpret cultural structures in and of themselves, […]. The meaning of an ideology or belief system cannot be read from social behavior; it must be studied as a pattern in and of itself" (Alexander 1990: 3; 25). Olick (2010) and Kane (1991) undertake thorough discussions of theoretical possibilities of cultural autonomy.

Kane comes to a differentiation between concrete and analytic autonomy by asking if culture can be described as an independent variable. According to Kane, the answer is both yes and no. It is independent in the sense that cultural forms are autonomous structures which are, however, not independent from the rest of the social system. To solve this quandary, Kane proposes two forms of cultural autonomy. Conceptualizing autonomy of culture *analytically* means to separate culture from other social structures. Analytic autonomy presumes an independent structure of culture, it "is sought apart from material life" (*ibid.*: 54) and as such can analytically be treated as written text (cf. Alexander 1987: 296). There are three parts in establishing an analytic autonomy of culture: First, internal elements and the internal logic of a culture structure must be identified. Internal elements are symbols that serve as vehicles through which meaning is expressed. The internal logic of a culture structure is rooted in symbolic classification of binary opposition. Examples for such a binary systems can be found in Sahlins' (1976) discussion of American food preferences

(opposition of edible – inedible), Alexander and Smith's (2003a) presentation of the discourse of American civil society (opposition of sacred – profane → democratic – counterdemocratic code), or Douglas' (2004) elaboration on how the perception of dirt varies among different societies (opposition of pure – polluted). Secondly, analytic autonomy provides an understanding of how the symbolic process works. Rituals, as cultural practices for acting out of symbolic meanings give significance to the aforementioned symbolic categories. Those rituals "infuse members of the group with an understanding of experience, a prescription for action in life, and a bond of solidarity to the group" (Kane 1991: 57). Rituals also play a pivotal role in the reproduction of the symbolic system (3) which is transmitted via myths from generation to generation.

What does that mean for a cultural sociological research agenda? Jacobs (1996a) offers a hands-on-answer to this question in his analysis of the events following the so called Rodney King Beating in 1991[33]. Analyzing articles from the Los Angeles Times and the Los Angeles Sentinel on the incident, Jacobs sets off to close a gap in studying the interplay between concrete and analytic forms of culture with narratives and events as relationally conceptualized as representation of concrete and analytic autonomy. With this, the author utilizes (and advances) narrative analyses to incorporate the cultural sociologist's call for a relative autonomy of culture. A media analysis shows how a problem in civil society is understood and displayed as a different problem in several various public spheres with codes and narratives of their respective discursive community. Jacobs thus uncovers the role of genre in public discourse, "both meaning and [empirical] outcomes depend on the *interaction* between events and their narrative understanding" (*ibid.*: 1267; italics original).

The relative autonomy of culture thus is rooted in the internal logic of the culture structure, which originated from Saussure's work on structuralist semiotics, the idea of *langue* as an abstract signifying system, informs this patterned relationship of culture. His concern for a structuralist theory of culture is guided by an understanding

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[33] In Los Angeles on March 3, 1991, Rodney King, an African American, was pursued for speeding and – after a short chase – severely beaten and injured by three white LAPD officers, while a sergeant and 17 remaining officers witnessed this incident without taking action to prevent it. George Holliday, an amateur cameraman filmed this scene and gave the footage to a local TV station. From this point on, a broad debate about police brutality and racism sprang alive, accompanied by violent riots and mutual recrimination resulting in the resigning of the Police Chief Daryl Gates and the decision of Mayor Tom Bradley not to run for reelection. For a detailed description of this event see e.g. Cannon 1997.

of culture as "symbolic systems consisting in patterned relationships among symbols and a complementary but distinct conceptualization of culture as a set of practices" (Emirbayer 2004: 8). The distinction between *langue* and *parole* reflects the distinction between concrete and analytic autonomy of culture, thus allowing for a differentiation of culture as practice and culture as system. By establishing this relative autonomy, the symbolic classification of culture as system is analytically understood as organized alongside binary oppositions, which are the codes of civil discourse. To recognize and depict the autonomy of culture, a "robust understanding of the codes that are at play in the cultural objects under consideration" (Alexander & Smith 2003b: 20) is needed.

3.2.2 Binary oppositions as structural elements of a strong program in cultural sociology

While Saussure's concept of the relation between sign and signifier helps to develop the autonomy of symbolic systems, Alexander's interpretation of Durkheim's studies on religious systems reveal the binary organization of such systems. However, for a sociological analysis of culture these two theoretical achievements had to be brought together.

> "Pivotal […] is an effort to understand culture not just as text (à la Geertz) but rather as a text that is underpinned by signs and symbols that are in patterned relationships to each other. Writing in the first decades of the twentieth century, Durkheim and his students such as Hertz and Mauss understood that culture was a classification system of binary oppositions. At the same time Saussure was developing his structural linguistics, arguing that meanings were generated by means of patterned relationships between concepts and sounds" (*ibid.*: 24).

Saussure suggested that language operates by means of contrast (Smith 2001: 99). Geertz abstracts this *opposition formula* from the study of linguistic systems:

> "[L]inguistic study [...] defines its basic units, its constituent elements, not in terms of their common properties but their differences, that is, by contrasting them in pairs. Binary opposition […] forms the basis of savage thought as it does of language. And indeed it is this which makes them essentially variant forms of the same thing: communications systems. With

this door open all things are possible. Not just the logic of totemic classification but of any classificatory scheme at all – plant taxonomies, personal names, sacred geographies, cosmologies, hair styles among the Omaha Indians, or design motifs on Australian bull-roars – can, *en principe*, be exposed. For they always trace down to an underlying opposition of pared terms - high and low, right and left, peace and war, and so on […] (Geertz 1973b: 354-355, italics original).

Binary codes as patterned oppositions allow us to make sense of the world and to read real world events as meaningful social facts. They are the basis for collective representations, which allow for a shared understanding within a community (Smith 2005: 14). Alexander and Smith (2003a) work out the use of this joint by analyzing the discursive patterns of American civil society. The authors identify three basic elements of civil society: social actors, social relationships between those actors, and social institutions. These three dimensions of social structure are interrelated by binary oppositions. At the heart of the discourse of American civil society lies the binary opposition of a democratic vs. a counterdemocratic code, which specifies the features of actors, relationships and institutions that are appropriate in a democratic society. The democratic code is considered to be sacred (in Durkheimian terms) and builds the "discourse of liberty" (Alexander 2013: 115). It is threatened by the profane counterdemocratic code ("discourse of repression"). Alexander and Smith understand this discursive structure of civil society as "a general grammar on which historically specific traditions draw to create particular configurations of meanings, ideology, and belief" (Alexander & Smith 2003a: 125). This general grammar is best exposed in discourse on crisis, for periods of social tension are liminal, quasi-ritualized intervals in which codes are used in a more abstract manner and communication moves away from more mundane every-day-life-concerns[34]. Thus, the opposition of democratic and counterdemocratic code is worked out empirically in historical elaborations (discursive attacks on U.S. American Presidents) and contemporary data concerning the Watergate scandal. The analysis of historical crucial events is intended to show consistency of the cultural structure across time, types, and differing political groups. By the example of political speeches the authors illustrate how the two actors refer to the same discursive code differ in their interpretation and application of the code. The authors illustrate how the actors draw on collectively held cultural codes to fit their

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[34] For an elaboration on discourse as ritual see Turner (1974).

argumentation into the public discourse. This is not to be understood as instrumental, but as strongly believed by the actors. The features of the democratic and counterdemocratic code are displayed in three tables according to the three dimensions of civil society:

Table 4: The discursive structure of actors

Democratic Code	Counterdemocratic Code
Active	Passive
Autonomous	Dependent
Rational	Irrational
Reasonable	Hysterical
Calm	Excitable
Controlled	Passionate
Realistic	Unrealistic
Sane	Mad

Table 5: The discursive structure of social relationships

Democratic Code	Counterdemocratic Code
Open	Secret
Trusting	Suspicious
Critical	Deferential
Truthful	Deceitful
Straightforward	Calculating
Citizen	Enemy

Table 6: The discursive structures of social institutions

Democratic Code	Counterdemocratic Code
Rule Regulated	Arbitrary
Law	Power
Equality	Hierarchy
Inclusive	Exclusive
Impersonal	Personal
Contractual	Ascriptive
Groups	Factions
Office	Personality

(Source of table 4, table 5, and table 6: Alexander & Smith 2003a: 123)

Figure 5, 6, and 7 show the interpretation and differentiation of the democratic and counterdemocratic code for each basic element of civil society. Actors "believe in both the positive and negative side [of civil society], that they employ both as viable normative evaluations of political communities. The members of every democratic society consider both symbolic sets as realistic descriptions of individual and social life" (Alexander 2013: 112). Thus, the culture of civil society can be presented as a "system of symbolic codes" (Alexander & Smith 2003a: 153).

This set of binary codes is not just limited to discourse in the USA or even limited to the sphere of political discourse. Smith applies the structure of binary codes to the discourse and motifs for war, establishing an explanatory approach to war as ritual (Smith 2005; Smith 1991). Rituals thus are organized around a cultural code that specifies sacred and profane in social discourse. This approach shows, that "war cannot be explained, understood, and interpreted only in terms of economic, geopolitical, and psychological variables" (*ibid.*: 132) but needs a cultural interpretation in order to understand underlying mechanisms and motifs of war. Other examples of applying the theory of binary codes are Alexander's study on the computer as sacred and profane information machine (Alexander 2003d), Mary Douglas' analysis of the interpretation and meaning of dirt (Douglas 2004), Spillman's study on American business associations (Spillman 2012), Baiocchi on the democratic movement in Brazil (Baiocchi 2006), and Ku on the democratic struggle in Hong Kong (Ku 2001).

Drawing on Durkheim's ritual theory, Alexander illustrates in "Watergate as Democratic Ritual" how the distinction of the codes sacred vs. profane initiates action if an event is considered polluting the sacred. If a majority of the civil society sees social actors and their relationships no longer as controlled, reasonable, open, and trusting, but as passionate, hysterical, secret, and suspicious, the center of the society is in danger of becoming polluted. Societies set processes of symbolic reintegration and cultural renewal in action, if a social consensus about the interpretation of events is reached.

However, binary codes are just one part of the story. They lie beneath the social act of storytelling, building the "skeletal structures of stories, societies tell about themselves" (Alexander 2013: 115). Binary codes thus serve as building blocks of meaning. They give way to cultural narratives as the bearer of meanings. Binary codes bring order through assertion of resemblance or difference, whereas narratives

bring order through sequencing events (Ricoeur 1980: 171; 178). The events unfolding around the Watergate Scandal for example could have not told themselves. They "had to be told by society; it was, to use Durkheim's famous phrase, a social fact" (Alexander 2003e: 156). In the following chapter on narrative theory, I will show the importance of narratives within cultural sociology, but also show that its notion of narrative is short sided.

3.3 Conclusions of the first part of theoretical foundations

3.3.1 Critical response to cultural sociology

The concept of cultural sociology Alexander has put forward has been subject to critique. I will concentrate on two major arguments here. McLennan's review (2005) rests entirely on the reproach that cultural sociology is idealist. The author underpins this appraisal mainly by two arguments. The first one targets the cultural sociologist as not being objective. McLennan rejects the role of irrational emotion as part of sociological analysis: "it is precisely *because* massive feelings appear to rule the world that critical social observers must try to gain some interpretative distance from them" (*ibid.*: 3; italics original). For this objection, two counterarguments can be made: First, if 'massive feelings' rule the world, as McLennan admits, sociology has to take those feelings and irrationalities into account if it is still pursuing the goal to describe and explain social action (*verstehend erklären* in Weber's terms). And therefore the 'objective social observer' needs to assign those social feelings a place in her analysis. Second, cultural sociology does not neglect the objectivity of the social observer. Cultural sociology employs Geertz' thick description as its major guideline for empirical matters, but it is important to notice that this methodological concept consists of different analytic methods. Thus cultural sociologists draw on a variety of empirical methods that McLennan does not reject as subjective. Thick description does not coerce the analyst to engage normatively in a social discourse – no more than participant observation does anyway. On the contrary, analytic instruments such as content analysis or discourse analysis ensure the objective distance McLennan demands.

Secondly, McLennan does not accept the separation between cultural sociology and the sociology of culture, arguing that cultural sociology does not let go of the material context when analyzing social patterns despite its demand for a cultural autonomy. However, culture in its material form was never rejected by cultural sociology. The

autonomy of culture refers to culture as a dimension penetrating all social action; it is not thought of as a variable that replaces the social. Cultural sociology seeks to find "a way to incorporate meaning into social structure in a systematic way […]. Culture is a dimension of all action, not a variable that stands off to one, even if very important, side." (Alexander 2005: 21). Culture in its material form belongs to this social dimension and as such is still subject to cultural analysis.

Thus, a cultural sociological approach allows including culture as an independent variable in the analysis of social action.

3.3.2 Conclusions from the theoretical outline of cultural sociology

From this first theoretical outline there are several features to take away for a cultural sociological approach to narrative analysis. First, the analysis is based on a meaning and knowledge centered concept of culture, just as it was postulated by Tenbruck et al. for the renewal of culture in (German) sociology. For this development sociologists had to discuss the tension between romantic and classic elements in sociological analysis, thus allowing for an interpretive analysis of social phenomena and change of the style of thoughts within sociology – or at least it opened up a new way of interpretation. The stage was thus set for a cultural sociology that took culture not as material component of social life, but as an autonomous variable in the construction of social phenomena. With Saussure's work on semiotics and Geertz' work on cultural interpretation culture can be read as a written text. Structure and substance can be divided just like *langue* and *parole*, and *form* and *content* in Northrop Frye's work. Binary codes serve as structural pillars to civil discourse, representing the form of culture.

4   Theoretical foundations II: narrative analysis

"Stories make explicit the cultural schemas that underpin institutional practices. […] And people do things with stories. They entertain and persuade, build social bonds and break them, make sense of their worlds and, in the process, create those worlds."
(Polletta 2006: 13-14)

In order to understand and analyze the narratives climate advocates tell about the ecological crisis and to develop a systematically advanced model of narrative analysis I turn to the insights of narrative theory and existing studies on narrative analysis. "Narrative provides a link between culture as system and culture as practice. […] Narrative is an arena in which meaning takes form, in which individuals connect to the public and social world" (Bonnell & Hunt 1999b: 17). Narrative analysis enables sociological research to avoid structural or cultural fundamentalism because it allows for understanding how culture and structure interact in shaping interests (Polletta 2006: 27).

Narratives are based on pre-structured perceptions of the world. Seeing how cultural sociology is also rooted in psychoanalysis (see ch. 3.2, p. 82) narratives, as they are used in cultural sociology resemble in the analysis of their function and gestalt C.G. Jung's archetypes (Jung 1992, c1966: 90-113). Jung argues that people perceive the world through pre-structured patterns, derived from the collective unconscious (Feist & Feist 2008). Apart from a wide array of archetypal figures, motifs, and events, Jung describes some archetypes as most recurring, claiming the emergence of certain definite archetypes as the only common factor among a limitless individual variety. These archetypes are "the shadow, the animal, the wise old man, the anima [in men], the animus [in women], the mother, the child" (Jung 1992, c1966: 110). These figures are too differentiated as to find them in this study on climate change narratives. However, the point Jung makes about the formal character of archetypes can support this study in its quest to map out formal characteristics of narratives. Brumlik (2004, c1993: 67) argues that Jung's archetypes do not serve a substantial, but a formal purpose. Jung elaborates that archetypes are per se empty, formal elements, a priori

existing possibilities of imagination[35]. Following a broad overview over narrative analysis within different disciplines, I will outline various attempts of defining narratives and with that describe structural and contentual elements of narratives. This provides the basis for a discussion of different models of narrative analysis: the *Structural Model of Narrative* by Labov and Waletzky (1997), Smith's *Structural Model of Genre* (2005), and Jones' and McBeth's *Narrative Policy Framework* (2010). These models will be interrelated to cultural sociological demands of analysis. Starting from this, I will suggest an integrated attempt of cultural narrative analysis. This model will combine two ends of narrative analysis: *formulaic* and *playful* narrative research which are not to be understood as mutually exclusive (Smith 2007: 392-393).

Clearly narrative analysis is subject to various disciplines and in each of them are narratives analyzed in various forms. The term of narrative plays an important role in linguistics, literary theory, cultural theory, and social sciences. Since the early 1980s the use of narrative methods rose in the social sciences, from highly technical linguistic analysis of structure to interpretive approaches focusing on content (Hards 2012: 762; Elliott 2005: 3). Smith (2010: 132) points at two parallel outcomes of narrative analysis: the first refers to analytic and meta-narrative and thus depicts narratives as product of the analysis. Seeking answers to historical causalities, the researcher produces narratives in the course of the analysis. The second is described as ontological and public, cultural, or institutional narratives. Here, the narrator is in the focus, as she assigns meanings to events by sequencing them intentionally in a specific order. Elliot differentiates ontological narratives as first-order narratives from analytic narratives as second-order narratives. The latter are collective stories researcher's construct to make sense of the social world (Richardson 1990b: 25-6). Those collective stories however do not emerge from a cultural vacuum; rather, they are embedded in cultural structures. Sociological approach to narratives thus does not stay at the level of textual analysis: "it insists that story production and consumption is an empirical and social process involving stream of joint actions in local contexts themselves bound into wider negotiated social worlds. Texts are connected to lives, actions, contexts, and societies" (Plummer 1995: 24).

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[35] In original German: "Der Archetypus ist ein an sich leeres, formales Element, […] eine a priori gegebene Möglichkeit der Vorstellungsform" (Jung, GW 9/11: § 155; cited in Brumlik 2004, c1993: 67).

4.1 The role of narrative in social organization

Franzosi (1998) poses the question how and why sociologists should be interested in narrative in the first place. After all, narratives seem to belong more in the realm of literary theorists than into the study of social action. On the other side, as the narrative turn indicates, narratives give way to uncover a collective story in sociologically significant terms (Richardson 1990a: 125). As outlined above culture can be understood as text that guides social action. Franzosi states that "narrative texts are packed with sociological information, and a great deal of our empirical evidence is in narrative form" (Franzosi 1998: 517). Narrative is a useful concept for social research, since it is "not tied to any particular medium and it is independent of the distinction between fiction and non-fiction" (Ryan 2007: 26). Constructing a narrative plays an important role in social life, communities mobilize resources to protest, fight, or contribute to common projects around narratives (Smith 2010: 136). "Individual stories tie in with a society's narratives about collective cultural meanings. These in turn are embedded in what Lyotard called humankind's great 'meta-narratives' provided by religion, science and tradition" (Paschen & Ison 2014: 4). Real world events must be translated into narrative form. They "must be not only registered within chronological framework of their original occurrence but narrated as well, that is to say, revealed as possessing a structure, an order of meaning, that they do not possess as mere sequence" (White 1987: 5).

In attempts to a comprehensive definition, many authors both from literary studies as well as from the realm of social sciences and linguistics include the social role of narratives. Bonnell and Hunt describe the universality of narratives in daily social life: "narratives get their power from being woven into daily life – that is, by molding and expressing popular opinion of how individual motivation and action work" (Bonnell & Hunt 1999b: 18). Telling stories is a universal human activity (Hards 2012: 762), "human beings are storytelling animals, we tell stories about our triumphs and tragedies" (Alexander 2003b: 84), human beings organize their experiences and memory in the form of narrative stories (Bruner 1991: 4), and these stories are everywhere in social life:

> "There are countless forms of narrative in the world. […] Narrative is present in myth, legend, fables, tales, short stories, epics, history, tragedy, *drame* [suspense drama], comedy, pantomime, paintings (in Santa Ursula

by Carpaccio for instance), stained-glass windows, movies, local news, conversation. Moreover, in this infinite variety of forms, it is present at all times, in all places, in all societies; indeed narrative starts with the very history of mankind; there is not, there has never been anywhere, any people without narrative. […]. Like life itself, it is there, international, transhistorical, transcultural" (Barthes 1975: 237).

However, Barthes should not be misunderstood in the sense that narratives simply exist in our world. Just like there is nothing natural about the way social actors behave among one another and how they perceive the world (cf. chapter 3.2), likewise, "there is nothing natural about chronological registrations of events" (White 1987: 176). Thus, for the social researcher, narratives are perceived as result of human and social agency; as a way to make sense of the world and the events that occur in it. Thus, narratives are social meaning making in action (Paschen & Ison 2014: 4).

Table 7 gives an overview of quotes from different authors concerning the role of narratives in social life:

Table 7: The social role of narratives

Author(s)	Quote on the social role of narratives
Hards 2012: 762	Narrative approaches suggest that people make sense of their experiences by telling stories to others and to themselves. Advocates claim that storytelling is a universal human activity.
Bonnell & Hunt 1999a: 17	Narrative is an arena in which meaning takes form, in which individuals connect to the public and social world, and in which change therefore becomes possible.
Smith 2010: 129	Actors articulate their beliefs and thoughts and conceive of appropriate actions to accompany those thoughts […] by the telling of a story with a beginning, middle, and end. Through these expressions, actors come to understand and construct their world and their place within it.
Elliott 2005: 3	A narrative can be understood to organize a sequence of events into a whole so that the significance of each event can be understood through its relation to that whole. This way, a narrative conveys the meaning of events.

Dahlstrom 2010: 857	Narratives influence what individuals believe about the world.
White 1987: 5	Events must be […] narrated as well, that is to say, revealed as possessing a structure, an order of meaning that they do not possess as mere sequence.
Boholm in press: 14-15	Collective narratives about events […] are predominantly communicated through news media. […] there must be a story about intentions and motives, victims, villains, and heroes, all staged in a specific setting.
Bruner 1991: 4	We organize our experience and our memory of human happenings mainly in the form of narrative […].Unlike the constructions generated by logical and scientific procedures that can be weeded out by falsification, narrative constructions can only achieve "verisimilitude." Narratives, then, are a version of reality whose acceptability is governed by convention and "narrative necessity.

(Source: own illustration)

The role of narratives contains methodical implications for their use in the social sciences. Hinchman and Hinchman state, that "narratives (stories) in the human sciences should be defined provisionally as discourses with a clear sequential order that connect events in a meaningful way for a definite audience and thus offer insights about the world and/ or people's experiences of it" (Hinchman & Hinchman 1997: xvi). Thus, narrative inquiry is a fruitful way for the social researcher to explore people's experiences and the meaning they connect to those experiences (Hards 2012: 762). Polletta sees the social use of singular narratives against the backdrop of familiar stories within a society and culture, thus influencing social structures. "The relationship between culture, structure, and story is thus complex and variable. Much of the time, structures are reproduced through stories that address familiar oppositions. Sometimes, stories undermine those oppositions in ways that mobilize overt change […]. Stories of women having different job aspirations than men make sense, because they are heard against the backdrop of stories of women having different biologies than men and stories of little girls being different from little boys and stories of people having different tastes […] (Polletta 2006: 15).

Interest in narrative analysis in the human and social sciences grew stronger since 1980s, where some scholars even see these disciplines taking a "narrative turn" (Mishler 1995: 87-88; 117). Alexander identifies a growing interest in narrative

analysis with sociologists "now reading literary theorists like Northrop Frye, Peter Brooks, and Frederic Jameson […]. The appeal of such theory lies partially in its affinity for a textual understanding of social life" (Alexander & Smith 2003b: 25). Narrative theory with a structuralist background works well within cultural sociology for it assures cultural autonomy in its analytic sense. A structuralist approach highlights the relationships between narrative elements (characters, plot, moral evaluation) in formal models, thus allowing for an application across cases without losing sight of each case's particularities (*ibid.*: 25-26).

4.2 Formal definitions of narrative

Definitions of narrative distinguish in general between structure and form on the one hand and content on the other. The basis for this distinction is a reference to Hayden White's content and form (1987), which can be seen analogous to Saussure's distinction between *parole* and *langue* (see chapter 3.1.2) and his semiotic use of signifier and signified, where the mere occurrence of events (specific dates, geographical details and so on) correspond as signified to the content of those events as the signifiers (*ibid.*: 9). Narrative scholars agree by and large on basic structural elements, which are:

- Beginning – middle – end
- Unfolding events
- Presentation of characters (hero – villain – victim)
- Plot
- Moral / transformation

Narratives consist of a beginning, a middle, and an end (Jones & McBeth 2010: 334; Smith 2010: 129; Richardson 2007: 146; Halttunen 1999: 165-166; Labov & Waletzky 1997: 12; White 1987: 17). "Everywhere people experience and interpret their lives in relationship to *time*. […] And, everywhere, humans make sense of their temporal worlds through the narrative" (Richardson 1990a: 124, italics original). Abbott introduces the term of narration complementary to narrative as the process of telling the story (Abbott 2007: 39-40). He thus achieves a distinction between story and plot as well as between story and narrative, where narrative becomes the representation of a story. This is important because it underlines the role narratives play in transporting meaning: a story can be plotted and narrated in different ways; the

factual real-world events stay the same, but their meaning changes with the way they are narrated.

Ryan points out that there exists a general consensus on basic elements of a definition, such as a sequential order of presented events[36], causality between these events (as opposed to merely a list of events)[37], and those elements that render change possible within a narrative[38] (Ryan 2007: 23; Smith 2010: 133). Elliot summarizes those basic elements in her definition: "Narrative can be understood to organize a sequence of events into a whole so that the significance of each event can be understood through its relation to that whole" (Elliott 2005: 3). Stone states that these fundamental elements – temporal structure, characters, transformation – can also be found in the structure of policy problems (Stone 2002: 159).

The sequence of events is as important and influential to the transported meaning as the content of the narrative, because this "sequencing of events implies something about which events are necessary and contribute to a given outcome" (Smith 2010: 133). Besides the temporal paragraphs narratives contain a number of characters that play, as an individual or collective entity, a role in the events that are told (Margolin 2007: 66). The set of characters consists of one or more heroes as fixer(s) of a problem, one or more villains causing a problem, and one or more victims affected by the problem (McBeth et al. 2005415). Characters are part of the design that constitutes a plot and represents ideological positions (Richardson 2007). Missing from this list of characters is the role of the narrator or storyteller, which does not necessarily have to be one of the characters. In fact, as we will see in the analysis of climate change narratives, narrators position themselves differently within

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[36] Ryan cites Genette ("One will define narrative without difficulty as the representation of an event or a sequence of events" – Genette 1982: 127), Prince („The representation of one or more real or fictive events communicated by one, two, or several narrators to one, two, or several narrates" – Prince 2003: 58) and Abbott ("Narratives is the representation of events, consisting of story and narrative discourse, story is an event or sequence of events (the action), and narrative discourse is those events as represented." – Abbott 2008: 16).

[37] Ryan underlines the importance of causality for a definition by citing e.g. Onega and Landa ("The semiotic representation of a sequence of events, meaningfully connected in a temporal and causal way." – Onega Jaén & García Landa 1996: 3) and Bal ("The transition from one state to another state, caused or experienced by actors." – Bal 1997: 182). Roland Barthes (1975: 271) states that with people's efforts in telling their experience of the world in language, narratives establish meaning where before was a mere copy of the events that are told.

[38] Ryan refers to Ricoeur („I take temporality to be that structure of existence that reaches language in narrativity, and narrativity to be the language structure that has temporality as its ultimate reference." – Ricoeur 1980: 165) and Brooks ("Plot is the principal ordering force of those meanings that we try to wrest from human temporality." – Brooks 1992: ix).

or outside the narrative they are telling. Analysis of structure helps to uncover this position. As the authority of the narrative the storyteller owns interpretational sovereignty (White 1987: 19). For this reason, the narrator should always be understood as part of the set of characters, irrespective of their actual position within the narrative (that is, if they play an active role in those events that are unfolding).

4.3 A typology of narrative analysis

Broadly speaking, narrative analysis can focus on two parts of narratives: for one, on the process of segmentation, which identifies semiotic units, and secondly, on the process of integration, assembling those units of the process of segmentation into units of higher rank. The first process corresponds to the form, the second to the meaning (Barthes 1975: 266).

Mishler (1995) put forward a typology of narrative analysis. Narrative models thus focus on one of the three functions of language:

meaning – structure – interactional context.

These functions are analogous to the differentiation of

semantics – syntax – pragmatics and *content – structure – performance.*

Table 8 will give an overview of the interrelations of these three disciplines and their understanding of narratives.

Table 8: Narrative in linguistics, literary theory, and social sciences

	Narrative			
Discipline	Linguistic theory	Literary theory	Social Sciences	
Subject of analysis	Structural elements of narratives	Narratives in fictional texts	Narrative as individual life-stories	Analytic and meta-narratives

(Source: own illustration)

With a combination of the models of narrative analysis that will be presented in the following chapters I will show the importance of all the above mentioned levels of narrative analysis.

The following presentation of analytic models zooms out from the basic units of a narrative (4.3.1: Labov and Waletzky's structural model of narrative), through its

external form and the meaning it transports through this form (4.3.2: Smith's structural model of genre), to the transmitted, literal content (4.3.3: Jones and McBeth's narrative policy framework), thus providing a line from structure to form to content alongside White's (1987) differentiation between content and form and Saussure's (1986, c1983) differentiation between *parole* and *langue*.

4.3.1 The Structural Model of Narrative: the structure of narrative

The sociolinguists Waletzky and Labov (1997) undertake a formal and functional analysis of narrative. Formal in the sense that it relies on the basic techniques of linguistic analysis, isolating structural units that correspond to a variety of superficial forms; functional in the sense that narratives are considered as one verbal technique for recapitulating experience (*ibid.*: 4). The model thus examines formal structural properties of narratives in relation to their social functions (Cortazzi 1993: 43). Understanding the structure of narrative "helps us to understand how people give shape to events, how they make a point, their reaction to events, and how they portray them. All of this can be used as a starting point for further exploration and analysis" (Gibbs 2007: 70). The authors put forward a structural model of narrative form based on fundamental techniques in linguistics, using mainly biographical interviews of telling personal experiences. The by now well-known model sets the first attempt to apply a linguistic approach to oral narratives of personal experience (Mishler 1995: 92; Elliott 2005: 42). Before the model is fully formally developed, the authors informally define narrative "as one method of recapitulating past experience by matching a verbal sequence of clauses to the sequence of events that actually occurred" (Labov & Waletzky 1997: 12). Developing the model further, the authors identify basic elements within a narrative: At the very base narratives consists of clauses which fulfill different functions. A narrative clause maintains the strict temporal sequence that is the defining characteristic of narrative. A free clause can range freely through the whole narrative. Furthermore there are coordinate clauses, that can be placed anywhere without disturbing the semantic interpretation or the temporal order, and restricted clauses, which are neither free nor temporally ordered. These clauses are defined in relation to the temporal sequence in the narrative and the resulting displacement set (i.e. a set of clauses that defines the temporal sequence). Taking the analysis to a higher level, the authors outline six basic components of simple narratives: Abstract, Orientation, Complicating Action, Evaluation, Result or Resolution, and Coda. The orientation section gives the

audience information about places, persons, time, and behavioral situation the narrative refers to. Usually the larger body of narrative clauses covers several events that describe the complicating action. This section is closed by an evaluation given by the narrator where she comments on the events. "The evaluation of a narrative is defined by us as that part of the narrative that reveals the attitude of the narrator towards the narrative by emphasizing the relative importance of some narrative units as compared to others" (*ibid.*: 32). With the identification of the evaluation section, the section of the resolution becomes apparent. Here, the narrator draws a conclusion from the story she has told. The evaluation section and the resolution section can be given as one. Labov and Waletzky detect in their broad analysis of interview data that many narrators actually add a coda section to the end of the story. Those are clauses that do not contain information about the events, but function as closing remarks (in Labov and Waletzky's study they present phrases like "And that – that was it, you know", "And that was that", and "That was it" to be such closing remarks (*ibid.*: 36).

The following table demonstrates an application of the model to a section of one of this study's interviews. This section is from an interview with a painter in the Hudson River Valley and was conducted in order to achieve an understanding of the meaning a place has for its community. In this section, the interviewee is asked to tell about her experience with an organized painting workshop in the Hudson River Valley (I-USA-3)

Table 9: Exemplary analysis of clauses (I-USA 3)

Orientation	68	Many Youngsters were there. I was certainly the oldest student.
	69	
	70	They took me on the last minute, I sent in a couple of images, and they were meeting to wrap things up and they told Jacob, the head of this thing, we definitely have to let this guy in.
	71	
	72	
		So we painted for about a month every day. We got up early and we would go out.
Complicating Action	74	I became close with probably two of the students.
	74-75	One was closer to my age, but that wasn't the reason. We painted similarly.

	76	We went on separate hikes together.
	78	I learned some technical skills.
Evaluation	79-81	But what I saw was that the students were very good at recreating what they saw, but the Hudson…. You know, I am certainly not a very religious person, but the Hudson River School was definitely tied up to religion.
	82-83	These men believed that they were walking into God's home when they were walking into this wilderness
	85-86	And these younger people […] had a different view point. They would immediately plug in their iPods
	91-92 92-94	And I would listen, I would set up and I would be right near the stream of water. And I would be listening to the wood splashing, and to the birds, and everything around, taking it all in.
Resolution	96	I mean, it was fine…
	77	I kind of separated from that group.
Coda		- None -

(Source: own illustration)

Note that the resolution does not necessarily have to be stated at the end of the narratives. The statement "I kind of separated from that group" is given by the interviewee in the first section of the narrative sequence (line 77), but anticipates the result following the narrative clauses (lines 68 through 78) beforehand. This finding is in line with the assumption that even in biographical interviews "respondents rarely provide strictly chronological accounts (Elliott 2005: 46; Coffey & Atkinson 1996: 58).

The model helps to separate singular clauses and to uncover their function and relation to each other. This is particularly helpful in biographic interviews, with a high number of narrative sequences that correspond to the model's requirement of events being told. For narratives that do not refer to personal experiences, an application of the whole model does not prove fruitful. It becomes quite clear that applying this method to whole interviews is not very feasible (Elliott 2005: 46). The outlined section above should merely clarify the basic framework of the method. However, the

approach by Labov and Waletzky provides a linguistic understanding of narrative structure, which helps to separate clauses also in less action driven narratives. Coffey and Atkinson advocate the model for it "provides us with an analytic perspective on two things: it allows us to see how that narrative is structured, and it offers a perspective from which to reflect on the functions of the story" (Coffey & Atkinson 1996: 61). The model thus guides researchers to avoid reading qualitative data purely for content by beginning with a formal analysis of the structure of a narrative (Elliott 2005: 42). If we take narratives to be social texts, as pointed out by Franzosi (1998: 517), than the analysis should not only cover telling of personal experience, but should also take comments and statements as narratives. Thus, from this linguistic approach I will draw the understanding of different functions of clauses in order to identify the borders of a narrative. With this I argue against Elliot, who criticizes the model to the effect that the various sets of narratives appearing in interviews cannot be separated that easily (Elliott 2005: 46). On the contrary, the model helps to identify boundaries between narratives, if the analyst takes into account that one clause can serve more than one narrative.

But for a sufficient analysis of narratives that understands their role in civil discourse, the analytic tool must include cultural and social elements.

4.3.2 The Structural Model of Genre: the form of narrative

The Structural Model of Genre laid out by Smith (2005) moves beyond the structure of single units as Labov and Waletzky do but does not concern itself with contentual topics, as McBeth and Jones do (see chapter 4.3.3); rather, the model sets out to conceptualize narratives with the term of genres and analyze the implications of a genre guess. It considers arguments in cultural sociology claiming that narratives "just like binary codes, circulate and are contested in the collective conscience and in this process can shape history" (Alexander & Smith 2010: 17).

In his study on war narratives, Smith aims at developing an alternative explanation to the question, why nations engage in warfare apart from instrumental, material rationale like a struggle over power or resources. With a cultural take on the issue, the author illustrates the importance of binary codes defining sacred and profane and a limited pool of narrative structure as cultural backdrop for legitimating military policy. In this chapter, I will portray Smith's structural model of genre and how it can be brought to use in the discussion of climate change narratives. The concept of

genre is also discussed in Jacob's study on the events following the Rodney King Beating in 1991 as "an important part on how events get narrated, linked to other events, and infused with social expectation (Jacobs 1996a: 1267).

Drawing on the description of civil discourse (Alexander & Smith 2003a) Smith differentiates two perspectives on analyzing meaning. Thought together, both axes are the foundations of the cultural system through which real world events as mere facts are turned into non material social facts in the collective conscience: the paradigmatic approach understands meaning as brought about by binary codes which help classify the world we live in. Anthropological studies have emphasized the role of binary oppositions in so-called primitive societies, where myths and codes are used to construct collective representations of the world. These codes provide building blocks and this approach can be seen in the works of Lévi-Strauss, Barthes, and Sahlins. However, binary codes are yet sufficient for the explanation of cultural meaning. They often simplify the meaning of events, ignore subtle changes in the discourse and moreover they do not provide a toolbox for action. "Binaries help to make sense of the world, but they do not offer an instruction manual for what to do next" (Smith 2005: 17). To untangle the complexity of civil discourse, an analysis of narrative is needed.

This is provided by the second axis of the cultural system, the syntagmatic approach, which can be found in the works of Propp, Greimas, and Ricoeur and is centered in a diachronic and more sequential perspective. Narrative structures place actors and events into plots. They provide intricacy to our understanding of world events and convert situations into scenarios (*ibid.*: 13-14). Narratives order through sequencing rather than through distinction and resemblance (Ricoeur 1980: 171; 178) and thus create causalities within a story. Thus, narrative theory provides the link between culture and agency that is missing in the concept of binary codes. However, for Smith a generalizable theory of narrative is missing. For his structural model of genre the author draws on hermeneutics, the idiographic and inductive approach to narrative in the social sciences, and structural analysis as shown in the works of Hayden White (1973; 1987). A cultural sociological approach to narrative, needs to draw on those schools: in the tradition of social sciences, it has to consider the role of narrative in real social life; in the tradition of hermeneutics, it has to take into account the implications narratives have for the ethical or normative regulation of social action;

and in a structuralist tradition it has to aim for a generalizable theory that sees the limited canteen of cultural tropes that are narratives (Smith 2005: 19). Referring to Aristotle's *poetics*, Smith claims that narratives are limited as they consist of finite elements.

Analogue to Saussure's interest in *langue* rather than in *parole* (see chapter 3.1.2), "structuralist poetics ignore the surface detail of this story or that drama in digging for the patterned relationships and regularities that unite particular genres of storytelling activity" (*ibid.*: 20). Those regularities and patterns are summed up and represented by specific genres, which give way to the outcome of a story through a genre guess. Frye (1969) develops a formalization of genre. This formalization focuses on the position and characteristics of the hero and thus comes to a hierarchy of fictional modes (genres).

> "In literary fictions, the plot consists of somebody doing something. The somebody, if an individual, is the hero, and the something he does or fails to do, is what he can do, or could have done, on the level of the postulates made about him by the author and the consequent expectations of the audience. Fictions therefore maybe classified not morally, but by the hero's power of action, which may be greater than ours, less, or roughly the same" (*ibid.*: 33).

The hero in a story told in the *Ironic Mode* disposes of powers of action inferior to the audience's; *Low Mimetic Mode* presents the hero as "one of us" (*ibid.*: 34). In *High Mimetic Mode* the hero is superior to other men, but not to his environment, whereas in *romance* and *myth* the hero is set apart both from the audience and nature. Myths tell "heroic stories of triumph over adversity" (Smith 2008: 91).

Smith argues that these genres – even though Frye is referring to fiction writing – also apply to the way in which we perceive real world events. Yet, Frye's typology of fictional modes must be advanced to be applicable to non-fictional narratives. Thus, Smith adds three characteristics to the hero's power of action: first, the shape of motivation: is it set in material interests or are the hero's concerns ideal? Second: the importance of the object of struggle, moving on a scale from local through national onto global. Third: the polarization between the hero and the villain: the larger the difference between both characters, the higher the genre.

Smith describes four genres occurring in the civil discourse of war:

- The *low mimetic genre* is the predominant narrative mode for the public understanding of everyday politics. It is little plot driven and emotionally flat. Smith describes it as the "genre of anti-history" (Smith 2005: 23).

- *Tragedy* provides a way to identify with the object of struggle that is often portrayed as innocent suffering. However, the genre fails at provoking action as fatalism is often a theme in this mode of storytelling. "The tragic genre can lead to paralysis in political life rather than demands for intervention" (*ibid.*: 25).

- Contrary to the genre of tragedy, *romance* is indeed effective when it comes to demand action, as it is marked by the belief that actions can make a difference and a change for the better is possible. However, the genre proves to be highly unstable and vulnerable to attacks from advocates of realist and tragic visions, a characteristic that has comes from the suspicion that actions might end up being "futile and lead to unintended outcomes" (*ibid.*: 26).

- The genre that drives engagement in conflict is the *apocalyptic* outlook on a situation. Due to a high polarization between hero and villain and the object of struggle being extremely significant, it is highly effective in "generating and legitimating massive society-wide sacrifice" (*ibid.*: 27).

Figure 6 shows these characteristics integrated in the Structural Model of Genre.

Figure 6: The Structural Model of Genre
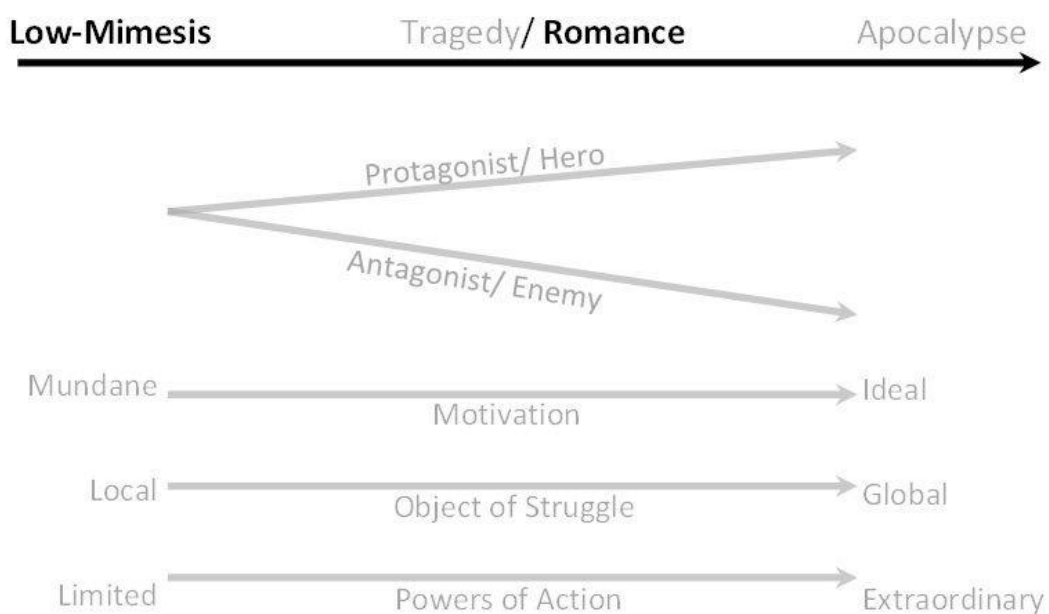
(Source: Smith 2005: 24)

The genres shown in the figure above are based on Frye's discussion of fictional mode, yet Smith develops genre types fitted to the civil discourse of war. He thus portrays the discussion of whether or not nations engage in military actions in specific situations as *genre war*. Influencing for a decision for or against war is, according to Smith, the genre guess that is inherent to each genre. That is, e.g., the apocalyptic genre evokes high level demonization of the villain, depicts the object of struggle as highest good and of global importance, and allocates idealistic motivation to the hero and a high belief in its powers to resolve the current situation to legitimate military action. This is demanded by the public, as a quote from Republican Pat Buchanan in the debate about the Gulf War of 1991 shows: "Before we send thousands of American soldiers to their deaths […] let's make damn sure America's vital interests are threatened. […] Saddam is not a madman, he is no Adolf Hitler" (*ibid.*: 112). A reason affecting the people of the USA to engage in this war must be of high importance, otherwise military action will not be legitimated and accepted by the public. Applying the typology of genre to this case, Smith claims that the antiwar Right sought a low mimetic genre, downplaying the importance of this particular conflict to the American people and also downplaying the danger and risk that sprung from the villain Saddam Hussein.

Understanding the choice of a particular genre is not just an academic endeavor but actually tells a large deal about the reasons why a specific situation developed this way and not another. "Genre politics is a witnessable, reportable, measureable social fact that has determinate material consequences over multiple cases" (*ibid.*: 208). The genre that is chosen by an actor to tell a story works as a prediction for future events. "Genre influences the expected outcome of a particular narrative construction by constructing a set of expectations for the hero and the conclusion of the story. […Thus] a 'narrative sociology' can help social scientists to better understand the dynamics of social process and social change" (Jacobs 1996a: 1267). This is what Smith depicts as *genre guess* (Smith 2005: 27-34): the evaluation of a situation based on the interpretation of a few events and then ongoing efforts to check this first interpretation as things develop.

At this point Smith`s understanding of genre falls short. The author focuses on genre change within an actor-group solely over time; the time in which events develop. "It may be that we got our earlier readings wrong. […] We look back to the past, think

about old clues in new ways, construct revised narratives, and contemplate changing our genre" (*ibid.*31). Besides the aspect of temporality – and especially if the narrative analysis is concerned with an explanation of social facts rather than fictional literature – genres change depending on the audience a specific actor group is targeting. I claim that there is not one way a story is told by a specific group, but that genres overlap can even be partly contradictory to one another.

4.3.3 The Narrative Policy Framework: the content of narrative

McBeth et al. (2005) argue that policy debates are less open to objective facts about an issue (if there is such a thing as objective facts) but that different solutions are supported by a differing examination of the situation and the inherent evidence, stemming from a selective interpretation of the circumstances at play. The concept of the social construction of the world leads also in policy studies to the question how meaning is developed and assigned. Narratives are key to understand this meaning making process as they are in an "epistemologically privileged position in making sense of a socially constructed world" (Jones & McBeth 2010: 334).

Thus, "examining policy controversies provides insights into competitive interest group framing" (McBeth et al. 2005: 419). Jones and McBeth (2010) develop a narrative policy framework based on Wildavsky and Douglas' Cultural Theory, which aims at satisfying positivist scientific standards by operationalizing narrative research paradigms. The authors apply a statistical approach to Narrative Policy Analysis (Roe 1994) by quantification of narratives and hypotheses testing (McBeth et al. 2005). Thus, this model focuses less on formal structures, as did Labov and Waletzky's model, but introduces cultural interpretation of events into the analysis of narratives. "The Narrative Policy Framework seeks to combine aspects of structuralist narrative analysis, where the emphasis is on textual elements, with a poststructuralist focus on subjective interpretation and the deconstruction of ideological agendas" (Paschen & Ison 2014: 5). Cultural Theory examines the social construction of meaning and the patterns with which individuals and groups interpret events that unfold in their world (Leiserowitz 2003 58). Cultural Theory attempts to explore "the different perceptual screens through which people interpret or make sense of their world and the social relations that make particular visions of reality seem more or less plausible" (Thompson et al. 1990: XIII). Portraying the debate between positivist and post-positivist scholars, McBeth and Jones argue for a policy analysis tool that matches

positivist standards and can be "clear enough to be wrong" (Jones & McBeth 2010: 331).

Drawing on preceding works on narrative analysis in policy studies, the definition of narrative covers the basic elements and follows those given in chapter 4.2: narrative thus must contain a setting or context, a plot, characters consisting of three general categories (heroes, villains, and victims), and a moral of the story, in this case a policy solution. For a statistical analysis, narrative content must avoid relativity, thus, "narratives must be anchored in generalizable content to limit variability" (*ibid.*: 341). To derive such categories, the authors suggest turning to the concepts of partisanship and ideology and cultural theory as a scheme for belief systems.

Partisanship and Ideology provide an understanding of characters, plot, and causal mechanisms that are used to describe a situation by opponents in political discourse. Loyalty towards one party acts as a cognitive filter (Bartels 2002, cited in Jones & McBeth 2010 341), ideology structures political preferences. If only Ideology is taken as basis for the analysis of the discourse around climate change, then the topic would be presented as a simply partisan issue. "The story told by ideology is straightforward – conservatives are much less likely to agree with the majority of scientists and, as such, are less likely to support climate change mediating policies. Liberals, by definition, are the exact opposite" (Jones 2011: 723). An Ideology based approach leaves a topic like climate change contentious and partisan, with no compromising middle ground to be found. Cultural Theory, the authors claim, opens the debate up to compromise among the different types and their perception of nature.

With a large body of literature that examines attitudes towards political issues, such as climate change (see chapter 2.5.1), Cultural Theory has been proven to serve as a useful tool to identify culturally specific policy narratives, which allows the authors to use Cultural Theory as a robust anchor for narrative content. Thus, the analysis of narratives can be grounded in well-established theory.

From the viewpoint of sociology, another take on the debate between quantitative and qualitative methods and their respective justifications and scientific standards does not seem fruitful. However, for this study on climate change narratives, it is helpful to show that the study of narratives does not remain a nebulous and elusive

concept, not fitted for underpinning political theory. Jones and McBeth attribute the reservations policy studies have over narrative analysis to the circumstance that narrative entered policy studies through the vehicle of post-structural literary theory. The quantitative, structuralist, and positivist approach does not seek to replace qualitative, post-structuralist analysis of narratives, but to enable positivist and post-positivist scholars to engage in fruitful debate over narrative's significance in shaping public's opinion (Jones & McBeth 2010: 339).

4.4 Shortcomings of the presented models of narrative analysis

The three analytic models focus on different elements of a narrative. Labov and Waletzky strip the narrative off its content to focus completely on linguistic units. This offers a way to understand the inner logic of a narrative and identify causalities in-between them. However, there are a few methodical and theoretical problems with it: firstly, as Elliot (2005: 46) points out, applying this analysis tool to whole transcripts of interviews produces a huge amount of clauses that does not always prove useful for the analytic interpretation. Secondly, and more important for a social scientific approach to narratives: the model remains its analytic endeavor on the purely structural level. With this, a link to social theory in order to interpret and explain structural findings is missing.

On the other end of the hierarchy of structure, form, and content sits Jones and McBeth's narrative policy framework. Its basis of Cultural Theory proves to be very fruitful when it comes to explain various attitudes towards a social problem (in this case climate change). Yet, it imposes purely social categories to the data and ignores the potential that an analysis of textual structures bears for social explanation. A cultural sociological analysis should take advantage of its assumption to treat culture as text.

The model by Smith bridges the gap between those models that focus either on content or on structure by applying the theory of genres to narratives and thus making use of the genre guess concept. Smith's model, however, falls short on two accounts: firstly, a narrative has to fulfill each characteristic of the model on the same level to properly fit into a specific genre. There are, however, problems with some of the characteristics Smith proposes. Take for example the scale on which the object of struggle is evaluated. In order to fulfill the demands of the apocalyptic genre, the object of struggle has to claim global importance. But that ignores that civil discourse

takes place on different levels, and that a narrative might have *apocalyptic* structures even if the object of struggle does not concern the whole planet. The model works well for the analysis of war narratives, because the consequence of an apocalyptic reading of events would always be global (most wars affect not only the nations, allegiances, religious, ethnic, etc. groups that are directly involved, but influence others as well). But if the model is to be applied to less high stake topics, this scale has to be altered. Secondly, Smith allows a change in genre only as progressing over time, as more events are uncovered. He thus ignores a vital element of social discourse analysis: a topic can take form in different narratives with different genres and genre guesses within the same group of actors at the same time. This is especially true if one considers what Smith calls genre wars: consequences drawn from a list of events depend heavily on the reading, the narrative interpretation that succeeds in the public discourse. While this is true, Smith accounts only for one narrative per actor group. But this discourse is far more multi-layered than that.

The strongest point of criticism that goes for all three models is that all the models above fail to put different narratives in relation to each other. Smith goes for one singular narrative interpretation of one event, changing genre only over time and according to newly uncovered information. Jones and McBeth tie narratives back to theoretical ideal types, allowing each type only for one narrative understanding. Labov and Waletzky take the different elements of a narrative apart without implying an interpretation. But it is precisely when social facts are compared that we see their nature through the differences between them.

4.5 Structure – Form – Content: towards an integrated model of cultural narrative analysis

Taking this critical reflection into account, a model of narrative analysis which benefits from the above presented models must fulfill the following demands:

In response to Labov and Waletzky's model the structural analysis of an integrated model must not be autotelic, i.e. it should not pursue identifying structural elements of a narrative as an end in itself. Thus, we need to make sure that the analysis of those structural elements serves a socio-cultural purpose. Instead of focusing on purely textual clauses as Labov and Waletzky, I propose a more contentual approach by marking textual elements that focus on the *active players* within in the narrative: hero, villain, victim, and the relationship these elements keep with one another. Thus, for a

social analysis of narratives the Structural Model displays exemplary the use of a sound textual analysis to identify singular elements without implying a hierarchical or judgmental interpretation.

Interpretational hierarchy should not overpower other analytic results. As Smith introduces a high demand for hierarchy in his analytic model, the identified elements need to meet each other's standard. That is that an analytic conflict occurs if, on the one hand, a violent contrast can be identified between hero and villain, and, on the other hand, the object of struggle is not a global threat. Smith's hierarchical scale for the object of struggle ignore that narratives are subjective to the point of view from which they are told. The scale of local – national – global imposes an objective, factual view on the object of struggle. But the assessment of its importance lies within the narrative, and is not externally imposed. Despite this, the concept of the genre guess introduces a means for a social analysis of action that a narrative evokes and thus carries the sociological purpose of the analysis.

As opposed to Jones and McBeth's use of Cultural Theory's strict categories, the proposed model will take advantages from literature theory's insights and will thus allow for a more open analytic approach. However, the strict use of the categories in the Narrative Policy Framework ensures that the model does not miss its purpose to serve an understanding of the social role of narratives, to comprehend the social background of a narrative, and not to pursue only purely literary and structuralist purposes. I draw from Jones and McBeth the possibility of identifying the main topic of a narrative, which can be found in general tropes of policy studies. Here, the storyteller and the audience can be identified, helping to carve out the relationship between these two actors of a narrative. The identification of these elements – storyteller – audience – main topic – is based on Polletta's claim that "the risks in storytelling come as much from the norms of narrative's use and interpretation as they do from the norms of its content. […] Stories are differently intelligible, useful, and authoritative, depending on who tells them, when, for what purpose, and in what setting" (Polletta 2006: 3).

The integrated model of cultural narrative analysis tackles two more issues neglected by the former approaches: firstly, it allows for the idea that multiple narratives exist within one social group, and that change in these narratives does not only occur over time and with the discovery of more facts, but that they differ depending on the social

circumstances and the audience. The interplay between those narratives and their characteristics is pivotal to a social analysis as it provides insights of the structure of the public discourse. A comparison of different narratives that have emerged in the analysis thus promises to reveal how these different stories influence one another and which consequences possible interdependencies have for their stability and reliability.

The model (Figure 7) follows Hayden White and Ferdinand de Saussure with their differentiations between content and form resp. *parole* and *langue* by segregating three levels of analysis:

Figure 7: Integrated Model of Cultural Narrative Analysis

Storyteller

Romance

Apocalypse

Beginning – Middle – End

CONTENT →

FORM

← STRUCTURE

Audience

Low Mimesis

Main Topic
(object of struggle)

Tragedy

Hero   Villain   Victim
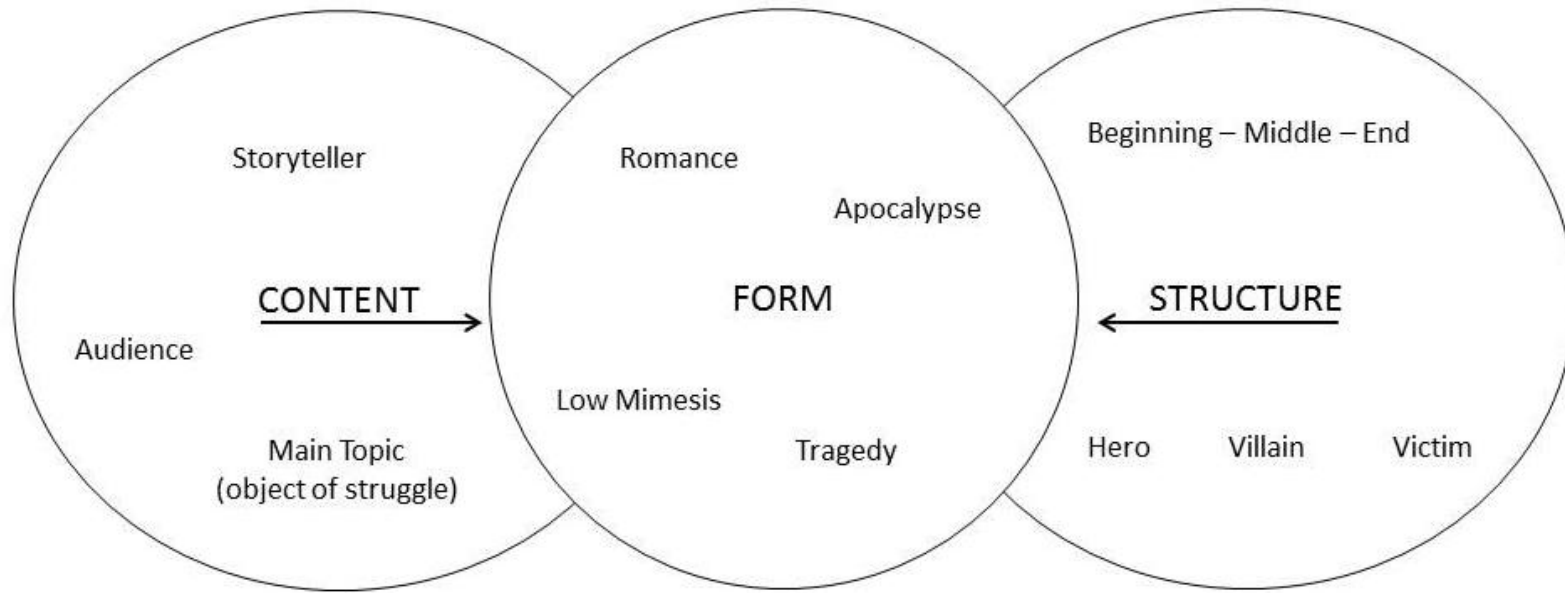
(Source: own illustration)

The single circles of the model can be further explained on their own:

(1) structure:

The circle on the right commits to the identification of structural elements in the story and thus draws intensely on narrative theory and literature theory. Singling out the clauses that describe either the hero, the villain, or the victim, helps to uncover implicit references to certain characters. It also allows for an understanding of the relationships between those elements. As I will show later in the analysis the explicitly mentioned characters are as important to the model as those that are omitted. This paradigmatic analysis of narratives makes use of structural binary codes by placing the actors in patterns of opposition. This analytic step only becomes possible by allowing for a comparison between the narratives.

Figure 8: Integrated model: structure
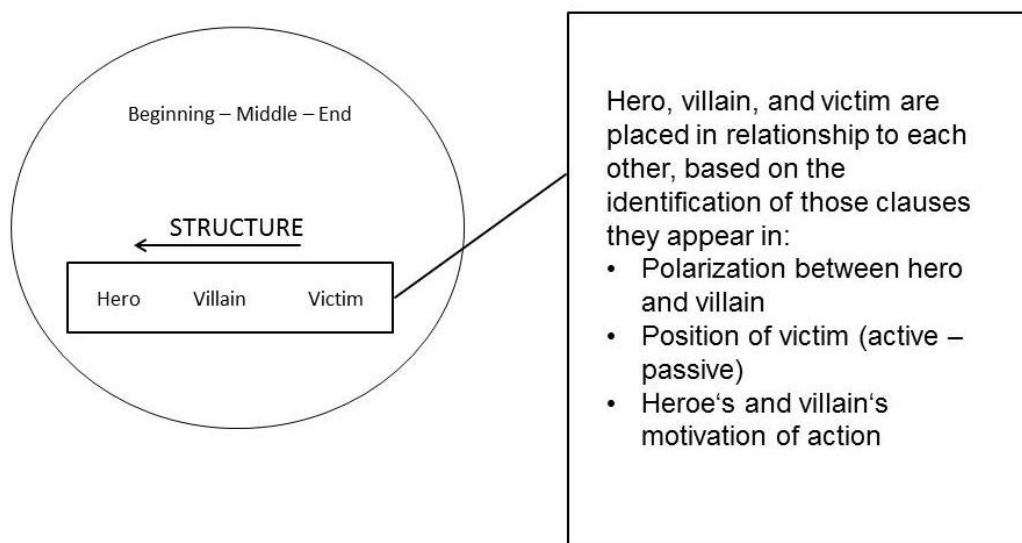
(Source: own illustration)

(2) content

The circle on the left in the model combines the broader context of a story as it is framed in the public discourse, resembling Saussure's concept of parole, which he describes as speech as "an individual act of the will and the intelligence", and – with a little license – is expandable to the sense of discourse as is presented by the German *Rede* (Saussure 1986, c1983: 16). This circle represents the semantic topic of the narrative and draws on the analytic findings in the circle on the right (Structure) to describe the point of view of the storyteller (narrator) and

the audience she addresses. The focusing on the storyteller allows to identify the main topic of the narrative, or the object of struggle, with recourse to political, cultural, and social tropes.

Figure 9: Integrated model: content
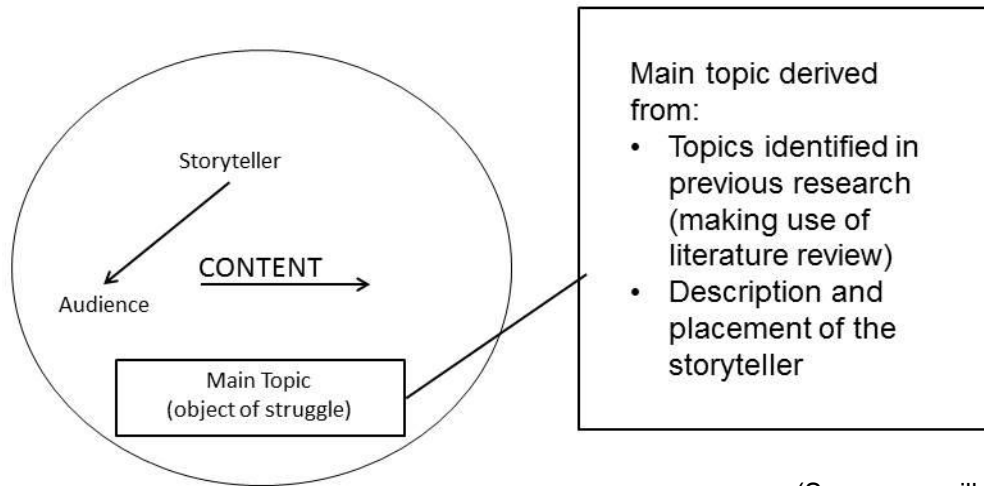
(Source: own illustration)

(3) form

The circle in the middle focuses on the form of a narrative. Drawing on Smith who follows Aristotle's classification of literary genres, this part of the model values the benefits of the genre guess. Narratives are thus a sense-making cultural form, that links actions to cognitive and value systems. The encompassing concept of genre enables the model to bring the different elements back together to form a cohesive picture of the story that is told. The choice of genre depends on both the lower level of Structure and the upper level of Content. The relationship between the elements and the characteristics of those elements as described and identified on the level of Structure determines the literary form the narrative takes in the public discourse.

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Figure 10: Integrated model: form

The genre is informed by the contentual and paradigmatic analysis:
- The description of the hero-villain-victim relationship
- The presentation of the main topic
- The justification of (proposed) action
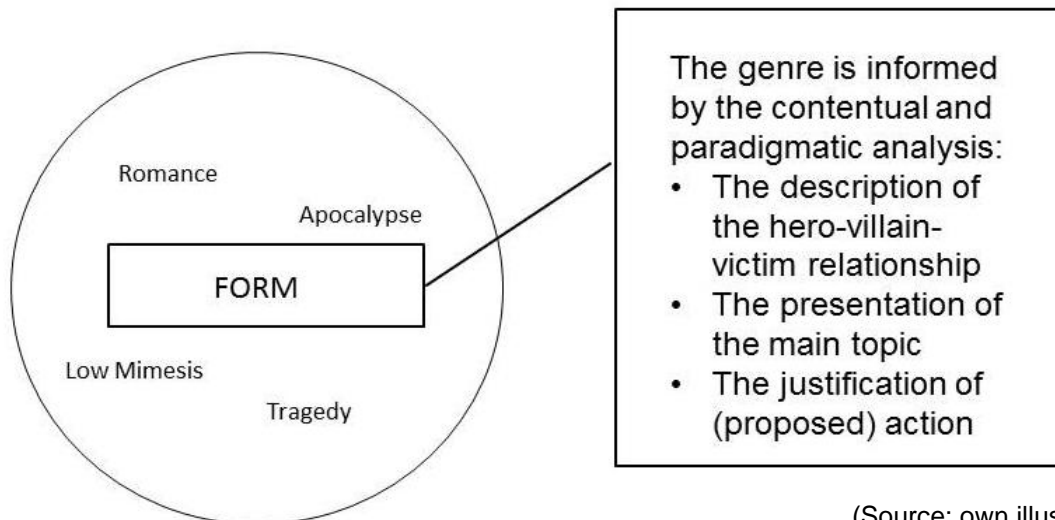
(Source: own illustration)

At the center of the model lies a basic understanding of culture as text as it is basic to cultural sociology. The interpretation of social facts is analyzed with a combination of social, cultural, and literature theory, allowing for a holistic analysis of the underlying cultural patterns within social interpretation. With cultural sociological methods we will be able to analyze climate change narratives as they are brought in use by climate change advocates. We will understand their cultural meaning and uncover connections and inconsistencies that hamper successful climate change communication.

5   Methodical approach

Social scientific research seeks to systematically capture and interpret social phenomena; it is theory-driven and needs to follow transparent rules (Atteslander 2008)[39]. In social sciences, methodologists have developed a large tool kit for conducting research and analyzing data. The following chapter will present the empirical process of this study that leads to the findings described and discussed in the chapters 8 and 9. In the following chapter I will first offer some general remarks about the design of the study (5.1), the process of data collection and a description of the interviewees (5.2), followed by a description of the case studies where the interviews have been conducted (0) and methodical concerns about interviewing as a research technique (5.4). Subsequently, I will discuss the process of editing the dataset (5.5) and the data evaluation (5.6). The chapter is completed with a critical reflection on the use of quality criteria in qualitative research and specifically in this study (5.7).

5.1 A qualitative approach with problem-centered interviews

The goal of this study is not to verify a priori constructed hypothesis, in which case a quantitative research design would have been appropriate. Rather, this study is explorative in nature, seeking to carefully conduct a description and interpretation of an empirical set of facts, i.e. the ways in which climate advocates talk about climate change (Mayer 2006: 35). Therefore, a qualitative research design with the aim of conducting problem-centered interviews was selected (Rapley 2001: 304-305). This allows the researcher to understand the context of cultural meanings that are organized at the collective and social level (Pugh 2013: 5-6). "Qualitative studies ultimately aim to describe and explain (at some level) a pattern of relationships, which can be done only with a set of conceptually specified analytic categories" (Huberman & Miles 1994: 431; see also Janesick 1994: 212). Within qualitative research methods, one-on-one- or group-interviews are a common technique to gain knowledge from experts and to see the object of study from different angles. Interviews enable the researcher to control the line of questioning and interviewees

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[39] In original German: „Empirische Sozialforschung ist die systematische Erfassung und Deutung sozialer Erscheinungen. Empirisch bedeutet, dass theoretisch formulierte Annahmen an spezifischen Wirklichkeiten überprüft werden. "Systematisch" weist daraufhin, dass dies nach Regeln vor sich gehen muss. Theoretische Annahmen und die Beschaffenheit der zu untersuchenden sozialen Realität sowie die zur Verfügung stehenden Mittel bedingen den Forschungsablauf" (Atteslander (2008: 4-5)).

can input historical and context information into the research process (Creswell 2003: 186). There is a wide variety of interview types in social research, ranging from closely standardized to open interviews, with semi-structured interviews balancing out both extremes and being the most commonly used (Hopf 2007: 350-351). In this category falls the problem-centered interview. This interview type focuses on a socially relevant problem, i.e. the interviewer makes use of knowledge about a social problem she required a priori to the empirical phase and of knowledge required during the interview process (Witzel 2000: 2-3). The latter specifically refers to the process-orientation of this type of interview, acknowledging the fact that "the discourse of the interview is jointly constructed by the interviewer and the interviewee. […] The aim of an interview should be to stimulate the interviewee's interpretive capacities and that the role of the interviewer should be to activate narrative production by indicating - or even suggesting - narrative positions, resources, orientations, and precedents" (Elliott 2005: 21).

Witzel's problem-centered interview (Witzel 2000) meet all the criteria for the epistemological interest underlying this study: interviewees should be encouraged to talk about a specific problem (climate change) from their either professional or personal point of view, they were also allowed and encouraged to talk about personal experiences and to offer their opinion on a subject from a perspective they might not be experts in. For this reason, expert interviews were dismissed (because not only expertise but also personal opinions were asked) as were narrative interviews, which aim heavily for biographic, episodic storytelling, while lacking at a focus on a specific topic.

The problem-centered interview makes use of two communication strategies: story-generating strategy (*erzählgenerierende Kommunikationsstrategie*) and understanding-generating strategy (*Verständnisgenerierende Kommunikations-strategie*). The first includes a prepared introductory question that serves as an invitation for the interviewee to tell a story, and thus to select the perspective in which she wants to talk about an issue. This question should contour the conversation topic while it should also be as open as possible. Further, general testing out leads to gradually explore the interviewee's opinion further, while additional ad hoc questions ensure that all areas of interest are covered, even if the interviewee does not address them in their first statement (*ibid.*: 5). The second strategy makes use of the process-

orientation of the interview by fostering questions from knowledge gained in the current or previous interviews. This element serves as a tool for reflection for the interviewee, inviting her to second her opinion or add to statements already made in the interview. It also allows breaking through implicitness of every-day-life by posing seemingly obvious questions and allows clarifications. Confrontations in terms of bold statements are also used to generate a new point of view (*ibid.*: 6).

Witzel describes four instruments for conducting problem-centered interviews: the construction of an interview guideline will be explained further in chapter 5.4, the process of editing the collected data in chapter 5.5. Witzel also suggests to collect socio-demographic data by completing a short questionnaire and to draw up postscripts after every interview. The latter can lead in this study to short descriptions of the interviewee (appendix A). The former is especially useful in interviews with an interest in biographical and personal information. In this study, the construction of a socio-demographic questionnaire was dismissed since it was not considered to add valuable information. However, socio-demographic data was presented in the postscript and questions concerning these data were posed where appropriate.

5.2 Process of data collection

Data collection began in 2010 in Germany and continued in 2012 in the USA. For this study, 16 narrative, problem-centered interviews were conducted with 17 interviewees. From these interviews, 15 were considered to be adequate for analysis and interpretation. One interview was conducted with two respondents at the same time, so the total number of interviewees is 16. One interview had to be ignored in the analysis because the interviewee was adamant to provide answers only in written form. The first interviews were originally meant to serve as pre-test, but the quality of the material was considered high enough for being included in the evaluation process. The sample was intentionally kept small to allow for a deep analysis that would cover both content and structure of what has been told. The phase of interviews was completed when narratives started to recur.

The respondents were invited to the interview via email, partly on recommendation by other interviewees. Participants recommended people they encountered professionally or on a private level, e.g. through neighborhood or through climate change related activities within their communities. Participants were ensured anonymity in the beginning of the interview. It was also made clear in the beginning

to the participants that professional expertise as well as personal should be equally voiced (*ibid.*: 5). The sample consists of:

- representatives of environmental NGO's
- representatives of governmental institutions
- environmental activists
- concerned citizens
- politicians of afflicted regions

Table 10 gives an overview of the participants in this study, a short description of the participants can be found in appendix A.

Table 10: Overview interviewees

Interviewno./ Acronym	Region (Case Study)	Occupation
I-GER 1	Enzkreis	Subject specialist sustainability and climate, Stuttgart regional assembly
I-GER 2	Enzkreis	Regional climate mitigation officer
I-GER 3	Enzkreis	Member of state parliament Baden Württemberg, priority: energy and sustainability
I-GER 4	Enzkreis	Journalist, regional newspaper
I-GER 5	Enzkreis	manager regional assembly for the region northern black forest
I-GER 6	Enzkreis	Regional head of law and administration
I-GER 7	Enzkreis	Executive member regional flood aid group
I-GER 8	Enzkreis	Regional director BUND – Friends of the Earth, Germany
I-USA 1	Lower Hudson River Valley	Reference person project "Rising Waters. Helping Hudson River Communities Adopt to Climate Change"

I-USA 2.1	Lower Hudson River Valley	Project coordinator "Hudson River Estuary Program"
I-USA 2.2	Lower Hudson River Valley	Project coordinator "Hudson River Estuary Program"
I-USA 3	Lower Hudson River Valley	Artist, close to the "Hudson River Art School"
I-USA 4	Lower Hudson River Valley	Artist, involved citizen, Piermont, State of New York
I-USA 5	Lower Hudson River Valley	Mayor, Piermont, State of New York
I-USA 6	Lower Hudson River Valley	Geophysicist (retired), involved citizen, Piermont, State of New York
I-USA 7	Lower Hudson River Valley	Environmental activist; permanent consultant at NGO Riverkeeper

(Source: own illustration)

5.3 Constructing the case studies

Not only was the occupation or the involvement of the respondents critical to the sampling process but there was also a regional scope introduced: before choosing and contacting possible interviewees, a literature research on afflicted regions was conducted beforehand. The concept behind this was that the study should not be limited to the perspective of people who are professionally involved in climate mitigation or related environmental activities but that it should also include the interpretation of events by laypeople. This approach was set to widen the scope of the study and to provide the possibility to match those narratives given by professionally involved personal with those of afflicted citizens. The regional scope thus was on the one hand to limit the available data, and on the other hand to ensure that interviewees shared a common background. This way, the data was not flooded with narratives in reference to particular geographic environment that would not be present in any other interview. Additionally, the selected regions should not be existentially threatened by the consequences of climate change to avoid a circumstantial bias in the dataset. At the same time, the region should have encountered the changes that come with a changing climate on a quite moderate

level so that it was possible to find concerned citizens that would not only mirror narratives presented in the media. The vulnerability of these regions is only one reason for their selection. Criteria for selection come from epistemological and pragmatic concerns, referring not only to the detailed regional scope of the cases, but more general to the selection of a region in Germany and in the USA.

A pragmatic concern lies within the nature of qualitative data: in order to conduct interviews and subsequently analyze and interpret those data the researcher needs to have sound knowledge of her participants' language. Background information within the study, such as reports by local governments, is also usually only available in the language used in this region. With German as native language and English as first foreign language the study it seemed appropriate to conduct field research in a German resp. English speaking environment. Another pragmatic reason is the accessibility of the region to the researcher.

For this project, it was critical to ensure access to possible interviewees, i.e. travel time and costs for conducting face-to-face interviews. Access to interviewees in Enzkreis, Baden Württemberg was simple due to the proximity between research basis and field. A research stay in Connecticut, USA made data collection in the Lower Hudson River Valley possible.

As for epistemological concerns, the USA and Germany were selected mainly for two reasons: first, generally speaking both nations are similar when it comes to their economic situation, their political system, and the role of science in political decision making and the public discourse (Gerhards 2000: 8). Also, their situation within the climate change discourse is comparable: both nations are seen as perpetrator of anthropogenic climate change due to industrial revolution, both nations are broadly not existentially threatened by climate change, and both nations are considered within the public discourse to be among those nations that have to find a solution for the situation.

Based on these criteria two regions were selected as case studies: The Lower Hudson River Valley in New York State, USA and the Enzkreis in Baden Württemberg Germany. Both regions were experiencing flooding, either from heavy precipitation or from rising sea level in the case of the Hudson River Valley. In the following chapter, I will give a short overview of the characteristics of both cases.

Before I describe the locations of the case studies further, I want to draw attention to a regular problem in social science research on climate change: reports on climate change, like those regularly published by the IPCC or climate research institutions use careful wording when it comes to allocate causes of changes in weather patterns to a changing climate. I.e. it is not said with certainty that observations on increased heavy precipitation, more flood events, heat waves, droughts, and so forth are a direct consequence of a rise in the average global temperature. However, there is to some degree consensus that these factors most likely correlate, both in the scientific community and among environmental activists, politicians and so on. The latter matters most when it comes to selecting a case study for the research question I am trying to answer here. As we will see in the interviews, none of the participants query this correlation. For this reason it seems legitimate in this study to neglect the caution with which natural scientific research makes claims about the direct – and what is more difficult: locally tailored – impacts of climate change.

5.3.1 Case study 1: Enzkreis, Baden Württemberg, Germany

The first interviews were set in the region Enzkreis, in the South-West of Germany. The region is defined by its river, the Enz, running through the eastern part of the Black forest and continuing into the larger river Neckar.

Figure 11 shows the geographical location of the Enzkreis within the state of Baden Württemberg.

Figure 11: Geographical location of the Enzkreis and the river Enz;
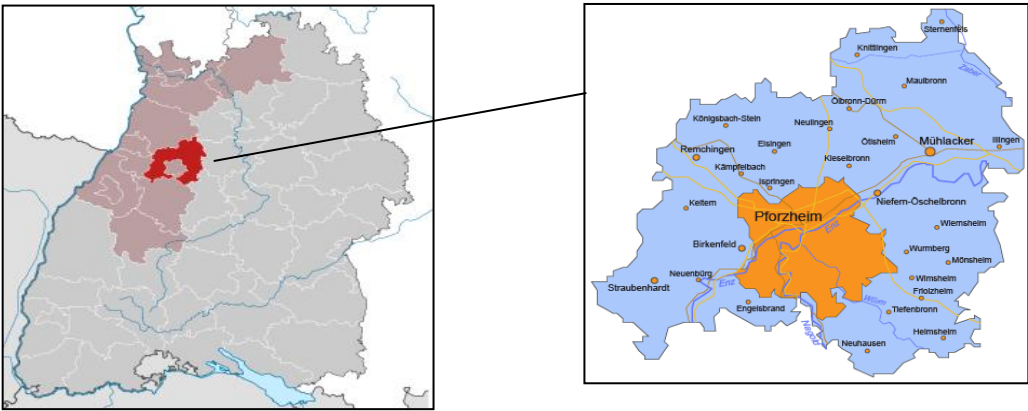
(Source: www.nordschwarzwald.de)

This region experienced some severe flooding. Especially the medium-sized town Mühlacker was hit during the so-called Christmas-Flood in December 1993 badly due to heavy precipitation (Pforzheimer Zeitung Gesamtausgabe 1994) as well as

another flood event in 1999 in the medium-sized towns Schömberg and Unterreichenbach (Knöller 2009). The South-West of Germany will have to deal with various impacts of climate change, namely increasing heavy precipitation during the winter months and heatwaves during summer (Weber & Komischke 2008; Hennegriff et al. 2006; Caspary 2001). Increasing flood hazard due to heavy precipitation is here considered to be the greatest risk to the economic development and environmental protection (Zebisch et al. 2005).

Because of these predictions of future developments as well as those flood events in the past, which are set in the collective memory of the community, the region Enzkreis and especially Mühlacker were selected as one case study.

5.3.2 Case study 2: Lower Hudson River Valley, New York, USA

The second case study is set in the Lower Hudson River Valley in the State of New York, USA. Interviews here took place between September 2011 and April 2012. The Lower Hudson River Valley is specifically threatened by flood events since not only run offs from heavy precipitation happen but towns are set very close to the Hudson River. The Hudson is a 507km long water source, running from north to south through eastern New York State. However, about half of its length is not considered a freshwater source, since between approximately New York Harbor and Troy Dam the Hudson is a tidal estuary, so towns along the Hudson in this area are directly threatened by sea level rise, even though most visitors would not consider the Hudson Valley as being coastal. Studies preliminary predict that the entire Hudson Estuary up to the town Troy will be affected by sea level rise and storm surge (NYS Department of Environmental Conservation - Hudson River Estuary Program 2010: 6; 31).

Similar to the first case study, the regional scope here was also narrowed down to one vulnerable town. Piermont is a small town located on the west bank of the Hudson River, south of the Tappan Zee Bridge. It is threatened by sea level rise due to its close proximity to the Hudson River.

Figure 12 below shows the geographical location of Piermont and the Lower Hudson River Valley.

Figure 12: The Lower Hudson River Valley and Piermont
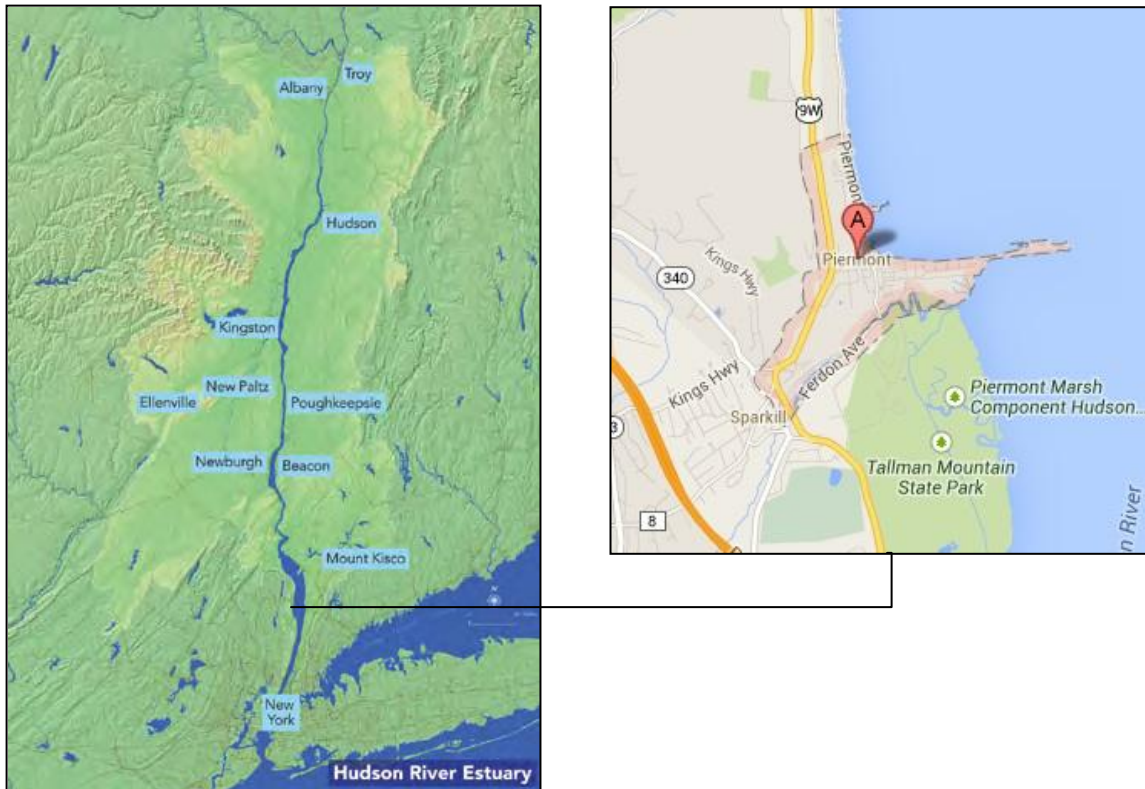
Both regions are labeled as case studies, however, there is no case comparison intended in this study. On this level of politically active or at least interested climate advocates a common ground in the understanding of the issue is established. Discourse on the issue of climate change takes place within an area we might call 'expert sphere', with activists, politicians, and concerned citizens alike applying similar arguments and logic (cf. Arnold 2012: 118). . Cultural differences are not found significant within this community. For the study, it is rather interesting to see how narratives in the U.S. American interviews and the German interviews resemble each other. Interviewees move in the same circles and read similar reports and documents on the ecological crisis. Therefore, akin thought patterns emerge. Interviews in two globally different regions were conducted to avoid the possibility of a 'national bias', i.e. a nationally narrow reading of climate change and to get a wide range of narratives. In accordance with a thick description approach: "You can study different things in different places […] but that doesn't make the place what it is you are studying" (Geertz 1973d: 22).

5.4 Conducting interviews: methodical concerns

Before the interviews started, a guideline for problem-centered interviews was developed (Hopf 2007: 351; Witzel 1982). This guideline mainly served two purposes: (1) it was used as a conversation starter in the beginning, making sure that the interviewee got all relevant background information; (2) the guideline contained pre-formulated questions that helped to cover important areas. However, since the research questions called for open interviews, the guideline was not supposed to restrain the interview. Participants were encouraged to suggest themes, i.e. content of a narrative (Hards 2012: 762) and besides more general questions like "How would you describe the situation in XX/ YY with reference to climate change today?", the interview guideline took into account the specifics about each participant. For instance, one interview contained questions tailored for the participant who was an environmental activist and who had been arrested because of a protest action prior to the interview. This specific incident was acknowledged in the interview. Specific information about participants and their situation shaped the guideline for each interview and required to balance out the need to keep interviews partly consistent on the one hand and to appreciate specific knowledge of the participant on the other hand. Preliminary analysis after each phase of interviews (2-3 interviews) allowed for adapting the interview guideline (*ibid.*: 763). Interpretive research can make use of a flexible research design, incorporating information gained in the process for the remaining data collection (Lueger 2010: 154). This procedure is in line with Witzel's emphasis of the process-orientation of the problem-centered interview (see chapter 5.1). This also allows for variations between the interviews to achieve a wide range of narratives. The aim was not to compare the interviews to one another, since this study's interest does not follow a comparative approach, but to gain an overview over the stories climate advocates tell. Huberman states that "changes in observational protocols or interview schedules in a field study usually reflect a better understanding of the setting, thereby heightening the internal validity of the study" (Huberman & Miles 1994: 431).

Interviews were conducted both as face-to-face and via telephone. Initially intended to consist only of face-to-face-Interviews, the data collection had to adjust to some research pragmatic obstacles. Among the interviews conducted in the USA are four telephone interviews. Reasons for this derive partly from schedule issues and the fact, that some of the interviewees were recommended during the course of another

face-to-face-interview. Two of the four participants interviewed via telephone were met beforehand, so that a possible bias between interviews conducted in person and interviews conducted via telephone could be minimized. The quality of the telephone interviews was comparable to face-to-face-interviews, so both types of data could be treated equally (Schulz 2011: 121-122).

Additionally to interview data, field notes were conducted during research trips to the case study regions. These visits allowed for a deeper understanding of the situation within the region. Two interviewees in the Hudson River Valley took me, in my capacity as researcher, to see some places in their community they were especially concerned about. In Piermont, I was shown houses next to the Hudson River that were regularly, and also at that time, flooded. This added to the interpretation of the interview data, because interviewees could expect a somewhat shared knowledge between themselves and the interviewer.

5.5 Process of editing data

Interviews were recorded on tape, which ensured an authentic and precise documentation of the data (Witzel 2000: 4). Subsequently, interviews were transcribed. The transcription process is not just mechanical action but is considered to be part of the analysis as "decisions about how transcription should be carried out are intimately connected with the type of analysis that is intended" (Elliott 2005: 51). For reasons of readability, transcripts were smoothed by omitting broad dialect and back channel utterances, where the interviewer uses verbal encouragement signaling the interviewee that she is being listened to and should continue. This way a *clean transcript* was produced, as opposed to a *detailed transcript*, including ethno-methodical formal notation systems or a transcript using Gee's units of discourse, which focuses on smallest basic elements of discourse and thus emphasizing especially the structure why neglecting the content (*ibid.*: 51)[40].

After transcripts were completed, the documents were transferred to the program MAX.QDA, a qualitative analysis software. Unlike quantitative analysis tools, like SPSS, MAX.QDA and other qualitative analysis software enable the researcher to structure and organize the data, rather than performing analysis. This interpretive process is still left to the researcher (Kelle 2007: 488).

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[40] For further information on rules for transcribing qualitative data see also Kuckartz 2007: 37-47).

A peculiarity to this study is that it deals with data in two different languages (English and German). Lauf and Peter (2001) characterize three procedures to deal with multi lingual data: a first suggestion is the native speaker procedure (*muttersprachiges Vorgehen*). Where data is only transcribed and coded by a native speaker of this language. The second procedure takes the project language into account (*projektsprachiges Vorgehen*), where the code book is composed in that language that is used in the whole research project and data is transcribed and coded only by native speaker. The third option is the multi lingual procedure (*mehrsprachiges Vorgehen*) in which the code book is composed in an identified project language but the data is transcribed and coded by non-native speaker and native speaker alike. The code book is composed in the identified project language (*ibid.*: 201-204). In the case at hand this last option was selected, since there was only one coder responsible for transcribing, coding, and analyzing the data. Code book and codes were formulated in English, the report is also written in English. The researcher was confronted with the problem of multilingualism also while reporting and discussing the findings. For an improved readability it was decided to report all quotes in English language. This should be critically reflected, since this procedure entails a translation of the German interview quotes. However, considering that the discussion and interpretation of data will be in English language, a translation seems reasonable to ensure the comprehensibility of the analysis to the reader. All quotes from German interviewees will be listed in the original German in appendix D.

5.6 Data evaluation

Evaluation of qualitative data is commonly carried out by coding larger or smaller text segments via coding. Creswell (Creswell 2003: 191-195) suggests six steps for the analysis process:

1. Organize and prepare dataset
2. Read through all the data to obtain a general sense of main topics and vein
3. Begin detailed analysis with a coding process
4. Generate a description of people and setting
5. Advance how the description will be represented in the qualitative narrative
6. Final steps in data analysis involves making an interpretation or meaning of the data

Step 1 was described in chapter 5.5 and step 4 was accomplished by a preparation of interview profiles in the form of short memos. These can be found at the end of this study in appendix A. Step 3 involves the coding process which is initialized in step 2. Corbin and Strauss emphasize that coding is more than just paraphrasing or listing codes. "It involves interacting with data (analysis) using techniques such as asking questions about the data, making comparisons between the data, and so on, and in doing so deriving concepts to stand for those data" (Corbin & Strauss 2008: 66). Saldana emphasizes that coding can be seen as analytic tactic and thus is a crucial part of the analysis (Saldaña 2013: 7). The author also states that coding is an iterative process, with coding taking place during and after data collection and consisting of different cycles, similar to Creswell's utterance that coding "is an ongoing process involving critical reflection about the data" (Creswell 2003: 190). Kuckartz (2007: 71-106) identifies four broad categories of coding types: theoretical coding (*theoretisches codieren*) following a grounded theory approach, thematic coding (*thematisches codieren*) following Hopf, typification (*Typenbildung*) following Kuckartz, and qualitative content analysis (*Inhaltsanalyse*) following Mayring (see also Böhm 2007: 476-477; Mayring 2007).

Thematic coding differentiates between data driven and context driven coding. In a context driven approach the researcher pays close attention to the development of the list of codes while analyzing the dataset. This process of open coding is commonly exerted within a grounded theory approach. The researcher is compelled to avoid an imposition of pre-existing theory onto the data. The data driven strategy makes use of pre-evaluated codes, derived from literature review or previous studies. Amendment and adjustment of the list of codes is called for while moving through the data (Gibbs 2007: 44-46). This study's data was coded in terms of thematic coding with a data-driven strategy. This way, findings are closely tied to previous studies that are discussed within the extensive literature review, but it also allowed for the data analysis to unveil an advanced perspective on topics within the talk about climate change.

The code book in appendix B reflects the integrated model of cultural narrative analysis. First, a main code is found and named according to the main topic of the corresponding narratives. Two sub-codes were assigned to every main code, representing structure and content. According to the model, and thus the underlying

narrative and cultural theory and findings from previous studies, these sub-codes were given their respective elements of either hero-villain-victim or topic-story-teller-audience: Figure 13 exemplary shows the list of codes for the narrative "economy":

Figure 13: Example - coding tree
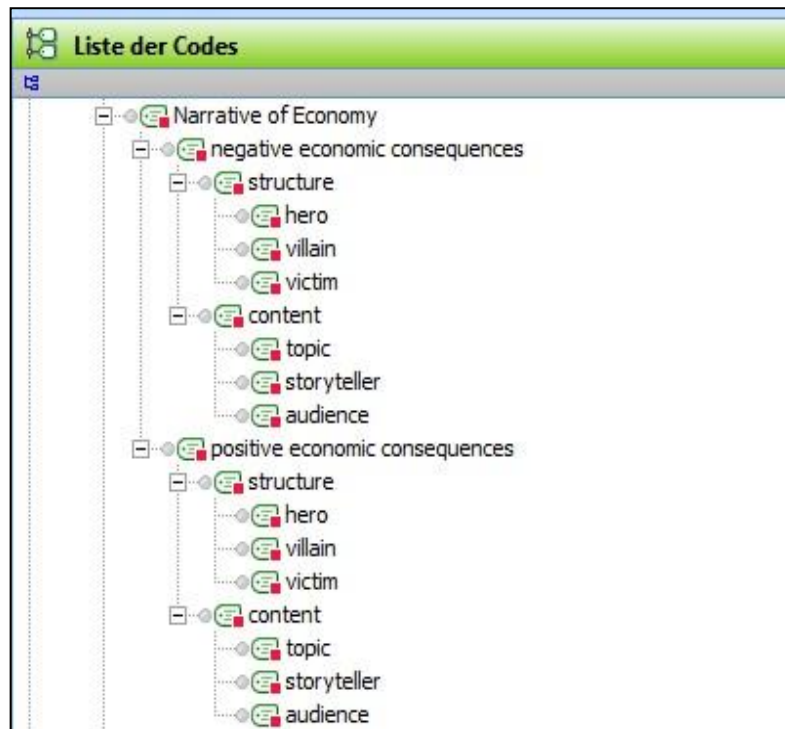
Interviews were analyzed according to this code-guideline on a case-to-case-basis, i.e. specific text passages were assigned specific codes. It is important to note that the requirement for exclusivity, promoted in several guidelines for social qualitative research, cannot be met. Especially in narrative analysis, stories overlap and are interwoven with one another. This way, one element might serve in different narratives. The code guideline in this study was designed to represent this fact and thus to untangle the narrative structures.

5.7 Reliability and validity of the data

Every empirical study has to critically reflect on validity and reliability of data and research process. Unlike quantitative methods, qualitative research is still missing an undisputed and generally accepted set of rules. A scholarly debate among methodologists discusses the possibilities and value of adopting quantitative quality

criteria, or developing a tailored set of quality criteria (Steinke 2007 319-321; Huberman & Miles 1994: 437-438). However, two of the most commonly referred to criteria – validity and reliability – should be at least discussed and connected to a qualitative study.

Reliability refers to replicability and stability of findings in data, *validity* "refers to the ability of research to reflect an external reality or to measure the concepts of interest, epitomized by the question: 'Are we measuring what we think we are measuring?'" (Elliott 2005: 22). The latter criterion, validity was reassigned in the qualitative arena. In quantitative methods, validity is achieved by a set of technical micro-definition, in qualitative methods, "Validity in qualitative research has to do with description and explanation, and whether or not a given explanation fits a given description. In other words, is the explanation credible?" (Janesick 1994: 216). It can be met through a detailed presentation of the methodical process, in particular with a transparent presentation of the data collection process (in this study covered in the chapters above), and through considering the suitability for the object of research (Mayring 2002: 140-142).

Both concepts were developed against the backdrop of quantitative methods and have been gradually adjusted to qualitative methods. However, especially the criterion of reliability cannot be easily applied to qualitative data. The relatively open interview guideline as well as the explorative nature of most qualitative studies makes findings barely replicable. Huberman and Miles (1994: 431) even state that "in effect, qualitative designs are not copyable". This might be true, but the researcher can counteract this nature of qualitative analysis by providing a detailed description of the code book that was used in the analysis to present her data in comprehensible and transparent fashion. Another instrument for measuring the reliability of qualitative data is the concept of inter- resp. intra-coder reliability. The degree of inter-coder reliability can be measured by having multiple coders and comparing their results. Intra-coder reliability can be measured by having one coder coding the same text passage at different points of time (Rössler 2010: 185-186). However, inter-coder reliability cannot be achieved in this study, since there was only one researcher (= coder) involved in the project. The timeframe of the coding process was intentionally kept small; this way outside influences could be kept to a minimum.

The degree of generalizability is another important aspect of findings in empirical studies and often a critical point for qualitative research designs. Whereas quantitative methods strive to achieve generalizability and general validity, qualitative studies seek to explore specific patterns and relationships within a social phenomenon. They do not seek to represent a society as a whole but to uncover underlying mechanisms. A quantitative design falls short in this task.

6   Empirical findings: climate change narratives

> *"I think it is really about telling a personal story. And I
> think that has been pretty successful so far, I talked
> to a lot of people in the course of a few months. I
> talked to a lot of people about climate change
> specifically, and you know for people who are either
> deniers or just don`t care that much, the personal
> story always means something."*
> *(I-USA 7[41]: 34)*

The following chapter will present the findings of the empirical analysis with regards to the theoretical framework developed in chapter 4. Thus, the structure of this chapter follows the analytic scheme set up in chapter 4.5. Each identified narrative is described first by its content, including topic, storyteller, and audience. Second, the structure of the narrative – consisting of its characters – hero, villain, and victim, is presented.

The overall arching theme of all presented narratives is the topic of climate change. However, each narrative takes a different approach to the issue[42]. Thus, five narratives were identified, with two sub-narratives to the narrative of economy (6.1) and the narrative dealing with climate change as a political topic (6.2). These stories are not independent entities; they intersect with each other and draw on the same pool of characters. Thus, one statement or paragraph in an interview can play different roles in different narratives, depending on the context. Also, the position of the characters varies in each story, thus leading to a varying hierarchical order between the characters.

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[41] Interview quote; the abbreviation indicates the number of the interview (see Appendix A for a list of interviews including their corresponding abbreviation). It is followed by a number, indicating the respective paragraph in the interview transcript (Max QDA file).

[42] At this point it seems appropriate to stress that this study is not interested in making a judgment about the subjective statements made by the interviewees. Even if some assessments are outdated or inappropriate, like the simplistic and patronizing differentiation between industrialized and developing countries. See for a discussion of recent orientation in development studies Ziai (2010) and Wagner et al. (2004).

Figure 14: Climate advocates' narratives
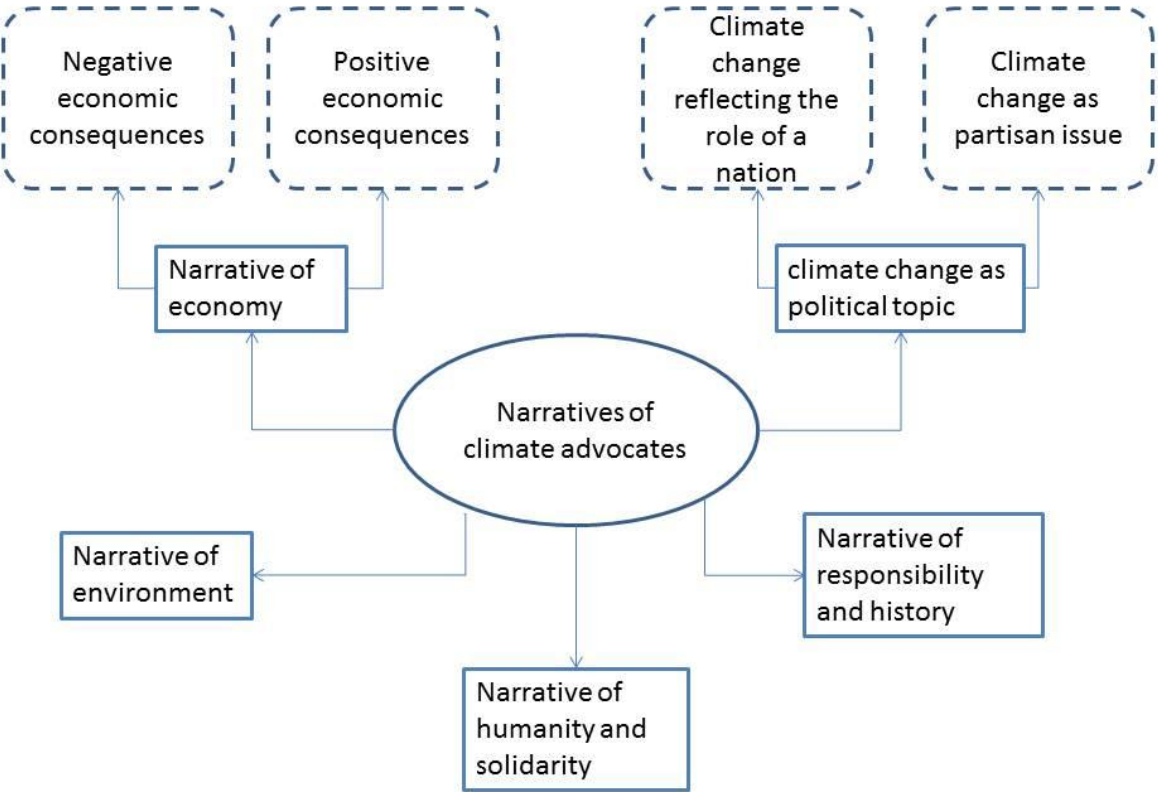
The overview of these narratives shows how climate change touches various spheres of social life. Renn assigns the amplification of climate change as a serious threat to the fact that "the impacts resonate with the concerns that are linked to each functional system of society" (Renn 2011: 164). This analysis can be seen in the figure above: climate change concerns the fields of economy (monetary loss in Renn's analysis), as well as social solidarity and questions of the relationship between humans and nature (social cohesion and environmental justice).

The first part of every chapter presents the content, focusing on the main topic (e.g. climate change in relation to economic development), identifying the characterization of the storyteller (e.g. in the narrative focusing on economic development, the storyteller might present herself as a rational, economically driven person). This again leads to a characterization of an imagined audience. This means that the storyteller chooses and presents her arguments for fighting climate change according to the audience they are addressing. Again, in the economic narrative this audience

is depicted as financially conscious and worried about the economic outcome of environmental involvement.

The second part of each chapter focuses on the structure, thus characterizing the villain, the victim, and the hero. Here it is important to note, that these characterizations change between narratives on the one hand. However, they also can change within a narrative, allowing for example a villain to become a hero, if she decides to get involved in the cause, advocated by the hero.

6.1 Narrative of economy

The narrative of economy deals with the economic effects climate change might have. As we will see in the following, climate advocates make use of both economic incentives (positive economic consequences) and financial losses (negative economic consequences). This can also be seen in the story of price Ney and Thompson (2000) identify in climate change talk. Here, the free market will achieve a reduction in consumption by introducing financial incentives (see also chapter 2.5.1).

6.1.1 Negative economic consequences

Content

The topic in this narrative resolves around negative impacts of climate change to national economies. Climate advocates emphasize that global warming will have negative economic consequences. Hereby they explicitly refer to the economy in industrialized countries.

In the German case study, interviewees describe the threats to the tourism sector in their region. These threats are already being experienced:

> "Consequences in the tourism sector, if you think about winter tourism that is something we have to expect. That is well known already, […]. The last two winters were quite alright, but before that, then we had ski lifts that weren't utilized to the optimum level, or that weren't running at all." (I-GER 5[43]: 15)

But interviewees also emphasize the future character of those threats:

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[43] For a better readability the quotes from German interviews are translated into English. A list with the original German quote can be found in appendix D.

"In the long run we will most likely have less snow. And this will of course hit the tourism sector, the region around the northern Black Forest with its smaller skiing areas." (I-GER 2: 6)

Interviewees in Piermont, NY, also hint at the damage climate change might do to their town's economy:

"You have to understand too, economically the… - in a sense, this is a perfect storm. The towns along the river have been renovating and developing incredible economic power over the past 15+ years. That is because the Hudson River is getting cleaner. Consequently at the same time we were beginning to see climate change and all these other issues impacting the river. While these towns had been developing - or I should not say developing, re-developing, re-inventing themselves, it has really been in the face of now. Water that is here, tides that are higher, and flooding that will continue to happen." (I-USA 5: 18)

After leaving its history as an industrial town behind, Piermont developed into a recreational environment for citizens escaping New York City on the weekends:

"And in the summertime or in the fall you can't drive down this road because there are so many people coming in from the City, you know, apple picking, to look at the foliage […]." (I-USA 2: 55)

Severe flood damage will threaten this line of commerce.

Besides these threats to the tourism sector, forestry and agriculture are suffering from long periods of drought, both in the summer and in the spring, which is even worse for farmers:

"We have to expect longer and hotter summers. And in the region around the northern Black Forest you can see different phenomena happen already. Consequences in the timber industry […] Trees that are typical for this region, for example spruces, will be endangered." (I-GER 5; 15)

"I am just writing an article on that issue, farmers in the region denote that this spring drought right now is the worst they've ever experienced. A spring drought is the worse than a drought period during summer, because most of the harvesting is done by then." (I-GER 4: 24)

Longer drought periods will cause poor harvest due to a lack of precipitation:

"At the moment missing precipitation is hurting the agriculture and everyone is envisaging poor harvest this year." (I-GER 3: 24)

Companies which manufacture along the river Neckar are also affected by heavy precipitation, as one interviewee, a subject specialist in sustainability and climate, points out:

> "When you think about the automotive industry for example, they need certain parts at a specific time, and when streets are flooded and the infrastructure breaks down, the whole supply chain gets interrupted." (I-GER 1: 14)

The perspective of interviewees in Piermont, NY, USA, involves less direct economic losses like those described above, but emphasizes how rising sea level will affect the town's budget. For instance, it will threaten its tax base in the long run, when homes and buildings along the waterfront cannot be sustained anymore:

> "It is not just the buildings, which of course are a tax base for the village, so it has to be concerned whether it can maintain this tax basis, therefore invest into the infrastructure to maintain that tax base, or whether in the long run it will lose that waterfront as a tax base, so to give up on it." (I-USA 6: 16)

Adaptation measures that have to be taken to control the damage flooding can do are also a financial challenge for the town:

> "We just completed this project, which for us as a village was very expensive, putting these walls up in the sea level parking lot so the water can escape when it comes in on high tides. And it was a big project for us, and it won't work for long, but for now it is protecting parts of our village from being under water […]." (I-USA 4: 14)"

This argument about economic threats is addressed to the *financial conscious* of fellow citizens. One interviewee, who has worked at a climate research institute and is therefore in demand as an expert on the subject in his hometown, puts the economic reason in the center of his argument:

> "I myself often fall into the mode of being 'Mr. Doom' instead of engaging them [audience] in positive acts. 'Mr. Doom' by scaring people too much with fore coming disasters[44]. While that helps on one level, particularly when it comes to the financial lost estimation, I always insist that whatever I do, I put a dollar sign on it. So when I say what is the probability of such

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[44] This concern can also be found in the social science literature on climate change, where scholars emphasize that fear messages often might lead to unintended and unwanted consequences (Moser & Walser (2008); Ereaut & Segnit (2006); Aronson (2008)

and such to occur, I say well it will cost the village a million dollars per event – or whatever." (I-USA 6: 28)

Climate advocates employed by environmental NGOs follow this argument by also pointing out the costs to local government:

"We are taking it home to the people who we think are gonna be most affected. For example municipalities that sit around the river shoreline are affected by sea level rise and if they don't think forward about it they will be reacting when the damage is done. So we try to reach out to them." (I-USA 2: 29)

Local officials pass this concern on to the citizens of their towns, explaining that changes will happen and that homeowners will have to deal with them. Asked about possible restrictions when homeowners seek to do major renovations on buildings that are set in flood zones, a local official replied:

"I don`t think I would be faced with legislating or restricting development at the river`s edge. I would say, by all means, go ahead! But understand that this is the reality this is what is happening and this is how it is going to be like 50 to 100 years from now." (I-USA 5: 16)

These quotes show how the content of a narrative of negative economic consequences develop around the threat of financial losses (decline in tourism, lost harvest, expenses due to flood adaptation). The storyteller depicts herself as a rational, economically thinking person, thus trying to persuade her audience with hard facts. By emphasizing the financial threats, climate advocates try to propose an argument which brings climate change closer to their audience, as it is a direct impact on their lives.

Structure

Like in other narratives, heroes, villains and victims are not mutually exclusive. Heroes in this narrative are those actors that work within the economic and political system. Governmental entities depict themselves as providing a framework for climate mitigation:

"The economy can't handle this. But we as a government, we as a collective are here to put things in order." (I-GER 3: 38)

They emphasize the challenges they took on and point out how political decisions can prevent greater damages to citizens and the economy:

"So, we decided to go another way und applied for the European Energy Award. I do believe that we can actually achieve more with this. We can develop a concept and then launch this concept, even if it takes some time. I believe this is the right way: to implement the goals of climate mitigation in our own concept, then reach those goals and even maybe exceed them." (I-GER 2: 36)

"At first, there was some reluctance but then there was a good acceptance [of flood zone maps]. We said: We can't designate an area if it isn't protected. If people start constructing there they will basically lynch us and ask: How could you designate this area for building land if you knew there were other areas more suitable?" (I-GER 3: 18)

The last quote already indicates one of the depicted victim figures in this narrative: property owners. One interviewee who also owns a home in a flood zone explained about adaptation measures, that he "simply paid an amount of 12.000 U.S. American Dollars to raise my house in 2003 when we bought this piece of property" (I-USA 6: 12). This is validated by a local official stating that "property owners have to take a lot of that [i.e. costs for adaptation measures] on" (I-USA 5: 12). Interviewees point out that not only immediate flood damage or adaptation measures debit property owners but that flood events can entail further financial challenges:

"All the houses are basically restored by now, but the flood has dramatic repercussions for large parts of the town population: All property owners who were hit by the flood can't get flood insurance anymore – or only with highly increased insurance contribution." (I-GER 3: 10)

As noted above as topic of the narrative, farmers and the tourism sector are described as victims of climate change on an economic level.

It is worth noticing that not only local challenges are mentioned within the realm of economic consequences, as this interviewee shows:

"If you take New Orleans for example. I mean if that is also a sign of climate change… Well, we don't have to expect those kinds of devastating effects here. I mean, the losses there literally are going into millions and almost a whole city was destroyed." (I-GER 5: 54)

Interestingly enough the storytellers are not blaming any specific group of actors. Analyzing the structure of the narrative the only party that is found guilty are those impacts of climate change. However, as these are not actors in a sociological sense,

but merely factors, the position of the villain in this story is left blank. Narratives are not self-contained, they interact with each other. In most narratives, industrialized nations or ruthless companies are depicted as villain in the story of climate change; in this presented narrative, they are presented as victims, as being vulnerable to impacts of climate change. Thus, they cannot – at the same time – serve as villains.

6.1.2 Positive economic consequences

Content

Contrary to the narrative where financial losses are at the center, climate advocates also make use of the argument that fighting climate change will have enormous economic benefits. This is very persuasive described in the following quote:

> "I think the only way we can get through the challenge of the politicization of climate change is if we can show people a direct benefit, either in a positive economic development, or recreational development or some way to create jobs. If we can`t connect this, because that is what people respond to, esp. with the economy the way it is. I think, that`s the best way, to try to get our message across. Trying to connect what we are recommending in terms of solutions. Not talk so much about the problem, but saying: you all know, you're all seeing what is happening and these are ways to address it and then have the solutions be connected so that they have a lot of co-benefits for the community. And I think they won`t address it for climate change's sake, for something that is years from now. They will address it if it is like, "oh, yes, if we design it that way, maybe we won`t have the community, or the road flooded anymore." these co-benefits." (I-USA 2: 40)

Here it shows how the value of nature itself is pushed into the background by the prospect of economic opportunities; note how the interviewee in the quote above emphasizes that people "won`t address it for climate change's sake", or that "a lot of the changes that have been made in the recent past were driven by economic interests. That had nothing to do with climate change." (I-GER-7: 58).

The argument of economic opportunity is made for local communities as well as on the level of national economy:

> "And then there are partners like the Michigan Nature Conservancy […] they're all trying to figure out how to help the towns around here to protect

their scenery. And protect habitat. Because they see this as a huge economic benefit for them." (I-USA 2: 55)

"We are missing a huge opportunity to be America first. We could be setting ourselves up to be a leader in renewable energy and adaptation strategies and we are not taking advantage of the biggest opportunity we have." (I-USA 2: 35)

The possibility of co-benefits is emphasized and politics are brought in as mean to provide a framework which allows taking advantage of these economic opportunities:

"Well, if you really think about it, it is a win-win-situation. If I approach the issue of energy saving, I firstly save money and secondly I get a climate mitigating effect." (I-GER 2: 18)

"And incentives need to be part of the political agenda, for example via the KfW[45]. If people do not have the financial resources to invest in renovations one has to offer loans with reduced rates of interests. And that will benefit the national economy." (I-GER 1: 22)

The argument is clearly addressed at an economically driven audience which might also be under financial pressure such as local politicians:

"I think the mayors yet to realize that this actually benefits them and their communities in multiple ways." (I-GER 2: 18)

"Or if there are incentives they can take advantage of, to understand the... you know, when you start looking at the payback for different energy efficiency measures it becomes very clear to a local official that they could save some money." (I-USA 2: 40)

Interviewees express directly how this argument is specifically constructed to persuade this type of audience:

"If we cannot connect this, because that is what people respond to, especially with the economy the way it is. I think, that`s the best way, to try to get our message across. […] Saying: You all know, you're all seeing what is happening and these are ways to address it and then have the solutions to be connected so that they have a lot of co-benefits for the community." (I-USA 2: 40)

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[45] KfW = Kreditanstalt für Wiederaufbau

The storyteller tries to achieve congruence with the audience in order to present themselves not as accusing, but as part of the challenge. Note how the interviewee in I-USA 2 emphasizes that "WE are missing a huge opportunity to be America first". Or how the interviewee in I-GER 2 addresses her audience by saying "if YOU really think about it, it is a win-win-situation" before bringing the argument into a rather active form: "if I approach the issue of energy saving, I firstly save money and secondly I get a climate mitigating effect". This narrative of a positive economic message follows Liverman's (2009) observation of a proposed market solution to the environmental crisis: carbon trading was introduced as a market instrument to manage pollution and led the way to climate mitigation as an investment opportunity.

Structure

Concerning the structural elements, climate advocates see actors within the economic realm as in the character of heroes, even though they are not acting accordingly just yet. The structural logic is: if these actors actually seek the economic opportunities they will turn into heroes. As one interviewee put it:

> "Well, we are not leaders. America is very America first, even though we are missing a huge economic opportunity to be America first. We could be setting ourselves up to be a leader in renewable energy and adaptation strategies." (I-USA 2: 35)

In this set up America has yet to take on this role of a hero in their own economic interest, they have not owned up to these challenges so far, but "we could be setting ourselves up to be a leader in renewable energies" implies that there is a possibility for the nation to reframe parts of their economy and contribute to stopping global warming at the same time. Forethought, innovation, and pioneering are characteristics of a hero in industrial setting:

> "Here in Germany and especially in Baden Württemberg we were always at the developmental forefront, because we were pioneers. Between 1988/89 and 1995 I worked for Porsche as an engineer. And we had an assignment to develop a car for the Chinese market, affordable for everyone. [….] As a young engineer and new Porsche employee I said that we can't "motorize" 1,4 million people. I literally said: "The earth won't stand that! […] And I think that at least our economy knows that we have to take on a pioneering role and lead this development." (I-GER 3: 30)

However, this narrative does not only depict national economies as entities to be actors in the fight against climate change, but employs also the financial elite of a society to advance technological innovations:

> "Social innovations are always costly in the beginning and not necessarily economically and financially appealing. So you need wealthy people for that. Innovative technologies should be implemented with wealthy people, and afterwards step-by-step with the rest of the population. […] If people with financial resources are involved and a product is forced into the market, prices will drop and the technology will become way more interesting." (I-GER 3: 30)

Again, the position of the villain is omitted in this narrative. Compared to the other narratives of climate change presented in this study, it seems that global economy and national economic interest are usually blamed, either as perpetrator of climate change or as perpetrators of failed global negotiations for a binding climate treaty.

This narrative stands out also by another factor: talk about economic chances is not set in relation to victims of climate change. The realm of economic and financial rationale does not allow for a victim figure. Here, climate advocates adopt the rationale of the economic world, where profit and money rules.

6.2 Narrative of climate change as political topic

Another narrative focuses on the issue of climate change as a political topic. This narrative underlines a finding by Maibach et al. (2010), which states that the environmental crisis used to be framed as an – in fact – environmental problem. In a recent development, however, it became framed more and more as a political problem.

In one version, this narrative connects the topic of climate change to the role of a nation and its political duties, in the other version the politicization of climate change is put in the center.

6.2.1 Climate change as partisan distinction

Content

This narrative plays an important role among American climate advocates. Its main topic revolves around the traditional disagreement on various issues between the Democratic and the Republican Party. Among other issues, like public health care or

stricter gun control laws, climate change is seen as a problem that divides Republicans and Democrats even stronger:

> "On the federal level climate change is a totally politicized issue" (I-USA 6: 24); "It is still a very highly politicized in America, and that is a shame because it`s bringing a lot of road blocks." (I-USA 2: 10)

In this feud, the Democratic party is established as the political player that takes the threat of climate change serious and is willing to get involved in the fight against it. But even here climate advocates have to deal with disappointment:

> "You know I elected Obama thinking that there will be more leadership on this than there has been, and it makes me sad, that, you know... we have a Democrat in the White House, and we should be able to be doing more leadership on this issue. You know, it is sad! I think it is an opportunity lost, and it is... unfortunately it is in a lot of things where people who were most enthusiastic about Obama's leadership were hoping that he would take some more risks. I mean, I will vote for him again, because there is no good alternative, but, anyway…" (I-USA 1: 46)

The Republican Party on the other hand makes itself out to be the party that is not gullibly buying into the hype of global warming and thus opposes to take measures right away. In the view of climate advocates this of course is seen as ignoring scientific facts and in the long run putting the lives of others willingly in danger.

> "For example the Republicans who are running for president right now, for the Republican nomination for president, I just can`t understand on this point how they can deny climate change when it challenges not their existence but the existence of their children. I mean, even instincts are about protecting your children and your grandchildren and they`re flying in the face of that and I think that the Republican party has to re-address their positions on climate because at this point they look like a fool. I mean this is a fact and you can`t negotiate with science, and science changes yes, but the scientific consensus for the past ten years has been moving in the direction of climate change is a very real thing and even becoming more and more real." (I-USA 7: 36)

Interviewees put science as the basis for taking measures against climate change. Thus, opposing to or ignoring scientific facts is seen as one of the big obstacles climate advocates have to overcome:

"You know, people are... the whole question has become more similar to a religious belief, either you believe in it or you don`t. And science has not a lot of wake with a lot of people. No matter how many charts and data you show them. They either don`t understand it or they think, you made it up. That is with certain sections of the population." (I-USA 2: 15)

Depicting climate change as a believe system rather than a result of scientific studies leads to administrative restrictions:

"You know our congress isn`t doing really anything productive to respond to climate change. I just read this morning that NOAA, our National Ocean and Atmospheric Agency, was proposing to shift the way it was organized so it would allow for a division of... there would be a national climate service where anyone from farmers to business people could go to find out short term climate predictions and long term climate predictions. They weren't asking for any other money, they just wanted approval to be re-organized. And they got killed in the House of Representatives, because they said it would be a place for propaganda." (I-USA 2: 10)

Similarly, concrete measures that would help vulnerable communities are blocked in political debate. One interviewee explained how she approached a representative of the Federal Emergency Management Agency (FEMA) at a congress:

"I said: I now take the privilege of the chairman of the session to ask a question myself: Could the gentleman of FEMA, please tell me when are they starting to take in account sea level rise in their mappings? And the response was: As soon as congress demands it. That was a totally political answer which means given the national non-consensus about climate change in this country is of course saying we will never get to it in a foreseeable time." (I-USA 6: 24)

The politicization poses a vital challenge to the quest of persuading politicians and citizens to take the threat of climate change serious and to develop measures against it. Thus, the storytellers find themselves opposite an audience which is skeptic of science. Climate advocates accept that the nature of scientific findings is merely absolute. Results of scientific studies do not present an absolute truth but are always subject to debate and change on basis of newly achieved scientific knowledge. This nature of science presents a problem when translating the scientific debate about climate change into the public sphere: "If you say we don`t know everything, they could interpret that to mean we don`t know anything" (I-USA 2: 24).

Climate advocates draw on personal experience to illustrate the challenge they are facing:

> "And science has not a lot of wake with a lot of people. No matter how many charts and data you show them. They either don`t understand it or they think, you made it up. […] You see, my husband is a Ph.D. scientist, and it took quite a while for him to take it seriously. He said, I want to make up my own mind, I don`t care if 100 people have said it or 2000 people have said it, I am going to make up my own mind. […] He does not want anybody to tell him what to think." (I-USA 2: 15 – 18)

Similarly, local developments are creating an opposition between climate skeptics and climate advocates, as this story told by an American climate advocate shows: a water rescue team proposed building a boathouse at the edge of the jetty in order to quickly reach people in need on the water. However, as sea level is rising and events of heavy precipitation are increasing the jetty is often flooded and inaccessible.

> "They ignore [my advice]. They voted for it to get it financed. It is as simple as that. I keep telling them that it is nonsense, but they think: okay, this academic guy, what does he know, what does he understands about our need when we go out there and rescue people?!" (I-USA 6: 26)

The Republican Party is perceived as being at the core of science skepticism. Instead of trying to convince their audience of the high credibility of scientific proof of climate change, one way climate advocates suggest to deal with this skepticism is to stay clear of the concept of climate change just to get mitigation and adaptation measures implemented:

> "So we are facing some really big challenges and we are finding, as we move forward that the more we focus on the impacts, whether it is flooding or heat, the more people can connect to it because they experienced it, rather than saying climate change... that seems to get more attraction with our massages and getting people to engage in conversation, but there are still times where if you say the word *climate change*... you know. Our governor right now doesn`t want to make this a centerpiece at all. But he is very interested in helping communities respond to flooding. So you can engage with him that way, but you can`t connect that to climate change." (I-USA 2: 10)

Convincing the audience that climate change exists is neglected in favor of taking concrete actions and to overcome opposition, because

"We need communities and municipalities to work together. And under our program there is a start. So we really promote communities working together. At the watershed program we started these inter-municipal councils, managing the watershed and what flows into the Hudson." (I-USA 55)

Structure

In this narrative the antagonism between hero and villain is set mainly in the opposition of Democrats and Republicans. Even though Democratic leadership has left climate advocates disappointed the party is still perceived as the better option:

"You know I elected Obama thinking that there will be more leadership on this than there has been, and it makes me sad […]. I mean, I will vote for him again, because there is no good alternative, but, anyway..." (I-USA 1: 46)

The general political orientation in the local population opens the possibility of being a hero in this narrative.

"You know, you are looking at a fairly Democratic village and certainly here in Piermont and then certainly within New York State which is also by nature being a northeast state and more Democratic will agree or will realize that [increasing flood events] are related to global warming." (I-USA 5: 40)

Thus, climate mitigation and adaptation benefits from the diversion of governmental administration:

"You know I live in a village, and that is part of a town, and that is part of a county that is part of New York, so we have these multiple government levels. And on the town and county level there are environmental committees to deal with these things as much as they can. They try to bring people together and look for government support, outside support to solve some of the problems." (I-USA 4: 26)

Governmental organizations are depicted trying to implement measures against political opposition, as the incident about NOAA's attempt to re-organize their administrative structure shows. New structures were needed to offer a climate service to the national public to give them the opportunity of information on long term and short term climate predictions. Even though this proposal was "killed in the

House of Representatives" (I-USA 2: 10) climate advocates see it as an important step for climate education.

Heroes fighting to overcome this politicization of climate change are found less on the federal level but more within local initiatives.

> "On the mitigation side, in Northern Westchester County, a small non-profit is operating; it has gathered representatives from, hm, how many different towns? Like all of Northern Westchester County, and they all applied jointly for a federal grant and they got 800.000 dollars and now they are implementing energy measures with this grant. And basically, it was a grant that required a minimum population size, and so they just said, hey, we just going to do it together." (I-USA 2: 57)

This narrative is by nature stronger with American climate advocates, since a consensus among German parties is fairly obvious. However, political tradition also shapes the perception of political climate heroes in the German debate:

> "We've always had a quite string green movement in Baden Württemberg, and today that is even more established with the new state government. In Mühlacker we had a green mayor for 8 years, so these topics are highly appreciated and dealt with." (I-GER 7: 54)

Lobbyism and shadow politics are blocking climate mitigation and adaptation measures, much to the frustration of climate advocates:

> "There is also a very strong political interest, by people who benefit from us not addressing climate change. […] and they hire very talented people to market their points of views to create this large umbrella of uncertainty." (I-USA 2: 23)

Climate advocates refer to the inability of the main political parties to reach a consensus – i.e. the Republicans to accept the scientific consensus – as the central reason for the impediment of national climate politics. Interviewees refer to congress not doing anything (I-USA 2: 10), not finding a working majority on political bills (I-USA 6: 24) and the House of Representatives blocking climate concerning proposals (I-USA 2: 10). The antagonism between Democrats as heroes and Republicans as villains is made explicit when Republicans are allocated irrationality ("I think that the Republican Party has to re-address their positions on climate because at this point

they look like a fool" – I-USA 7: 36) and when political party -orientation is intertwined with geographical locations:

> "You are looking at a fairly democratic village. And certainly here in Piermont and then certainly within New York State which is also by nature being a northeast state and more democratic will agree or will realize that, but if you go further into the rest of the country, all bets are off." (I-USA 5: 40)

The victims of these blockages can be found on national level rather than in vulnerable and existentially threatened countries in the distance:

> "On the federal level climate change is a totally politicized issue. On the local level where people get hit by it, it starts to soften at the edges and people start to realize they have to do something whether they attribute that to climate change or not, they simply know they get hit by something." (I-USA 6: 24)

The concern about future generations is also tied to national boundaries, as one interviewee puts it when accusing Republican voters and party members to neglect the issue of climate change even though it challenges the future of their children and grandchildren (I-USA 7: 36).

6.2.2 Climate change reflecting the role of a nation

Content

Besides contextualizing climate change nationally, climate advocates also put political responses to the environmental crisis into a global frame of reference. This narrative introduces other nations and depicts their stand on the topic:

> "What is really fascinating to me is to see what other places are thinking about climate change. You know … Russia, Medwedjew is saying, climate change is a big thing for us. Pakistan – they are thinking about climate change. The US are like, no, this is not happening." (I-USA 2: 37)

Politics of countries are compared and some nations are assigned specific functions within the political decision making process, such as European countries or the European Union in general:

> "It is interesting to me to see how quickly Germany can shift when presented with a problem. It`s like they say, okay, we know this now, we know about the problem, we now shift, we're going to go this way. That's

what I have observed about Germany. It seems like the citizens have really faith and trust in the government to make the right decision. And we don't have that here. We have a lot of skepticism here, people think the government can`t make a good decision anyway." (I-USA 2: 47 – 48)

"In Germany, or Europe, we have to take on the vanguard role. […] Our technology is highly demanded in the world because we are at the forefront of the technological development. So we need to stay there, and for this taking on the vanguard role is necessary and supported by the citizens because we can afford that." (I-GER 3: 32)

"And I do think that the European Union has to take on a role model function, especially when it comes to climate mitigation." (I-GER 1: 24)

The difficulties of reaching a unified climate treaty are seen as based on nation's different political agendas and opposing interests.

"At every of the global climate summits there were some nations that refused to sign the Kyoto Protocol, for instance the US, Russia, China, and India. These nations have different agendas, the US and Russia as global powers, China as most populous country like India." (I-GER 3: 30)

"I think, recent climate summits have shown how hard it is to reach a consensus between different nations […] They have all completely different interests, threshold countries, industrial countries, countries that are simply vulnerable to climate change. So, of course they have opposing interests. So it's really hard for them to come to terms." (I-GER 8: 32)

And in line with the perspective that some nations have to take a role model function or the vanguard role climate advocates expect those countries to work on overcoming opposing interests that block climate policies:

"I really reject this argument, which is also often made by our government: 'We can't do anything unless there has been a European arrangement beforehand', for instance concerning aviation gasoline; that is just ridiculous, because if they think like that, nothing is ever going to happen. The degree of international interweaving is so exaggerated, just to pretend that the national radius of operation is absolutely small. But it isn't! So, I think that is often just a really convenient excuse." (I-GER 8: 34)

The relation between storyteller and audience as well as their cast is vanished from this narrative. The storyteller is merely made explicit, only in terms of attacking current policies: "I really reject this argument, which is also often made by our

government" – I-GER 8: 34; "What is really fascinating to me is to see what other places are thinking about climate change" – I-USA 2: 37. There is no audience addressed directly. The critique of failed and disappointing political action is rather expressed in an abstract, non-personal way.

Structure

Heroes and villains in this narrative are cast from one pool of nations and policy makers. Nations are standing in as *pars pro toto* for politicians, as the following quotes show:

> "It seems like people are taking this issue very seriously in Germany. Yea, Germany makes major shifts in policy, right? I mean there is this whole green energy policy in Germany and then the recent decision to go away from nuclear power" (I-USA 2: 47)

> "What is really fascinating to me is to see what other places are thinking about climate change. You know? Russia, Medwedjew is saying climate change is a big thing for us. Pakistan – they are thinking about climate change." (I-USA 2: 37)

Interviewees emphasize outstanding performances by local politicians or environmental activists. Their actions are seen as a successful example of overcoming national hesitation:

> "And you have to see those mayors, like the one we have in [a nearby town], who has won – I think as one of the few communities in Germany – the European Energy Award in Gold. That mayor has been on that energy topic for 25 years, he has done a tremendous job. So, you see: a mayor can achieve a lot if he is really eager." (I-GER 2: 40)

> "I met so many people, so many amazing activists, I met so many amazing policy makers. I hung out with the president of --, and I learned a lot from him, and from everyone I was there with, that the solution to climate change isn`t going to happen in one day, but you need as many people as possible committing their lives to that process of to getting a fair, ambitious, and binding treaty." (I-USA 7: 30)

Local politicians have to push national decision making by going ahead, because "in general, lower governmental levels can be more efficient and successful" (I-GER 8: 34), even though steps on a smaller scale might lack in global impact, but it is considered an important accomplishment:

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> "And we will continue that in the Enzkreis. We might not save the world
> with that, but we can contribute our share to climate mitigation." (I-GER 2:
> 64)

Local initiatives serve as role models, showing how climate change impacts need to
be addressed and dealt with:

> "And we have been trying to take steps to engage the city to thinking
> about their long term... hm, I shouldn't say "engage the city", the city is
> way ahead of us on this. They have tremendous resources there, they
> already completely understand that it is happening, and they plan for it." (I-
> USA 2: 33)

Despite disagreement over specific strategies, the fact that a local government (even
with New York City it is a quite powerful one, it is still local) is taking action beyond
national standards is highly valued:

> "They would be considered as the national and global leaders in
> responding both in mitigation and adaptation, but some of the way they
> might choose to respond hits back to the solution." (I-USA 2 33)

As noted above, the villain in this narrative is also drawn from a pool of nations, with
politicians not making an effort to minimize the impacts of climate change.

> "I went into the conference hoping that we were going to get a fair
> ambitious and binding climate treaty, and I mean fair for... emphasis on the
> word fair, because some of them,… on that level regarding climate change
> has been dictated by the developed world, dictated by United States,
> dictated by the EU and by China and India. […]The way the UN is
> structured unfortunately the developed world is favored from a policy level
> and obviously favored from an economic level." (I-USA 7: 30)

Among these nations, the USA are outstanding out from the pool of villains. Climate
advocates, both from Germany and the USA agree that U.S. American politicians fail
in addressing climate politics.

> "Oh my god, yes, I wish, as a citizen that we were much more taking a
> leadership position, and we are not. And there is a lot of political reasons
> for that and a lot of global economic crisis reasons for that and a lot of
> reasons and a lot of excuses." (I-USA 2: 46)

> "The U.S. is an example: the U.S. can pretty much buy our way out of having to
> directly address climate change." (I-USA 7: 30)

The leadership role, which in other political areas is often assigned to the USA, and their performance within global environmental politics is criticized on the one hand with a national frame of reference:

> "We have a Democrat in the White House, and we should be able to be doing more leadership on this issue. You know, it is sad! I think it is an opportunity lost, and it is… sad." (I-USA 1: 46)

> "Well, we are not leaders. America is very America first, even though we are missing a huge economic opportunity to be America first. We could be setting ourselves up be a leader in renewable energy and adaptation strategies, and we are not taking advantage of the biggest opportunity that we have." (I-USA 2: 35)

Critique is also formulated against the backdrop of other nation's politics and their role in the debate:

> "It is pretty clear that we have a problem, and it is also clear that we only gonna slow down the problem if every nation realizes it. And when it comes to that, the USA are as bad as others, nations like Russia or China. […] And if governments do not prioritize the issue of climate change, […] Then we are not going to get any results. And personally, I don't see anything happening." (I-GER 7: 56)

The role of the villain is directly linked to the role of the victim, showing how the lack of political action and the refusal to take responsibility in the environmental crisis of some of the industrialized countries is hurting those who are most vulnerable to the impacts of climate change. However, here political defenselessness defines the status of being a victim.

> „I went into the conference hoping that we were going to get a fair ambitious and binding climate treaty, and I mean fair for... emphasis on the word fair, because some of them,… on that level regarding climate change has been dictated by the developed world, dictated by United States, dictated by the EU and by China and India. And you have all these countries that are part of the G77 and all the weak developed countries kind of squabble in because they have no chance under the regimes that are being enacted by the developed world. The way the UN is structured unfortunately the developed world is favored from a policy level and obviously favored from an economic level. […] But a nation like Tobalu or pretty much any small nation, nations like Tanzania don`t have the

resources to even feed their own people let alone to address climate change." (I-USA 7: 30)

As in other narratives, climate advocates establish the contrast between villain and victim not only with the opposition of powerful – powerless, but they emphasize how the developing world is mainly suffering from an impact, that the developing world caused:

"How did we manage our industrial development? Over the last century? And now we are permitting those developing countries the use of hard coal and brown coal. And nuclear energy. […]And do not show them an alternative way? So, we basically developed our societies on their backs" (I-GER 7: 58);

"I am talking about those [countries] that do not have any economic stakes in that, but have to deal with the impacts, like droughts." (I-GER 8: 36)

6.3 Narrative of environment

Content

This narrative centers on the values of environment itself. This shows the meaning interviewees assign to a specific place. It intertwines the sense that the earth is unique and precious and has to be protected and the relationship between human beings and the natural environment. This way, the value of nature is directly linked to social culture.

There are basically three key-aspects of the main topic in this narrative: the historical influence of a specific place, the meaning of a place to the people experiencing it every day, and the relationships between human beings and the environment.

The Hudson River Valley is an iconic part of the landscape at the East coast area of the USA, while the Enzkreis and the Northern Black Forest are also a vital part of Southern Germany, its significance cannot be compared to that of the larger Hudson River Valley. This may count as a reason that the following quotes dealing with the historical and cultural meaning of place are directed at the Hudson River Valley. The Hudson River is recognized for its uniqueness:

"You know, there is a fair number of people who are very passionate about the Hudson because of all the work that has been done and because it is just an iconic river." (I-USA 1: 10).

Even though the grandness of the landscape is note cited directly as a reason for pursuing climate politics it underpins the motivation and value system of climate advocates. The value of nature itself is found in the Hudson's history, influencing cultural and social developments:

> "But the Hudson... you know, I am certainly not a very religious person, but the Hudson River School was definitely tied deeply to religion. The Old School Painters[46]. These men believed that they were walking into Gods home when they were walking into this wilderness, and anything you read about them will tell you that. Everything is tied to God and the creation." (I-USA 3: 6)

Interviewees characterize the Hudson River Valley as a special place worth protecting especially because of its unique nature and its unique meaning, not only for those people living there but also for those who come to visit.

> "Every night is a different back drop, you have a different cloud pattern, every night you go out there, some nights it is incredible, some nights it is *blah*, but it is always different. You never see, unless it is crystal clear, you never see the same backdrop. So every night it is dramatic. [...]That is great around here, not only for painting." (I-USA 3: 17)

The river's entire ecosystem is in need of protection. Here – in contrast to the narrative of economic consequences – not as a means to an (economic) end, but as a value in itself. One of the interviewees who works for a Hudson River Protection NGO and who is also involved as an environmental activist puts it as follows:

> "People usually understand it, especially when you`re talking about fish, people start to understand it. People like fish. It is kind of funny, but people are actually having an emotional reaction to the fact that fish species' life chances are threatened by this issue. It is funny because you could say that their lifes are being threatened as well, but they are having more of a reaction to fish. I think people value their diversity, I forgot what the term is, it's an economic term, something like non-use economic value [non-use value] and it's weird, because people are not eating the fish, they are not even seeing them, but they like the idea that they are there. For the same reason people like polar bears. I mean, sure, polar bears are cute, but... people like all these different types, people just like biodiversity, I don't

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[46] This quote refers to the painters of the Hudson River School, an art movement in the mid-19th century, carried by landscape artists. Famous representatives of this movement include Thomas Cole (1801-1948) and Fredric Edwin Church (1826-1900).

know how else to explain it. And, I mean, a sturgeon is not cute and cuddly but there is something special about it, you know. And to know that something has always been there, and that it is not okay if it`s gone. Especially something like the Atlantic sturgeon which has lived in the system for millions of years. I hold the sturgeon thing as a symbol to my heart for the system that had had this huge impact on me. I think they are a very important species, I've seen one once. I don't often, but I value them, even though they benefit me in no way. It is just an emotional capacity, I just value their existence." (I-USA 7: 40)

This quote also marks the entrance to the topic of the relationship between humanity and nature, fleshed out in the description of the relationship between people and the Hudson River. The River is part of the lives of those people living in the Hudson Valley ("You can`t live in Hastings without having some interaction with the river." –I-USA 7: 24) and climate advocates describe their work on the issue of climate change with reference to the Hudson, thus turning climate work into concrete, local action that is done for the Hudson River, as opposed to climate work as abstract politics.

"Our job is to protect and revitalize the Hudson River, we look at the Hudson River as a whole ecosystem, the river, the land it crosses and its surroundings, the watershed, and we are looking at all the different influences on the Hudson that are affecting it today. So we deal with everything from cleaning up the water quality of the river, try to make it safe for swimming, restoring the Hudson's fisheries – some of them are very depleted, some of them are robust, and make sure, that those species stay robust, and those that are endangered do come back, we are trying to provide access to the river, so that the public can enjoy the Hudson, for swimming, hiking, boating, picnicking, glazing at the sunset, painting. Big culture. Protecting the aquatic habitats and the land habitats of the valley, so that we have a great diverse ecosystem, that is resilient in context of change. So, as part of that, climate change is the number one factor. It affects how we use the river, how the river sustains us, life itself. It is a key-aspect of that." (I-USA 2: 4)

The value of nature is set in relation to the social culture, seeking a balance between both spheres as a "mutually beneficial environment" (I-USA 7: 26). People need to take care of their environment so they will be able to enjoy it in the future, as the quote above shows (I-USA 2: 4: "So that the public can enjoy the Hudson, for swimming, hiking, boating, picnicking, glazing at the sunset, painting. Big culture").

This relationship is proffered as reason to get involved in climate politics as climate change impacts are influencing social culture:

> "I talked to some anglers today, and they told me that the fish are suffering from a lack of oxygen when the rivers are getting warmer. So I learned that our rivers, Enz, Nagold, Würm, are on average three degrees warmer now in the month of May than they were in the past years." (I-GER 4: 34)

Climate advocates emphasize the reciprocity of the relationship between human culture and nature to bring the value of nature to people's minds:

> "It used to be fact that the river was so toxic that you wouldn`t want to get near it, but in recent years you can see the return to the river, and how it gets cleaned up, and I like to think that part of my position is educating others on the fact that they can interact with the river and the river whether you know it or not provides for you in some way." (I-USA 7: 24).

In one interviewee's outstanding claim nature and human lives are even seen as of equal value:

> "And I don`t value - and maybe that is a difference to other people – I don`t value human life over other life forms, and I know that, or, well, definitely, that`s, what most of the world does, but I really don`t value my own life over the life of others..." (I-USA 7: 32)

Storytellers are aware of their audience and that the topic of this narrative has to be told carefully to persuade.

> "It`s been the challenge of my life so far. One method I use is actually story telling. I mean, I love policy work, I enjoy policy, but what is lacking in the environmental movement is the whole of emotion, I tell the story about my time in Copenhagen and then about my time in Tanzania, and emotions are more powerful than any policy documents, emotions have the capacity to drive people's personal action, and I find that when you engage with people on the personal level, when you tell them your story, they have a reaction. […] I talked to a lot of people in the course of a few months I talked to a lot of people about climate change specifically, and you know for people who are either deniers or just don`t care that much, the personal story always means something." (I-USA 7: 34)

Making the story personal on behalf of the storyteller also leads to addressing the audience on a personal, emotional level.

"[…] Everyone has a spot I think, they`ve been to, they can think about like 'I just felt free there' […] I mean, it`s been psychological to me, when I speak in public about my experience with climate change and witnessing it people are moved you know? By that! They want to know what they can do." (I-USA 7: 36)

The meaning of a specific place to an audience is understood as a way of reaching people's emotional relationship to that place and the historical development of a place encourages this way of addressing:

"People stopped looking at it as an industrial waterway and started thinking of it as a recreational source, which is tremendous! It`s wonderful. And by going there you found people instead of looking to live nowhere near the river because it was horrible, it smelled bad and it was ugly, they started to think about it as a very beautiful place to live and wanted to get near and closer to it." (I-USA 5: 20)

In this approach, the storyteller is extremely present in this narrative, as she draws on personal experience to tell the story of a place's beauty and meaning and the value of nature itself:

"You know, I grew up in the Hudson valley, I grew up in Hastings, which is on the river, and the river has always been part of my life. I`ve never lived outside the Hudson valley, apart from when I went to school in Maine, and it is a really big part of my life, just day to day, it was around me, it's what inspires me." (I-USA 7: 18)

Structure

The heroes in this narrative are those actors that recognize the beauty of landscape and nature as a value in itself and set out to protect it. This becomes part of the history of environmental protection:

"[Thomas Cole] fell in love with this area so much, so he eventually became one of our first environmentalists later on, because probably from the early 1800s to the 1900s they completely stripped this whole mountain of timber. If you look at black and white photos of this area in the 1890s to 1900 it looked like a wasteland, it looked like an atomic bomb went off here […] And this and many other tanneries throughout the Catskills were responsible for stripping this whole area and then the railroads came through. That`s another thing Thomas Cole spoke out against, these railroads. He just saw no beauty in it." (I-USA 3: 4)

Environmental activists, NGOs, and citizens that get involved in local environmental tasks are set in relation to specific local environmental problems, like the pollution of a watershed, etc.:

> "You have some active people, volunteers, that sort of try to clean up the Sparkill, and when they do that they become aware of flooding etc." (I-USA 6: 30)

> "There is an organization called Scenic Hudson and the Hudson Riverkeeper, they are involved in these things a great deal. And I am part of a group that is called the Sparkill Watershed Alliance, which just has recently started to monitor the creek, our local creek that empties into the river that has these huge pollution problems. But, yea, there are lots of organizations. I think communities and small towns and villages have now environmental committees, they are not as effective as they need to be but at least, they exist." (I-USA 4: 26)

Being in contact with nature becomes a characteristic of heroes in this story, for "they just see that some species are disappearing and that new species are showing up" (I-GER 8: 6). A development that some interviewees see spreading among the society:

> "That people are more aware of their environment and that they appreciate it more. And then you have the whole issue of consuming local products." (I-GER 1: 48)

Contrary to that the character of the villain is assigned an abusive posture towards nature or at least a lack of appreciation:

> „I just love living things and I think that unfortunately over time humans have lost sight of our role on the planet, which is not... I mean our role is not to be dominant over other species. Right now, that is totally forgotten. People abuse the environment because they think they are better than it, but it is not a question of being better or worse, the question is about cohabitating." (I-USA 7: 26)

> "But I think people living in the urban areas or white collar workers are not that aware of this problem yet." (I-GER 8: 6)

The villain's ignorance of nature is blamed for the situation the victim finds itself in. Here, the victim clearly is the endangered environment with its habitants. These losses are described with specific local reference:

"It is also changing the salinity content of the river. the river is in a constant give and take between the ocean being salty and freshwater from the mountains and if the salinity balance gets changed you know the biological make up of the river is going to change and I am sure it already has and I am sure there are species that no longer prefer to live in the Hudson River because of that, and I think that is inexcusable." (I-USA 7: 38)

"Here in Piermont we just recently discovered that the Sparkill creek was just this beautiful creek which is in many of my paintings, that is intensely polluted. In fact it is one of the most polluted sites in New York State. And that just shocks us. And that is because of a lot of thing, but also because of an increase in the water, additional rainfalls and the fact, that we get these new sorts of storm surges, and higher tides, that polluted water has become very invasive." (I-USA 4: 12)

The relationship between people and nature is once more strongly emphasized as a reciprocal one and at the same time nature is portrayed as something in need of the hero's protection. Nature suffers from the villain's intrusion:

"We all live in this one world, this one earth, we all are dealing with the sun and freak weather… it has to be clear to everyone that something in the atmosphere has changed and that these changes are anthropogenic." (I-GER 7: 58)

"And almost all disasters are caused by mankind, at least partially. No matter if it is fire, wildland fires, or floods. I think especially floods are directly related to anthropogenic activities." (I-GER 4: 65)

Moreover, climate advocates insist that damaging the environment will come back to those who caused these damages, thus the narrative structure causally interlinks all of the figures:

"The river is tidal, the Hudson is an estuary it has tides for 154 miles all the way to Troy, and so sea-level rise as part of climate change is already affecting us on the Hudson, it has gone up 6 inches from when I was a teenager, and it is expected to go anywhere from two to five or six feed in the next 100 years due to a increasing sea level. And that is going to affect the ecosystem, it's going to affect human communities, it's going to affect our ability to live in the valley." (I-USA 2: 4)

6.4 Narrative of humanity and solidarity

Content

The main topic in this narrative is the sense of solidarity with those who are afflicted with the impacts of climate change. This solidarity derives from the idea of humanity, not from a sense of responsibility and guilt, as the narrative in chapter 6.5 does. People should get involved in climate mitigation because other human beings are suffering from the impacts:

> "And there are so many realms, those famines in some parts of Africa, weird weather incidents somewhere else… shouldn't there be some kind of initiatives, people should unite and realize that this affects us as human beings, not as an industrialized nation, but as human beings. My existence, my life is going to be difficult in the future. I don't understand why people don't seem to realize how hard it's going to be!" (I-GER 7: 58)

> "But I do believe that these people have the right to continue to do this and to live and their existence is just being challenged directly by burning fossil fuels. I take personal offense to that. I think that is why people should care." (I-USA 7: 36)

However, climate advocates are aware of the problem of distant suffering and how this affects people's willingness to help:

> "I mean, on an individual level people can be very helpful. I have relatives in Haiti, when there was this earthquake in Haiti, everyone donated something. I don't know anybody who didn't, donate money or whatever. But that got such tremendous press, and other things, like the monsoon in Pakistan, yes, they got press, but not the same level like the disaster in Haiti. I am sure a lot of people weren't even aware that they happened." (I-USA 2: 35)

Structures that come with distant suffering[47] play an important part in this narrative as they are seen as an obstacle for a lot of people that might otherwise be willing to help. The problem of the time- spatio-distant character of climate change comes once more into play:

> "You know, I think every human being wants to help in some way. If you have a situation like that at home it's easier to help, because it is tangible.

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[47] The problem of distant suffering and how people are dealing with this is – among others – prominently considered in Luc Boltanski's "Distant suffering. Morality, media, and politics" (1999).

In cases like Haiti or Somalia, there is so much information and are so many organizations, where money goes to waste in the administration, there are so many opposing interests… Personally, I think that makes it hard to help there…" (I-GER 7: 48)

They also recognize a struggle for attention each crisis has to win. A constant stream of reports about people's suffering in TV news, the internet – including social networks – and newspapers is wearing thin the audience's attention:

"And I think to a certain extent, disaster after disaster after disaster people just stop feeling as powerfully, like, okay, now, this is going to be every day. I can't deal with this every day." (I-USA 2: 37)

„A drought in Africa or an erosion in Pakistan on the other hand, I fear people don't care about that. Or only if they have some kind of connection to the country, or know people who are affected. Personally I feel that people need to be affected on a personal level and that reports people only get blunted by TV or radio news. They don't think "oh, right, that is climate change, we have to do something about it" or something like that." (I-GER 8: 18)

Audience and storyteller are depicted as being in the same situation:

"We all live in this one world, this one earth; we all have to deal with the same sun or some kind of freak weather. […] I do not understand how people don't see that everything is going to be harder." (I-GER 7: 58).

Structure

Being a hero in this narrative implies to address climate change for the sake of those who are suffering. But these heroes are doing it not due to guilt, but because they feel a moral obligation towards fellow human beings:

"In some parts of society, take the churches for example, they always point out that we have a moral responsibility, and people who are involved in church activities they might really feel that responsibility. And the environmental NGO's also hint at that." (I-GER 8: 44)

Since the distance between those who can help and those in need of that help is an obstacle, heroes are assigned a power to overcome this obstacle by drawing from personal experience. This way, the gap between those in need and potential helpers (heroes) can be closed:

"We look at flood events differently. With the perspective "Can we help there?" For instance the Elbe flooding in 2000 made us think about what we can do to help. […] And we experience that here in our company: Employees ask to be released from work because they were asked to help in Dresden when they had this big flood. Of course, on the one hand it doesn't help the company, but it is important for the case. And I think the common interest has to be rated higher in that case than my company's interest." (I-GER 7: 46)

Climate mitigating action that is taken on a local level is put into global context, emphasizing how local initiatives can make a difference on a global scale. With this, the vulnerability of geographically distant places is brought into the every-day-life experience of the hero:

"So, this was a regional planning process, and I know that there are a lot of regional global climate change processes, because if you try to address the issue on global level, there are a lot of players doing that and doing that well, with their conventions and efforts that are underway country to country working on various protocols to reduce emissions. The thought on this was, our piece of what we could do to deal with global climate change is make the region a better more adapted place to live. And that will help in the overall global theme. Because everything we do to reduce climate change impacts and to reduce the impacts on the Hudson, because we are a big consumer of resources and a wealthy place, there is a lot of reasons why we should be able to do it well, because we have a lot of resources to think it through. And that is replicable in other places." (I-USA 1: 38)

"Yes, absolutely. It is a huge part of the reason, why the boat is so attractive as an enforcement tool because it is a conversation starter, so, when people see us out on the water, whether they are boaters, or kayakers, or just interested citizens, they want to talk to us and oftentimes when we`re on patrol we get as close as we can to land to have a conversation with people because they want to know what we`re doing, what we are working on and how they can get involved." (I-USA 7: 12)

The experience of helping others is also made on a local level, thus serving as a role model for helping others where the geographical distance and the distance between experiences of everyday life is even bigger:

"I am not that affected, I am concerned because I am a citizen and this is my community and it concerns me, and as a community we really try with our own money and grants to protect residents." (I-USA 4: 14)

The suffering of the victims in this narrative is told as a personal, intimate story. In the following quote this is exceptionally done by retelling a personal meeting and actually using the words of the victim:

"But then he mentioned the Copenhagen conference without me ever mentioning it, and he said, you know, I see these people in Copenhagen and they don`t care about climate, they don't care about our way of life, they don't care about me and my children, they are in it for the money, […] You need to go back to the U.S. and you need to tell people that we are dying here. I mean, this is life or death for us. We have no options here." (I-USA 7: 36)

The villain in this narrative is characterized by ignorance of the suffering and negligence of the victims, thus adding to their suffering actively by, i.e. polluting or preserving egoistic interests, but by way of being inactive in the face of disaster:

"People aren't just that altruistic in our society. Own interests always come first." (I-GER 8: 48)

6.5 Narrative of responsibility and history

Content

Climate change in this narrative is viewed as a consequence of the way industrialized countries developed their wealth and standard of living on the expense of other countries. That indicates that industrialized countries have a responsibility to provide aid to those countries that are suffering from the impacts of climate change. This help is not seen as actually providing financial and development aid, but is contextualized as a reason for industrialized wealthy countries to get involved in climate mitigation:

"Countries like the USA or European countries, which are emitting CO_2 beyond the bearable amount for decades; those countries have the responsibility to counteract und to support the most vulnerable country. That's a given. We have this huge obligation to provide. We caused climate change, and those threshold countries are on the best way to catch up with us. But we are responsible for the larger parts of this development that lead to global warming." (I-GER 8: 40)

"It's us, these highly industrialized countries of the West, the U.S., European countries, Australia. Brazil is catching up, but in a historical perspective we are responsible for those CO2 emissions over the last decades that caused climate change." (I-GER 8: 42)

The main topic in this narrative resembles the profligacy story in Ney and Thompson's (2000: 73) study, where the lifestyle of over-consumption in industrialized countries is made responsible for today's global warming (see also chapter 2.5.1). The following quote form a German interviewee brings in the concept of a community of responsibility which has to be established among wealthy and well developed countries:

"So, in our processes there was always a lot of talk about a community of responsibility. And I feel that captures it quite well. No matter if you look at the problem from a regional, a national, or an international perspective: in general, it is always some kind of a community of responsibility. And, the question of blame, well, that's always a popular game, that doesn't lead anywhere." (I-GER 5: 44)

At the same time the problem of climate change is connected to the local challenges on site, creating a frame of reference for local experience. The historical development thus cannot only be put in terms of economic progress but in terms of geographical and cultural history:

"But right now, I think specifically the problem with climate change here on the edge of the river is, what is it that you can really do? How do you hold back the ocean and that is the question that mankind has been dealing with many years." (I-USA 5: 46)

"That is what happens. We are not a nation that started out with dikes, we are not the Netherlands that is not build into our consciousness that we are going to build these barriers and find a way to live and to adjust. Historically we are not a nation that has done this, so we don`t have the infrastructure we don`t have the history to fighting back the sea." (I-USA 4: 16)

The audience is addressed by providing concrete suggestions for contributing to climate mitigation:

"So we are trying to show again and again where every individual can cut back on CO2; mobility, nutrition, consumerism in general. And of course heating and living. On national average every citizen emits 11 tons of CO2

per annum, and it is really hard to cut back to a bearable amount. But in our project we do have families who already reached a level of six or seven tons. But, of course those are interested in these issues anyway…" (I-GER 8: 10)

In education on climate mitigation this kind of concrete suggestions is seen as very helpful and is in line with findings from studies on environmental communication (Aronson 2008).

"If you offer people specific advice on what to do and about funding possibilities, so this practical use… I think that involves everyone's realm of experience and people respond to that. That is more use than blank theory." (I-GER 8: 30)

However, in the overall topic climate advocates see the problem that blaming people may not have the desired effect for the audience will feel (wrongfully) accused and will get defensive:

"The problem is, that all these things, when you talk about them, they involve guilt. Because everybody has their own air condition, their own car - including myself - and while some people are more conscious about it than others it makes you feel guilty when you are being told you are wasting energy. And that is where the personal issue comes in. People get defensive right away." (I-USA 6: 28)

Structure

Action has to be taken by industrialized countries against the backdrop of this responsibility. Local initiatives and environmental groups are seen as actors in this field that take on this challenge.

"They try to bring people together and look for government support, outside support to solve some of the problems. People are aware of it and there are organizations that participate. And as I said, Riverkeepers are one of the first that come to mind here because they are so actively involved. And Scenic Hudson is another." (USA 4: 26)

"But in our project we do have families who already reached a level of six or seven tons. But, of course those are interested in these issues anyway…" (I-GER 8: 10)

Interest in environmental issues and in getting involved in climate mitigation is also connected to personal experience and a sense of responsibility:

I: But besides Riverkeepers, you are also an environmental activist? Because, I found this article about you, well, the one where you got arrested and we have been talking a lot about the river and how your connection here is, but there is more to your environmental interests than Hudson?

B: Oh yes, that. Well, I think, my concerns, everything relates back to my love for the Hudson River and the Hudson Valley, I think that`s is the lodging point for my inspiration, but I mean it definitely goes beyond that, I mean, I have a general... I mean, I haven't been all over the world, but I have travelled the world a bit, and I was actually living in Tanzania during my junior year, I certainly haven`t been all over the world, but I guess I just have a general love for the planet." (I-USA 7: 25-26)

The victims in this narrative are clearly those who are innocently suffering from the impacts of climate change, caused by the industrialized world. The reason to get active and protect those who suffer lies in the wrongfulness and injustice of the situation:

"But you have to consider the fact that that people are on the Tuvaluan atoll for a reason and we have no right to say 'you can`t live here anymore'." (I-USA 7: 32)

In opposition to this, the villain is accused of not ignoring her responsibility and not getting action on the way:

"And if none of the governments understand that every missed reduction goal goes towards making it harder to live on this earth…" (I-GER 7: 58)

It is also stressed in the characterization of the villain that the responsibilities towards vulnerable countries are based on historical failure of industrialized countries.

„But the reason why we should take an interest in climate change is that we are accelerating it through burning fossil fuels, and it is creating an environment, that is unlivable for things that would otherwise thrive in a stable climate. […] But we are putting so much of that into the atmosphere that the earth just can`t keep up. And I think it is a fallacy that humans feel entitled to destabilizing an otherwise stable climate." (I-USA 7: 32)

This narrative resembles what Liverman calls "common but differentiated responsibility" (Liverman 2009: 288) which refers to conflicts over assigning responsibility for global warming, centering on north-south-relations and the amount of CO_2 emissions, past and future.

6.6 Other topics derived from the dataset

Besides the narrative tropes documented above, interviewees talked about a range of different topics. Even though these are not part of the canon of narratives they will be presented in the following chapters in order to give a cohesive picture of the dataset. Some aspects are particularly interesting against the backdrop of sociological research on climate change, presented in chapter 3. These findings are summarized in four topics: talk about adaptation strategies, reflection on climate change communication, the topic of uncertainty of climate change consequences and the logic of science, and finally general remarks about vulnerability to climate change. A fifth category deals with biographical information, interviewees talking about their lives, for instance where they grew up, how long they have lived in a specific place, or information about their families. However, if this information were not tied to the topic of climate change or if they were coded and analyzed in the context of another, climate change related aspect, they do not offer any more insight into the interviewees take on climate change and are therefore omitted in this display of findings.

6.6.1 Vulnerability of local community

Interviewees talked regularly about specific vulnerabilities to climate change in their communities. In both cases, this usually involved flood events and/ or heavy precipitation. The degree of vulnerability was often connected to the degree of awareness to the environmental crisis:

> "You know, where we are in Piermont, it is a huge topic. Because where we are right at the mouth of the biggest salt water marsh is, which is the Sparkill marsh. We have a lot of land in the village that is at sea level. And we have enormous challenges in our village, enormous challenges. […] And we have serious flooding on a regular basis. It is affecting so many things here. Our village is deeply affected by climate change already. Faster than we can afford to address it. […] Because we are right on the water. I think, other people will become more concerned about it as time goes by, but for those of us, who live in these few little villages down that are directly on the water, these climate change problems – that other people will begin to be really aware of within five, six, seven years – we are on this right now, we are on top of them right now." (I-USA 4: 10-12).

These flood events are used as an opportunity to monitor and evaluate changes in the environment, to prepare adaptation measures and to keep on top of things. The

idea that people are more aware of climate change when they are threatened by events like floods however, was persuasively opposed by Whitmarsh (2008). The argument was that floods are singular events that occur suddenly and require urgent action, whereas climate change and its consequences is a distant problem. However, this might be explained by taking into account that people in this case study experiencing possibly climate change related events like floods often and on a regular basis, which leads to a different perception of its causes.

> "And another thing, one should not dismiss is the problem of newly adventives fauna, i.e. animals and also plants that already made themselves at home here, like some ticks for example, or the oak processionary moth, and some mosquitoes. And with that our public health office came up with the idea – in the context of our application for the European Energy Award where we had to answer questions on adaptation as well – they came with the idea to install an early-warning system for these new bugs and insects." (I-GER 2: 6).

> „We are just starting to document… actually, we are going to start asking residents to document every event, however minor, every flooding event. Even if it is not a very large one that asks for help from the Federal Emergency Management Association." (I-USA 5: 32).

6.6.2 The issue of adaptation

The topic of adaptation is discussed by the interviewees mostly with specific reference to the locality they are based in and often refer to specific events in the past that are used as projection for future challenges. The interviews conducted with German participants deal especially with adaptation measures that need to be taken after they experienced severe flooding due to heavy precipitation.

One interviewee put in a request in the state parliament of Baden Württemberg concerning the flood control measures within Pforzheim and Mühlacker:

> "Against the backdrop of the 1993 flood it seems necessary to request information on that issue. […] Flood prevention is also part of the state's duties. I was a member of the municipal council since 1994, so I knew already quite a lot about it. They did a lot: dredging beneath the Bridge in Dürrmenz, where the water was always hindered, […] there has been done a lot. So, we just wanted to know the status. And especially, how the climate factor can be considered more carefully in future planning." (I-GER 3: 16)

Flood prevention is clearly put in direct relation to climate change and is thus characterized as an adaptation measure. In these terms, interviewees emphasize the need to react flexible to a changing landscape.

> "And that was valuable information, because I wanted to give the village a feeling that the Hudson River is not a static thing, it is a living thing and so changes are always happening. So the question is how we, as a society, relate to those changes. We always think, when we build something that it will stay the same. Well, that is not the case." (I-USA 6: 8).

These are merely statements about the importance of adaptation and the challenges adaptation poses. This information adds to the characteristic of the case study and thus allows for an improved understanding for the researcher.

6.6.3 Climate change communication

Another topic that was brought up regularly by interviewees concerned reflection on climate change communication. Here, climate advocates talked explicitly about communication strategies, e.g. to evoke emotions in order to achieve a reaction from the audience, by telling a personal story (I-USA7: 34) and/ or by emphasizing the vulnerabilities of a community and keeping an event in the collective consciousness (I-GER 7: 28):

> "Emotions are more powerful than policy documents, emotions have the capacity to drive people's action, and I find it that when you engage with people on a personal level, when you tell them your story, they have a reaction." (I-USA 7: 34)

> "For the 10-year anniversary [of the '93 flood] we made this movie 'Mühlhausen IN Enz'. For we are actually called 'Mühlausen on Enz', we collected footage from various amateur film makers, got a cutter to work on that footage for little money and produced about 100 copies of that movie. We collected donations with the sale of it. And basically, we just presented the dismay of it, pretty amateurish, but anyway. Just so, we wouldn't have to discuss it over and over again. So that it would serve as a reminder." (I-GER 7: 28).

Media attention is also described as an important part of communication strategies. Vital not only in terms of educating people about the causes and consequences of climate change, but also to inform about local climate activities and initiatives:

"I think having the stakeholder meetings and publishing the report and having a fair number of media hype associated with the report, so generating the conversation, starting the conversation, was translated into media publicity, into stakeholder survey, where people said: yes, we really understand there is a global climate change issue and there is more flooding along the Hudson and here are some of the things, we should be thinking about implementing over time." (I-USA 1: 50)

Even though these aspects of climate advocates' work deal explicitly with communications they are not included in the cultural narratives presented above. That is because these communication strategies laid out by interviewees read as a "how-to"-manual, and do not represent underlying mechanisms of communication this study tried to uncover.

6.6.4 Uncertainty and scientific logic

One major challenge for climate change communication is the problem of uncertainty that surrounds climate change research and its translation into a collective public discourse, which follows different rules than scientific discourse. This has been discussed in chapter 2.4, recounting findings in various studies on climate change communication. However, it is also a factor interviewees in this study brought up. Two aspects of this struggle were discussed: first, the problem of understanding scientific logic:

"And of course there is uncertainty in science, but most people don`t understand the scientific method or scientific inquiry enough to realize that that is okay; that we still know a lot. They just hear "Oh we don`t know what we`re talking about"." (I-USA 2: 23)

This relates back to the challenge that climate change is still an abstract concept, missing a "personal touch" and direct tangibility.

"So it's really about applicability. And that, at the end, comes down to people's personal experience, which is always in the foreground. It is not so much the pure theory people pay attention to, in my opinion." (I-GER 8: 30).

"So we are facing some really big challenges and we are finding, as we move forward that the more we focus on the impacts, whether it is flooding or heat, the more people can connect to it because they experienced it, rather than saying climate change..." (I-USA 2: 10)

Second, the aspect of uncertainties within climate research are discussed in the interviews, concerning the consequences of a warming climate for the environment and the economy, and with that the question of political measures that should be taken. It offers insight that climate advocates are not entirely sure themselves about the impacts climate change may have on the local place that was mostly discussed.

> "Of course it is hard to say if those heavy precipitations we experienced would have happened even without climate change. It is always difficult to state if an event is due to climate change or if it is just a case of extreme weather. It is really difficult to separate those two." (I-GER 2: 10)

> "Well, there is the question of determining climate change processes and then, of course, discussions are following such statements: What kind of events should we expect in the future? This always depends on different scenarios, different climate predictions. There are also always new and emerging findings in that field." (I-GER 5: 42)

This shows that interviewees are aware of the difficulties to communicate climate change due to the opposing logics of scientific and public discourse. The two topics of climate change communication and uncertainty and scientific logic are thus directly linked to each other.

7 Discussion of empirical findings

In the following chapter I will discuss selected aspects of the above described narratives, along the lines of the two main research questions posed in the introduction of this study: How can we enhance understanding of climate change communication and how can a cultural and systematic approach to narrative analysis be developed? First, aspects are selected with a focus on their empirical value to studies on climate change communication and second with a focus of the theoretical advancement this study seeks to provide to narrative analysis.

7.1 Discussion of empirical implications

In an empirical perspective I will first lay out how those themes presented in the chapter concerning the state of research are recurring in the findings of this study and where differences lie. Secondly, I will show how the relationship between storyteller and audience influences the frame in which the story is presented. Finally, following Lamont's concept of boundary work of social groups (Lamont & Fournier 1992b; Lamont 2000) I will show how the characters separate themselves from the other character groups within a narrative.

The narratives described above show how a phenomenon based in the sphere of natural sciences becomes storied and what Smith calls "a meaningful social fact" (Smith 2012: 745). This is how climate change becomes part of the social world by mimicking those pre-modern structured myths and narratives our societies are still holding onto.

7.1.1 Recurring motifs and themes

The literature overview in chapter 2 and especially in chapter 2.5 revealed various motifs and themes in climate change communication. Some of these occur again in the findings I have presented above.

The narrative of positive economic consequences (chapter 6.1.2) can be found essentially in Liverman's (2009) description of the story about climate change as an investment opportunity[48]. Even though the narrative in the present study entails various economic options, like becoming "a leader in renewable energy" (I-USA 2: 35) and other economic benefits, whereas Liverman focuses on carbon-trading as a

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[48] Liverman frames this as a newly emerging story (Liverman 2009: 295-296), seeing as the article was published in 2009, the storyline is not "new" anymore. However, it is an important study in the development of this narrative.

market solution to climate change, both narratives introduce the environmental threat into the realm of economic reason. This once more underlines how climate change becomes part of the social sphere (see here also Renn 2011: 164 or ch. 6 of this study).

The economic perspective on climate change plays a significant role in the debate about climate change, as is shown by the two economic narratives in this study as well as in other analysis of climate change communication, such as the studies by Ney and Thompson (2000) and Verweij et al. (2006). These studies show how climate mitigation activities become embedded into economic reason. The story of price resembles the story of climate change as an investment opportunity and the narratives of economic consequences. In both studies, the critique on the wasteful lifestyle in high-income, industrialized countries is prominently represented as the story of profligacy and can be found in this study on narratives as well. Here, however, the stories told by climate advocates are further differentiated: storytellers invoke a responsibility towards nature itself, a responsibility towards suffering humans in highly affected parts of the world out of basic human solidarity as well as specific historical guilt (benefitting from the industrial revolution which contributed highly to the environmental crisis). This further detailing enhances our understanding of the motivation behind each narrative. Uncovering various narrative elements, the cultural structural analysis of narratives also allows adding an additional layer to the cultural theoretical analysis of climate change stories as presented by Ney and Thompson. Various studies (*ibid.*; Smith 2012; Jones 2010) describe characters as heroes, villains, and victims. However, they often lack extending their analysis beyond a pure description of those characters and to relate the characters within the story and the surrounding cast (storyteller and audience) to the development and potential of the story.

Figure 14 shows the differentiation of narratives due to their main topic. Arguments made within each narrative however do not entail an explicit opposition of the various realms. For example, the economic narrative does not present itself as a distinction to environmental or social concern; these realms simply are not part of the economic narrative. In her study on Norwegian stories about climate change, Norgaard (2011) identifies two stories that are made to legitimize Norwegian climate policy: "Norway is a little land" – minimizing Norway's contribution to climate change – and "We have

suffered" – a story told to show how Norway just fairly recently became a wealthier country due to its petrol industry. With this, the author inherently puts economic development opposite of climate mitigation activities, thus strengthening an alleged and common premise of an opposition between these two realms, and – more importantly – an opposition triggered by the occurrence of climate change. Despite her cultural perspective, this opposition prevents the inclusion of climate change into the social world as a meaningful social fact. Climate change thus remains an outside disturbance to social life.

7.1.2 Topics as result of the relationship between storyteller and audience

Narratives consist of the events and characters occurring within the story (hero, villain, victim, main topic) and the cast surrounding the narrative. The latter is what Smith calls the meta-discourse over a narrative (Smith 2012: 758). Every narrative has to be told by a storyteller. According to science communication literature the teller of a story needs to know her audience if that story aims at convincing an audience of a specific task. Hart and Nisbet (2011) insist that communication efforts need to take into account the audience's predisposition on an issue. With regard to climate change communication Nisbet points out "to break through the communication barriers of human nature, partisan identity, and media fragmentation, messages need to be tailored to a specific medium and audience, using carefully researched metaphors, allusions, and examples that trigger a new way of thinking about the personal relevance of climate change" (Nisbet 2009: 15). This can be found in the described narratives, where climate advocates built narratives around various main topics, depending on the "imagined" audience. Climate advocates fit their arguments to topics they imagine their audience will listen to. One striking example for this is the narrative of economy:

> I **always insist that whatever I do, I put a dollar sign on it.** So when I say what is the probability of such and such to occur, I say well it will cost the village a million dollars per event – or whatever." (I-USA 6: 28)

> "I think the only way we can get through the challenge of the politicization of climate change is if we can show people a direct benefit, […] **because that is what people respond to,** esp. with the economy the way it is. I think, that`s the best way, to try to get our message across." (I-USA 2: 40)

"Well, if you really think about it, it is a win-win-situation. If I approach the issue of energy saving, **I firstly save money and secondly I get a climate mitigating effect.**" (I-GER 2: 18)

Communication research literature suggests various frames for climate change communication. For example a connection between public health and the impacts of climate change is considered successful as it arouses hopeful emotions and thus a positive response (Maibach et al. 2010). Myers et al. argue, that "research on a public health frame, for example, suggests that when climate change is introduced as a human health issue, a broad cross-section of audiences – even segments otherwise skeptical of climate science – find the information to be compelling and useful." (Myers et al. 2012: 1107). The presented data in this study hint at public health to be an issue. However, there is no explicit connection made between climate change and public health, but climate advocates put it in context with a broader environmental issue, such as clean air and a clean river:

So we deal with everything from **cleaning up the water quality of the river, try to make it safe for swimming,** restoring the Hudson's fisheries." (I-USA 2: 4)

"Somewhat related is this creek that we have running through the village, you saw. Now, sewage will end up finding its way into that creek […] we have a little park down there in the area by the Troy Bridge and a playground. What I don`t understand is, once that had been flooded with questionable water **what is the proper time frame to say people shouldn`t go into that park with their young kids** playing on the swings and what not. […] so, that`s general public issues that we will need to figure out how to deal with in terms of alerting the public when something like that happens" (I-USA 5: 25).

The last quote shows how the impacts of climate change touch on public health issues. However, it is not presented as a main topic by the interviewed climate advocates.

7.1.3 Boundaries between characters

Climate advocates get involved in boundary work[49], establishing two groups with clearly differing values and goals in the narrative of climate change as a partisan

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[49] Lamont (1992a) defines boundary work as the process through which people differentiate themselves from others. These patterns of boundary work are not to be understood as individualized characteristics, but as institutionalized cultural repertoires (Lamont 2000): 243.

issue. Climate change becomes another topic in which the American political elite is deeply divided, with Democrats blaming Republicans for blocking important decisions in climate politics (as most climate agent represent themselves as Democrats: "You know, you are looking at a fairly Democratic village and certainly here in Piermont and then certainly within New York State which is also by nature being a Northeast state and more Democratic will agree or will realize that [increasing flood events] are related to global warming." – I-USA 5: 40; "It is still a very highly politicized issue in America, and that is a shame because it`s bringing a lot of road blocks." – I-USA 2: 10). The strong divide between supporters of the Republican and Democratic party is backed by findings from survey reports. Engels et al. report that "for the U.S., social scientists have predicted a growing divide between liberals and conservatives rather than the emergence of a social consensus. […] The probability of holding skeptical views on climate change is significantly higher among white male respondents who identify with the conservative party than among any other group" (Engels et al. 2013: 1019).

Climate advocates do not try to achieve a new status of this relationship but try to circumvent the differences between heroes and villains by excluding the object of struggle (i.e. climate change). This strategy does not allow for a long time solution to climate change, since it does not cover all the aspects this ecological crisis contains, as one interviewee states:

> "But there are still times where if you say the word *climate change*... you know. Our governor right now doesn`t want to make this a centerpiece at all. But he is very interested in helping communities respond to flooding. So you can engage with him that way, but **you can`t connect that to climate change**." (I-USA 2: 10)

Common ground is not to be found in this narrative, when climate change becomes characterized not in terms of a rationally discussed topic within political decision making but becomes subject to negotiations of fundamental beliefs:

> "You know, people are... the whole question has become more similar to a **religious belief**, either you believe in it or you don`t. And science has not a lot of wake with a lot of people. No matter how many charts and data you show them. They either don`t understand it or they think, you made it up. That is with certain sections of the population." (I-USA 2: 15)

Religious beliefs are non-negotiable; the characterization of climate change and related possible policy solutions as this kind of belief divides heroes and villains into two opposing groups with no option of overcoming these established boundaries. It thus diminishes the chances to come to an agreement on the political level. Thus, this narrative stands out from the others as it inadvertently does not allow for a solution to climate change. By contrast, the narrative of responsibility and history or the narrative of positive economic consequences of climate change for example portrays the villain with the option of developing into a hero or – at least – to join the hero in his quest for climate mitigation. Heroes imply in their statements a sense of community by including themselves in the group of perpetrators:

> "Countries like the USA or European countries, which are emitting CO2 beyond the bearable amount for decades; […] **We** caused climate change, and those threshold countries are on the best way to catch up with us. But **we** are responsible for the larger parts of this development that lead to global warming." (I-GER 8: 40)

Thus, the barrier between hero and villain becomes permeably. Both groups are divided by their present attitude towards climate change, on the one side those willing to take action, on the other side those who are ignoring the problem, but a common background and a community allows for a future development where villains turn into heroes or at least join them in their quest.

The narrative of climate change as a partisan issue serves as self-affirmation for the group of climate advocates that they are doing "the right thing" and stand on moral high ground. However, this story of climate change establishes impervious boundaries between two groups. Since members of both groups need to be included in the quest to lessen the impacts of climate change, this narrative structure achieves the opposite of a unified political elite that tackle the problem of climate change. Here, an even stronger barrier between both groups is created. Thus, the possibilities to make a collective effort in the fight against climate change are narratively diminished.

This chapter showed how characters in a narrative relate to one another and how storytellers adjust narratives to subjects they assume are of interest and concern to the audience. It also discussed if and how motifs recur in this study's narrative that were found in other research and thus relates the findings of this study to the existing

research. Regarding the empirical perspective, various overlaps and similarities have been identified. However, in a theoretical perspective this study stands against most existing research by applying a more systematized analysis to a narrative's elements.

The following chapter will highlight and discuss selected theoretical aspects in which this study seeks to contribute to a culturally informed narrative theory.

7.2 Discussion of theoretical implications

The chapter consists of two main aspects: first, I will show how the hierarchy between characters influences the narrative distribution of power among them. For this analytic insight it is important to identify heroes, villains, and victims and to understand the nature of their relationship. Secondly, I will link this narrative analysis to the concept of binary codes as cornerstone of cultural sociology.

7.2.1 Hierarchies and the role of characters

The analysis reveals differing hierarchies between characters. The relationship between characters determines the potential for characters – especially the villain – to develop and thus indicates if the story is set to move towards a solution.

The narrative that deals with climate change as a partisan issue portrays the differences between the hero and the villain as something that cannot be changed. Climate change becomes a symptom of the dysfunctional relationship between two opposing actors, in this case between Democrats and Republicans in U.S. American national politics. The relationship between hero and villain is at the center of the story; the alleged object of interest – climate change – becomes a background for this relationship.

In this narrative, the role of the villain differs from other narratives as she takes active part in the story. In other stories, the villain is described as passive. For example the narrative of economic consequences, both negative and positive, assigns a purely passive role to the villain: heroes blame villains for not taking action against climate change, even though – in this case – it would be in the interest of national economy. This can be seen within the other narratives as well, where the heroes are demanding the villains to take action. Contrary to that, the narrative of climate change as a partisan issue describes the role of the villain as active. He is accused of actively denying the case of climate change and lobbying against climate mitigation politics. Denying is not passive but an action carried out collectively (Norgaard 2011).

This active role establishes a horizontal hierarchy between the hero and the villain: both parties have an agenda and are determined to assert their point of view. The villain in this story does not have the possibility to develop. The horizontal relationship assigns power to both characters to the extent of a deadlock.

It is interesting to note that climate change, or rather the environmental consequences of climate change, are not being blamed or portrayed as villain. This is, on a first look, contrary to the findings on the discourse about droughts in Australian society by Smith and West (1996) where droughts are depicted as the adversary. There are two reasons for this contradictory finding: firstly, climate advocates see the environment as victim to human action. They emphasize that this climate change is induced by societies abusing nature over a long period:

> „I just love living things and I think that unfortunately over time **humans have lost sight of our role on the planet**, which is not... I mean our role is not to be dominant over other species. Right now, that is totally forgotten. People abuse the environment […]" (I-USA 7: 26)

Note that when it comes to describing how climate change impacts on social communities, climate advocates state particular events, like floods or heavy precipitation and imply a relation to anthropogenic induced climate change. However, climate change itself does not appear as an actor, but is used in this context as explanatory background. Second, Smith and West fail to point out that in this moral drama they lay out, droughts are not equipped with "real" agency. Droughts are negotiated by social actors when they make these environmental events part of the collective discourse. Thus, contrary to the misleading description droughts function as vehicle for human agency within cultural discourse. Similarly, climate advocates in this study include climate change as responsible for events like floods, etc., but actual agency is assigned only to social actors.

Concerning the relationship between the hero and the victim, climate advocates – in general – argue strongly on the victim's behalf. As stated in the presentation of the empirical findings third world countries are mostly depicted as victims in the narratives. Thus, the relationship is construed vertical: the hero is in charge, making decisions on behalf of the victim. The victim on the other hand is portrayed as helpless and lacking any agency to fight back. Inconsiderate of the facts about current CO_2 emissions and the options of political action as well as underrated

resilience these narratives paint an unbalanced picture of the situation, as Bravo (2009) notes in his study on climate change framework in relation to indigenous people. Describing a radio report about Inuit elders engaging in debates about new and unfamiliar weather patterns at a workshop the author states: "The unusual aspect of this story is that listeners were able to hear, however briefly, what a group of Inuit elders were actually saying about climate change – in contrast to the majority of climate change reports that simply portray Inuit and polar bears as the icons or victims of climate change" (*ibid.*: 257).

7.2.2 The foundation of binary codes

The analysis of the narrative structure also uncovers how the binary structure of civil discourse, described by Alexander and Smith (2003a)[50], informs climate change communication. The discursive structure of social institutions (*ibid.*: 122-124) can be seen in the narrative that deals with a nation's role in the climate change debate. Here, the hero and the villain are placed between the poles of inclusive and exclusive. One important social institution within the climate change debate is the institution of the UN climate summits. The power however is unevenly distributed and negotiations are perceived as not being carried out in a fair manner:

> "I went into the conference hoping that we were going to get a fair ambitious and binding climate treaty, and I mean fair for... emphasis on the word fair, because some of them,… on that level **regarding climate change has been dictated by the developed world**, dictated by United States, dictated by the EU and by China and India. […]The way the UN is structured unfortunately the developed world is favored from a policy level and obviously favored from an economic level." (I-USA 7: 30)

Here, the binary code of inclusive vs. exclusive is assigned to the way processes are conducted within relevant social institutions.

The characterization of heroes and villains in the presentation of empirical findings follows the discursive structure of actors (*ibid.*: 122), with heroes being active in the fight against climate change and villains being portrayed as passive. Similarly, the narrative of environment describes heroes in terms of being responsible and caring for nature, whereas villains are shown to act abusive towards natural resources.

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[50] For an elaboration of the binary codes of civil discourse see chapter 3.2.2.

Revoking the above discussed narrative of climate change as a partisan issue, where climate change was framed as a question of belief, climate advocates accuse climate skeptics and climate deniers as being ignorant of scientific facts and the conclusion of the majority of the scientific community. This opens the narrative up to the differentiation between enlightened and ignorant, thus introducing the clash between modern and pre-modern societies and progressive vs. reactionary citizens. This makes the issue of climate change part of the question "in which kind of society do we want to live in?", thus raising the implicit stakes.

The same narrative also negotiates the discursive structure of social relationships by addressing shadow politics and secretive negotiations:

> "There is also **a very strong political interest, by people who benefit from us not addressing climate change**. […] and they hire very talented people to market their points of views to either create this large umbrella of uncertainty." (I-USA 2: 23)

Thus, heroes and villains are not only divided by their willingness to act upon climate change or even acknowledge it as an environmental crisis, but alongside the discursive structure of social relationships: open vs. secretive, trusting vs. suspicious. Understanding how narratives are constructed alongside these binary codes allows us to see how these narratives are part of a culturally informed civil discourse and thus anchors narrative analysis deeper onto cultural sociology.

7.2.3 Narratives exist in various forms simultaneously

Up to this point I have described and discussed the narratives in terms of structure and content, but not in terms of their form. As elaborated in ch. 4.5, both content and structure constitute a narrative's form. The concept of form draws on Smith's genre guess, which means that a story told in a specific genre, entails a specific social meaning. I am adopting this concept but will argue against Smith's assessment of the chronological development of genre. I argue here that genre shifts do not linearly change over time, but that a story exists in various genres simultaneously.

Taking the case at hand, Smith claims that the story of global warming shifts over the course of history from a low mimetic genre to an apocalyptic narration of events[51].

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[51] Smith writes: "There has been a narrative shift toward apocalypticism rather than low mimetic forms of narration that once saw the problem as containable with routine policy solutions, or as fingerclick

The data at hand show how climate agents talk about climate change in various genres. That is because the main topic, the relationship between the characters, and the relationship between audience and storyteller constitute the genre. Without analyzing these elements in themselves the determination of the genre would be one-dimensional and likely be drawn from the storyteller's point of view. Of course climate agents see climate change as an extremely urgent matter. Drawing only from this, all narrative would be understood as apocalyptic genre. Contrary to that, the analysis above shows that the interaction of the single elements put climate change as overarching topic in different contexts and thus evokes different forms. I will exemplify this on the narrative of economy. Here, climate change is set into the context of economic reason. Taking part in climate mitigating activities is presented as an investment opportunity, with a flat hierarchy between storyteller and audience and the characters (by arguing with purely economic aspects hero and villain meet as equals). The stakes are not high, as an investment opportunity is optional, thus the story is presented in a low mimetic form of narration. At the same time, climate agents also tell the story form a future-oriented perspective where climate change is will affect the life of our grandchildren and from a humanitarian perspective, where climate change endangers people's living environment. Here, the hierarchy between hero and victim is vertical, as is the hierarchy between audience and storyteller, who takes the moral high ground. The stakes are high as people's lives are in danger. Here, the story is told in an apocalyptic form. This finding advances cultural sociological understanding of narratives, given that Smith's account for a chronological development of narratives does not allow for competition for meaning between narratives. Here, the story that is told among one (interest) group is seen as remarkably robust. The narrative has to be defended against externally constructed logical and empirical challenges (Smith 2005: 113). This take on narrative does not consider how various readings of a phenomenon can exist simultaneously in one or more actor groups and even contradictory to each other.

This shows how a story is told in different forms at the same time within the same public discourse and even how different forms are developed and applied in the same group of storytellers with the same purpose. Here, the influence of cultural sociology in this analysis becomes evident, when narratives are understood as form

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solvable by our more technically advanced descendants "(Smith 2012: 752; for the example of genre shifts of the assessment conflict situations see also the discussion of war narratives in Smith 2005).

of collective communication with differing manifestations. The phenomenon of climate change becomes part of the social world as it is embedded in the social pre-structured perception of the world. Narratives follow the structure of collective representation.

7.3 Summary of selected aspects of findings

Summarizing, the chapter discussed the study's findings in two perspectives. Empirically, the discussion showed:

- how narratives iterate certain motifs and themes, and thus strengthen the presumption of a pre-structured perception of the social world

- how the relationship between storyteller und audience bring about the characteristics of a narrative's main topic

- how characters within a narrative seek to set themselves apart from each other, thus creating narrative boundaries.

Furthermore, this chapter also discussed in which way this study contributes to an advancement of narrative analysis in cultural sociological tradition: It showed:

- how a textual, culturally informed analysis of the characters reveals how the hierarchy between hero, villain, and victim influences a narrative's setting towards a solution

- how cultural sociology's cornerstone of binary codes can be fruitfully integrated into narrative analysis in order to locate a specific topic within the structure of public discourse

- how narratives exist in differing forms at the same time within the same group of storytellers.

8   Conclusion

Concluding I will point out some aspects for policy advice in the next chapter. Following this, I will critically reflect on the shortcomings and challenges of this study before I close with some remarks on possible further research, where the concept of an integrated model of cultural narrative analysis might be considered fruitful.

8.1 Suggested implications for policy makers

Apart from the two main research questions this study wanted to answer and which address academic concerns (advancing the cultural sociological approach to narratives and contributing to the understanding of public climate change discourse), there can also be drawn some lessons to learn for policy makers.

Narrative analysis is not only an academic exercise but can also entail suggestions for policy advice, especially in the realm of science communication. Social values, social norms and the perception of social life are a vital factor in adaptation and mitigation policy and in the process of ensuring public support for these policies (Renn 2004). From the perspective of the argumentative turn in policy analysis Verweij points out that people's differing and opposing perception of risks and policy challenges need to be understood and used through constructive communication (Verweij et al. 2006: 821). Policy strategies need to take into account how risks are communicated in the public discourse, a culturally rich narrative analysis can provide clues as to how public opinion is formed and which inherent structures are at play (Trumbo & Shanahan 2000: 200). Insights from cultural sociology can help here to uncover how narratives interpret data and information about climate change (Osbaldiston 2010: 7).

The analysis of climate change narratives allows for two main policy implications:

1. Contradictory forms of narratives tend to weaken the credibility of those narratives

2. A narrative needs to allow for character development otherwise it will only lead to a deadlock in the process of reaching a consensus.

Ad 1: The study revealed several dominant stories told by climate advocates. The multitude of these stories leads to a contention, not only in the struggle for public attention, but also – and more importantly – in contradictory storline*s*. Each narrative

is built around a different main topic. These topics have varying impacts on the form (≜ genre) a narrative takes, leading to inconsistencies between the stories and thus making them vulnerable to attacks. To show how different topics affect the credibility and congruency of narratives, I will turn to the two narratives that are most opposing to each other: the narrative of economy and the narrative of solidarity and humanity.

The latter plays on the value of human equality, insisting that people are obliged to help each other based on sheer humanitarianism. Those who suffer from the impacts of climate change are human as well and thus citizens of the industrialized countries should feel obliged to do something about this suffering. It is the idea of a global, human community that calls for action against climate change. Here, the topic of climate change is moved into a framework of humanitarian sensibility. The stakes here are high and inaction will have devastating consequences.

The former narrative makes use of market rationality, introducing the topic of climate change into the realm of economic arguments. Financial and economic benefits or resp. the avoidance of financial losses serves as motivator for action. However, this leaves a choice for action or inaction: if financial incentives are not going to pay off or if short-term solutions to national economies (for example relying further on CO_2-intense energy) promise to be effective, the argument for getting engaged in climate mitigating activities loses its ground. The topic of climate change and the motivation for taking action is introduced into a mundane setting where money, profit, and economic reason rule. Thus, it is presented as optional and becomes a subject to economic whim.

These two narratives serve as examples for contradictory forms. On the one hand, there is one narrative with high stakes and devastating consequences. On the other hand, there is another narrative where the purpose becomes flexible and needs to meet economic purpose. The final goal is economic prosperity not survival under human conditions. The former is calling for urgent action, the latter settling for a cost-benefit-analysis.

Climate advocates try to address a diverse range of people, which leads them to re-structure the story they are telling, trying to "hit the nerve" of the audience they imagine. Thus, they for example introduce economic reason into the story in order to "get their message across" as one interviewee put it (I-USA 2: 40), they switch from

humanitarian beliefs (narrative of solidarity and humanity) to allocation of blame (narrative of responsibility and history). All narratives however deal with the same object. The contradictory forms in which the object is presented now leads to contradictory directions, making the story of climate change action vulnerable to attacks. Policy makers have to consider these contradictions and understand that conflicting stories are not only assigned to antagonistic interest groups, but that they exist within largely unified groups.

Ad 2: The way policy solutions and need for action is presented has to allow for a development of the characters. Only if villains are allowed to turn into heroes, policy agreements can be reached and put into action. Considering for example the narrative of climate change as partisan distinction: here, heroes and villains are set into the opposition of Democrats and Republicans. When former Democratic presidential candidate Al Gore aroused a lot of public attention with the documentary "An inconvenient truth" and earmarked climate change even further as Democratic topic, Republicans had to take an opposing side towards the issue to make the differences between both parties obvious to the voters. Of course, if political power is unequally distributed among parties political polarization can lead to rapid action. But for this to happen, one party has to hold significantly more power than the other. Equal distribution of power on the other hand in combination with a fundamental disagreement on a subject leads to paralysis in the political system. Considering the multiple legislative and executive levels that are necessary for sustainable climate change policies and, in the case of U.S. American politics , the distribution of power among the different political decision making entities, a broad political consensus about this problem seems to be important (Engels et al. 2013: 1019; McCright & Dunlap 2011; Dunlap & McCright 2008). Constructing strong boundaries between two groups compromises the chances to win people over. The value of the topic is compromised by prejudices of one group towards the advocate group. Thus, the construction of the story of climate change and the layout of policy solutions needs to portray both sides as reasonable to allow the villain to change and join the hero`s quest. This prevents a (further) polarization of characters and might ensure public support for policy strategies.

The above described policy implications stem from an analysis of narrative elements that starts by focusing on each of this elements on their own. A narrative needs to be

dissected to uncover hidden structures that give the narrative a specific direction. Here, a narrative analysis anchored in cultural sociology and literature theory can provide insights for communication science from which in turn, communication strategies can benefit.

8.2 Critical review of the study

Research integrity calls for a transparent documentation of the research process, the collecting of data, the treatment of those data, and transparent and comprehensible description of the analysis and the conclusion. Furthermore, it is in order to critically reflect on one's study by disclosing weak spots and shortcomings to the reader. The following chapter discusses some of the shortcomings of this study.

Shortcomings of the integrated model of cultural narrative analysis

The development of the integrated model in chapter 4.5 served the purpose to integrate cultural sociology and narrative theory in order to understand the cultural meaning of social narratives. With this model the study aimed at answering the research question what a cultural systematic analysis of narrative has to look like. However, it brings with some challenges that could not be overcome in this study.

One main concern is that social narratives of climate change are developing and changing right now. Social coping with climate change is an ongoing process and thus the debate about it is ongoing. This runs contrary to one of the characteristics of narratives, namely that they consist of a clearly defined beginning, middle, and end. Here, the legacy of literature theory in narrative analysis becomes evident: written stories mostly confine to these criteria, oral narratives are more difficult to pin down. That poses the question if the utilization of narratives is legitimate firstly to oral interviews as they have been conducted for this study or to a phenomenon that is still under development. The objection could be raised that this sort of analysis is only fit for historical documents on a closed case or to media reports. However, narrative analysis bears great potential for sociological research and has been applied in several other cases (see ch. 4.3). Franzosi points out that the process of contextualizing a narrative allows sociologists draw conclusions from the particular to the universal. Thus, the analysis of narrative patterns sheds light on the patterns of social relations (Franzosi 1998: 548-550), the unique interest of sociological research.

Shortcomings of the sampling

Another concern in this study is the selection of data. There are several aspects that should be critically reflected:

- the selection of interviews

- national differences underlying the U.S. American and German interviews

- anecdotal character of some input data

Open interviews run the risk of becoming anecdotal, especially when conducted for an exploratory study because the interviewer does not precisely follow a closed set of interview questions. The selection of the narratives depends strongly on the stories that were told by the interviewees. Additionally, the selection of interviewees spans from professional specialists in a governmental institution working on adaptation measures to climate change to artists, interested in landscape paintings and environmentalism. However, this quite diverse group of interviewees provided a thick set of data concerning the perception of climate change from various perspectives. Given that the narratives I hoped to uncover are present in the public discourse of the topic and not only part of an expert discourse – one reason why the set of interviewees is not constrained to professional climate change experts – the diversity of interviewees served the purpose of this study.

This touches on another possible objection to the methical part of this study: reducing the interviewee data to climate advocates. If one seeks to contribute to the understanding of public discourse, one surely should consider all opinions on a subject. However, the aim of this study was to add to the understanding of public discourse by providing a novel approach to narrative analysis. Applying the model to a dataset that obviously differs greatly in one main aspect – agreeing resp. rejecting the idea of anthropogenic climate change – could have covered the weak spots and strengths of this model.

Taking the overall limitations of the dataset into account this study surely cannot claim to have uncovered all potential narratives in the discourse about climate change. This, however, was not aim of the study and would have gone beyond the scope of this study's research interest.

8.3 Outlook on further research

In all its weaknesses and strengths, this study can provide a starting point for further research. I will outline some research questions and interests that could take up the efforts of this study.

Empirically: Advancing the understanding of (climate change) communication

This study focused on the narratives and stories told by climate advocates. There are mainly two more parts of the climate change story that could benefit from this study's approach: analyzing the narratives in the climate skeptics or climate denier group. This would be especially interesting in the U.S. American discourse, as both groups play a huge role in public discourse. Secondly, the analysis of media coverage and policy documents in terms of their narrative structure can provide additional data. This way these different spheres of discourse could be compared in order to see which communication elements are represented in all of these spheres. It would allow for painting a more coherent and detailed picture of climate change communication. Making use of textual data, such as media reports and policy documents, would also account for the need for a "closed" story, with a defined beginning, middle, and end.

Furthermore, stories emerging in those regions that are actually suffering from the impacts of climate change can provide alternatives to the unilateral perspective of climate change experts and policy makers in industrialized parts of the world that are well equipped to deal with the often quite small impacts. For climate communication research it would be interesting to see possible discrepancies in the hierarchy of characters and to see which main topics emerge in these stories as compared to those in the western discourse.

Besides the topic of climate change, which is still an ongoing process with an ambiguous ending, the discourse on historical, completed phenomena could be put to use to consider the potential of the narrative analysis approach this study provided.

Methodologically: application of the model in other methodological contexts

The model provides another way to be put to use in sociological research. Instead of analyzing narratives derived from interview data, this approach to narratives could be turned upside down by using it as a guideline for developing narratives which then

will generate data. The analytical differentiation between the narrative elements might thus be considered for the design of factorial surveys *(German: Vignettenanalyse)*. Scenarios often entail short descriptions of situation, depending on the topic or the depth of the stories, researchers might consider the narrative structure and its implications for respondents.

Theoretically: Advancing cultural narrative analysis

This study aimed at including premises of cultural sociology in narrative analysis. It thus also tried to provide an additional useful methodical tool to analyze qualitative data for cultural sociology. Further research could be conducted in pursuing this by advancing this sketch of a narrative analysis model. Especially the place and role of cultural autonomy and its significance in narrative research should be further spelled out. A more detailed and rich theoretical reflection on this matter could advance the benefit of narrative analysis in cultural sociology.

This study on climate change narratives provided a cultural perspective on how real world facts are processed in public communication. I draw from literary theory, cultural theory, cultural sociology and risk and science communication to develop a model of narrative analysis that holds true the paradigms of cultural sociology and integrated a perspective from literary studies and cultural theory. By applying this model to narratives provided by climate advocates, these narratives were broken up into three main elements: content, structure, and form, with the first two constructing the last. The analysis of content on the one hand, and the analysis of structure on the other hand revealed firstly several main topics around which narratives develop and secondly the ways in which the single elements of the narrative interact with each other. The study showed how the hierarchical relationship between characters within the narratives and the cast outside the narrative (storyteller and audience) influence the perception of the story and its message. Cultural sociology's two foundations – treating culture as autonomous and acknowledgment of binary codes as foundation of public discourse – allowed for treating volatile texts from interviews with a textual approach. Climate change is a narrated social phenomenon that does not only require the reading of meteorological data but the "reading of those readings" (Smith 2012: 759). The study at hand aimed at revealing this "reading of those readings", i.e.

how climate advocates turn climate change into a culturally and socially meaningful story. Outlining an approach to narrative analysis that sufficiently takes into account cultural sociological paradigms, this study presented and analyzed the structure, content, and form of climate change narratives.

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Appendix A: List of interviewees and short description

I-Ger-1; Enzkreis

Form of the interview	Face-to-face
Gender	male
Occupation	subject specialist sustainability and climate, Stuttgart regional assembly
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally involved in evaluating social and economic challenges for the region around Stuttgart, Baden Württemberg spreading from climate change
Additional information on the interview setting	Interview was conducted at the workplace; no interruptions; this interview was intended as pre-test but was incorporated into the main dataset due to its sufficient quality

I-Ger-2; Enzkreis

Form of the interview	Face-to-face
Gender	Female
Occupation	Regional climate mitigation officer
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally involved in climate mitigation activities within the region of Enzkreis; consulting other communal departments
Additional information on the interview setting	Interview was conducted at the workplace, no direct interruptions

I-Ger-3; Enzkreis

Form of the interview	Face-to-face
Gender	Male
Occupation	Member of state parliament Baden Württemberg, priority: energy and sustainability
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is involved in communal and state politics; the challenges of climate change (both mitigation and adaptation) is part of his political agenda
Additional information on the interview setting	Interview was conducted at interviewee's company, i.e. his hometown in the region of the Enzkreis; no interruptions

I-Ger-4; Enzkreis

Form of the interview	Face-to-face
Gender	Male
Occupation	Journalist at a regional newspaper
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee passes comments on current social, economic, and political developments in a regional newspaper and covers regional and communal news-stories that include (unusual) weather incidents, such as floods and dry spells
Additional information on the interview setting	Interview was conducted at the workplace; only minor interruptions (twice due to a telephone call)

I-Ger-5; Enzkreis

Form of the interview	Face-to-face
Gender	Male
Occupation	manager regional assembly for the region northern blackforest
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally involved in evaluating social and economic challenges for the region around the northern Black Forest, Baden Württemberg spreading from climate change
Additional information on the interview setting	Interview was conducted at the workplace; no interruptions

I-Ger-6; Enzkreis

Form of the interview	Face-to-face
Gender	Female
Occupation	Regional head of law and administration
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee's work is touched by consequences of climate change, mostly because of the release of the flood hazard maps in Baden Württemberg
Additional information on the interview setting	Interview was conducted at the workplace; no interruptions

I-Ger-7; Enzkreis

Form of the interview	Face-to-face
Gender	Male
Occupation	Executive member regional flood aid group

Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee was heavily hit by a flood in his hometown, and brought civilian flood aid group into being as a direct and immediate consequence. He was also invited to other communities to talk about strategies of dealing with a rising flood hazard, however, the group is not active anymore, because there is no immediate need
Additional information on the interview setting	Interview was conducted at the workplace; no interruptions; interview was followed up by achieving additional information through a film that was made of the flood

I-Ger-8; Enzkreis

Form of the interview	Face-to-face
Gender	Female
Occupation	Regional director BUND – Friends of the Earth Germany
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally involved in environmental concerns and consequences of climate change in the region of the Enzkreis, especially around Pforzheim
Additional information on the interview setting	Interview was conducted at the workplace; no interruptions

I-USA-1; Lower Hudson River Valley

Form of the interview	Telephone
Gender	Female
Occupation	Reference person project "Rising Waters. Helping Hudson River Communities Adopt to Climate Change"
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally involved in environmental concerns, esp. in climate adaptation activities around the Hudson River, affiliated with non-governmental organization)
Additional information on the interview setting	Interview was conducted via telephone, no interruptions

I-USA-2 – Interviewee 1; Lower Hudson River Valley

Form of the interview	Face-to-face, simultaneously with colleague (see I-USA-2: Interviewee 2)
Gender	Female
Occupation	Project coordinator "Hudson River Estuary Program"
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally involved in diverse climate mitigation and adaptation activities, esp. developing communal strategies; affiliated with governmental organization; based in New Paltz, State of New York
Additional information on the interview setting	Interview was conducted during extended lunch break at local restaurant; minor interruptions

I-USA-2 – Interviewee 2; Lower Hudson River Valley

Form of the interview	Face-to-face, simultaneously with colleague (see I-USA-2: Interviewee 2)
Gender	Female
Occupation	Project coordinator "Hudson River Estuary Program"
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally involved in diverse climate mitigation and adaptation activities, esp. developing communal strategies; affiliated with governmental organization; based in New Paltz, State of New York
Additional information on the interview setting	Interview was conducted during extended lunch break at local restaurant; minor interruptions;

I-USA-3; Lower Hudson River Valley

Form of the interview	Face-to-face
Gender	Male
Occupation	Artist, close to the "Hudson River Art School"
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is interested in environmental concerns because of his personal relationship to nature due to outdoor painting, esp. in the Catskills and along the Hudson River
Additional information on the interview setting	Interview was conducted at a hotel in the Catskills and was followed up by a joint hike through a part of the Catskills; this way a deeper understanding of the interview-content (esp. about specific places) was achieved

I-USA-4; Lower Hudson River Valley

Form of the interview	Telephone
Gender	Female
Occupation	Artist, involved citizen of Piermont, State of New York
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is an involved citizen, privately active in environmental activities, such as cleaning up the river along the city; her body of artwork consists partly of contemporary landscape paintings.
Additional information on the interview setting	Interview was conducted via telephone, but interviewer and interviewee met before in person in Piermont. Interviewee showed vulnerable and important parts of the city and introduced interviewer to two more citizens, who also became interviewees (I-USA-5 and I-USA-6)

I-USA-4; Lower Hudson River Valley

Form of the interview	Face-to-face
Gender	Male
Occupation	Mayor, Piermont, State of New York
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is in his capacity as mayor involved in activities concerning climate adaptation strategies for the town of Piermont
Additional information on the interview setting	Interview was conducted face-to-face in Piermont; no interruptions

I-USA-5; Lower Hudson River Valley

Form of the interview	Telephone
Gender	Male
Occupation	Geophysicist (retired), involved citizen, Piermont, State of New York
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally and privately involved in climate change adaptation activities. He also owns a home in the most vulnerable part of Piermont
Additional information on the interview setting	Interview was conducted via telephone, but interviewer and interviewee met before in person in Piermont in interviewee's home

I-USA-6; Lower Hudson River Valley

Form of the interview	Telephone
Gender	Male
Occupation	Environmental activist; permanent consultant at NGO "Riverkeeper"
Affiliation with climate change (climate mitigation/ climate adaptation) activities	Interviewee is professionally involved in environmental activities; he is also privately driven as an environmental activist; based in Hastings-on-Hudson, State of New York
Additional information on the interview setting	Interview was conducted via telephone, one minor interruption due to another incoming call for the interviewee

Appendix B: Code book

Due to its analytic purpose the code book consists of topical narratives with its respective elements: content and structure. This scheme is repetitive to all narratives; accordingly, the following code book will give memos to the various topics of narratives (narrative – content – topic) and will describe the respective elements exemplarily on one narrative (narrative – content – topic & storyteller & audience and narrative – structure – hero & villain & victim). The code book is furthermore divided into codings directly linked to narratives and codings that summarize various topics which did not show narrative structure.

Narratives		
Code (content – topic)		**Memo**
Narrative of economy		Narrative centers on climate change as influencing economy.
		Arguments from an economic perspective, regardless of local, national, or global reference.
		It is furthermore differentiated in two more subcodes, describing two narratives.
	Negative economic consequences	Narrative centers on climate change as a threat to the economy.
		Arguments for getting engaged in the combat against climate change are developed against the backdrop of impending economic loss.
	Positive economic consequences	Narrative centers on climate change as potential boost for the economy.
		Arguments for getting engaged in the combat against climate change present this combat as economic opportunity e.g. in terms of technological and other innovation.
Narrative of solidarity		Narrative centers on a feeling/ emotion of one mankind.
		Arguments for getting engaged in the combat against climate change stem from the idea that all people are equal and that it is humankind's duty to give each other aid.

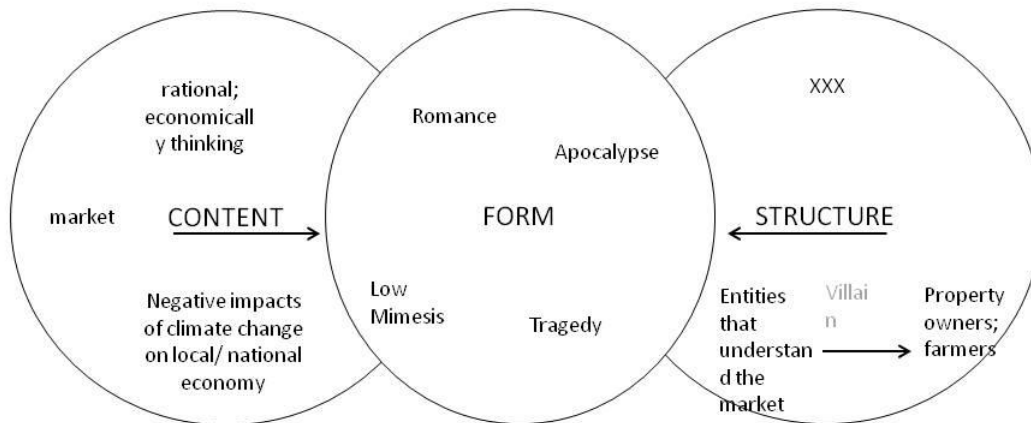| Narrative of responsibility and history		Narrative centers on the concept of blame, guilt, and responsibility of industrialized countries (high income countries) towards third world and threshold countries (low income countries).
		Arguments for getting engaged in the combat against climate change are made mainly on three levels:
		1. High standard of living in high income countries is achieved at the expense of low income countries
		2. High income countries have the resources to ensure the planet if livable for all humankind and species
		3. The historical value of specific localities and regions must be protected (= cultural meaning of place)
Narrative of environment		Narrative centers on environment and nature as independent value.
		Arguments for getting engaged in the combat against climate change stem from the concept that nature is fragile and deserving of protection.
Narrative of climate change as political topic		Narrative centers on climate change as a topic in the political realm.
		It is furthermore differentiated in two more subcodes, describing two narratives.
	Climate change as partisan distinction	Narrative centers on the politicization of climate change, i.e. the roles various political parties take on in the political debate about climate change.
	Climate change reflecting the role of a nation	Narrative centers on climate change as means to reflect the role of a nation within the global power structure.
		Arguments for getting engaged in the combat against climate change are supported with the positive image of leadership and taking on the vanguard role.

Narratives – Elements		
Metacode	**Subcode**	**Memo**
Content		Second-grade actors (individuals; communities, such as nations; environment; animals)
	Topic	Extracting the central argument (see table above)
	Storyteller	Self-description of the storyteller Does not need to be explicitly mentioned; often overlaps with the description of the hero
	Audience	Description of "referential actors" who are addressed in the narrative Topic (often) chosen in reference to the (imagined) audience
Structure		First-grade actors (individuals; communities, such as nations; environment; animals)
	Hero	Actors who are described as actively involved in the combat against climate change
	Villain	Actors who are described as blocking climate mitigation efforts, either actively or passively
	Victim	Actors who suffer from the consequences of climate change Are ascribed a passive role

Various topics	
Code	**Memo**
Uncertainty and scientific logic	Topics that arise from the challenges of science communication.
Biographical information	Information on interviewees' biographies and background information on specific local places and events.

Various topics	
Code	**Memo**
Vulnerabilities	Information and perception of various aspects of vulnerabilities in specific places (e.g. climate change as health risk due to increasing sewage overflow in the USA)
Adaptation	Information on adaptation strategies in general.
Communication	Information on communication efforts in general.

Appendix C: Schematic presentation of narratives

Narrative of negative economy

Narrative of positive economy
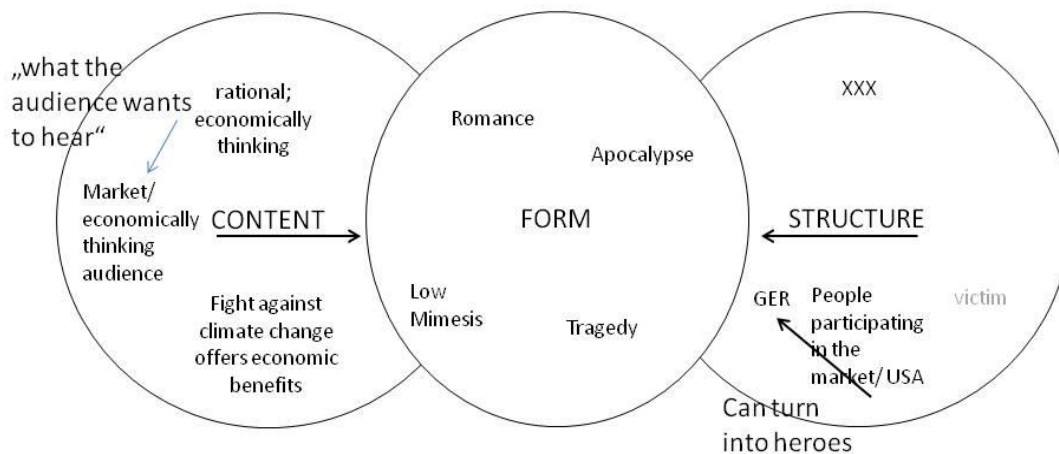
Narrative: cc as partisan issue

Not talking to an audience, but about it

Democrats

Republicans/ climate skeptics

CONTENT →

Politization of climate change

Romance

Apocalypse

FORM

Low Mimesis

Tragedy

XXX

← STRUCTURE

Democrats   victim

Republicans
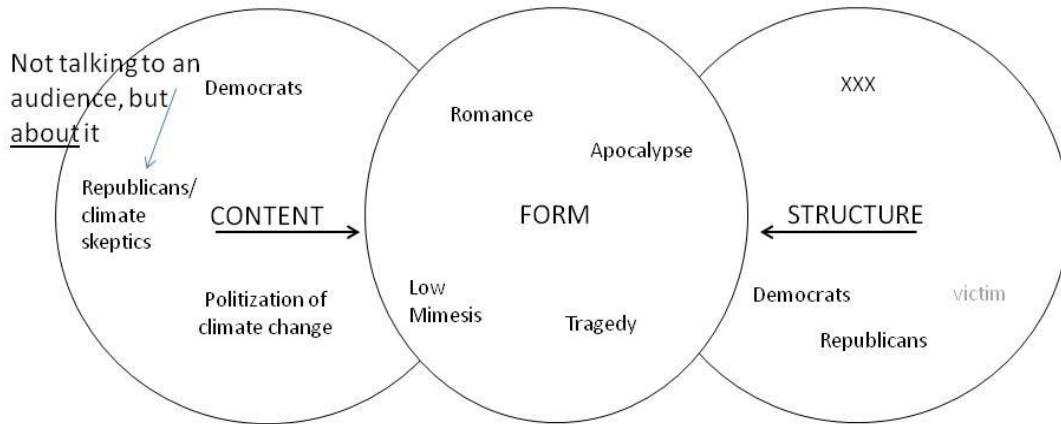
Narrative: role of a nation

Abstract critique

Not explicit

audience

CONTENT →

Climate change as topic of international relations against the backdrop of national performances

Romance

Apocalypse

FORM

Low Mimesis

Tragedy

XXX

← STRUCTURE

Local initiatives and singled out politicians

„the ususal suspects: USA, EU

Developing countires

Narrative of environment

Storyteller ist aware of vulnerability of the story

Environmental activists

Audience: is not aware/ ignores the vulnerability of nature

CONTENT →

Relationship humankind – earth

Romance

Apocalypse

FORM

Low Mimesis

Tragedy

XXX

← STRUCTURE

Env. Workers; ppl in touch with nature

Entities who are abusing nature

Environ ment / earth

Narrative of solidarity

Creating a bond, storyteller a sense of unity

audience

CONTENT →

solidarity with those who suffer innocently/ distant suffering

Romance

Apocalypse

FORM

Low Mimesis

Tragedy

XXX

← STRUCTURE

Characteri zed by the power to overcome distance
Local → global

Entities ignoring suffering

Entities suffering from cc impacts (NOTE: not exclusively 3rd world countries

Narrative of responsibility and history

Appendix D: List of quotes in German original

Interview#	Paragraph	Quote in German Original
I-GER 5	15	Touristische Auswirkungen, wenn Sie an Wintertourismus denken, ja ist etwas, wo man wohl mitrechnen muss. Das ist ja auch heute schon bekannt und schlägt sich auch nieder. Gut die letzten beiden Winter waren relativ gut wohl, aber eben davor, dann gibt es Liftanlagen, die nicht ausgelastet sind oder gar nicht in Betrieb waren. Also das sind so typische Dinge, wo man sich sicherlich dann auch gesellschaftlich drauf einstellen muss.
I-GER 2	6	langfristig wird es wahrscheinlich weniger Schnee geben. Was natürlich den Tourismus betrifft, die Region Nordschwarzwald hat ja doch einige kleine Ski-Gebiete für die Naherholung,
I-GER 5	15	Also mit längeren Sommerperioden und auch Hitzeperioden ist damit zu rechnen. Aber auch jetzt im Nordschwarzwald selber, haben sie ganz unterschiedliche Phänomene, die wohl eintreffen werden. So die Aussagen. Damit auch Auswirkungen im Bereich beispielsweise Wirtschaftsfaktor Holz. […] Dass dann der typische Baum wie die Fichte eben standortgefährdet ist, in weiten Teilen.
I-GER 4	24	bin ja dabei, gerade wieder was zu schreiben für morgen, sagen die Landwirte, das ist die größte Frühjahrstrockenheit, ich hab mit Landwirten gesprochen, die seit Jahrzehnten Landwirte sind. Das ist die größte Frühjahrstrockenheit im Enzkreis, die sie je erlebt haben. Nicht die größte Trockenheit überhaupt, aber die größte Frühjahrstrockenheit, wobei Frühjahrstrockenheiten für die Landwirte schlimmer sind, als Sommertrockenheiten noch weil da hat sich dann das Getreide oder Mais und Raps schon entwickelt oder ist zum Teil sogar schon geerntet. Aber im Sommer, aber im Frühjahr wenn sich gar nicht das entwickeln kann, die Körner, dann ist das ganz schlimm. Und im Moment rechnet man mit Ausfällen, sie waren ja gerade dabei, von 30 bis 50 Prozent.

I-GER 3	24	Im Moment gerade sind es die ganz wenigen Niederschläge, die der Landwirtschaft wirklich weh tun und bei denen man jetzt schon damit rechnet, dass es eine schlechte Ernte gibt.
I-GER 1	14	Also, Automobilindustrie braucht Teile zu bestimmter Zeit und wenn alle Straßen zum Erliegen kommen dann geht die ganze Kette verloren. Und, dann zieht sich eins ums andere nach.
I-GER 3	38	Die Wirtschaft selbst kann und sollte das nicht machen. Aber wir als Staat, als Kollektiv dafür da, die Dinge zu regeln.
I-GER 2	36	Von daher haben wir uns für einen anderen Weg entschieden und machen erstmal den European Energy Award, wobei ich glaube, dass man damit faktisch vielleicht fast mehr erreicht. Ein Konzept entwickeln und dann die Umsetzung dieses Konzeptes, das dauert immer alles seine Zeit. Aber im Grunde ist das der Weg: Dass man die Klimaschutzziele in einem eigenen Konzept versucht umzusetzen oder sogar zu übertreffen.
I-GER 3	18	Die Akzeptanz in der Politik ist eigentlich groß gewesen. Man hat gesagt: Jawohl, das ist richtig. Das hat zwar ein bisschen gedauert, bis man es umgesetzt hat, aber die Akzeptanz ist groß. Wir haben gesagt: Wir können doch nicht gezielt etwas ausweisen, was nicht geschützt ist. Die Leute, die dort nachher bauen, werden uns doch lynchen und sagen: Wie konntet ihr das nur ausweisen, wenn es andere Flächen gibt
I-GER 3	10	Die Häuser sind im Grunde alle wieder renoviert und hergestellt. Aber wir haben für die Bevölkerung eine ganz dramatische Nachwirkung: Alle, die damals betroffen waren, bekommen für ihre Häuser heute keine Versicherung gegen Hochwasser mehr, oder nur zu dramatisch erhöhten Preisen.
I-GER 5	54	wenn Sie jetzt die Auswirkungen damals, [...in New Orleans nehmen]. Also wo ja wirklich dann Milliardenschäden entstanden sind, wo ja eine ganze Stadt quasi fast zerstört wurde.

I-GER 7	58	Viele Dinge, die in den letzten Jahren umgestellt wurden, waren rein wirtschaftsgetrieben. Das hatte nichts mit dem KW zu tun.
I-Ger 2	18	Nur glaube ich, wenn man sich ernsthaft mit dem Thema beschäftigt, es auf eine Win-Win-Situation hinaus läuft. Wenn ich an die Energie-Einsparungen rangehe, habe ich erstmal Kosteneinsparungen und dann den klimaschützerischen Effekt quasi en passant.
I-GER 1	22	Aber das ist das eben auch Sache der Politik monetäre Anreize zu setzen, über die KfW zum Beispiel. Dass man sagt, gut, wenn die Leute einfach nicht das Geld haben um solche Sanierungen zu machen, dann muss man eben gucken, dass wir zinsgünstige Darlehen haben, die dann eben quasi der Volkswirtschaft wieder zu gute kommen.
I-GER 2	18	Ich glaube, darauf müssen die Bürgermeister noch kommen, dass ihnen das in mehrfacher Hinsicht wirklich etwas bringt.
I-GER 3	30	Wir hier in Deutschland und auch in Baden-Württemberg haben eigentlich immer davon gelebt und waren auch deshalb immer in der Entwicklung vorn dabei, weil wir Vorreiter waren. Ich habe - und da schließt sich der Kreis ein bisschen - von 1988/89 bis 1995 bei Porsche in Weissach gearbeitet und habe dort als Ingenieur Autos entwickelt. Und wir haben 1991/1992 den Auftrag bekommen, einen - in Anführungszeichen - Volkswagen für China zu entwickeln. […]Ich habe schon damals als junger Ingenieur und frischgebackener Porsche-Mitarbeiter gesagt, dass wir 1,4 Milliarden Menschen nicht auf unserem Niveau motorisieren können. Ich habe wortwörtlich gesagt: "Das hält diese Kugel nicht aus." […]Und da ist bei uns, meine ich, zumindest in der Wirtschaft wirklich klar, dass wir die Vorreiter-Rolle einnehmen und führend sein müssen.
I-GER 3	30	Diese These habe ich schon immer vertreten. Veränderungen in der Gesellschaft kosten am Anfang immer Geld und sind wirtschaftlich am Anfang nicht interessant. Das geht nur mit Leuten, die sich das leisten können. Deshalb setze ich immer darauf, dass jede neue Technologie eingeführt wird, zunächst

		eben nur bei den reichen oder wohlhabenden Leuten, weil sie dann zeitversetzt auch die Ärmeren in der Gesellschaft irgendwann erreicht.
I-GER 3	32	Das habe ich im Grunde genau so beschrieben, dass wir in Deutschland - oder Europa, aber Deutschland in jedem Fall - Vorreiter sein müssen. Wir haben einen guten Maschinenbau, gute Technik, gute Ingenieure, das ist unsere Stärke. Unsere Technik ist in der Welt nachgefragt, aber eben nur, weil wir in der Entwicklung vorne sind. Wir müssen aufpassen, dass wir das auch bleiben. Dazu gehört - und ich glaube, dass dafür auch die Bereitschaft in der Bevölkerung da ist - auch, dass wir eine Vorreiter-Rolle einnehmen, denn wir können uns die auch am leichtesten leisten.
I-GER 1	24	Von daher denke, ich dass die EU-Ebene, grade auch was den Bereich Klima betrifft, ja, auch bestimmte Vorbildfunktion hat und auch bestimmte Rahmen setzen kann
I-GER 3	30	Es gab auf den Konferenzen, egal ob in Rio de Janeiro, Kyoto oder Kopenhagen, ein paar große Nationen, die sich leider gesperrt haben, beispielsweise - wie die USA - das Kyoto-Protokoll zu unterschreiben. Dazu gehören auch noch Russland, China und Indien. Diese Staaten sind unterschiedlich eingetaktet, die USA und Russland als Weltmacht, und dann China als bevölkerungsreichster Staat der Welt und ganz ähnlich Indien
I-GER 8	32	Ich denke, die letzten Klimagipfel haben ja gezeigt, dass es unendlich schwer ist, eine Einigung zwischen verschiedenen Staaten zu erzielen. […] Die haben ja auch ganz unterschiedliche Interessenslagen, ob das jetzt Schwellenländer sind, oder die alten Industrienationen oder Länder die eigentlich nur betroffen sind. Da sind naturgemäß die Interessenslagen ja völlig unterschiedlich. Und da einen Konsens herbeizuführen ist hochproblematisch.
I-GER 8	34	Ich finde die Argumentation, die ja auch oft von der Bundesregierung kommt "Wir können gar nichts machen, weil das auf europäischer Ebene geregelt werden muss und wir erst einmal uns in Europa einig sein müssen" zum Beispiel Flugbenzinbesteuerung, also, das ist ja natürlich albern, denn

		dann wird gar nichts passieren. Ich denke, da wird oft so getan, als ob man so stark in das internationale Geflecht eingebunden wäre, dass die eigenen Handlungsspielräume minimal sind. Aber die sind eigentlich doch größer als man denkt. Ich denke das ist oft auch eine gemütliche Rückzugsmöglichkeit.
I-GER 2	40	Und man muss auch sagen, es gibt eben Bürgermeister wie in unsere Vorzeigegemeinde XY, die als eine der wenigen Kommunen im Bundesgebiet - ich glaube, als erste auch - den European Energy Award in Gold gewonnen hat. Der Bürgermeister XY, der turnt seit 25 Jahren in dem Energie-Bereich rum und hat sich das Thema auf die Fahne geschrieben. Der hat schon gigantisch viel gemacht, und da sieht man: Wenn ein Bürgermeister da wirklich aktiv ist, kann er sehr viel bewegen.
I-GER 2	64	So werden wir es im Klimaschutz wohl auch machen. Damit werden wir nicht die Welt retten, aber es ist unser Beitrag des Enzkreis', und wenn das jeder ernsthaft betreibt, kann man schon etwas erreichen.
I-GER 7	56	Klar ist, dass wir ein Problem haben und klar ist, dass wir nur einen Aufschub erreichen oder eine Verlangsamung wenn allen Ländern das bewusst ist. Und da sind die Amerikaner so schlecht oder so gut wie andere, auch neue Staaten wie China oder Russland, […]und solange die Regierungen das nicht auf einem Topniveau behandeln […] dann tut sich da nichts. Und meine persönliche Meinung ist, dass sich da überhaupt nichts tut, dass sich da das Bewusstsein überhaupt nicht ändert.
I-GER 8	58	wie haben wir denn diese Entwicklung gemacht? Die letzten 100 Jahre? Den Entwicklungsländern verbieten wir jetzt Stein- und Braunkohle und Atomenergie sollen sie auch nicht nutzen. Ja, was sollen Sie denn dann nutzen? Wir haben damit auch 50 Jahre für unseren Aufschwung genutzt. Und jetzt wollen wir es denen verbieten?

I-GER 8	36	Ich meine diejenigen, die von der Wirtschaft her keine Interessen haben, sondern nur die Folgen wie Dürren abbekommen.
I-GER 4	34	[…] mit Anglern habe ich, Fischern zum Beispiel heute gesprochen. Die sagen ja auch, die Fische leiden unter Sauerstoffknappheit teilweise, wenn es zu trocken wird, oder wenn die Flüsse zu warm werden. Heute habe ich zum Beispiel erfahren, dass der die Flüsse jetzt im Mai, im Grunde durchschnittlich, hier die Enz, Nagold, Würm sind unsere drei zentralen Flüsse, auch Gewässer erster Ordnung. Dass die im Schnitt drei Grad wärmer sind, als in den vergangenen Jahren. Das ist natürlich schon enorm, drei Grad. Bei der Erderwärmung ist ja schon ein Zehntel sehr viel. Drei Grad in so und so viel Jahren, aber da sind die Flüsse offensichtlich, im Moment drei Jahre, nicht drei Jahre, sondern drei Grad wärmer als zur üblichen Jahreszeit, sonst im Mai.
I-GER 8	6	Ich denke Naturschützer schon eher, die einfach sehen, dass manche Arten verschwinden, oder neu auftreten, die es vorher nicht in dem Maße gegeben hat.
I-GER 1	48	Dass der Mensch also so seine Umwelt bewusster erlebt und wertschätzt und dann sind wir beim Konsum von regionalen Produkten oder Naherholungsräumen, dass man sagt, fahr ich mehr Fahrrad oder so.
I-GER 8	6	Aber ich denke die Städter, oder die Leute auf dem Land, die im Büro arbeiten, ich denke da ist das Bewusstsein noch nicht so da.
I-GER 7	58	Wir leben alle auf einer Welt, auf einer Erde, und wir haben alle das gleiche Thema mit der Sonne und mit Wetterkapriolen. Es muss einfach jedem klar sein, dass sich da oben in der Atmosphäre was getan hat und dass das im Moment mal rein menschengemacht ist.

I-GER 4	65	Aber bei allen, fast bei allen anderen Katastrophen, die in der Welt geschehen, glaube ich dass die, zumindest teilweise vom Menschen, manchmal auch alleine vom Menschen, mitverursacht werden. Egal ob es Feuer sind, oder sonst irgendetwas. Waldbrände und Hochwasser. Ich glaube Hochwasser stehen im unmittelbaren Zusammenhang.
I-GER 7	48	Wissen Sie, in jedem Menschen steckt ein bisschen das Helfersyndrom, wenn Sie das jetzt hier vor der Haustür haben, mit einem direkten Bezug, wo es greifbar ist, da fällt das Helfen leicht. Für Haiti oder Somalia, da gibt es so viele Informationen und Organisatione und da wird so viel Geld in den Organisationen verbrannt, da gibt es so viele Interessen, die daran vorbeigehen. Und meine persönliche Meinung ist, dass man sich da schon schwer tut.
I-GER 8	18	Dagegen eine Dürre in Afrika oder eine Erosion in Pakistan oder was auch immer, da habe ich die Befürchtung dass das den meisten doch "dran vorbei geht". Es sei denn, sie haben einen Bezug zu dem Land oder waren schon mal dort. Oder kennen Leute, die direkt betroffen sind. Mein Eindruck ist, dass eine persönliche Betroffenheit gegeben sein muss und dass Nachrichten im Radio oder im Fernsehen, dass da die Leute ziemlich abstumpfen. Also, weniger daran denken "das ist der Klimawandel und dagegen müsste man eigentlich etwas tun" oder so.
I-GER 7	58	Wir leben alle auf einer Welt, auf einer Erde, und wir haben alle das gleiche Thema mit der Sonne und mit Wetterkapriolen. […]Ich verstehe nicht, dass die Leute nicht merken, dass das schlimmer wird.
I-GER 8	44	In Teilbereichen der Gesellschaft, also die Kirchen weisen ja auch immer auf die moralische Verantwortung hin und Leute die stark kirchlich oder christlich engagiert sind, da haben sie festgestellt, dass die auch diese Verpflichtung verspüren. Die Naturschutz- oder Umweltverbände weisen ja auch immer wieder darauf hin.
I-GER 7	46	Es wird mit dem Blick darauf geguckt: Kann man da was tun? Brauchen die Hilfe? Also, das letzte ganz große Hochwasser

		war das Elbe Hochwasser 2000, da haben wir uns schon zusammengesetzt und gesagt, Mensch, was tun wir? […]Und das haben wir auch hier in der Firma erlebt, dass Leute gekommen sind und gesagt haben: Ich bin für 4 Tage nach Dresden abkommandiert und der ist dann morgen abgerückt. Auf der einen Seite als Firma, hilft mir das nicht, aber für die Sache Hochwasser hilft das natürlich ungemein. Und da hat das Gemeininteresse natürlich absoluten Vorrang, da muss das private oder Firmeninteresse einfach zurückstehen.
I-GER 8	48	So altruistisch sind die Leute in unserer Gesellschaft nicht. Da steht das Interesse am eigenen Wohlergehen immer im Vordergrund.
I-GER 8	40	Länder wie die USA oder die europäischen Länder, die also weit über das erträgliche Maß hinaus seit Jahrzehnten CO2 ausstoßen, die sind natürlich erst einmal in der Verantwortung gegenzusteuern und den Ländern Unterstützung zu leisten, die stark betroffen sind. Das ist ja klar. Wir haben eine riesige Bringschuld. Wir haben den Klimawandel verursacht und die Schwellenländer sind ja gerade heftig dabei aufzuholen. Aber wir haben bislang den Großteil der Entwicklung zu verschulden, die zum Klimawandel geführt hat.
I-GER 8	42	Wir, die hochindustrialisierten Länder des Westens, USA, die europäischen Länder, Australien sicherlich noch. Brasilien ist als Schwellenland stark im Kommen, aber auch im geschichtlichen Vergleich haben wir doch in den letzten Jahrzehnten das CO2 in die Luft gebracht, das ja den Klimawandel verursacht hat.
I-GER 8	10	Dass wir eben immer wieder aufzeigen, welche Bereiche es gibt, wo die Privatperson etwas machen kann. Und da gibt es ja unglaublich viele Bereiche. Da geht es ja um Mobilität, um Ernährung, um Konsum. Und dann natürlich ganz naheliegend um Heizen und Wohnen. Im Bundesdurchschnitt stößt ja jeder Bundesbürger 11 Tonnen CO2 aus pro Jahr, und da auf das erträgliche Maß runterzukommen ist ja für einen Mitteleuropäer kaum möglich. Aber wir haben da Familien, die schon bei sechs oder sieben Tonnen sind, und das ist ja schon mal unheimlich viel. Nur erreichen wir damit

		halt vor allem den Kreis der Teilnehmer in unserem Projekt, [...].
I-GER 8	30	Wenn die Leute konkrete Tipps bekommen, was können sie machen und wo gibt es Fördermöglichkeiten. Also, diese ganz praktische Verwendbarkeit. Das läuft ja wieder auf diesen persönlichen Erfahrungsbereich raus, das steht für die Leute immer im Vordergrund. Die reine Theorie ist nicht so das, was die Leute anspricht. Ist mein Gefühl.
I-GER 8	10	Aber wir haben da Familien, die schon bei sechs oder sieben Tonnen sind, und das ist ja schon mal unheimlich viel. Nur erreichen wir damit halt vor allem den Kreis der Teilnehmer in unserem Projekt, [...].
I-GER 7	58	Und wenn den Staaten nicht klar ist, dass man mit jeder neuen nicht eingehaltenen Reduzierung dazu beiträgt, das Menschenleben auf dieser Erde in der Zukunft zu erschweren.
I-GER 3	16	Vor dem Hintergrund des 1993er Hochwasser erschien es da nötig, mal den aktuellen Stand abzufragen. [...] Hochwasserschutz-Maßnahmen sind ja auch Landesmaßnahmen. Da ich ab 1994 im Gemeinderat war, hab ich alles mitbekommen was nach 1993 passiert ist. Da wurde viel umgesetzt: Es gab Ausbaggerungen unter der Brücke in Dürrmenz, die ein Staupunkt war, [...] da ist sehr viel passiert. Da wollten wir eben wissen: Wie ist der Stand? Was wurde umgesetzt? Und vor allem: wie man den Klimaschutzfaktor noch besser einbeziehen kann.
I-GER 7	28	Zum zehnjährigen Jubiläum haben wir dann den Film gedreht, "Mühlhausen in der Enz". Wir heißen ja eigentlich Mühlhausen an der Enz. Wir haben Filmmaterial von den Hobbyfilmern zusammen getragen, haben dann einen professionellen Bearbeiter gefunden der uns das für wenig Geld gemacht hat und haben dann ein paar 100 Videos gemacht , und durch den Verkauf dann auch Spenden gesammelt. Wir haben hier einfach die Betroffenheit sehr laienhaft dargestellt, aber einfach die Betroffenheit aus dem Tag danach dargestellt. So dass wir nicht immer diskutieren müssen, sondern einfach sagen können: da, schaut es euch

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		an. Und das war dann so eine Art Erinnerung. Wenn man das noch auf Film hat, dann vergisst man das nicht mehr.
I-GER 8	30	Also, diese ganz praktische Verwendbarkeit. Das läuft ja wieder auf diesen persönlichen Erfahrungsbereich raus, das steht für die Leute immer im Vordergrund. Die reine Theorie ist nicht so das, was die Leute anspricht. Ist mein Gefühl.
I-GER 5	42	Das Eine ist ja die Frage der Feststellung von Klimawandelprozessen und natürlich dann die Diskussionen. Was erwartet uns? Das hängt ja wieder von den verschiedenen Szenarien, der Klimaprognosen ab. Dann gibt es ja auch immer wieder neue Erkenntnisse.
I-GER 4	17	Also nach diesem `93er Hochwasser…, die Intensität hat nach meinem laienhaften und journalistischen Verständnis – ich hab es ja nicht empirisch oder sonst wie ausgewertet – die Intensität hat nicht zugenommen, aber die Häufigkeit von Hochwassern schon, habe ich den Eindruck gegenüber der Zeit meiner Kindheit. […] Ich kann mich nicht erinnern, dass es in den sechziger, siebziger, achtziger Jahren so viele Hochwasser gegeben hat, wie, sag ich mal ab den neunziger Jahren.
I-GER 2	6	Was man außerdem auch nicht verkennen darf, sind die Einwanderer-Pflanzen und -Tiere, also die Tiere und Pflanzen, die bei uns schon heimisch geworden sind. Da gibt es die Zecken-Problematik, den Eichen-Prozessionsspinner, und manche Moskitos. In diesem Zusammenhang ist bei uns im Gesundheitsamt die Idee aufgekeimt - weil wir am European Energy Award teilnehmen und da bei der Selbstbewertung und Ersterhebung auch Fragen zur Klimaanpassung gestellt werden – ein Frühwarnsystem für diese Einwanderer-Tierchen einzurichten.