

Spheres of Skepticism

The Integration of the Climate Skeptic Counterpublic Within the German Networked Public Sphere

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»Because this idea that the Internet's gonna become incredibly democratic? I mean, if you've spent any time on the Web, you know that it's not gonna be, because that's completely overwhelming.«

David Foster Wallace

Abstract

This thesis is an investigation into the climate change discourse in the German networked public sphere with a focus on the climate skeptic counterpublic. I will focus in particular on the hypothesis that a polarizing discourse might lead to a fragmentation of the public sphere and the formation of echo chambers. This overarching research question of this thesis, then, asks how the climate skeptic counterpublic can potentially be integrated in the German networked public sphere and to what extent. The climate change discourse in Germany serves as a suitable example since it is heavily polarized with the mainstream being convinced that dangerous anthropogenic climate change is happening while the skeptic minority rejects the idea of a global warming and/or mankind's responsibility. To understand the possible integration of the skeptic counterpublic in the networked public sphere three studies were conducted based on the integration dimensions of similarity of discourse, connectivity and collective identity.

In the first study the German-language climate networked public sphere was mapped with a hyperlink network analysis of over 10,000 climate websites. The results show a highly polarized, almost unconnected discourse and suggest that climate skeptics could even be considered to form an echo chamber in which only climate skeptic and antagonistic messages are being shared. The second study, then, identifies several skeptic frames in the German news media's reporting on COP17. However, it can be concluded that climate skeptic messages are barely being included in the media coverage thus showing that skeptics are also excluded in the mass media. In the third study, 10,262 online comments of ten comment sections (four news sites, two climate skeptic blogs, two climate activist blogs, two climate science blogs) were analyzed to look at if and how connected skeptics are on the different sites. The results show that skeptics are highly active in the comment sections and account for over 40% of the relevant comments. It is further shown that even though there is discussion between mainstream and counterpublic, users from the mainstream react highly critical to skeptic messages.

In sum, this thesis shows that albeit the climate skeptic counterpublic is structurally only barely connected to the mainstream as well as excluded from the mass media, skeptics are very vocal and foster discussions over climate change and climate science. These discussions, even though characterized by the clash of two opposing beliefs, are a sign of integration and show that the fear of an echo chamber that is disconnected from other opinions and, indeed, society is premature.

1. Introduction

This thesis will contribute to the theoretical conception of the networked public sphere and counterpublic theory as well as to the fields of climate change communication and digital communication. I will focus on the complex relationship between counterpublic and mainstream public with regards to the counterpublic's integration in the networked public sphere. From a theoretical point of view I will first show how *counterpublic theory* and the *networked public sphere* concept can be combined, and then propose to adapt the concept of *integration* to describe different levels on which counterpublics and mainstream can potentially meet. As an empirical example the case of *climate change skepticism*¹ in Germany has been chosen. The case is especially instructive since those Germans who doubt – against all scientific evidence (IPCC, 2013) – that climate change exists or that mankind is not responsible for global warming are both a minority and seldom represented in the mass media (Grundmann & Scott, 2014; Hornschuh, 2008). However, the Internet offers skeptics new possibilities to voice their opinions through blogs or comment sections.

Indeed, the advent of any new media, such as the printing press, telegraph, radio, TV, and lastly the Internet, has always excited the imaginations of writers, journalists, politicians and scholars alike. Regarding the developments of the Internet some saw the potential for a further democratization (Rheingold, 1993) of society whereas others like Wallace² (Lipsky, 2010) were less optimistic in their assessment. Wallace, for example, proposed that the Internet would not lead to a more democratic sphere where everyone would watch/read/see what s/he needs but rather to a platform where some people would actively turn into professional gatekeepers who then reduced the complexity of this plethora of information for them. Hindman (2009) and others described the result of these developments in their concentration hypotheses: It was assumed that most of our attention is directed toward a few very prominent websites whereas the rest is ignored. Accordingly, the Internet's potential for diversity, inclusion and participation needs to be negated (see chapter 3.2.3). Coming from a similar pessimistic background Sunstein

¹ From now on I will use the more commonly used and shorter term *climate skepticism* (Howarth & Sharman, 2015; O'Neill & Boykoff, 2010) when referring to *climate change skepticism*.

² The quote on the first page was taken from an interview that Lipsky (2010, p. 87) conducted with Wallace in 1996.

(2001, 2007) suggested the opposite and proposed that the Internet would lead to a fragmented society which was shaped by self-referential enclaves, the so-called 'echo chambers' and would slowly drift away from a societal common ground. Sunstein feared that these echo chambers were so detached from each other that a common ground for public discourse was almost unachievable.

These projections have in common that they deal with the fundamental questions of changes in democracy which go hand in hand with the new media developments. Concerning questions are where people get their information from, if they are able to make themselves heard under what circumstances and, most importantly, if they – in fact – are heard. These questions and fears are thus closely connected with the concept of the public sphere and, even more so, with the question whether the Internet is able to foster a more integrative public sphere or rather hinders it.

Against this background the heated debate on climate change is an interesting and relevant topic with the skeptic counterpublic on the one side and the mainstream on the other. Indeed, climate skeptic communication on the Internet can be considered to be a suitable example to examine if and how a potential echo chamber can still be connected with the mainstream and on what levels. Climate skepticism is a special case since skeptics are not only in opposition to an overwhelming majority of climate scientists (Anderegg, Prall, Harold, & Schneider, 2010; IPCC, 2013) but there is also little common ground between skeptics and the mainstream which may lead to a polarized discourse and entrenched positions (Cook & Lewandowsky, 2016; Hoffarth & Hodson, 2016). In addition, the rhetoric surrounding climate change –especially in politics – signals that the debate is very heated. The potential Democratic candidate for the US presidential elections in 2016, Bernie Sanders, once equated skeptics with Nazis (Hoffman, 2011, p. 11), whereas the Republican senator James Inhofe (2012) wrote a book called *The Greatest Hoax. How the Global Warming Conspiracy Threatens Your Future*. Additionally, several studies were able to show that climate skeptic think tanks and scientists have ties to big fossil fuel companies (Jacques, Dunlap, & Freeman, 2008; Oreskes & Conway, 2010), a finding that may even make the positions more entrenched when people suspect that skeptics have a hidden agenda.

However, the US debate on climate change cannot be compared to the German one. The ecological friendly Green Party, for example, was already part of the German government in the late 1990's and early 2000's and, in general, the climate debate is shaped by politicians or climate scientists such as Rahmstorf or Schellnhuber (both

Potsdam Institute for Climate Impact Research) who clearly speak out for political action regarding climate change and there are only few prominent skeptics (Rhomberg & Kaiser, 2015).³ Additionally, in Germany there is a wide consensus that climate change exists and that mankind is to blame (Engels, Hüther, Schäfer, & Held, 2013) which is also – with some exceptions – reflected in the mass media’s reporting (Grundmann & Scott, 2014). As climate skeptics were not represented politically until recently⁴, the Internet offers them ways to make their voice heard and to find support for their positions that were not possible before.

This, then, raises the question whether German climate skeptics form their own echo chamber online or whether the less aggressive German debate potentially contributed to a more integrative public sphere. The overarching research question of the thesis is:

RQ: Are climate skeptics integrated in the German networked public sphere, and if so to what extent?

Accordingly, this thesis is structured as following:

First, I will outline the relevance of this thesis and the research gaps I aim to close or contribute to (chapter 2). Then, the connection between democracy and the public sphere is presented to both show the public sphere’s importance but also to lay a theoretical foundation for the further chapters (chapter 3.1.1). Based on this framework I will focus on the mass media’s relevance for the public sphere and outline in this context Habermas’ (1992; 1992) understanding of the public sphere that inspired many scholars in their understanding of the online public sphere. At the same time, Gerhards and Neidhardt’s (1993) model of the arena publics is introduced to demonstrate how these publics can be integrated in the public sphere (chapter 3.1.1). Against this background it is suggested that the Internet changed our understanding of the public sphere. To do so, issues like fragmentation, polarization and the formation of echo

³ Former RWE Innogy CEO Vahrenholt who wrote a skeptic book (Vahrenholt & Lüning, 2012) may be the exception but it can be argued that even he is not as prominent as the two climate scientists named above (Rhomberg & Kaiser, 2015).

⁴ It has to be noted that all studies that will be presented in this thesis were conducted before the AfD was successfully voted in several German federal state parliaments (Landtage). However, the AfD’s stance on climate politics and science was heavily discussed on the climate skeptic blog *Eike* with some users expressing their disappointment that the AfD was not skeptic enough.

chambers are delineated (chapter 3.1.3). Then, research on online publics is outlined to show on which layers empirical research can be situated (chapter 3.1.4). Next, the networked public sphere is presented as a suitable theoretical concept that allows for the integration of different publics and forms of communication (see chapter 3.1.5). As this thesis focuses on how counterpublics can be integrated in the networked public sphere and to what extent, I will examine how counterpublics can be understood (chapter 3.2.1), how the Internet changed counterpublic communication (chapter 3.2.2) and how counterpublics can be integrated theoretically in the concept of the networked public sphere (chapter 3.2.3). Climate skepticism is then introduced as an important and suitable case for the research question in this thesis.

After addressing issues with regard to the label ‘skeptic’ (chapter 4.1) I will focus on current research with regard to the skeptic’s identity (chapter 4.2.1), with what frames they appear in the mass media (chapter 4.2.2) and how they use the Internet for their cause (chapter 4.2.3). The considerations with regard to the networked public sphere, the integration of counterpublics and climate skepticism are then combined to establish more concise research questions and propose how these can be answered empirically (chapter 5). The three case studies are presented to highlight different dimensions of integration (chapters 6.1, 6.3, 6.5) that are finally being discussed and interlinked to fully examine and answer the question of the climate skeptic counterpublic’s integration in the German networked public sphere (chapter 7). Lastly, the limitations of these studies are considered and further research possibilities proposed (chapter 8).

2. Relevance

This thesis is placed at two crossroads: On the one hand, it combines public sphere and counterpublic theory with environmental communication. On the other hand, it combines classical empirical methods with digital methods. By doing so, this thesis contributes to multiple research strains. Additionally, due to the uprising of the right-wing and climate skeptical party “Alternative für Deutschland” (AfD; transl.: Alternative for Germany) and its political success in the latest German state elections in 2016, research on climate change skepticism seems all the more important from a

societal point of view. Indeed, due to their recent success in the federal state elections in Saxony-Anhalt, Rhineland-Palatinate and Baden-Württemberg this is the first time in Germany's history that climate skeptic positions have been represented politically.

The theory of the public sphere is perhaps one of the most prominent theoretical concepts within communication science but also in the social sciences and humanities in general (Ferree, Gamson, Gerhards, & Rucht, 2002a; Imhof, 2003; Jarren & Donges, 2011). As chapter 3.1.1 will show, there are several schools of thought with different assumptions of what a 'good' public sphere would look like and what its structure and functions would be. In this regard I draw from Benkler's (2006) adaption of the networked public sphere and Kleinen-von Königslöw's (2010) analysis of how different public forums can be integrated. Since I am especially interested in the relationship between counterpublic and mainstream publics,⁵ Nuernbergk's (2013) analysis of follow-up communication in counterpublics and their integrative potential for the networked public sphere serves as a good starting point. However, all the authors mentioned either do not focus on counterpublics – broadly understood as publics that are in opposition to the mainstream public sphere due to marginalization or exclusion – or hold a somewhat narrow view, i.e. understand counterpublics as positive. By choosing a 'problematic' case, that is where one side rejects the scientific consensus, I follow Downey and Fenton's (2003, p. 198f.) suggestion that counterpublic theory should also look at 'radical' cases. I believe that looking at a public that partially rejects scientific facts, even promotes lies and thus also thwarts the idea of an honest public discourse, offers the opportunity to look at how different publics interact with each other.

By analyzing online comments I build on Nuernbergk's (2013, p. 586) suggestion that research on public discourse should include online comments as well, and recent research (Toepfl & Piwoni, 2015) suggests that comment sections could bear separate counterpublics. Lörcher and Taddicken (2015) emphasize in this context that skeptics seem to be more active online and that this should be looked at more closely. Accordingly, the German climate skeptic counterpublic seems to be very active within different comment sections. Consequently I will also be able to address the question of how counterpublics, i.e. publics which are per definition in opposition to the mainstream publics, are integrated or excluded within the wider networked public

⁵ Publics are understood in this thesis as parts of the overarching concept of the public sphere (see also chapter 3.1.2).

sphere through comment sections and thus adding a novel perspective both to counterpublic theory as well as to the research on online comments.

In addition, climate change skepticism is a research topic that has gained much attention over the last years and thus a lot is known about who the attitudes of skeptics and what frames they use (see chapter 4.2). But compared to other countries, climate skepticism does not seem to be a major issue in Germany (Engels et al., 2013; Kaiser & Rhomberg, 2015; Metag, Füchslin, & Schäfer, 2015). The study therefore also sheds a light on the peculiar German case of climate change skepticism and shows how the German perspective differs from other countries.

By looking at climate skeptics with the means of network analysis these two research strains can be combined. Hyperlink analysis enables the identification of different publics and how these are connected with each other (Adamic & Glance, 2005). Thus, it is possible to empirically detect the ‘counter’ in counterpublics (Asen, 2000). Hyperlink analysis also allows for a broader look at the alliances climate skeptics form and thus contributes to both the identification of how “autonomous public spheres [...] create alliances and organize solidarity” (Downey & Fenton, 2003) as well as our understanding of environmental communication and the identification of places of contestation.

Empirically, it has been stressed several times that the Internet challenges not only our theoretical concepts of the public sphere but also our empirical methods (Maireder, Ausserhofer, Schumann, & Taddicken, 2015; Rogers, 2002, 2013). Additionally, a multi-method approach can be seen as key when tackling such complex issues as the relationship between publics and counterpublics. By combining a hyperlink network analysis with a content analysis of news articles as well as online comments, I will test “whether the construction of a virtual counter-public sphere leads to radical groups gaining greater publicity in the mass-media public sphere” (Downey & Fenton, 2003, p. 199).

3. Theoretical Background

To tackle the outlined overarching research questions I will draw on public sphere theory. I will first describe how the public sphere was conceptualized before the advent

of the Internet and then focus on the changes the Internet brought for the public sphere as well as our understanding of it. In this context, the concept of the networked public sphere serves as a way to integrate classical theoretical conceptions with the new challenges and chances the Internet brought about. Counterpublic theory is then presented as a way to think about different publics with regard to phenomena like inclusion, exclusion but also fragmentation or concentration. In this sense, counterpublic theory is integrated into the networked public sphere concept as a special form of polarized discourse and an empirical template for testing the integration of counterpublics within the broader mainstream publics. However, since the public sphere is often thought of as mass media induced, new forms of communication such as blogs and comment sections that facilitate the formation of new publics are presented since these are important parts of the networked public sphere and can even constitute counterpublics.

3.1. From Public Sphere to Networked Public Sphere

‘Public sphere’⁶ is an often-used term in academia that differs among different schools of thought, academic disciplines and national contexts. Negt and Kluge (1993, p. 1) consider the public sphere to be a “historical concept of extraordinary fluidity” whereas others see it as “an essentially contested concept” (Rauchfleisch & Kovic, in press, p. 3). Indeed, there are many different and mostly normative understandings of what constitutes a public sphere, which actors have to be involved, what the prerequisites are, or what functions it has to fulfill for society. These reflections can be traced back to philosophers like Aristotle (Lingenberg, 2010, p. 26), Locke, Rousseau, Mill (Ferree, Gamson, Gerhards, & Rucht, 2002b; Rhomberg, 2008) and more contemporary scholars like Lippmann or Dewey (Lingenberg, 2010; Schudson, 2008). What all of these scholars had in common was an interest in how the civil society⁷ could be integrated in

⁶ ‘Public’ in this context is often times contrasted to ‘private’ and refers usually to 1) events that are of public interest, 2) communication that is directed at everyone and 3) free access to spaces and places (Plake, Jansen, & Schuhmacher, 2001, p. 18ff.).

⁷ Understood in this context as “pluralistic entity of public associations, coalitions and gatherings which are based on the citizens’ voluntary and conjoined action. Clubs, organizations or social movements are in this context characteristic forms of organization.” (Adloff, 2005, p. 8, own translation)

the broader political context, especially with regard to democracy.⁸ The close connection between public sphere and democracy emerges from its roots in democracy's basic notion which can be "conceived in terms of the ideal of collective self-determination" (Blumler & Coleman, 2015, p. 112). For this self-determination specific civic rights like freedom of speech or freedom of the press are paramount in allowing for public discourse. Consequently Klier (1990, p. 23; own translation) explicates that the public sphere "is the place in which 'democracy' has to show and prove itself in every way." However, the role the public sphere has to play within democracy is dependent on how authors conceptualize democracy (Ferree et al., 2002a). Against this backdrop the public sphere can be broadly understood as the "constellation of communicative spaces in society that permit the circulation of information, ideas, debates [...] and also the formation of political will" (Dahlgren, 2005, p. 148).

Based on these introductory remarks I will first outline the connection between democracy and public sphere theory (chapter 3.1.1) to then present two influential public sphere concepts and establish the concept of integration of different publics (chapter 3.1.2). Since we understand the public sphere as a product of communication I will then describe how the Internet changed public communication and thus the public sphere by presenting two major issues the public sphere faces online with fragmentation and concentration (3.1.3). Then, I will present different ways to understand online public to show the differences with regard to variety and scope (chapter 3.1.4). Finally, the concept of the networked public sphere is presented as a way to account for these problems and to integrate new forms of communication (Benkler, 2006; Castells, 2007; Friedland, Hove, & Rojas, 2006).

3.1.1 The Relationship Between Democracy Theory and Public Sphere

When it comes to different conceptualizations of the public sphere the differences can either be explained with the underlying democratic theory or the sociological macro theory. Based on Ferree et al.'s (2002a, p. 289) distinction that "[d]emocratic theory focuses on accountability and responsiveness in the decision-making process [whereas; J.K.] theories of the public sphere focus on the role of public communication in

⁸ Naturally, the scholars differed with regard to their understanding of democracy and how actors from the civil society can be defined (e.g. Dahlgren, 2006; Gerhards, 1997; Habermas, 1992).

facilitating or hindering this process” the four public sphere theory strands⁹ of the representative liberal, participatory liberal, discursive and constructionist tradition¹⁰ will be presented to emphasize the relevance of the public sphere for society and democracy. In addition, the theoretical traditions also function as a foundation for the next chapters and this thesis in general since they emphasize different aspects such as who is allowed to talk but also who gets excluded. These are paramount considerations when focusing on the potential integration of counterpublics.

The *representative liberal tradition* is based around an elite-centered understanding of democracy (Ferree et al., 2002a, p. 290ff.). Elitism in this regard refers to both how the role of citizens is seen as well as how political decisions are legitimized. Naturally, different authors who can be subsumed under this label like Schumpeter (1947), Downs (1957), Dahrendorf (1993) or Kornhauser (1959) differ with regards to the degree of how involved citizens should be in the political process. Yet the overarching theme is a skeptic position towards the citizens’ level of information and interest (Ferree et al., 2002a, p. 291). Consequently, even though citizens are seen as fundamental for democracy, their main objective according to the representative liberal model is to vote responsibly and thus give legitimacy to political parties and the governmental bodies. According to this model, political parties and interest groups are especially significant since they act as intermediaries between citizens and political decision makers (Nuernbergk, 2013, p. 47). Authors of this position stress in this context the need for a competent political leadership. Therefore, the public discourse should be transparent so that citizens are able to make informed and rational decisions, with the actors being represented proportionally (decided by elections) and the content being decided by the “free marketplace of ideas”¹¹ (Ferree et al., 2002a, p. 293). This, however, is somewhat problematic with regards to minorities: Although they are

⁹ Ferree et al.’s (2002a) differentiation can be considered as highly influential and serves as a starting point for many scholars when talking about the relationship between democracy and public sphere (e.g. Kaiser, Fähnrich, Rhomberg, & Filzmaier, in print; Kleinen-von Königslöw, 2010; Lingenberg, 2010; Olof Larsson & Moe, 2013; Schäfer, 2015b). Whereas Zimmermann (2006), for example, only adjusts the name of the discursive model to deliberative, Nuernbergk (2013, p. 46) suggests that the constructionist model can be considered rather a critique of the others and not an independent model. Martinsen (2009) excludes the latter altogether and differentiates between liberal, deliberative and participatory theory models.

¹⁰ It has to be noted though that these traditions are not separated accurately. As Rucht (2012, p. 115) points out, for example, the representative liberal model may also include deliberative processes, albeit within elite circles.

¹¹ See for a critique of the idea of the public sphere as a marketplace Steiner (2007).

allowed to participate, minorities are marginalized since authors of this tradition emphasize that actors should be allowed to speak proportionally to their relevance determined through elections (Habermas, 1992, p. 403f.). The overall tone of the public discourse is supposed to be civil which is guaranteed by the actors' detachment from their positions. Detachment in this sense refers to a distanced and unemotional stance. This is not to say that political actors are not allowed to disagree but rather that their detachment is obligatory when coming to a compromise in order that a decision can be found and the debate considered closed. Debates according to authors of this theoretical strain should center around the idea of "conversational restraint" (Ackerman, 1989, p. 17ff.) which emphasizes that the aspects on which actors are not able to find a consensus should be brushed aside in favor of finding a consensus on the points which can be agreed upon. Against this background, the mass media's main objective is to inform all parts of society about relevant matters and represent the involved actors according to their relevance within the discourse (proportionality).

Where the representative liberal model tries to minimize the citizen's direct involvement, authors from the *participatory liberal theory* emphasize the role of active and emancipated citizens who are able to influence the political process through the means of participation (Ferree et al., 2002a, p. 295ff.). Consequently, the aim is to include as many citizens in the political process as possible even though it is admitted that not all people are interested in participating (Ferree et al., 2002a). Public discourse is thus not dominated by detached elite communication but rather by the inclusion of citizens who are not necessarily bound by the normative requirement of civility but are also allowed to use a more emotional approach (e.g. through polemics). Even though representatives of the model differ in their perceptions on how citizens should behave in the public discourse, they agree that a freedom regarding the "range of communicative styles" (Ferree et al., 2002a, p. 298) is needed. Through the inclusion in public discourse citizens are able to learn to express their own interests and defend them vocally (Zimmermann, 2006, p. 26). The central motif of the participatory liberal model is the empowerment of citizens (Ferree et al., 2002a, p. 297). Hence, grassroots movements are more important in this theory strain since they are able to channel opinions, highlight alternative viewpoints and foster participation. The mass media are thus also expected to represent the civil society more prominently than in the representative liberal model (Nuernbergk, 2013, p. 49). In this sense the public sphere

can be considered as a critical counterweight to the political hegemony (Martinsen, 2009).

Closely connected to the participatory liberal theory is the *discursive theory* model which can be mainly attributed to the works of Habermas (1992; 2006[1962]). The main difference between the two models is that the discursive model emphasizes the need for deliberation within the political decision making process and thus emphasizes the importance of an institutionalized deliberative process which is based on inclusion whereas the participatory liberal model assumes that popular inclusion would suffice (Ferree et al., 2002a, p. 302; Habermas, 1992, p. 368). Rucht (2012) remarks that participation in itself does not guarantee deliberation. Hilmer (2010), however, adds that participatory models include spaces like the private realm or work whereas the deliberative models do not. Public discourse in the deliberative tradition should be centered around core values like respect and dialogue that ensure an equal and reciprocal deliberation based on rational and accepted arguments (Ferree et al., 2002a, p. 306; Martinsen, 2009, p. 50). Since the goal of deliberation is to find a common ground, debates can also be considered closed after a consensus has been found.

The public sphere in this tradition is centered on deliberation processes of actors from the civil society whose task it is to shed light on overlooked issues or make diverse opinions heard. Civil society actors are seen as especially important since their opinions and arguments are assumed to be “better” for the public discourse, i.e. freer, more diverse, rational and without influence of external or internal constraints such as economic or power considerations (Habermas, 1992, p. 443). Gerhards (1997), on the contrary, finds in his empirical analysis of this claim no proof for more diverse and rational arguments by civil society actors. The result of free civic deliberation is legitimized power (Habermas, 1992). Civil society actors in this sense are situated on the periphery of the political process, whereas the center is shaped by political or administrative institutions (e.g. governmental bodies) and courts (Habermas, 1992; Peters, 1993). The public sphere in this model is situated near the periphery and is thought to bring actors from periphery and center together so that a discursive consensus can be achieved. Habermas (1992) adds that public deliberation, even though paramount in this model, is not necessary for all, mostly routine, political issues but only for those which spark conflict. The mass media’s task in this understanding, albeit problematic since driven by economic goals, is to include actors from the civil society and make different positions heard.

Authors from the *constructionist theory* model are mostly concerned with the question of who is being left out in the other traditions (Ferree et al., 2002a, p. 306). Based on post-structuralist authors like Foucault (1972), they are interested in society's underlying power dynamics and how these reproduce inequalities as, for example, access to the public sphere (e.g. Benhabib, 1992; Felski, 1989; Fraser, 1990). Authors from this tradition often argue from a feminist point of view and contextualize women's marginalization within the broader societal picture (Ferree et al., 2002a, p. 307). They assume that the demarcations of private and public sphere as well as political and other topics which Habermas, for example, draws in *Structural Transformation of the Public Sphere* (Habermas, 1989), are in themselves an artificial act of exclusion that marginalize important topics and actors (Fraser, 1990). From this perspective, discourse is in itself a power practice and categories like knowledge are not neutral but also methods of control (Zimmermann, 2006, p. 31). As the line between private and public is blurred, the representative liberal notion of expertise naturally has to be rejected since other actors from the civil society may be more appropriate to connect these two spheres (Ferree et al., 2002a, p. 307). The consequence of this demand is not only that all actors, especially the marginalized ones, have to be actively included within the public sphere but also that they have to be recognized as 'strange' or 'different' (Ferree et al., 2002a, p. 307f.). The form of communication within the public sphere is thus not supposed to be detached or civil, since these attributes in themselves can be considered excluding, but should focus on its own narratives to make experiences and differences more clear and obvious (Ferree et al., 2002a, p. 313f.; Young, 1993, p. 123ff.). Discourses in this context are never supposed to end since this could exclude potentially marginalized positions. Consequently, authors from the constructionist tradition reject the aim for a consensus as it implies that actors have to give up their (subjective) positions and thus are marginalized (Mouffe, 1999). Accordingly the public sphere has expanded due to previously unknown positions and actors.

Based on the underlying power structures within the public sphere, Fraser (1990) is also deeply skeptical as to whether *one* public sphere, in which all positions and actors are included, would actually be a good thing for democracy. She suggests rather that minorities should form subaltern counterpublics in which they are able to regroup (Fraser, 1990; chapter 3.2). The mass media in this context are presumed to make the marginalized groups visible and give them the chance to share their narratives. Despite these differences to the other models, it has to be noted that the constructionist model

offers no alternative regarding the ideal structure of democracy or how the public sphere can be evaluated. Rather, authors from this tradition point to weaknesses in the other traditions (Ferree et al., 2002a, p. 315; Nuernbergk, 2013, p. 58). This also brought, for example, Habermas (1992) to adjust his theory and to take marginalized groups more into account.

The four different traditions, albeit not fully delimitable, can be divided by their main focus: whereas the representative liberal theory focuses from an elite perspective on the question of ‘who’ has to be involved within the public sphere, authors from the participatory liberal model emphasize the role of popular inclusion and the empowerment of citizens within the political process (Ferree et al., 2002a, p. 316). For representatives of the discursive tradition, however, the main focus lies on the question of which functions the discourse should fulfill to allow for deliberation, while constructionists explicate the need for a truly inclusive discourse that avoids excluding minorities and thus expands the public sphere (Ferree et al., 2002a, p. 316f.). These, then, serve as a good starting point for the inquiry into not only how a public sphere can be conceptualized both off- and online but also how counterpublics form and what relationship they have to the mainstream public sphere.

3.1.2 Two Classical Concepts of the Public Sphere

After having outlined the close connection between democracy theory and public sphere I will focus on how the public sphere can be conceptualized and operationalized empirically. In order to do so I will first present structurally different tiers of publics, explain how the mass media comes into play and then outline Habermas’ (1992, 2006 [1962]) deliberative and Gerhards’ and Neidhardt’s (Ferree et al., 2002b; Gerhards, 1998; Gerhards & Neidhardt, 1991, 1993) liberal model and its adjustments of the public sphere¹². These two concepts are being chosen here since they show how the public sphere can be understood but the authors also emphasize different aspects that are fruitful when trying to understand the online public sphere that Benkler (2006), for example, did not consider in his analysis of the networked public sphere, namely integration of different publics. The mass media’s relevance for integrating different

¹² For a more in-depth analysis of the different public sphere concepts in communication science see Imhof (2003) or Wimmer (2007).

publics has also to be outlined so that it can be contrasted with the Internet and to emphasize why mass media research is imperative when looking at the integration of a counterpublic.

Tiers of the Public Sphere

When talking about the public sphere it is important to note that the public sphere is not made up of one big public but rather of many different only partially connected publics (Gerhards & Neidhardt, 1991, p. 50). These publics can be divided into three layers, or tiers, based on three criteria: amount of communicating participants (openness), the “elaboration of their organizational structure” (Gerhards & Schäfer, 2010, p. 144) and societal impact (Gerhards & Neidhardt, 1993; Gerhards & Schäfer, 2010). These three tiers are ‘encounter’ public, ‘public events’ public¹³ and ‘mass media’ public. The encounter public can be considered an ‘everyday’ public because it consists of casual everyday, face to face encounters, for example in the train or on the street, where everyone is able to voice his/her opinion without the need of a specific structure. However, the encounter public is naturally also the public with the least structural prerequisites as well as reach and societal influence due to its small size and ephemeral character. The ‘public events’ public on the other hand is more advanced with regard to structural prerequisites. Public events are, for example, demonstrations or public lectures and thus need at least a minimal degree of organization and a demarcation of who is allowed to speak and who is not. But they are also more influential than the encounter publics since they reach more people. Finally, the mass media public is the most influential public since it can be assumed that most people read/listen/watch media content in some way. However, the structural prerequisites (infrastructure, expertise, etc.) are also the most advanced to gain such a reach, thus leading to a stark delineation between an abstract audience (i.e. the audience is not spatially present) and speaker (e.g. journalists or politicians) which may lead to an exclusion of topics and/or actors (see section 3.1.1) and a reduction of social complexity (Gerhards & Schäfer, 2010, p. 144). Similar to Gerhards and Neidhardt (1993), Habermas (1996, p. 374) differentiates between episodic publics (e.g. in coffee houses), occasional publics (e.g. performances or concerts) and the abstract public sphere “of isolated readers, listeners, and viewers

¹³ I refer in this context to the literal translation of “Öffentliche Veranstaltungen” (Gerhards & Neidhardt, 1991, p. 53) which is also used by Gerhards and Schäfer (2010, p. 144). Raupp (2011, p. 79) on the other hand refers to this tier of publics as “public sphere of assemblies”.

scattered across large geographic areas, or even around the globe, and brought together only through the mass media.” Nuernbergk (2013, p. 41f.), however, points out that the criteria of the different public tiers are closely connected to the conditions the mass media public sphere dictates, whereas such a clear-cut distinction is barely applicable to the Internet.

Based on these differentiations I will now focus on the most influential tier of the public sphere: the mass media public (Gerhards & Neidhardt, 1993). Indeed, many scholars use the mass media for their empirical analysis of the public sphere since they consider them as somewhat representative of the public discourse (e.g. Eilders, Neidhardt, & Pfetsch, 2004; Ferree et al., 2002b; Gerhards & Schäfer, 2006; Kleinen-von Königslöw, 2010; Lichtenstein, 2014; Weßler, 1999).¹⁴ As Gerhards, Neidhardt and Rucht (1998, p. 87) put it: “The modern public sphere is thus mostly a mass media public sphere.” This perspective is not only based on the mass media public sphere’s general reach and influence but also on the mass media’s potential for fulfilling the role as an intermediary between state and society (Habermas, 2006). The mass media system in this context has a double function: it serves as forum of the public sphere and as actor that selects other actors, topics and/or opinions and how these should be framed. This selection process, like most processes within the mass media, is based on several news factors such as the type of event, the actors involved or the societal influence (e.g. Eilders, 1997; Galtung & Ruge, 1965; Schulz, 1976). These processes are shaped by highly ritualized and professionalized programs within mass media that guarantee constant communication and lead Blöbaum (2004, p. 209ff.) to differentiate between presentation, organization, selection and information collection programs. I will thus focus on how the mass media can be embedded theoretically in the public sphere.

Habermas’ public sphere model

Even though the mass media’s role within the public sphere cannot be disputed, it can be criticized. Habermas (2006 [1962]), who is probably the most prominent scholar when it comes to the public sphere, proclaimed that with the mass media the public sphere changed from culture reasoning (*kulturräsonnierend*) to culture consuming (*kulturkonsumierend*) since the mass media pushed the citizens back into the private

¹⁴ This is especially the case in communication science. Neidhardt (2007, p. 19) emphasizes this when he calls the public sphere a “fundamental term of a political communication science”.

sphere where they only passively consumed the news but did not deliberate about it. According to Habermas (2006[1962]), the mass media's interest does not lie in fostering deliberation and integrating different actors but rather on economic growth. Habermas fears that this would weaken the public sphere in favor of an elite-dominated public discourse that would leave no room for public deliberation and the formation of a public opinion and would thus incapacitate the citizens. In his later works (Habermas, 1992, 2006), however, he revised his perspective on the mass media and also emphasized the need for a strong press in order to empower citizens. Yet, this differentiation shows how the ideal public sphere would look according to Habermas' (2006 [1962]) analysis of the bourgeois public sphere and its structural transformation: unregulated access for every citizen to a freely and unconstrained assembly where all publicly relevant issues could be discussed respectfully and reciprocally with everyone being able to voice his/her opinion. In this context, he contrasts the autonomous (*autochthon*) to the power-regulated (*vermachtet*) actors within the public sphere. In this understanding, the autonomous actors derive from civil society and are able to speak freely and without any pressure. The power-regulated actors are regulated "by formal bureaucratic relations of hierarchy." (Ferree et al., 2002b, p. 216) The unrestrained autonomous actors can thus be considered more rational (see chapter 3.1.1).

Habermas understands the public sphere in the following way: "The public sphere can best be described as a network for communicating information and points of view (i.e. opinions expressing affirmative or negative attitudes); the streams of communication are, in the process, filtered and synthesized in such a way that they coalesce into bundles of topically specified public opinions." (Habermas, 1996, p. 360)

This definition is helpful since it already emphasizes the need for active civil society actors in the public discourse, the public sphere's network character and also leaves room for public communication outside the mass media. These aspects are highly important when thinking about a public sphere on the Internet and have influenced many scholars who conceptualized the online public sphere (e.g. Boyd, 2010; Gerhards & Schäfer, 2010; Papacharissi, 2002). However, Habermas' concept has often been criticized, for example for being too naïve when it comes to the distinction between public and private (Calhoun, 1992, p. 35), for its very ambitious preconditions for public discourse (Gerhards, 1997) and indeed, Habermas (1996, p. 326) himself noted that this concept could be considered as an 'ideal' and "methodological fiction".

Gerhards' and Neidhardt's (1993) model is, in contrast, more functionalist and less normative.

Gerhards' and Neidhardt's public sphere model and the concept of integration

Coming from the tradition of the representative liberal model, Gerhards and Neidhardt (1991) tried to conceptualize the public sphere in a way that both keeps Habermas' vision of an ideal public sphere in mind and yet is suitable for empirical analyses (Wimmer, 2007, p. 108). Based on the three tiers of the public sphere mentioned above, they understand the public sphere as an intermediary communication system which "can realistically be only a mass media public sphere" (Gerhards, 1991, p. 61; own translation). It thus functions as an arena or forum between the civil society and the political system. They assume that the public sphere is not a unity but rather consists of numerous different forums in which the mass media constitutes the "master forum" since it guarantees social communication that bridges subsystems and specific topics and thus helps integrate the different forums (Gerhards, 1994, p. 84; Kleinen-von Königslöw, 2010). The authors emphasize that the mass media public cannot be thought of without the other publics since it is rooted in them and depends on their input, e.g. for topics (Wimmer, 2007, p. 111). In the concept of Gerhards and Neidhardt (1991), the public sphere is shaped by a distribution of roles – the audience, the media and the speakers¹⁵ – and a process of input, output and throughput where topics and opinions are collected (input), processed (throughput) and passed on (output) (Neidhardt, 1994, p. 8f.). Similar to Habermas the public sphere has to be open for every member of society regardless of expertise or status (Gerhards & Neidhardt, 1991, p. 44ff.).

Based on the assumption that the public sphere consists of numerous different forums they propose that these can be divided into topic-specific sub-forums like a science forum and a social movement forum (Ferree et al., 2002b). The audience, in this picture, is situated in the gallery (the size differs depending on media type and outlet) and media and speakers¹⁶ on the stage. The audience in this context is the addressee of media and speakers and can be considered as the reference group of both (Gerhards et

¹⁵ Ferree et al. (2002a) note in this context, that the differentiation between media and speaker is problematic since journalists may very well act as speakers themselves.

¹⁶ Neidhardt (1994, p. 14) differentiates between five types of speakers: 1) representatives (e.g. of societal groups), 2) advocates (e.g. of special issues), 3) experts (e.g. in their scientific field), 4) intellectuals (e.g. those of a high reputation within society) and 5) commentators (e.g. journalists that voice their opinion).

al., 1998, p. 56). Additionally to the gallery and the stage there is also the backstage in which actors plan their communication strategies to persuade the audience and try to find sponsors or resources which may support them on the stage (Ferree et al., 2002a, p. 11).

This concept has been adapted by several scholars (e.g. Ferree et al., 2002b; Kleinen-von Königslöw, 2010; Weßler, 1999) but I will focus in particular on Kleinen-von Königslöw's (2010, p. 36) question of how these diverse public forums actually can be integrated into one public sphere.¹⁷ Integration in this context can be understood as the “coherence of parts in a ‘systemic’ whole and the resulting demarcation to an unstructured environment” (Esser, 2000, p. 261, own translation). Consequently, integration refers to the differentiation of an ingroup and an outgroup. Kleinen-von Königslöw (2010, p. 40f.) thus proposes four dimensions which indicate whether a forum or a public is integrated in the national public sphere or not: 1) observation of governing (i.e. the forums observe and discuss the political system), 2) similarity of discourses (i.e. the similarity of the forums' observations and discussions), 3) connectivity of discourses (i.e. if the forums exchange topics and speakers and thus interact with each other) and 4) collective identity (i.e. who is seen by the forums as ingroup and who as outgroup).¹⁸ In her analysis, Kleinen-von Königslöw (2010, p. 292, 300) concludes that the German public sphere is “sufficiently” integrated and suggests that the four dimensions can also be used for analyzing the relationship between mainstream public and counterpublic.

However, Gerhards' and Neidhardt's (1991) model of the public sphere also sparked criticism which Wimmer (2007, p. 127) summed up in two major points. On the one hand, Gerhards and Neidhardt mainly focused on the political public sphere

¹⁷ Kleinen-von Königslöw's (2010) differentiation is based on Wessler et al.'s (2008) analysis of the transnationalization of the public sphere with regard to a possible formation of an European Public Sphere.

¹⁸ Wessler et al. (2008, p. 30) differentiated in this context between 1) monitoring governance, 2) discourse convergence, 3) discursive integration, and 4) collective identification. And Nuernbergk (2013, p. 292) proposes that these can be understood more generally as 1) monitoring/transparency, 2) validation/similarity, 3) orientation/connectivity, and 4) identity/alternativity. Since Wessler et al. (2008) focused on the transnationalization of the public sphere and Nuernbergk (2013) did not take framing into account, I will draw on Kleinen-von Königslöw's (2010) dimensions. However, it has to be noted that all authors leave the dimension collective identity unclear with regard to what factors constitute a collective identity as in an ingroup that can be clearly separated from an outgroup (Lichtenstein, 2014). As I will show in chapter 4.2.2 but also empirically in 6.5 climate skepticism can indeed be considered to be part of one's identity based on one's attitudes.

which leaves out other aspects of the lifeworld (see also the constructionist perspective in chapter 3.1.1) and which is also reflected by those studies on the public sphere which mostly focus on the mass media and leave out other “dimensions of social context” (ibid). On the other hand scholars criticized the concept for being limited to a national context and question whether the model can be used to analyze a transnational public sphere. Both issues are especially relevant when thinking about the Internet since a political public sphere online is an artificial construct at best in the sense that political issues are discussed in all different kinds of publics (Wojcieszak & Mutz, 2009); mass media are not necessarily needed anymore for information and opinion formation (Goode, 2009) and national borders can easily be transcended (Castells, 2007).

Yet, Habermas’ (2006[1962]) discursive and Gerhards’ and Neidhardt’s (1991) liberal model offer important insights on the multiplicity of publics, the importance of the mass media for the public sphere, the public sphere’s network character, and how public discourse would ideally look. In addition, the importance of the mass media for the formation of a public sphere but also the integration of different publics has been outlined. These aspects need to be considered when thinking about the online public sphere and the question whether the Internet can lead to an integration of counterpublics and to what extent. In the next chapter I will thus focus on how the Internet changed communication and, in turn, the public sphere.

3.1.3 Internet and the Public Sphere

As the last chapter has shown the mass media are instrumental in facilitating a public sphere. In this sense, the Internet, as a new and highly disruptive medium, could lead to a new transformation of the public sphere (Bruns & Highfield, 2016). In this chapter I will focus on the question: Is the Internet suitable for people to form a public sphere and what aspects may hinder them?

There were high hopes for democracy when the Internet was first¹⁹ introduced. Websites, e-mails, mailing lists, discussion boards, chat systems and other services promised new forms of communicating with each other, thus circumventing the mass media and, at the same time, informing oneself through new and old channels. This new

¹⁹ ‘First’ in this context refers to the wider introduction to and adaptation by the general public in the 1990s and not to prior mostly closed (military) versions that can be traced back to the 1960s (Schmidt, 2013, p. 36).

medium²⁰, like most media before, was therefore seen to have the potential to fundamentally influence the social, economical and political environment (Castells, 1996, 2004). Neuberger (2009, p. 22ff.)²¹, in an attempt to wholly grasp the medium Internet and its impact, differentiates between the medium's technical potential and how it's selectively adapted as an institutionalized medium. On the technical side he describes how the Internet changed the social (integration of different forms of communication), channel and sign (best seen on multi-media sites where video, audio, text and picture are integrated) as well as space and time dimensions (being able to communicate both instantly as well as after years, regardless of physical distance). On the adaption side, he outlines how the Internet's multi-optionality, decentralization and meta-communication (which allows for a system's (self-)observation) changed how, when, and where people communicate. The Web 2.0 and the 'rise' of user-generated content naturally made these changes even more apparent and also sped them up (Neuberger, 2009; Schmidt, 2011). These myriads of small and big changes – some only assumed – lead scholars to the conclusion that the Internet would have a significant impact on our understanding and conceptualization of the public sphere (e.g. Benkler, 2006; Bieber, 1999; Castells, 2007; Couldry, 2003; Dahlberg, 2001; Gerhards & Schäfer, 2007, 2010; Neuberger, 2009, 2014; Schmidt, 2013; Sunstein, 2001). But these changes do not necessarily lead to an online public sphere. In contrast, some authors (Hindman, 2009; Sunstein, 2001) proposed that the Internet would harm the public sphere and democracy. Thus, before I present how scholars study and understand the online public sphere I outline the potential problems it faces.

Indeed, when it comes to early assessments of the Internet and democracy and/or the public sphere there can be roughly divided between two camps: the optimistic and the pessimistic.²² The US politician Gore, for example, prominently claimed that the

²⁰ The Internet in this context can be considered a “hybrid medium” (Höflich, 1997) since it allows for several modes of communication on a variety of hardware (e.g. smartphone, computers, etc.) ranging from mass media communication to interpersonal communication (Schmidt, 2013).

²¹ Neuberger (2009) is one of several scholars who outlined how the Internet changed society and communication and especially focused in this context on journalism and the public sphere. For a more broad analysis see Castells (1996, 2004; Castells & Cardoso, 2006) or Benkler (2006).

²² In this context, Zimmermann (2006, p. 121) adds that there are also ambivalent or neutral positions. However, since these emerged only after the first debates between optimists and pessimists I will focus on the two extreme positions. She also lists other terms that have been used for both sides, e.g. “techno-determinists” or “dystopianist” (Zimmermann, 2006, p. 121; 2007, p. 169).

Internet “*will not only be a metaphor for a functioning democracy, it will in fact promote the functioning of democracy by greatly enhancing the participation of citizens in decision-making*” (Schulz, 2011, p. 214, emphasis in original)²³. In contrary, Sunstein (2001) proposes that the Internet may lead to a more polarized and scattered discourse (the so-called “Babel objection”). And Hindman (2009) even calls digital democracy a “myth.” So whereas the optimists proposed that the Internet would lead to a more democratic society in which the citizens could be more informed and involved in the public discourse and the political process, the pessimists feared that the Internet would lead to the contrary and to an overly individualized society in which already existing inequalities would be reproduced. Before focusing on how the online public sphere can be understood and conceptualized it is mandatory to look at some of the problems it faces.

In their literature review, Zamith and Lewis (2014, p. 4) identified six overarching problems the public sphere faces on the Internet: “a ‘digital divide’; incivility among participants; the anonymity of communicators; the fragmentation of deliberation; selective exposure by individuals; and the homogenization of discussions”.

²⁴ Digital divide, in this context, refers to inequalities as, for example, access to the Internet, technical infrastructure but also digital literacy which not only limits a person’s ability or will to inform him/herself on the Internet but also to participate in a meaningful discourse (Hargittai, 2002; Hargittai & Walejko, 2008; Schradie, 2011; van Dijk, 2006). Incivility, on the other hand, is deeply connected with Habermas’ (1996) ideal of a deliberative discourse and refers to the tone in which online discussions are held. Most studies that take a closer look at civility online (e.g. in comment sections, forums or on social media sites like *Twitter*), however report that online discourses are mostly characterized by their incivility (e.g. hate speech, personal attacks or lies) and leave little room for true deliberation (Anderson, Brossard, Scheufele, Xenos, & Ladwig, 2013; Freelon, 2013; Papacharissi, 2004; Zamith & Lewis, 2014). Whereas the anonymity of users might potentially lead to a more equal discourse, studies show that it can also be detrimental for the public sphere as it may encourage the use of fake

²³ See also Negroponte (1995) or Rheingold (1993) for a positive take on how the Internet would change society for the better.

²⁴ See also for an in-depth discussion of these phenomena Kaiser, Fähnrich, Rhomberg and Filzmaier (in print) and regarding fragmentation and concentration in particular Nuernbergk (2013, p. 163ff.).

persona, trolling²⁵, flaming²⁶ or lying since there is no accountability for the users (Lee, 2005; Zamith & Lewis, 2014). Selective exposure describes the conscious or unconscious²⁷ act of ignoring content that may lead to cognitive dissonance and thus to withdrawal in an “echo chamber” (Sunstein, 2001) or “filter bubble” (Pariser, 2011) in which only topics and opinions are being shared and discussed that are consonant with one’s own worldview but excludes a more diverse public discourse (Kaiser, Fähnrich, et al., in print; Zamith & Lewis, 2014).

Finally, fragmentation and homogenization can be described as the two opposing extremes on the same scale that ‘measures’ the public sphere’s²⁸ diversity (of participants, topics or opinions and websites). These two phenomena usually refer to the audience; the ‘homogenization’ of media use is called concentration (Hindman, 2009). So, then, whereas fragmentation in its extreme form refers to the public sphere’s disintegration into numerous echo chambers that are not integrated at all, homogenization insinuates the “winner takes all”-rule of attention by which a potentially healthy and diverse public sphere is dominated by a few users or, in the case of concentration websites, whereas the rest is ignored.

Habermas (2008a; 2009, pp. 53, 157), for example, proposes that the Internet may be especially helpful in authoritarian or oppressive states where the public discourse is censored but may lead to a fragmentation of the public sphere in democratic states. This is in line with Sunstein (2001, p. 67; 2008) who proposes that the Internet may lead to more deliberation although not in the general public sphere but rather in “deliberative enclaves” or echo chambers which then, as a result, may become even more extreme since there are no opposing voices. He suggests that these enclaves thus become an echo chamber, i.e. a “breeding ground for group polarization and

²⁵ Trolling can be defined as: “A troller is a CMC [computer-mediated communication; JK] user who constructs the identity of sincerely wishing to be part of the group in question, including professing, or conveying pseudo-sincere intentions, but whose real intention(s) is/are to cause disruption and/or to trigger or exacerbate conflict for the purposes of their own amusement.” (Hardaker, 2010, p. 237)

²⁶ Flaming is here understood as “a hostile expression of strong emotions such as swearing, insults, and name-calling” (Lee, 2005, p. 285).

²⁷ Mostly through algorithms that select content based on one’s preferences and thus also hide content that potentially goes against one’s preferences (Pariser, 2011)

²⁸ Some authors refer not to the public sphere or publics but rather to audience fragmentation, i.e. the fragmentation of what was previously considered one audience into numerous different smaller audiences of different channels and media (Tewksbury, 2005; Webster, 2014; Webster & Ksiazek, 2012). Since it was already outlined that the public sphere is heavily dependent on the audience these studies are also included here (see chapter 3.1.2).

extremism” (Sunstein, 2001, p. 71). Putnam (2000) also refers to the phenomenon of these numerous un- or only loosely connected publics as “cyberbalkanization.” Indeed, several studies were able to identify echo chambers, fragmentation or polarization processes online – often along ideological lines (Adamic & Glance, 2005; Sunstein, 2008; Williams, McMurray, Kurz, & Hugo Lambert, 2015; see also chapter 5.1).²⁹

However, concerning this position, there are two major issues. On the one hand, as it has already been pointed out before (see chapter 3.1.1) it is highly questionable whether there ever was *one* public sphere and, more importantly, if this is even something to aspire to. Fraser (1990), for example, made clear that counterpublics are actually better for society since they extend the public sphere by giving a voice to minorities and excluded groups whereas a single public sphere would marginalize those voices (see also chapter 3.2). Dahlberg adds (2007, p. 833) that “the model fails to theorize respect for difference as a fundamental end of democracy. Difference is seen as a threat to social stability, to be overcome by rational deliberation aimed at consensus.” On the other hand, authors who study fragmentation or polarization processes online often do so by looking at one specific topic and one proxy for connectedness (e.g. hyperlinks, blogrolls, follower/followee relations or direct interactions). These proxies only shed light on one specific way of attributing relevance or attention. However, as Kleinen-von Königslöw (2010) points out, there are multiple ways of integrating different publics as, for example, observing each other or discussing the same topics. Additionally, there are, of course, other topics where actors who differ on one subject may now interact. As Bruns and Highfield (2016) point out there are numerous publics on the Internet and although some may be polarized or fragmented, others are not.

In contrast, homogenization or concentration processes refer to an overly monotonous public sphere. Zamith and Lewis (2014), for example, understand the term mostly from a participation perspective and consequently define the main problem as online discourses being dominated by a few highly active users while a mostly passive and consequently silent audience sits back. In several empirical studies, Hindman (2009) shifts the focus from the users’ participation to their attention and suggests that since everyone’s attention is limited people do not necessarily check out all possible

²⁹ A prominent topic for research in this context is the online polarization between Republicans and Democrats in the US (Adamic & Glance, 2005; Colleoni, Rozza, & Arvidsson, 2014). Empirically, ingroup/outgroup relations are often times measured with regard to a group’s homophily, i.e. people prefer to interact with like-minded and stay within a group of like-minded (Colleoni et al., 2014; Yardi & Boyd, 2010).

websites (e.g. political websites) but rely on more classical outlets (e.g. the mass media) or on search engines like Google. He, too, proposes that the combination of the user's limited amount of attention, a sheer unlimited amount of websites and Google's quasi-monopoly would lead to a "Googlearchy" (Hindman, 2009, p. 55). He thus "suggests that online concentration comes from the sheer size of the medium and the inability of any citizen, no matter how sophisticated and civic-minded, to cover it all" (Hindman, 2009, p. 57). Consequently users are only paying attention to a small amount of selected websites which, however, make up most of their attention. Thus the Internet could eventually be regarded as being even more effective in excluding minority voices than traditional mass media (Hindman, 2009, p. 12).

Hindman's (2009) analysis can also be considered as an attempted rebuttal of Benkler's (2006, p. 248) diagnosis that online fragmentation and homogenization processes are "just right" to support "universal intake and local filtering". Nuernbergk (2013, p. 170ff.), however, disagrees with Hindman's (2009) assessments and remarks that it is not clear which sites are actually the most prominent ones in the analysis. He adds that mass media outlets, for example, are not only covering many different topics but also fulfill highly crucial tasks within the public sphere like giving orientation or information. Additionally, a study by Neuberger and Lobigs (2010), which focused on the diversity of sources online, could not confirm the claim of concentration processes within the online public sphere. Another aspect which counters the fear of an online concentration is the role of the social web and its closely connected recommendation and sharing system which enables the quick diffusion of information or opinions across different publics and the circumvention of classical gatekeepers (Benkler, Roberts, Faris, Solow-Niederman, & Etling, 2015; Maireder & Schlögl, 2014; Nahon & Hemsley, 2013). With regard to the question of user homogenization, Hargittai and Walejko (2008) noted that inequalities, albeit existing, disappeared when controlling for digital literacy. It thus seems likely that the more people adapt to the Internet and its opportunities, the more these inequalities (e.g. digital literacy, education) will at least be reduced.

The outline has shown how the Internet has transformed and challenged users and scholars alike and could display that the online public sphere differs from the traditional mass media public sphere with respect to issues such as fragmentation or concentration but also new opportunities for participation. Accordingly, the public sphere model cannot just be translated to the Internet but should take key aspects such

as the Internet's network character into account. Especially fragmentation and the special case of echo chambers are highly relevant for this thesis as these can be used to describe online counterpublic empirically. In the next chapter I will focus on different aspects that have been highlighted when looking at the online public sphere.

3.1.4 Research on Online Publics

The Internet and all its different forms of communication (e.g. mails, forums, blogs, videos and posts, likes, shares or retweets on social media platforms) that open up new opportunities for citizens to participate politically (both on a national and transnational level) as well as journalistically can be seen as indicators for another structural transformation of the public sphere (Bruns & Highfield, 2016). Accordingly, a variety of labels have been coined to describe the new online public sphere(s) that can be differentiated based on their analytical perspective, societal level and research focus (see Table 1). In general, authors either focus on a forum or a discourse perspective when conducting research on the online public sphere.

Zimmermann (2007), for example, refers broadly to the “online public sphere” and, similar to Gerhards and Schäfer (2010), takes a closer look at search engines as an influential forum of the public sphere. In comparison, Schmidt (2013) distinguishes between four different kinds of publics ranging from the micro to meso level (depending on the number of participants): mass media, expert (e.g. open access journals), collaborative (e.g. on *Wikipedia*) and personal publics. He thus emphasizes that the mass media are relevant online but also that other forums form through the users' activity on different platforms. Neuberger (2009) and Nuernbergk (2013) specifically take a closer look at how the mass media can be integrated in the networked public sphere and emphasize that the mass media still play a crucial part online. Bruns and Burgess (2012) analyze the social media site *Twitter* and identify the formation of ad-hoc publics which have both a temporal character, since they can be considered ephemeral, but also a spatial character since they are mostly restricted to a platform. The social media also lead to the erosion of the (potentially artificial) differentiation of ‘public’ and ‘private.’ Papacharissi (2010), for example, proposes that *Facebook* and other similar services would lead to “private spheres” that are only open to a few and closed to most, while Schmidt (2011) suggests that users now form their own “personal

publics” on *Twitter* or *Facebook*. Both have in common that they focus on the user and thus on the micro perspective.

Analytical perspective forum	Societal level	Research focus	Selected authors
	macro	search engines	Gerhards & Schäfer, 2010; Hindman, 2009; Zimmermann, 2006, 2007
	meso	mass media	Neuberger, 2009; Nuernbergk, 2013; Schmidt, 2013
	micro/meso	social media	Ausserhofer & Maireder, 2013; Bruns, Burgess, Highfield, Kirchhoff, & Nicolai, 2011; Papacharissi, 2010; Rauchfleisch & Schäfer, 2015; Schmidt, 2013
discourse	micro/meso/ macro	issues	Benkler et al., 2015; Bruns & Highfield, 2016; Dahlgren, 2001, 2009; Habermas, 2006; Poor, 2005; Schmidt, 2013
	micro/meso	identity	Jackson & Foucault Welles, 2015; Nuernbergk, 2013; Renninger, 2015; Toepfl & Piwoni, 2015
	micro/meso	emotions	Papacharissi, 2015; Tong, 2015

Table 1: Perspectives and research foci³⁰ when looking at online publics and the associated societal level (own depiction)

In contrast, Dahlgren (2001, 2009) describes “issue publics” which form around one specific topic or issue (see also Habermas, 2006). These can be considered to range from micro, meso to macro level since some issues are very specific and only relevant to a few, whereas other issues are highly relevant to society at a whole. Even though issue publics are often analyzed on a specific platform, they can also be investigated on several platforms or via hyperlinks (Benkler et al., 2015; Chadwick, 2011; Rogers, 2002). Since issue publics, ad-hoc publics, fragmentation processes as well as a myriad of user preferences may lead to rather small publics, Gitlin (2008) proposes that these would form “public sphericules” which are usually small but have the potential to grow and have a larger impact (see also Bruns, 2008).

Rauchfleisch and Schäfer (2015) look at the special case³¹ of *Sina Weibo* in China and differentiate between thematic, short-term, encoded, local, non-domestic political,

³⁰ Focus in this context refers to aspects that the authors covered with their empirical analysis and/or theoretical considerations. Rauchfleisch and Schäfer (2015), for example, analyzed in their study the use of *Sina Weibo* in China (platform) and highlight different adaptations and cases that also had a political impact. And Nuernbergk (2013) analyzed how the mass media and counterpublics were situated in the networked public sphere. In general, it has to be noted that this table is by no means exhaustive and should be seen as a heuristic categorization.

³¹ Their study (Rauchfleisch & Schäfer, 2015) is especially remarkable since it focuses not on a democratic country in which the freedom of speech is guaranteed but rather on an authoritarian country in which censorship is prevalent. By doing so they also give

mobile and meta public spheres, thus also accounting for technical access, spatial circumstances in the lifeworld³² but also how online publics are able to influence the political process. They thus emphasize that within a forum, in this case *Sina Weibo*, different publics can form around different aspects. Other authors like Renninger (2015), for example, highlight that publics cannot only form around issues but also around identity, for example in the case of counterpublics. Even though identity building is essential for the formation of a national³³ or even transnational public sphere as Wessler et al. (2008) emphasized, the studies in which identity is a central aspect of the publics with regard to the Internet, usually focus on a micro or meso level. Since the new forms of online communication like social media empower users to share their own personal opinion and individual framing these may lead to “affective publics” (Papacharissi, 2015; Papacharissi & de Fatima Oliveira, 2012) in which not only the argument but also the emotional state and one’s individual perception play a role. These, however, often transcend the individual and thus are on a micro or meso level.

What most of these concepts have in common is a) the attempt to grasp the ways in which different form of communication foster the creation of new publics, as well as b) a less normative approach to how the public sphere has to look and what its functions are in favor of a more descriptive and systemizing attempt to grasp the Internet’s complexity. Indeed, the segregation of different tiers of the public sphere in mass media, public events and encounter publics (see chapter 3.1.2) seems more and more artificial in a time where search engines like Google have a further reach than the mass media (Gerhards & Schäfer, 2010) and weakly organized individuals have now the potential to directly influence the political discourse (Bieber, 2002; Maireder & Schlögl, 2014). Thus, Rauchfleisch and Kovic (in press) suggest that the public sphere should not be looked at from a normative perspective but rather from a functionalist one, i.e.

Habermas’ (2009) hypotheses that the Internet would be more helpful for facilitating a public sphere in authoritarian countries empirical weight.

³² Habermas (1996, p. 22) understands lifeworld as “background knowledge”: “The lifeworld forms both the horizon for speech situations and the source of interpretations, while it in turn reproduces itself only through ongoing communicative actions.”

³³ Even though studies still often focus on a national context (e.g. Ausserhofer & Maireder, 2013; Bruns et al., 2011; Rauchfleisch & Metag, 2015) authors are not necessarily bound to it anymore since they can now look at, for example, English- or German-language debates (e.g. Benkler et al., 2015; Etling, Kelly, Faris, & Palfrey, 2010; Jang & Hart, 2015) or a transnational discourse (Volkmer, 2014)

with a focus on the public sphere's general functions³⁴ and the aspects that foster or hinder the formation of a public sphere. In a next step I will focus on the networked public sphere and will demonstrate how this less normative concept helps us to understand and to integrate the different issues of concentration and fragmentation.

3.1.5 The Networked Public Sphere

The concept of the networked public sphere, which I will focus on in this thesis, is another way to grasp the new and different forms of communication as well as to account for the Internet's decentralized and networked technical infrastructure. Even though several scholars emphasized the Internet's network character (Bieber, 1999; Boyd, 2010) when talking about the public sphere, Benkler's (2006; Benkler et al., 2015) concept is used here as a starting point since it described the Internet's influence on society from a more general perspective and also inspired communication scholars to advance this concept (e.g. Boyd, 2010; Friedland et al., 2006; Neuberger, 2009, 2014; Nuernbergk, 2013; Raupp, 2011).

The starting point for Benkler's (2006, p. 1) public sphere theory is the assessment that the "change brought about by the networked information environment is deep. It is structural. It goes to the very foundations of how liberal markets and liberal democracies have coevolved for almost two centuries". New forms of communication (e.g. blogs, social media or user comments) enable citizens to circumvent the classical mass media public sphere and establish their own channels of communication, information and journalism. These, then, are not dependent on the mass media as gatekeepers who differentiate between what is relevant and what is not, but rather allow citizens to decide for themselves and also set the agenda themselves. Bruns (2005) names this change "gatewatching," a process in which citizens now monitor both mass media and other sources for potentially relevant information. These gatewatching processes take place all over the Internet (e.g. blogs, *Twitter*, *Facebook*, *Reddit*) and are an essential part of the networked public sphere since they fulfill the task of giving orientation (Neuberger, 2009; Nuernbergk, 2013). Another fundamental change the Internet has brought about is the erosion of clear-cut communication roles. Whereas in

³⁴ They establish four general functions of the public sphere: identity building, agenda setting, control and criticism and deliberation (Rauchfleisch & Kovic, in press).

classical public sphere concepts there was the differentiation between speaker and audience, the Internet (especially visible through the social web) gives everyone the potential to be what Bruns (2005) calls a “producer”.³⁵ The term describes the fluid change between producing (i.e. speaking) and using (i.e. audience) of information. “Producers” are then another potential source of information, both for citizens as well as for the mass media. As a consequence, a feedback loop is created in which a discussion is never truly ‘finished.’ However, the mass media, too, are very prominent online and now have the ability to integrate more voices, information and opinions in their coverage. They have created an opening for more interaction, thus giving citizens a voice within public discourse (Loosen & Schmidt, 2012). Nuernbergk (2014) adds that the Internet fosters follow-up communication to journalistic coverage through participative formats such as comment sections but also on other platforms like *Twitter*, *Facebook* or on blogs which then, in turn, may influence further journalistic coverage.

Adapting Gerhards’ and Neidhardt’s (1991) input/throughput/output model to the networked public sphere, Nuernbergk (2013, p. 160) suggests that on the input side – even though there are still exclusions (e.g. through technical or social aspects; see also chapter 3.1.3) – there is now more transparency with regard to selected opinions and topics.³⁶ In the throughput phase mass media are still highly important but users now also have the potential to participate in the process and establish new topics and opinions and to extend the discourse. Nuernbergk (2013, p. 160), however, adds that the two main problems for the mass media are to keep the audience’s attention and to ensure discursiveness within the decentralized structure of the Internet. On the output side, he proposes that the uneven attention distribution may hinder the giving of

³⁵ Larsson (2011, p. 1190) identifies with a survey five different types of users: prosumer (active users), lurker (rarely active, mostly passive usage), bystander (not active, only passive), filter (mostly sharing content), and critic (mostly passive but appreciates options for participation). Since these types are not selective Springer, Engelmann and Pfaffinger (2015), for example, only differentiate between user (active), lurker (passive) and non-users.

³⁶ Nuernbergk (2013, p. 58ff.) also refers to the long tail principle which Neuberger (2009, p. 41ff.) adapted for the networked public sphere. In short, it takes the fragmentation and concentration process (on the supply side) into consideration and suggests that both processes happen to a certain extent (i.e. there are few websites that are very prominent and there are many which are almost unknown) but that these do not endanger the public sphere since there are services like search engines or blog aggregators which also shed light on the long tail (i.e., the many sites that are rarely paid attention to). Neuberger (2009, p. 43, own translation) thus suggests that fears of fragmentation “can be judged as doubtful” since these are still integrated within the networked public sphere.

orientation (Nuernbergk, 2013, p. 160). In contrast, the networked public sphere enables individuals to find these alternative sites and opinions even though alternative viewpoints may also be excluded this way (similar to the classical public sphere).

However, the question remains as to how the networked public sphere can be defined. Boyd (2008, p. 38) emphasizes in this context that networked publics are “constructed through networked technologies” and can be characterized by an “imagined collective that emerges as a result of the intersection of people, technology, and practice.” By emphasizing the “imagined collective” she refers to what Anderson (2006[1983]) called “imagined communities” which refers to an idea of community and shared identity. For Boyd this feeling of an “imagined collective” is what users of the same platform (e.g. a forum) experience and which makes them feel as if they ‘belonged’ to the community. Ito (2008) focuses on the technological side and proposes that networked publics “reference a linked set of social, cultural, and technological developments that have accompanied the growing engagement with digitally networked media.” And for Benkler (2006: 253) the multiple networked public spheres “cluster around topical, organizational or other common features.” Boyd outlines four main differences between networked publics and other publics: persistence, replicability, scalability and searchability (Boyd, 2010, p. 26ff.). Persistence refers to the fact that ‘the Internet never forgets’ and that there exist multiple ways in which information (e.g. content) gets stored online. Replicability describes that information can easily be replicated without loss of quality since it is stored digitally. Scalability emphasizes the potential of reach within networked publics, i.e. that information from small networked publics can reach a wide visibility through diffusion effects or virality. Finally, searchability refers to the fact that most content in networked publics can be found through search engines and is thus easily accessible.

The networked public sphere is thus made out of numerous publics of different size and influence which are sometimes strongly, sometimes loosely³⁷ connected and cluster around different issues (thus also accounting for the other publics mentioned

³⁷ This is in reference to social network theory in which a network consists of nodes (e.g. actors, websites, user profiles, etc.) and edges (e.g. if people are related to each other, if websites link to another website, if people are friends on *Facebook*) and some of these nodes are more strongly connected to a community (strong ties) and some of them are only loosely connected (weak ties). The strength of a tie is usually measured with regard to nodes’ “closeness of bond” (Herring et al., 2005, p. 2). Whereas strong ties usually suggest a close community, weak ties are considered to have a bridging (e.g. of information) function between communities and thus enable their integration (Granovetter, 1973).

above) but who all have the potential to influence one another, to set the agenda or to influence the public discourse. The networked public sphere is a highly integrative concept that allows the inclusion of different types of publics³⁸ and different forms of communication and emphasizes the civil society's role in the public discourse which, in traditional concepts of the public sphere, had been considered to be mostly passive. It can be understood as "the range of practices, organizations, and technologies that have emerged from networked communication as an alternative arena for public discourse, political debate, and mobilization alongside, and in interaction with, traditional media." (Benkler et al., 2015, p. 3)

It is, then, not a replacement of the classical mass media public sphere but rather a new form of public sphere that is closely connected and even entwined with the mass media public sphere.³⁹ With these changes, new forms of societal observation and participation become possible which may have an impact "on the gatekeeping of the traditional media" (Nuernbergk, 2013, p. 281). The networked public sphere thus emphasizes the connectivity of different actors and the potential for citizens as well as marginalized minorities to voice their opinions. The concept is thus chosen as the theoretical framework for this thesis as I want to look at different forms of communication and contextualize these with each other. However, even though the Internet makes it easier to find alternative viewpoints it does not guarantee that these are also heard in the public discourse. This has been shown with regard to the phenomena of fragmentation and concentration. Polarization and echo chambers in this context have been presented as a special form of (self)exclusion that will be analyzed empirically in this thesis. Indeed, exclusion processes still exist and it is thus important to focus on the question of how counterpublics can be defined and how these can be integrated into the networked public sphere⁴⁰.

³⁸ Publics in this context refers to the tier system of Gerhards and Neidhardt (1991; see also chapter 3.1.2). Or as Raupp (2011, p. 83) states: "The concept of the networked public sphere takes into account not only horizontal relationships on the various levels, but also vertical networks between all the three levels." (She translates the German Ebene as level whereas in this thesis it is translated as tier)

³⁹ Bruns and Highfield (2016) even suggest that the Internet is now that closely connected to the classical mass media public sphere that the prefix 'networked' is not needed anymore.

⁴⁰ Since the networked public sphere is not a replacement of the mass media public sphere I will refer to the 'public sphere' when talking about the general overarching idea of a public sphere, the 'mass media public sphere' when talking about the public sphere which is facilitated by the mass media and the 'networked public sphere' when talking about the online public sphere.

3.2. Counterpublic Theory

Albeit the theoretical foundation for an online public sphere has been presented, the question arises how groups that are hardly represented in the public discourse and who vocally reject the mainstream positions, as for example climate skeptics, can be theoretically conceptualized and integrated in the concept of the networked public sphere. Indeed, the exclusion of specific groups from society based on their beliefs, political ideology, social status, gender or other reasons has a long history. In ancient Greece, for example, the political arena was only open for some citizens – the poor, slaves and women were left out (Euben, 1993). Habermas (2006 [1962]) found in his analysis of the bourgeois public sphere in the 18th century that workers and women were not part of that discourse either. However, in a democratic society, which is centered on the idea that all citizens are equal, it can be argued that marginalized groups and minorities naturally also need a voice within the public discourse (see chapter 3.1.1). Indeed there are groups which have the power to organize, make their voice heard and challenge the status quo publically. Due to their opposition to the mainstream public they are called counterpublics⁴¹. In this chapter I will first outline how counterpublics have been traditionally understood and then draw from studies that analyzed the formation of counterpublics online. I will finally show how counterpublics can be understood and integrated in the networked public sphere and, in turn, also show how the Internet challenges our understanding of counterpublics.

⁴¹ Depending on the author the term is either written ‘counterpublic’ (e.g. Asen, 2000; 2016; Fraser, 1990) or ‘counter-public’ (e.g. Chávez, 2011; Wimmer, 2005). It has to be noted, that both spellings vary regarding their popularity on Google Scholar (last checked: March 29, 2016). Whereas the singular ‘counter-public’ seems to be more popular with scholars (5,840 to 4,750 results) the plural ‘counterpublics’ is used more frequently (7,730 to 2,980 results). In Germany, however, most authors seem to favor the singular form ‘Gegenöffentlichkeit’ (e.g. Engesser & Wimmer, 2009; Nuernbergk, 2013) over the less used ‘Gegen-Öffentlichkeit’ (e.g. Baumann, 1993; Sutter, 2010) (3,240 to 532 results). The plural forms ‘Gegenöffentlichkeiten’ or ‘Gegen-Öffentlichkeiten’ are according to Google Scholar rarely used (663 to 121 results). Google Scholar results are in this context, naturally, only seen as an indicator as it neither can be seen as representative of the whole academic discourse nor are the search results selective. Since I agree with Fraser that the public sphere is made out of numerous publics it seems counterintuitive to assume that there exist only one counterpublic. I will thus use ‘counterpublics’ as plural when referring to counterpublics in an unspecified way and ‘counterpublic’ when referring to a specific public, e.g. the climate skeptic counterpublic in Germany.

3.2.1 Classical Understandings of Counterpublics

From a social science perspective the history of counterpublics is closely connected to the introduction of the printing press which enabled the creation of printed counterspeech and thus a way to (potentially anonymously) question those in power. Indeed, first acts of counterpublicity can be traced back to the pamphlets of the reformation in the 15th and 16th century (Wimmer, 2007, p. 153f.). Nowadays, the use of the term counterpublics, however, is directly connected with the student movements in the 1960's and 1970's which used the notion as "a fighting term which is in opposition to the media system and its structures and functions that legitimate the contexts of power" (Stamm, 1988, p. 40, own translation). This practice of questioning the political status quo and its legitimating and reproducing structures manifested itself in acts of activism (e.g. protests) or counterpublicity (e.g. alternative media). Counterpublic theory is thus closely connected to social movement research but also to the critical theory and cultural studies (Nuernbergk, 2013, p. 95f.).

To detangle these different positions Oy (2001) differentiates three types of counterpublics with regard to their connections to mass media, public sphere and democracy. The first type *counterpublic communication* is characterized by the counterpublic's "worry about democracy" (Oy, 2001, p. 192, own translation). Based on this worry, counterpublics either try to influence the bourgeois public sphere and mass media through spectacular acts or exclude themselves from the public sphere through radicalization. The second type is based on critical theory and the assumption that within the public sphere *authentic communication* from directly involved actors is needed to truly get an idea of an issue and its effects on people (see also chapter 3.1.1). The third type *emancipatory communication* is a critique of the classical sender/receiver model and based on critical theory and cultural studies. Its main focus is the integration of the 'receiver' in an interactive and thus emancipatory communication process. In this context, Oy (2001, p. 203) emphasizes that counterpublic communication can only have an impact if it is also embedded within the daily life of the receivers who, then, are also able to question the contexts of power.

Wimmer (2007, p. 157ff.) differentiates between the social and content dimension of the term counterpublic and its different meanings: In the content dimension he distinguishes between counterpublic as counterdiscourses⁴² (in German

⁴² I adapt in this context Fraser's (1990, p. 67) term of counterdiscourses.

Gegenthematisierung) and institutionalized alternative or movement media. Counterdiscourses refer to the “widening of discursive contestation” (Fraser, 1990, p. 67) through the publicist inclusion of new perspectives, new opinions and the (re-) framing of issues, thus making social inequalities visible.⁴³ These counterdiscourses are mainly bound to the ‘classical’ mass media public sphere. In the contrary, movement media are thought of as rivaling the mass media and thus extending the diversity with regard to alternative topics, opinions and evaluations (Nuernbergk, 2013, p. 98f.). Additionally, the movement media’s aim is naturally also to mobilize their supporters. In the social dimension, counterpublics can refer to a specific public within the overarching public sphere or to cultural or media-dependent forms of practice (Wimmer, 2007, p. 157). The conception of counterpublics as their own specific publics is used by authors (Fraser, 1990; Wimmer, 2005) who propose that the public sphere is not one unified public but rather made out of numerous different publics (see also chapters 3.1.1, 3.1.2 and 3.1.4). In this sense the counterpublic has two options: either extending the public sphere by engaging actively and critically within the public discourse or isolating itself and forming an autonomous public that functions as a ‘safe haven’ (Felski, 1989; Fraser, 1990; Negt & Kluge, 1993; Nuernbergk, 2013, p. 99; Wimmer, 2007, p. 160f.). The social or media-dependent forms of practice are highly connected with other forms of counterpublic communication since “there is no alternative communication without a social practice which determines and ratifies it.” (Couldry, 2003, p. 39). The practices can, for example, also include participation in marches or the visiting and organizing of counterpublic spaces like theaters or centers (Nuernbergk, 2013, p. 99; Stamm, 1988, p. 42).

Based on this outline, I will now focus on Fraser’s (1990, 2007) seminal work on subaltern counterpublics to show how counterpublics can be defined.⁴⁴ Her starting point is a critique of Habermas’ (2006 [1962]) concept of the public sphere from a feminist point of view (see also chapter 3.1.1). In her analysis, Fraser points out that the idea of one public sphere is neither realistic nor desirable since it silences minorities and diversity under the guise of unity. By referring to historical studies she emphasizes that there was not only the bourgeois public sphere which Habermas described but also

⁴³ As Wimmer (2007, p. 158ff.) points out this is also in line with Brecht’s (1967 [1932]) radio theory, Enzensberger’s (1970) emancipatory media usage or Lovink’s (1992) megaphone model which all aim to empower citizens by giving them the option to voice their opinion.

⁴⁴ For a more in-depth analysis of different schools of thought regarding counterpublics see Wimmer (2007) or Nuernbergk (2013).

proletarian⁴⁵ (i.e. working class) publics or “elite women’s publics” (Fraser, 1990, p. 61). Instead of one public sphere there were and are numerous publics. As underlying power structures mark the classical public sphere, she argues that there can be no true deliberation since “proceeding as if they don't exist when they do [...] does not foster participatory parity” (Fraser, 1990, p. 64). Marginalized groups and actors thus only have the possibility to retreat and form

“*subaltern counterpublics* in order to signal that they are parallel discursive arenas where members of subordinate social groups invent and circulate counterdiscourses, which in turn permit them to formulate oppositional interpretations of their identities, interests, and needs.” (Fraser, 1990, p. 67, emphasis in original)

Consequently, Fraser’s ideal of a public sphere consists of numerous publics so that deliberation is possible and exclusion and marginalization processes are minimized. These counterpublics are, however, not supposed to be autonomous like Negt and Kluge (1993), for example, envision but rather should influence and extend the public discourse. For Fraser (1990, p. 68) counterpublics have two main functions: “On the one hand, they function as spaces of withdrawal and regroupment; on the other hand, they also function as bases and training grounds for agitational activities directed toward wider publics.” They can thus also be considered as a sense-making forum for the involved actors to also form and test their identities.⁴⁶ Counterpublics are seen as inherently positive both for the marginalized groups as well as for society as a whole. However, it remains unclear which role the mass media play in Fraser’s concept, how media outlets could support the counterpublics, how the different publics are connected, how the publics can be measured or when a counterpublic can be considered integrated

⁴⁵ See also Negt and Kluge (1993) for a more detailed look at the proletarian public sphere which they contrast to Habermas’ (2006 [1962]) bourgeois public sphere and in which they describe how the working class was excluded. They thus propose that the working class should create a counterpublic to establish their own point of view in the public discourse and make their interests heard.

⁴⁶ The idea of a collective identity as a unifying and mobilizing element is integral in counterpublic theory (Rucht, 1994; Wimmer, 2007, p. 197). Closely connected is, in this context, the framing theory in which scholars have propagated that frames can foster identity building (Gamson, 1992; Snow & Benford, 1992). In this thesis I understand frames with Gamson and Modigliani (1989, p. 3) as “making sense of relevant events, suggesting what is at issue”, i.e. so-called “emphasis frames” (Cacciatore, Scheufele, & Iyengar, 2016, p. 6). Framing can be considered an especially important aspect in the context of the public sphere but also with regard to climate change communication in particular since “frames privilege certain meaning elements at the cost of others” (Ferree et al., 2002b, p. xii; see also chapter 6.3.3).

in the broader public sphere (Kleinen-von Königslöw, 2010, p. 24; Nuernbergk, 2013, p. 108).

Based on Fraser's (1990) concept of subaltern counterpublics and Oy's (2001) as well as Wimmer's (2007) differentiation of counterpublics and their meanings counterpublics can be broadly understood as publics which are created based on 1) exclusion or marginalization processes that are helpful in 2) shaping group identities, and which also have the 3) potential to extend public discourse and the public sphere in general through counterdiscourses, alternative media and social practices. Counterpublics, then, are mostly seen as positive for society. This notion can, however, be questioned. Indeed, with the rise of the Internet some scholars suggested that counterpublics could be understood from a less normative perspective in order to allow, for example, the analysis of unruly publics or extremist groups that do not adhere to democratic principles (Cammaerts, 2009; Downey & Fenton, 2003; Toepfl & Piwoni, 2015). In the next chapter I will thus focus on how the Internet changed counterpublic communication but also may have lead to a more fragmented public sphere.

3.2.2 Online Counterpublics

In accordance with the changes in the public sphere the Internet also brought about the formation of counterpublics and their impact on the broader public sphere has changed. Engesser and Wimmer (2009, p. 46) even go as far as to propose that counterpublics rely that heavily on digital communication that, as a result, they can no longer be thought of without it. They emphasize that the Internet's characteristics of hypertextuality (i.e. the structural connection through links between different pages or domains), multimodality (i.e. presenting messages in various different media forms) and interactivity⁴⁷ allow counterpublics to form new allegiances and make their messages heard quickly. Their argument is indeed quite compelling: whereas prior to the Internet counterpublics were forced to organize to make their messages heard in the mass media or publically (e.g. in movements or alternative media) they now need less

⁴⁷ Interactivity can be generally understood as "1) as an attribute of *technical media systems* [...], (2) as an attribute of the *communication process* [...], and (3) as an attribute of the *perceptions of users*" (Ziegele, Breiner, & Quiring, 2014, p. 1113, emphasis in original). In this thesis I focus on 2) with regard to the interaction of users to users.

organization to connect with sympathizers and can completely circumvent the mass media. Nuernbergk (2013, p. 265), however, adds that even though movements and counterpublics have now more options than ever before to promote their cause it is likely that they will still try to reach the traditional mass media outlets since these guarantee a wider reach and have more impact.

Apart from this assessment, Wimmer (2007, p. 217) identified seven functions that new media offer for counterpublics: 1) articulation, 2) emancipation/identity building, 3) information/communication, 4) mobilization, 5) organization, 6) protest and 7) subversion. One aspect that Wimmer does not fully include in this list but which seems extremely relevant in this context is the act of hacking.⁴⁸ One reason for this may be that hacking is mostly illegal and thus cannot be included in a normative understanding of counterpublics within a democratic society and their functions. However, I posit that hacking has to be included from a more descriptive perspective since it is undoubtedly part of the online public discourse and has the potential to influence society and the public discourse.⁴⁹ Additionally, in authoritarian countries hacking can be understood as a form of civil disobedience (O'Neil, 2014).

But these opportunities for counterpublics also have to be seen against the background of new as well as old exclusion mechanisms the Internet introduced or reproduced: Probably the most prominent form of exclusion is, similar to the classical public sphere, nonobservance, for example through fragmentation or concentration (see chapter 3.1.3), which can be the product of not paying attention, not being able to pay attention due to a warped perspective that emphasizes corporate portals or commercial media (e.g. sponsored posts on *Facebook* or *Instagram*) but also of leaving someone out consciously (e.g. in the mass media but also on blog aggregators) (Dahlberg, 2005;

⁴⁸ Wimmer (2007, p. 218) mentions hacking in the context of protest and refers to Bieber's (1999) understanding of specific acts of hacking as virtual sit-ins. This definition is somewhat limited since it leaves out other ways of hacking as leaking personal or confidential information, making websites inaccessible with DDOS attacks or stealing money or information.

⁴⁹ One relevant example is 'Climategate' (Gregory & Glance, 2013). This term refers to the illegal publication of several thousand e-mails that were written by climate scientists from the US and UK and which were published right before the highly anticipated climate summit in Copenhagen in 2009. They supposedly showed that the scientists lied and manipulated their data. The case as well as the allegations were discussed in the mass media heavily. However, these claims proved to be false as several committees relieved the scientists. Yet, the claim that Climategate proved that climate scientists would lie is still prevalent among climate skeptics (Gavin & Marshall, 2011; Grundmann, 2012) but has also influenced the public perception of climate science (Leiserowitz, Maibach, Roser-Renouf, Smith, & Dawson, 2013).

Webster, 2014; Zimmermann, 2006). Indeed, a very fragmented online discourse into potential echo chambers can also be seen with regard to counterpublics. Whereas Sunstein (2001; 2007) highlights that fragmentation and the formation of echo chambers can be harmful for society, echo chambers can also –depending on the case – be understood as counterpublics and, as such, with having an emancipatory and identity fostering character (Fraser, 1990; Nuernbergk, 2013). Echo chambers, then, are not necessarily harmful but it is important to understand the connections they still have to the other publics (see chapter 5).

Another way in which critical and possibly counterpublic messages can be excluded online is through censorship and even though users often find creative ways to circumvent censorship, the knowledge that one is under observance can already alter one's behavior and silence critical voices (Rauchfleisch & Schäfer, 2015; Stoycheff, 2016; Warf, 2010). Additionally, there exist other forms that may be used to silence users online as, for example, (automated) moderation from the owners of a site (e.g. of a comment section) or by other users⁵⁰ (Geiger, 2016). But exclusion can also manifest itself in more extreme forms online as, for example, harassment, which may even turn to cyberbullying or acts of hacking in order to publish information of personal communication (Mantilla, 2013; Shepherd, Harvey, Jordan, Srauy, & Miltner, 2015). It thus becomes evident that even though the Internet gives individuals and groups the chance to voice their opinion, form alliances and promote a cause, it also offers new ways to exclude and marginalize them.

When taking a closer look at studies that focus on the relationship between counterpublics and public sphere there are a some interesting aspects to note.⁵¹ Maireder and Schlögl (2014), for example, analyzed the *Twitter* debate on women's everyday experiences with sexism which were collected under the hashtag *#Aufschrei* (outcry). In their analysis they showed how the debate was initiated by a few feminist *Twitter* users, how it grew in size due to its highly relevant topic, how it was picked up by journalists who, then, wrote stories about the ongoing debate, but also how users tried to derail the debate through jokes or personal insults. These attempts by a few users were of no avail as the most influential German political TV talk show made it its main topic and invited

⁵⁰ On the social bookmark platform *Reddit*, for example, a comment that is disliked, i.e. downvoted, by many gets hidden

⁵¹ Not all studies mentioned here analyzed counterpublics specifically. However, the appearance of civil society actors or minorities may indeed be an indicator for how open the mass media and other media like search engines are with regard to the inclusion of critical or marginalized voices.

one of the *Twitter* users who had initiated the debate to the show. Chadwick (2011), in this context, also echoes the potential impact social media platforms like *Twitter* can have on the news media discourse.

In his study, Renninger (2015) takes a closer look at the asexual community on the social blogging platform *Tumblr*. He is able to show how asexuals have found a platform on which they were able to form their counterpublic and thus connect with like-minded users. However, since *Tumblr* is a public platform the asexual counterpublic is also under ‘attack’ by other users who try to marginalize them through insults and attempts at trolling. In his analysis of *Tumblr* he outlines several reasons why counterpublics such as feminists, asexuals and other movements may use the platform for their organization and communication, with the most prominent being that commenting is not incentivized at *Tumblr* as it is not a main feature and therefore comments can be more easily ignored (Renninger, 2015, p. 11f.). It is noteworthy that interactive features like commenting, which are usually seen as having a huge potential for the public sphere and journalism (Ruiz et al., 2011; Toepfl & Piwoni, 2015), are here seen as detrimental.

Jackson and Foucault Welles (2015) took a closer look at the case of how the *Twitter* hashtag *#myNYPD*, which was initially intended for marketing purposes and the promotion of the New York Police, was hijacked by counterpublic activists who, then, changed the subject to racial profiling and police brutality. In their analysis of *Twitter* users they conclude “that networked counterpublics are more diverse and inclusive than the mainstream public sphere“ (Jackson & Foucault Welles, 2015, p. 17).

Even though this may be the case for social media sites like *Twitter* the question arises whether Downey’s and Fenton’s (2003, p. 199) hypothesis that the growth of counterpublics online would also make the mass media more open to counterpublic actors is backed by empirical results. However, neither Gerhards’ and Schäfer’s (2006) nor Zimmermann’s (2006) analysis point towards this direction. Gerhards and Schäfer (2006) compared the mass media’s reporting on human genome research with the top documents they found on search engines regarding the visibility of different actors. In their comparison, the authors conclude that the Internet was even more one-sided and less pluralistic than the print media and thus cannot be considered more democratic (Gerhards & Schäfer, 2006, p. 224). Zimmermann (2006, p. 180; 2007) agrees with this sentiment. In her analysis of the representation of actors online, which she also based on documents found on search engines, she states that the Internet cannot be considered

more democratic than the mass media since individuals are almost not represented and, in addition, anti-democratic actors are even more present than in the mass media. Even though a cause for concern, this also shows that the Internet offers marginalized groups the opportunity to speak out.

Another way to look at the representation of actors online, which also takes the so-called 'blogsphere' into account, is through hyperlink analysis (Benkler, 2006; Pfetsch, Adam, & Bennett, 2013). Nuernbergk (2013, p. 577ff.) could, for example, show that the leftist counterpublic on Indymedia, even though it formed its own cluster, was not excluded from the broader networked public sphere and thus rejected the fragmentation hypothesis. Kaiser, Rhomberg, Maireder and Schlögl (in print) took a closer look at the *Energiewende* (i.e. the discourse surrounding Germany's shift from nuclear to renewable energy sources) discourse in Germany and were able to show that albeit the political actors excluded themselves from the discourse, actors from the civil society and special interest groups were integrated by other social fields (e.g. the media) but also very active with regard to linking to other social fields.

Nuernbergk (2013, 2014) also highlights the potential of follow-up communication to journalistic content in the blogosphere for counterpublics. In his analysis which was a combination of content and hyperlink network analysis of 323 blogs he concludes that "network-based media like weblogs indeed offer a viable space for commentary relevant to a specific matter of public concern." (Nuernbergk, 2014, p. 10) Another form of follow-up communication is commenting on a news story or on a blog post. In their analysis of comment sections of German news media outlets, Toepfl and Piwoni (2015) could show that supporters of the right-wing populist German party AfD were over proportionally active and suggested that the users transformed the comment sections into counterpublics.

In general, it thus has to be noted that the Internet offers counterpublics a variety of possibilities to form and organize themselves, to communicate with others and also to reach the broader public sphere and the mass media with their counterdiscourses. However, this does not imply that they are also more visible in the mainstream public sphere since the Internet also allows for new ways of exclusion. Indeed, it is suggested in this chapter that echo chambers can also be understood from a counterpublic perspective. Consequently, I will suggest in the next chapter that counterpublics can be integrated into the networked public sphere concept.

3.2.3 Integrating Counterpublics in the Networked Public Sphere

The integration of counterpublics in the networked public sphere seems – based on the understanding of the latter as it was established above (see chapter 3.1.4) – intuitive. Indeed, in a networked public sphere that is shaped by numerous publics of different size, organizational structure, societal impact and links to other publics, counterpublics can be considered to be a specific form of these publics. Based on the two previous chapters counterpublics can be defined as: 1) structured around a specific issue that is morally or politically polarizing (identity), 2) opposed to the dominant hegemony within this discourse (critical/counter), 3) marginalized and/or excluded from the dominant public discourse (exclusion) and 4) with its own influential media outlets (alternative media).

Moreover, there are two important aspects to consider: first, the separation of counterpublics and publics and second, their normative character. The former refers both to the identification and confirmation of the ‘counter’ in ‘counterpublic’ (Asen, 2000). Counterpublics are – quite literally – in opposition to the mainstream public sphere, are excluded from voicing their opinion and are often not represented in the mass media public sphere. As a reaction, they are forced to form outside the mainstream public sphere. Against this background, it seems imperative to take several levels of exclusion into consideration when talking about counterpublics and, more importantly, also to verify this empirically (see chapter 5). In this context, the concept of the echo chamber (Sunstein, 2001) can potentially⁵² be understood as an indicator for online counterpublics since they also often form around political or moral questions and usually stay within their group, thus fostering the group’s identity.

The normative character on the other hand refers to the term’s close connection to social movements and oppressed minorities and their struggle to find recognition in the public sphere. With regard to online communication, however, there have not only been attempts to ‘de-normativize’ the public sphere concept (Benkler, 2006; Rauchfleisch & Kovic, in press; Rauchfleisch & Schäfer, 2015) but also the counterpublic concept (Cammaerts, 2009; Toepfl & Piwoni, 2015). Indeed, it offers a powerful theoretical

⁵² This, naturally, depends on factors like the echo chamber’s size but also its identity and its political representation. Sunstein (2007, p. 116) suggests in an example that the case of 26% of US Americans only knowing arguments that are in favor of their political candidate but knowing none about their candidate’s opponent is a signal of an echo chamber. These, then, are naturally not counted here since they are not excluded from the political discourse or the mass media reporting.

framework that integrates processes of exclusion or counterdiscourses that happen online and, additionally, it allows for the integration of online phenomena such as echo chambers. I thus suggest that the concept should be used carefully and only for cases in which there is a clear break or polarization between mainstream and a marginalized faction that can be shown on several levels. However, it should also be applicable to problematic or ‘unruly’ publics that, for example, reject basic democratic principles since it is here, where the mentioned mechanisms are at work and it is also here where counterpublics form and try to widen the public discourse through several methods.

Counterpublics, then, can – as Kleinen-von Königslöw (2010, p. 300) already suggested – be understood with reference to Gerhards’ and Neidhardt’s (1991) arena model and analyzed with regard to how well they are integrated in the “arena public”. This is also true for the different publics of the networked public sphere (Raupp, 2011, p. 78ff.). It has to be noted that a differentiation between audience on the one side and speaker on the other has to be reconsidered depending on the public. Whereas the classic mass media publics are still shaped by this differentiation, other publics that are characterized by more interactivity and produsage are not.

This chapter, then, shows how counterpublics, as climate skeptics in Germany, can be integrated in the networked public spheres as a special case that can also be identified empirically (c.f. echo chambers) and that counterpublics will be able to spread their messages more visibly online through new forms of communication. Since the research question in this thesis deals with the question whether and to what extent counterpublics can be integrated in the networked public sphere Kleinen-von Königslöw’s (2010) dimensions for integration are presented to analyze this integration empirically. In the next chapter I will focus on the new forms of communication, namely blogs and comment sections, as facilitating media for these publics and will show how these can be understood, what opportunities these offer for counterpublics and how these can be integrated in the networked public sphere.

3.3. Blogs, Comment Sections and the Public Sphere

The concept of the networked public sphere is especially interesting when thinking about the Internet and how, where and why people form publics since it allows for an integration of different forms of communication. In this chapter I will focus on two very

prominent forms that are closely connected to the networked public sphere and which will play an important role in this thesis' empirical part: blogs and comment sections. I will also take current research on both forms into consideration to show how people use these forms to establish new publics.

3.3.1 Blogs & Current Research

The hopes for a more democratic Internet and a more inclusive public sphere are closely connected to weblogs (Benkler, 2006; Koop & Jansen, 2009). Indeed, weblogs, or blogs, which were initially thought of as some form of online diary gave users the opportunity to voice their opinion for free and without restraints (e.g. Bieber, 2006; Blood, 2000; Neuberger, Nuernbergk, & Rischke, 2007; Nuernbergk, 2013; Schmidt, 2006b, 2011; Wallsten, 2008). When blogs were first introduced in the late 1990's the norm were mostly static homepages (Blood, 2000; Schmidt, 2006b). Accordingly Benkler (2006, p. 216f.) contrasted blogs with classical homepages and emphasized that blogs have extended the Internet in two ways: firstly through their technical potential which makes the Internet "writable" (Benkler, 2006, p. 216) which means that people can now write at any time and as often as they want about any issue (ranging from political to private) and secondly, that blogs also empower the audience by giving them the opportunity to speak up through the introduction of comment sections. This mixture of blogging, commenting and answering previous comments creates an "end product [that] is a weighted conversation, rather than a finished good." (Benkler, 2006, p. 217) Other prominent characteristics of blogs are their reverse chronological order of regularly updated posts which can contain different kinds of media like videos, images or sound files (Blood, 2000). In this sense, they can be considered as a combination of classical homepages and discussion boards that even though "based on a similar technological foundation allow for numerous different practices" (Schmidt, 2011, p. 27, own translation). For Schmidt (2006a, p. 40; 2006b, pp. 117-146) three major characteristics unite these practices: they are authentic since they often reflect the blogger's personality, dialogue orientated as they foster follow-up communication in the comment sections and also on other blogs, and decentralized as they are a mixture of interpersonal and public communication with varying reach.

One major practice that also made the Internet's underlying networked character more visible is the act of *linking* to other sites. In general, there are three kinds of links on a blog: the classic permalink in a text which refers to another site (e.g. another blog) and which can be seen as both ephemeral and dynamic and as a proxy for a broader discourse (Adamic & Glance, 2005; Schmidt, 2006b), the link in a blogroll which is a comparatively stable link list in which links can be considered as a recommendation or symbol of allegiance within a community (Adamic & Glance, 2005; Koop & Jansen, 2009) and the *trackback* links which are automated messages which appear in the comment section under a blog post and which signal that another blog has linked to the post and thus helps bloggers to track the follow-up communication to their posts (Nuernbergk, 2013, p. 227; Schmidt, 2006b, p. 49). The sum of these links, i.e. the system of constant linking and re-linking, forms a broader network of topics and communities, the so-called "blogosphere" (Adamic & Glance, 2005; Wallsten, 2007).

The term blogosphere is used in several ways: as an umbrella term that includes all different kinds of blogs (Benkler, 2006; Herring et al., 2005) but also as a more specific description of blogs which, for example, can form around political issues (Benkler et al., 2015), national discourses (Etling et al., 2010), entertainment (Chittenden, 2010), social issues (Harp & Tremayne, 2006) or science (Bonetta, 2007). These blogospheres, then, can be even more differentiated, for example, based on their political ideology or scientific topic (Adamic & Glance, 2005; Elgesem, Steskal, & Diakopoulos, 2015; Hargittai, Gallo, & Kane, 2007; Sharman, 2014).

Consequently, the blogosphere, especially the political blogosphere, has been in the center of academic interest for quite some time. Coming from a public sphere perspective it seems especially important to take a closer look at the relevance of blogs in Germany to assess if counterpublic actors use blogs in order to expand the public sphere. Whereas in the USA blogs are widely established and are read roughly by over 30 percent of Americans (Statista, 2016) the blogosphere in Germany and especially the political one is stuck "in first gear" (Eckert, Chadha, & Koliska, 2014). According to the 2015 ARD/ZDF online study 8 percent of the German online users read blogs regularly (Frees & Koch, 2015, p. 372).⁵³ Nevertheless, Neuberger (2012, p. 45) was

⁵³ It is likely though that these numbers will rise slowly in the future since 15 percent of the 14-29 year olds are reading blogs regularly, thus doubling the general percentage (Frees & Koch, 2015, p. 372). It is also worth mentioning that the numbers differ from survey to survey. Neuberger (2012, p. 43), for example, showed that almost 33 percent of German Internet users used blogs at least once a month. That, however, does not

able to show in a survey that 19,2 percent of the German population counted blogs as journalistic outlets. But do blogs – according to Benkler (2006) – in fact widen the public sphere by giving a diverse set of actors the chance to speak up? The answer to this question is a mixed one (Nuernbergk, 2013, p. 245ff.). Studies show, for example, that not all blogs are equal but that there are so-called “A-list blogs” that are linked to heavily by other blogs and can thus be considered especially prominent and influential within the blogosphere (Ekdale, Namkoong, Fung, & Perlmutter, 2010; Herring et al., 2005; Trammell & Keshelashvili, 2005; Wallsten, 2007). However, most blogs are not from the “A-list” but rather focus on a variety of topics by numerous bloggers. Lörcher and Taddicken (2015, p. 264) for example, point out that blogs that are written by climate scientists can even be considered expert publics. Other studies, too, point out the different ways blogs are being used to extend the public sphere. One prominent example are the so-called watchblogs that focus on the mass media’s reporting and correct mistakes or call out unethical behavior and thus serve a “critical function” (Habermas, 2006, p. 423f.) for the public sphere. And several authors were able to show that blogs can be used to counter the mainstream discourse by users from counterpublics who are using blogs to communicate, discuss or network and, occasionally, to sway public opinion (Benkler et al., 2015; Engesser & Wimmer, 2009; Jackson & Foucault Welles, 2015; Nuernbergk, 2013; Renninger, 2015).

In sum, scholars agree that blogs offer users the opportunity to form new publics outside the mass media public and are thus an integral part of the networked public sphere (Benkler, 2006; Neuberger, 2009; Nuernbergk, 2013; Schmidt, 2013). Indeed, the opportunity for citizens to circumvent the mass media and publically post (political) opinions and information and engage in deliberative discourse with other users can be understood as actively contributing to the networked public sphere’s information and orientation functions. Closely connected to blogs are comment sections which have also gained scholars’ attention in the last year and on which I will focus next.

change the general consensus between scholars regarding the German blogosphere (Eckert et al., 2014; Katzenbach, 2008; Meinel, Bross, Berger, & Hennig, 2015; Nuernbergk, 2013).

3.3.2 Comment Sections & Current Research

Comment sections – similar to blogs – were seen as a way of getting more users to participate in online deliberation and as such contribute to the networked public sphere (Benkler, 2006; Dahlberg, 2011; Ruiz et al., 2011). Indeed, comment sections offer users similar opportunities to react to an article (on a news media site, a blog or an online retail shop) as blogs but also offer the opportunity to discuss further (potentially unrelated) issues with other users (Ksiazek, Peer, & Lessard, 2016). Comment sections can be considered as one of the most used forms of user generated content and public online participation⁵⁴ (Trost & Schwarzer, 2012, p. 95; Weber, 2013).⁵⁵ One reason for this is also that most news outlets – in addition to blogs – offer the opportunity to comment directly on their articles. Friemel and Dötsch (2015, p. 151), for example, show in their literature review that whereas only 46 percent of major German news outlets had comment sections in 2007, this number grew to 75 percent in 2012. Against this background, the hopes that were associated with comment sections seem reasonable since they enable a fast, easy and (depending on the site) anonymous way of deliberation. And yet, the hope for a civil and more deliberative discourse in the comment sections has faded in the last years with multiple studies concluding that comment sections rarely meet the high requirements for deliberative discourse (Coe, Kenski, & Rains, 2014; Collins & Nerlich, 2014; Dahlberg, 2001; Freelon, 2013; Papacharissi, 2004).⁵⁶

⁵⁴ Both Weber (2013) as well as Ziegele, Breiner and Quiring (2014) took a closer look at the factors that may foster participation – similar to news factors (Galtung & Ruge, 1965). So called “discussion factors” were “*controversy, unexpectedness, personalization, and uncertainty*” as well as “[*l*]ength, position, the news medium itself, and the news story topic” whereas “*incomprehensibility and negativity*” had a negative effect on the likelihood of commenting (Ziegele et al., 2014, p. 1129, emphasis in original).

⁵⁵ A recent representative survey for Germany (Institut für Demoskopie Allensbach, 2015, p. 158) shows that 29 percent of the participants have at least once written a comment under a journalistic article and 36,9 percent have at least once written a comment under a blog post or on a discussion board.

⁵⁶ Another aspect that potentially thwarts deliberation in the comment sections is astroturfing. According to Hoggan and Littlemore (2009, p. 36) astroturfing refers to activities by a “fake grassroots organization animated by a clever public relations campaign and a huge budget”. With regard to comment sections this means that it is mostly unclear who is participating in a debate and with which motives. This, naturally, violates the idea of an open and honest discourse by authentic users. Cho, Martens, Kim and Rodrigue (2011) could, for example, show that astroturfed messages about climate change could lead to more uncertainty about climate change and its anthropogenic

Even though online comments are often not compatible with a general understanding of a civil and constructive debate and even forced some news outlets to close their comment sections for some topics or in general (Hille & Bakker, 2014; Santana, 2016), they take place constantly all over the Internet – and also have an effect on readers or users who participate in the discussion.⁵⁷ Anderson et al. (2013), for example, found in their study that incivility in the comment sections can influence⁵⁸ a reader's perception of the article and make a complex scientific topic such as nanotechnology seem more risky than stated in the article. This is also in line with Houston, Hansen and Nisbet (2011) who show with an experiment that user comments may have an effect on the user's perception of bias in online news. And Lee (2012), by conducting an online survey, could identify that some users may misattribute the information they read in the comments to the article and thus confuse the source. Additionally, Hsueh, Yogeewaran and Malinen (2015) found that prejudiced comments influence the writers of comments to write more prejudiced comments themselves; an effect which may lead to a more polarized debate. Friemel and Dötsch (2015, p. 165) add in their comparison of reader and user perception of Swiss online comments that even though the comment sections tend to be more conservative than the general reader “[n]either readers nor writers of comments are aware of the bias and consider comments as a valid indicator for the opinion of all news site users.”

But can comment sections that empower users to discuss issues be considered as publics in their own right? In an analysis of blog posts and their comments during the time before the Bundestag elections in 2005, Albrecht, Hartig-Perschke and Lübcke (2008, p. 112) came to the conclusion that even though there was discussion between different blogs the main discussions took part in the comment sections. And Wojcieszak and Mutz (2009) note that studies that looked for a discursive deliberative political discourse may have looked at the wrong places (i.e. the classical political spheres like political blogs or news sites) and show with a survey that most discussions that cross political camps take place in supposed non-political online groups where political issues

cause. However, up to now there is no empirical way to identify ‘artificial’ comments within comment sections from a researcher's point of view even though this is gradually changing (Abokhodair, Yoo, & McDonald, 2015; Menczer, 2016).

⁵⁷ This is in line with research that indicates that cues like user ratings can influence our perception of product (Flanagin & Metzger, 2013; Flanagin, Metzger, Pure, Markov, & Hartsell, 2014).

⁵⁸ It has to be noted, though, that their regression model only explained 17 percent of the readers' risk perception (Anderson et al., 2013).

come up randomly. In a comparison of letters to the editors and online comments about Jena Six⁵⁹ McCluskey and Hmielowski (2011, p. 314) explicate that “the promise of online reader posts to bring additional views into public discourse on pressing social, cultural and political issues, as the posts clearly offered greater differences in opinion expression on the Jena Six events than did the letters to the editor.” Meyer and Carey (2014, p. 213) add to this literature with their findings from a survey of Internet users who state that one of the most important aspects for commenting is the “virtual sense of community”, thus echoing one of the networked publics’ key characteristics (c.f. Boyd, 2010).

Springer, Engelmann and Pfaffinger (2015, p. 799) note that online comment users can contribute to the input/throughput/output stages in the public sphere (see also chapter 3.1.2) in several ways: “to the input, by expressing their own opinions; to the throughput, by interacting with others; and to the output, by creating consensus or dissent on the interpretations of journalists, the mediated statements of actors, and/or the remarks of other users.” Indeed, the amount of public communication and –occasionally – deliberation that takes place in comment sections as follow-up communication to an article, as new discussion among users and as their potential influence points towards the assessment that comment section can be considered as being constitutive for the formation of publics. Based on Schmidt’s (2013) differentiation of different online publics⁶⁰ Lörcher and Taddicken (2015, p. 264) understand comment sections as mass media induced publics.⁶¹ Toepfl and Piwoni (2015), too, understand comment sections as separate publics to the mass media and also show in a next step how counterpublics can ‘conquer’ these publics in order to make their voices and opinions heard. In this context, I propose that comment sections can be understood as *media induced publics* that can be characterized as both responsive (due to their direct follow-up communication to the initial media stimulus) as well as interactive (due to their

⁵⁹ Jena Six refers to the severe punishment of six African-American high school students in Jena, Louisiana in 2007/2008 that became a “symbol of racist treatment of African-Americans“ (McCluskey & Hmielowski, 2011).

⁶⁰ Schmidt (2013, p. 41ff.) differentiates between different arenas within the public sphere: the mass media arena, the expert arena (e.g. scientific journals), the collaborative arena (e.g. *Wikipedia*) and the personal arena (e.g. *Facebook*).

⁶¹ They differentiate between mass media arena, expert arena (blogs by scientists), discussion arena (discussion forums) and mass media induced arena (comment sections) (Lörcher & Taddicken, 2015, p. 264ff.). It has to be noted though that these categories are not selective: whereas the articles of the mass media outlets and their comments are separated, blog posts and comments are both included in the discussion arena.

discursive structure that can evolve a topic or bring up new issues), as potentially influential (to both readers and writers) and as embedded within the networked public sphere due to the user's linking practices.

3.3.3 Blogs and Comment Sections in the Networked Public Sphere

In the last two chapters blogs and comment sections were presented as two new forms of online communication that facilitate the formation of new publics by users and that they are closely connected with Benkler's (2006) idea of a networked public sphere that, at best, can be "a boon to individual autonomy and freedom, which will break elite strangleholds on democratic discourse and draw diverse interests and talents into a common arena." (Etling et al., 2010, p. 1226) Indeed, both blogs and comment sections potentially give Internet users the possibility of broadening the public sphere by giving them a voice and a space for deliberation. But it was also shown that this promise is rarely fulfilled. Instead we can see that blogs are often mass media-focused, even when they are hosted by counterpublic actors, and that comment sections do rarely meet the deliberative standard within discussions.

However, when comparing blogs and comment sections with the characteristics Boyd (2010, p. 26ff.) outlined for networked publics (persistence, replicability, scalability and searchability; see also chapter 3.1.4) and keeping Dahlgren's (2005, p. 148) definition of the public sphere as the "constellation of communicative spaces in society that permit the circulation of information, ideas, debates [...] and also the formation of political will" in mind, it seems clear that both blogs and comment sections can give users the opportunity to form their own publics within the networked public sphere. Based on the three tiers of the public sphere outlined by Gerhards and Neidhardt (1991), Gerhards and Schäfer (2010, p. 146) place blogs on the level of the "public events public sphere". I propose, however, that this differs from case to case and between encounter and public events public sphere. Whereas blogging has become increasingly easier and, as such, also more popular with time and platforms like *Tumblr* or *Blogger* have little organization prerequisites (compared to getting an e-mail address, for example), a blog's societal impact is highly dependent on its user base. This, of course, also counts for media-induced publics where comments on a mass media site can be considered to be potentially more impactful than, for example, on a blog.

3.4 Summary: Networked Public Sphere and Counterpublics

Probably one of the most popular verdicts when it comes to the Internet and the public sphere stems from Papacharissi (2002, p. 23) who came to the conclusion that “the internet presents a public space, but does not yet constitute a public sphere.” As the previous chapters show, this verdict has to be revised for several reasons. Indeed, it can be argued that a) the networked public sphere is closely connected to the mass media public sphere and, as such, does not necessarily have to fulfill all functions the mass media public sphere has to but rather brings a more inclusive and yet diverse set of actors and voice to the ‘table.’ Additionally, the Internet also influenced the mass media and eroded the journalist’s gatekeeping monopoly through new communication forms like blogs and comment sections.

I further b) agree with Rauchfleisch and Kovic (in press) who propose that the public sphere’s main functions are identity, agenda setting, control and criticism and, finally, deliberation. As the previous chapters on the networked public sphere, blogs and comment sections have shown, these functions are – sometimes more, sometimes less – fulfilled within the networked public sphere *and* can also be adjusted to counterpublics. Indeed, by taking a less normative stance it becomes clear that identity building is an inherent part of online communities (Boyd, 2010), that online publics have the potential to set the agenda (Chadwick, 2011; Maireder & Schlögl, 2014) and fulfill the control and criticism function (Benkler et al., 2015; Habermas, 2006). Even deliberation, which is perhaps the most ambitious as well as academically tested function, can be identified in some media induced publics (Collins & Nerlich, 2014; Ruiz et al., 2011). Finally, c) the networked public sphere can be considered as more inclusive than the mass media public sphere as it accounts for numerous publics and counterpublics who try to make their voices heard.

Against this background, it has to be noted that the networked public sphere has several problems like fragmentation or polarization processes on the one and concentration and homogenization on the other hand. The question, however, remains of how to measure whether a counterpublic can be integrated in the mainstream public sphere and to what extent. To analyze this question I first look at the different public’s affordances for counterpublics, i.e. how easily counterpublics can access each public to voice their opinion (see Table 2). Since counterpublics are mostly excluded from the mass media their potential to voice their opinion is low and can mostly be done through newsworthy acts of protests (see chapter 3.2.1). In comparison, social media publics and

media induced publics are openly accessible for counterpublic actors and thus their potential can be considered high.

Mainstream public (constituted by media type)	Potential for Acts of Counterpublicity	Potential for Integrating Counterpublics				Societal Impact
		Monitoring	Similarity of Discourses	Connectivity	Collective Identity	
Mass media	Low	High	Low	Low	Low	High
Social media (e.g. blogs)	High	Low/Medium	Low/Medium	Medium	Low	Low/Medium
Media induced (comment sections)	High	Low/Medium	High	High	Low/Medium	Low

Table 2: Publics and their potential for acts of counterpublicity, integration of counterpublics and societal impact (own depiction)

To measure the different publics' potential to integrate counterpublics I adapt Kleinen-von Königslöw's (2010) criteria. Since these criteria were established for the mass media and not for the Internet and counterpublics respectively a few changes have to be made (cf. Kaiser et al., forthcoming; Nuernbergk, 2013). Nuernbergk (2013, p. 340), for example, understands *monitoring governance* more generally as *monitoring/transparency*. Monitoring is understood here as observing society in general with the assumption that it can already be considered somewhat integrated if counterpublics and mainstream publics observe the same events. This step allows for a more general understanding of the networked public sphere that goes beyond the political public sphere and thus allows for the integration of climate topics which, even though they include climate politics, are not a political topic per se. Naturally, the mass media's potential for monitoring society can be considered high since this is one of its main functions (Ferree et al. 2002a; see chapter 3.1.2). Yet, social media and media induced publics are more difficult cases since they all allow for the monitoring of society both through original information as well as mass media induced follow-up communication but also do not have to (see chapter 3.3.3). Since there are no comparable professional structures in place for these two types of publics but their potential for integration can be high for one case and low for another their potential can be considered low/medium.

The category *similarity of discourses* refers mostly to the frames that are being used in different publics (Kleinen-von Königslöw, 2010, p. 77). These frames are here

understood exclusively as counterpublic frames since it can be assumed that the more counterpublic frames are within the mainstream's discourse, the more integrated it is. The more frames that can be attributed to a counterpublic, then, that can be found in the mainstream publics point towards a similarity of mainstream and counterpublic discourses. The potential for counterpublic frames within the mass media publics, then, can be considered low since counterpublics are not part of the mainstream public and if they are only to some extent. Social media publics, however, are more open to counterpublic frames as counterpublic actors are able to create a blog or a *Twitter* account and use it for counterpublic communication. But this does not guarantee that counterpublic frames are actually used or even heard since social media publics also have the potential for polarization and fragmentation (e.g. Adamic & Glance, 2005; see chapter 3.1.3) which seldom allow for communication across the gap and, then, negate the possibility for a similar discourse. I thus suggest that their potential for integrating counterpublic frames can be considered low/medium. In comparison, media-induced publics offer counterpublics the opportunity to participate in the debate directly (e.g. on comment sections) and promote their frames so that others, even though they might disagree, have to see them (e.g. Toepfl & Piwoni, 2015). Their potential for a similar discourse is thus high.

The dimension *connectivity* is here understood as the structural connection via hyperlinks (c.f. Kaiser et al., forthcoming; Nuernbergk, 2013) or in the case of social media as interaction between actors (Yardi & Boyd, 2010). So connectivity refers to a conscious act of attribution distribution (Kaiser et al., in print) that could, potentially, connect mainstream publics and counterpublics. Even though the mass media public has the potential to include hyperlinks to refer to counterpublic actors they rarely do so (Nuernbergk, 2013) and thus the potential for connectivity is low. In contrast, social media publics have a medium potential for connecting the mainstream public with the counterpublics. Indeed, one of the social media's main features is the connectivity between actors (e.g. blogs or user accounts). They thus offer counterpublic actors the possibility to connect with actors from the mainstream via links (trackback function on blogs) or directly via a mention or a reply (e.g. on *Twitter*) which makes it harder to ignore them even though this is still possible. Media induced publics, in comparison, connect actors directly with each other as they appear, for example, in one discussion thread of a comment section thus making it harder for mainstream actors to ignore counterpublic actors. Thus, their potential for connectivity is high.

The last dimension *collective identity* refers to the issue of in-group/out-group relations, i.e. that there exist two sides: the mainstream perspective and the alternative counterpublic perspective (c.f. Kleinen-von Königslöw, 2010, p. 78; Nuernbergk, 2013, p. 340). I understand identity in this context as the underlying feeling “that they belong together” (Weber, 1978 [1922], p. 40) based on their acceptance of anthropogenic climate change or their rejection of it. In general, the potential for a collective identity when talking about counterpublics is low. Neither the mass media nor social media publics offer counterpublic actors the potential to be a part of the publics since they are often excluded from them. Their enclaves or echo chambers, then, can be considered to be the space in which they form their identities but these do not have the power to influence the mainstream publics in seeing counterpublics as part of their collective identity (see chapter 3.2.1 and 3.2.2). In media-induced publics, however, the opportunity can be assumed to be higher, as counterpublic actors are potentially more involved in the debates with other users which, then, could lead to the other users seeing them as part of their imagined community and thus the ingroup (Anderson, 2006; see also Friemel & Dötsch, 2015). Even though the potential is still higher than with the other publics, it can still be considered low/medium since counterpublics and their identities are still in opposition to the mainstream public, thus making forming a collective identity especially hard.

Finally, the societal impact of the different publics has to be considered. Even though the Internet fostered new forms of communication and, closely connected, publics, the mass media can still be considered to be the most influential public within the networked public sphere (cf. Gerhards & Schäfer, 2010; Neuberger, 2009; Nuernbergk, 2013). The potential impact of social media is comparatively low. But since it has been shown that they can act as corrective, and even set the agenda on occasion, their influence can be considered to be low/medium (Chadwick, 2011; Maireder & Schlögl, 2014). Media-induced publics are in contrast less influential, even though it has been shown that they do have an impact on readers and other users (Anderson et al., 2013; Friemel & Dötsch, 2015). Their societal influence is thus low.

Based on this differentiation I will focus on the categories *similarity of discourses*, *connectivity* and *collective identity* in this thesis. The dimension *monitoring* is already heavily influenced by my decision to look at media events (Dayan & Katz, 1992). Since these have been shown to draw much attention (Schmidt, Ivanova, & Schäfer, 2013) it

can be assumed that both mainstream as well as counterpublic focus on these, thus making it the baseline for this thesis.

The concept of the networked public sphere thus offers scholars both the opportunity to integrate different forms of communication in a theoretical framework but also to analyze the counterpublic's integration in more empirical ways than before. The studies that are presented in this thesis thus have to be seen against this backdrop of the networked public sphere and counterpublics and will focus on the outlined dimensions of integration. In the next chapter I will outline the case of climate change skepticism in Germany and explain why skeptics be considered their own counterpublic.

4. Climate Change Skepticism

Climate change is not only a highly important and urgent issue, it is also an issue that has the potential to lead to a polarized public sphere with the 'climate mainstream' on the one and the 'climate skeptics' on the other side (Elgesem et al., 2015). Even though polarization is a potential problem for a plethora of issues, climate change is an especially important and, perhaps, unique case of polarization since a broad societal movement – both nationally and internationally – is needed to mitigate climate change and/or to adapt⁶² to its multiple consequences (Giddens, 2008; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007, p. 8ff.).⁶³ Additionally, this polarization is also a demarcation between the scientific consensus that climate change is caused by humans on the one hand and the rejection of this consensus on the other (Anderegg, Prall, Harold, et al.,

⁶² Mitigation in this context refers mostly to the reduction of CO₂ emissions in order to stop or lessen climate change, whereas adaptation refers to regional, national but also international efforts to adapt to climate change's potential impact (e.g. temperature rise, extreme weather, rising sea levels, etc.) (Peters & Heinrichs, 2005, p. 203ff.). It is noteworthy that even though adaptation measures are nowadays seen as important aspect of climate change politics they were seen for some time in the 1990s and early 2000s as "taboo" (Pielke, Prins, Rayner, & Sarewitz, 2007, p. 597). This, in part, may also be due to skeptics' claims that mankind has always adapted to their surroundings and also can adapt to climate change (Kaiser & Rhomberg, 2015).

⁶³ Reasons for political inaction may be: "fear of electoral protest, close relationship with industry [...], a focus on economic growth, and the short-term priorities of government which are linked to its limited period in office." (Lorenzoni et al., 2007, p. 446)

2010; Cook et al., 2013; IPCC, 2013). It is against this background, that some climate scientists even grow tired of democracy as Stehr (2015) observes as they see democracy as being too slow to fight climate change appropriately.⁶⁴ This radicalization may, to some extent, also refer to climate skeptics' attempts to seed doubt and slow down political progress (Lockwood, 2010).

In this context, the case of Germany is especially interesting. Whereas climate skepticism is more popular in the USA or Australia, skeptics are a small minority in Germany (Metag et al., 2015) and are rarely represented by the mass media (Grundmann & Scott, 2014). Online, however, they are able to voice their opinion in absence of the mass media's gatekeeper and do so actively (Lörcher & Taddicken, 2015). In the following, I will first define the label 'skeptic', then focus on the current research on climate skepticism with regard to their attitudes and what frames they use, to then propose that climate skeptics can be considered a counterpublic within the German networked public sphere.

4.1 Terminology of Skepticism

Before taking a closer look on the literature about climate skepticism it seems necessary to first take the discussion regarding the labeling of climate skepticism into account (e.g. Anderegg, Prall, & Harold, 2010; Capstick & Pidgeon, 2014; Grundmann, 2015; Howarth & Sharman, 2015; Jaspal, Nerlich, & van Vuuren, 2015; McCright, 2007; O'Neill & Boykoff, 2010; Rahmstorf, 2005; Van Rensburg, 2015).⁶⁵ Indeed, the issue on how to refer to climate skeptics is a complicated one that is discussed on the scientific, political but also societal level and, as such, has the potential to even further the polarization of the different camps (Howarth & Sharman, 2015).

Perhaps the most important aspect when talking about labeling societal groups is that these labels tend to be mostly over-generalizations that artificially unite a variety of different backgrounds under one 'cause' and, at the same time, suggest a clear separation between in- and out-group that, most likely, does not exist but may lead to

⁶⁴ Lavik (2015), for example, argues from a philosophical point of view that climate denial should be made illegal (see also Stehr (2015) for arguments against this idea and Schmidt (2015) for a more in-depth insight into the connection between moral and climate change).

⁶⁵ See for an overview Howarth and Sharman (2015).

biases and prejudices (Galinsky, Hugenberg, Groom, & Bodenhausen, 2003; Sutton, 2010). Additionally, the labels themselves can already be considered frames that signal a common identity or a clear position (Ferree et al., 2002b, pp. xv-xvi; Pan & Kosicki, 2001). Howarth and Sharman (2015, p. 239, emphasis in original) thus add that labels “actively *construct* reality, rather than just reflect it”.

Against this background, it seems necessary to present the more prominent labels that are being used to describe people who question climate change or that mankind is responsible for it. Indeed, as several authors would note, this description of skeptics is an oversimplification since the skeptic camp can be differentiated into several camps and being skeptical of one aspect does not mean that one is skeptical of another (Capstick & Pidgeon, 2014; Engels et al., 2013). Anderegg et al. (2010), for example, establish three types: the skeptic, the contrarian and the denier. Boykoff and O’Neill (O’Neill & Boykoff, 2010) are critical of these labels and echo the prominent remark that the positive connotation of ‘skeptic’ would imply that skeptics are skeptical in the scientific sense even though this is mostly not the case.⁶⁶ The term contrarians in this context is a reference to McCright (2007) who understands contrarians as persons or groups who are extremely vocal about climate science and its consensus and have financial ties to conservative think tanks or the fossil fuel industry (O’Neill & Boykoff, 2010). O’Neill and Boykoff (2010, p. E151) further emphasize that the term ‘denier’ which is used for people who deny climate change “inappropriately link[s] such views with Holocaust denial.” Victor (2014, p. 2ff.) also opposes the term denier and suggests industry shills (who get paid for seeding doubt), skeptics (scientists) and hobbyists (people who are active online, e.g. on *Twitter* or in the blogosphere) instead. From a public sphere perspective none of these terms – except skeptics – seem particularly inclusive. Whereas denier evokes offensive images, contrarians or shills presumes a monetary motive and hobbyists downplays the actors’ potential knowledge and involvement.

Another method scholars use for understanding climate skepticism is through the identification of different strains of skepticism: Rahmstorf (2005), for example, distinguishes between trend, attribution and impact skepticism and thus emphasizes that

⁶⁶ Indeed, the insinuation that climate skeptics are skeptical about climate change or climate science in a scientific way, i.e. in an open-minded, evidence-driven and yet critical way, can be seen as the main problem for many with regards to the label skeptic. Torcello (2016, p. 3) in this context proposes to call it “pseudoskepticism” and argues that it is rather connected with “(a) ignorance of the scientific process and (b) ideologically motivated reasoning (as opposed to the exercise of faith).”

there are a) different camps and b) that there is a difference whether one questions climate change's existence (trend), the anthropogenic aspect (attribute) or climate change's impact. Engels et al. (2013) add the doubt about the so-called consensus between climate scientists which they call consensus skepticism. By keeping the skepticism in the term and further differentiating it, this approach seems more inclusive as the other terms mentioned above, since skeptics is both a self-description⁶⁷ as well as an ascription.

However, the skeptic side is only one of the two. Thus the question arises: how to call the other side, i.e. those who are convinced that climate change is happening and that mankind is responsible for global warming? Howarth and Sharman (2015, p. 244) note that skeptics have several names for the other side including “alarmist, warmist, believer or catastrophist.”⁶⁸ Yet, these seem equally excluding as some of the labels mentioned above. One prominent label that is often used, and which refers mostly to the scientific consensus but also the societal backing, is the term ‘mainstream’ (Anderegg, Prall, Harold, et al., 2010; Engels et al., 2013; Howarth & Sharman, 2015; Neverla & Schäfer, 2012). Howarth and Sharman (2015, p. 245, emphasis in original) remark that mainstream is a classic example for self-labeling that “helps to see that the notion of a mainstream is problematic, as it not only fails to adequately specify *who* is captured within that mainstream, but it also immediately frames all those who disagree as an outsider.” However, this label is especially interesting from a public sphere and counterpublic theory point of view as it also signals the underlying power relations with a clear in- and out-group.

The labels ‘climate skeptic’ and ‘mainstream’ are thus used throughout this thesis for several reasons: the term ‘skeptic’ is not only a self-description but – despite all the debate around it – is also used prominently in academia, politics and society. It can thus

⁶⁷ A climate skeptic German blog, for example, calls itself *Science Skeptical*. See also Hobson and Niemeyer (2013) for a more in-depth discussion of the skeptics' self-description.

⁶⁸ Indeed, Giddens (2008, p. 6) differentiates between three positions: “The battle between the sceptics and the main body of scientific opinion continues, with each tending to rubbish the other's arguments. However, there is a further divergence of opinion today, between the mainstream and authors and researchers who think climate change poses even greater, and more urgent, threats than is ordinarily acknowledged. These, whom I shall call the “radicals”, argue that [...] it is already too late to avoid dangerous climate change. We had best concentrate most of our energies preparing to adapt to it and cope as best we can.” Studies on the climate change discourse online, however, were not able to identify this third camp (Elgesem et al., 2015; Sharman, 2014; Williams et al., 2015).

be considered the most integrative label when talking about skeptics. Additionally, it is also not inherently negative or condescending in its framing⁶⁹ and thus not as excluding as denier or contrarian. And, finally, even though labels in general and more so in this case are controversial they also fulfill a generalizing function that allows further research of the public discourse (Ferree et al., 2002b, pp. xv-xvi). ‘Mainstream’, on the other hand, is referred to since it is also prominently used and fits to public sphere theory.

4.2 Current Research on Climate Skepticism

Climate change skepticism is a prominent topic for scholars around the world⁷⁰ that gained popularity over the last years and, as such, has been highlighted in different academic fields ranging from environmental sciences (Farmer & Cook, 2013), philosophy (Biddle & Leuschner, 2015), anthropology (Connor, 2010), sociology (McCright & Dunlap, 2011b), political science (Corry & Jørgensen, 2015; Goeminne, 2012), communication science (Schäfer, 2015a), economics (especially tourism studies; e.g. Hall et al. (2015)), educational studies (Legates, Soon, Briggs, & Monckton of Brenchley, 2013), criminology (Brisman, 2012) to psychology (Stoll-Kleemann, O’Riordan, & Jaeger, 2001).⁷¹ In this section, I want to focus on a communication science perspective⁷² and outline the current research on who is more likely to be a skeptic and where and how skeptic messages are framed and published in the ‘classical’ mass media and online media. These findings are imperative for the assumption in this thesis that skeptics can be considered a counterpublic in Germany. The following chapters thus focus on their attitudes and positions (4.2.1), their representation in the

⁶⁹ Even though it may be used that way.

⁷⁰ Even though most of the studies presented here stem from Europe, USA or America, there are some studies that focus on Brazil (Jylhä, Cantal, Akrami, & Milfont, 2016), China (Liu, 2015), Africa (Dorsey, 2007) or Russia (Forbes & Stammler, 2009).

⁷¹ It has to be noted that the differentiation between disciplines, albeit somewhat artificial since some authors can be counted under more than one discipline, mostly refers to the journals or books the authors have published in.

⁷² Research on climate change skepticism communication is in this sense a part of the bigger field of climate change communication. See for a general overview of climate change in the media Schäfer and Schlichting (2014) and for a more specific overview about online climate change communication Schäfer (2012).

mass media (4.2.2) and how skeptics utilize the new forms of online communication (4.2.3).

4.2.1 Who is a Climate Skeptic?

As outlined above, the number of skeptics in a society differs from country to country, definition to definition, but also from survey to survey⁷³. In the USA or Australia, for example, climate skepticism is more prevalent than in Germany or Central Europe (Engels et al., 2013; Metag et al., 2015). When Metag, Füchslin and Schäfer (2015), for example, replicated the well-known Global Warming's Six Americas study (Leiserowitz, Maibach, Roser-Renouf, Feinberg, & Howe, 2013) they were not able to identify the most skeptic category 'dismissive'. However, they identified 10 percent within their representative survey as 'doubtful' about climate change, whereas in the USA both the dismissive as well as the doubtful accounted for 13 percent each (Metag et al., 2015, p. 14). These findings regarding a low amount of skepticism in Germany are also in line with Engels et al. (2013) who wanted to know how prevalent trend, attribution, impact and consensus skepticism are in Germany. They found that 7 percent are skeptical about climate change, 5 percent about its impact, 7 percent about mankind's role and 8 percent about the scientific consensus and added that "only 19% of respondents indicated 'do not agree at all/somewhat disagree' to one or more dimensions." (Engels et al., 2013, p. 1023)

However, the question who these skeptics actually are remains. The answer to this is especially well known for the USA where several studies have focused on the issue. Scholars were, in this respect, able to show that especially conservatives were more likely to be skeptical about climate change (Bliuc et al., 2015; McCright & Dunlap, 2011a). McCright, Dunlap and Marquart-Pyatt (2016) present in an analysis of

⁷³ One YouGov survey, for example, that was issued by the DPA (German Press Agency) in 2011 found that 27,5 percent of Germans do not believe in climate change and that an additional 15,4 percent were uncertain (questionnaire and results are available to me). The question, however, was phrased highly suggestive: "Do you actually believe in global warming after these two cold winters?" (original: Glauben Sie eigentlich nach den zwei kalten Wintern noch an die globale Erwärmung?) By emphasizing the cold winters and using the term 'global warming' in the same sentence it is almost surprising that only 27,5 percent of the respondents answered with 'no' and the numbers are hardly a robust indicator for the amount of climate skeptics in Germany.

Eurobarometer data similar results for Western Europe but not for Eastern Europe. In contrast, Engels et al. (Engels et al., 2013) could not find a connection between a conservative attitude and skepticism in their study for Germany but emphasize at the same time that German skeptics are more likely to oppose renewable energies. Some studies also identified a potential gender gap, i.e. that men are more likely to be skeptic than women (Engels et al., 2013; McCright & Dunlap, 2011a). In addition to a conservative stance, some studies were also able to establish a connection between climate skepticism and the support of the free market (McCright & Dunlap, 2011a) or the endorsement of conspiracy theories (Lewandowsky, Cook, et al., 2015; Lewandowsky, Gignac, & Oberauer, 2015). Matthews (2015) inquired in this context who is actually writing skeptic comments. He analyzed 154 comments by skeptics in a thread that asked for their background and found that skeptics differed in the degree of skepticism (lukewarm to strong) but also that the users who answered were highly educated (46% had an academic degree), ‘converted’ at some point to skepticism and were often politically motivated.

As most of these results show climate skepticism is connected to more than just doubts about climate science but is rather rooted on a deeper, societal level and can be considered to be part of their identity.⁷⁴ This is also echoed by Bliuc et al. (2015, p. 1) who then propose that the divide between skeptics and the mainstream cannot be explained by politics alone but rather by cultural polarization and a divide of identities and thus a “socio-political conflict.” These findings emphasize that climate skeptics are often in opposition to the mainstream and that climate skepticism is rooted in a deeper societal conflict. This, then, can be considered to be a key aspect of a potential counterpublic.

4.2.2 Climate Skepticism in the Mass Media

Against this background it has to be asked where and how skeptics are presented in the public sphere. This question is closely connected to the concept of framing and, as such, several studies have taken a closer look at how climate change in general and climate

⁷⁴ Ojala (2015) remarks in this context that climate skeptic parents can also influence their children to be more skeptical.

skepticism in specific is framed in the mass media, which impact journalistic routines⁷⁵ have but also which role journalists and other actors play (Boykoff, 2011; Boykoff & Boykoff, 2004; Brüggemann & Engesser, 2014; Hornschuh, 2008; Rhomberg, 2012; Schäfer, 2015a; Schäfer & Schlichting, 2014). Schäfer (2015a, p. 854ff.) differentiates between four broad frames that are prominently used in the media by numerous actors: “anthropogenic climate change as a global problem”, “scientific uncertainty”, “economic development” and “ecological modernization”. Especially the frame of scientific uncertainty is interesting with regard to climate skepticism. Several studies⁷⁶ were able to show that it is heavily used by skeptics who see it as an opportunity to cast doubt on climate science “through the practice of interjecting and emphasizing controversy or disagreement among scientists” (Zehr, 2000, p. 90). Antilla (2005), for example, found that climate science was framed in the US reporting as “valid science”, “ambiguous cause or effects”, “uncertain” or “controversial”. However, the frame uncertain science has gradually lost its importance in the public debate (Schäfer, 2015a; Shehata & Hopmann, 2012).⁷⁷ Schmid-Petri et al. (2015) adapted Rahmstorf’s differentiation of skepticism and identified that about 30 percent of the US coverage on climate change had skeptical elements. This finding is in line with a previous study by Painter and Ashe (2012). Schmid-Petri et al. (2015) also emphasize that even though outright denial of climate change has become less frequent, more subtle forms have become more prominent. These forms of skepticism, then, also need to be identified.

Whereas climate skepticism is relatively prevalent in the mass media’s reporting in the USA, UK or Australia⁷⁸, there are only few studies that took a closer look at skepticism in the German mass media coverage. Hornschuh (2008), for example, was

⁷⁵ Boykoff and Boykoff (2004) could show in a study on the US coverage on climate change that the journalistic routine of balanced reporting, i.e. giving both sides of the story an opportunity to voice their opinion, resulted in a skewed representation that suggested that climate skeptics are more prevalent in society and climate science than they actually were and that skeptic positions are equal to the expertise of climate scientists.

⁷⁶ See for example: Antilla (2005); Boykoff (2007); McCright and Dunlap (2000); Painter (2012); Poortinga, Spence, Whitmarsh, Capstick, and Pidgeon (2011); Zehr (2000).

⁷⁷ Boussalis and Coan (2016) note in their analysis of documents by skeptic think tanks that skepticism about climate science is getting more prominent over the years for skeptic public relations. This, then, may indicate that the mass media may have adapted to the climate skeptic PR and ignore their framing of the uncertain climate science.

⁷⁸ Painter (2013), for example, compared the climate change coverage in the USA, UK, Australia, France, India and Norway and found that the skeptic usage of the uncertainty frame was used the most in Australia and the USA.

able to find the uncertain science frame but also noted that it is barely used. Similarly, Grundmann (2007) compared the German and US coverage on climate change with regard to prominent skeptic actors and found that climate skepticism is more prominent in the USA whereas in Germany skeptic actors are almost non-existent. In a similar study, Grundmann and Scott (2014, p. 232) compared the coverage in the USA, France, UK and Germany and concluded that skeptics “are much more visible in the USA and France compared to Germany and the UK.” Lörcher and Taddicken (2015) took a closer look at the German mass media’s online coverage of climate change and whether there was doubt regarding climate change’s existence, mankind’s responsibility, impact evaluation and climate science’s uncertainty or trustworthiness but also concluded that skepticism is rare in the mass media’s reporting.

This chapter shows that climate skeptics differ with regard to visibility from country to country. Since I am especially interested in Germany, it has to be noted that skeptics are almost not represented in the mass media. This, then, can be seen as another sign for the formation of a skeptic counterpublic outside of the mass media. However, up to now there has been no study that explicitly focused on the frames and their frequency in the German mass media. Consequently, this thesis will close that gap and look at how visible skeptic messages are in the mass media public sphere (see chapter 6.3). As counterpublics have new opportunities to make their voices heard online, I will shed light on the current research on climate skepticism online in the next chapter.

4.2.3 Climate Skepticism Online

The research on climate skepticism online can broadly be differentiated between studies that employ network analysis in order to identify communities and how these are connected with each other (e.g. hyperlink or social web analysis) and studies that look where and how skeptics voice their opinion on climate change (e.g. comment sections, blogs or social web).

Sharman (2014), for example, analyzed the linking practices of skeptic blogs according to their blogrolls and was able to identify three especially prominent blogs that mostly focus on climate science in the English-language climate discourse. She thus proposes that these blogs “are not only acting as translators between scientific research and lay audiences, but, in their reinterpretation of existing climate science knowledge

claims and critique of scientific institutions, are acting themselves as alternative public sites of expertise for a climate sceptical audience.” (Sharman, 2014, p. 167) In a similar study, Elgesem, Steskal and Diakopoulos (2015) looked at the communities English-language climate blogs formed through hyperlinks and, in combination with a topic modeling analysis, which topics were discussed in these communities. They were able to identify several communities, which only consisted of either skeptic or mainstream blogs (which they called ‘accepter’) and which mostly dealt with political issues. They only found one community that bridged this divide and in which the main topic dealt with climate science. The authors concluded that disagreement over climate politics seems to be more divisive than climate science. Both Williams et al. (2015) as well as Pearce et al. (2014) took a closer look at whether skeptics and the mainstream interacted with each other on *Twitter* and if so, how they interacted. Both studies showed that *Twitter* users mostly interacted with like-minded users and that the climate discourse on *Twitter* is also highly polarized. However, both studies were also able to find small communities in which exchanges across the gap happened and where skeptics and mainstream users interacted.

Although Jang and Hart (2015) used *Twitter* as a research object, too, they were more interested in the issue frames that were used in tweets regarding climate change. In their analysis of 5.7 million Tweets from American, British, Canadian and Australian users which were collected over two years, they were able to show that climate skepticism is not only more prevalent in conservative regions but also that skeptics favored using the term ‘global warming’ over ‘climate change’. Hellsten and Vasileiadou (2015, p. 603) took a closer look at the event dubbed Climategate and were able to identify how blogs set the agenda of the mass media, but whereas blogs framed the case as scientific fraud the mass media mostly described it as a “smear campaign of science”. In an analysis of user comments on tabloid sites before and after Climategate, Koteyko, Jaspal and Nerlich (2013) showed how climate science, which before was a side topic, was then one of the most discussed issues and closely connected to skeptic frames such as scientific uncertainty or the politicization of climate science. In a similar study the same authors identified three major themes in the skeptic comments that dealt with disparaging climate scientists and science, denying mainstream users legitimacy due to faulty science and suggesting that climate science had shady and financial motives (Jaspal, Nerlich, & Koteyko, 2013).

In an analysis of German user comments, Lörcher and Taddicken (2015, p. 276) found that climate skepticism is prevalent in the comment sections of the mass media, a weather forum and a skeptic blog but differs from site to site. Whereas on *Spiegel Online* and *Wetter Online* the perception of climate change is mostly accepted, i.e. users stand for the mainstream position, climate science is seen more ambivalently. On the skeptic site, *Eike* and on *Welt.de* comments are even more skeptical about climate science. The two sites differ with regard to the perception of climate change: where *Welt.de* is ambivalent about its existence and mankind's influence, *Eike* is more skeptical. However, they conclude that climate skepticism is not as prevalent as other studies would suggest (Lörcher & Taddicken, 2015, p. 278). Assuming that users who read some of these comments and other user-generated content, Porten-Chée and Eilders (2015) wanted to know if German skeptics who monitored these debates were more likely to voice their opinion than others. However, this was not the case and, indeed, "individuals who viewed themselves as part of the minority were even more willing to speak out in public than those who viewed themselves as part of the majority." (Porten-Cheé & Eilders, 2015, p. 149)

When taking these findings into account it becomes obvious that the Internet helped skeptics in finding alliances, getting their voice heard but also in setting the mass media's agenda. It is also evident, however, that climate skepticism in Germany is an under-researched field. In the next chapter, I will propose that climate skeptics can be considered their own counterpublic in Germany.

4.3 Climate Skeptics as a Counterpublic in Germany

As the last chapters have shown climate skepticism in Germany is –in comparison to other countries– relatively rare. Indeed, skeptics are neither very present in polls nor in the mass media's reporting on climate change and it is telling that Porten-Chée and Eilders (2015) mostly refer to them as minority and not as skeptics in their study. But studies from other countries show – and Lörcher and Taddicken's (2015) suggest that this is also the case for Germany – that skeptics are highly active and, for example, establish own blogs and create a community around their climate skeptic identity, but also post on social media platforms like *Twitter* and are especially vocal in the comment sections of the mass media and climate blogs.

The question however remains as to whether skeptics can be considered a counterpublic in Germany. Admittedly, understanding the phenomenon of climate skepticism as a counterpublic seems problematic at first sight as counterpublics are regarded as being closely connected with social movements that fight for acceptance, visibility and inclusion, i.e. counterpublics are mostly understood to have an emancipatory character and are thus mostly seen positively in the literature. Yet, against the background of Downey and Fenton's (2003) proposal that counterpublics should also extend to radical groups and recent demands that the public sphere should be seen from a more functionalist and less normative perspective (Rauchfleisch & Kovic, in press), I propose that climate skeptics can be considered a counterpublic. Indeed, German skeptics are a minority in Germany that is excluded from the mass media and thus are not part of the broad public discourse. In addition, they have established alternative media in which they can voice their opinion without potentially being excluded by members from the mainstream.

However, I also suggest that even though these arguments point towards skeptics being a counterpublic this has also to be tested empirically on several levels. In the following, I will divide the overarching research question in this thesis into three more concise research questions and describe how these will be answered empirically.

5. Interim Conclusion, Research Questions & Methods

The networked public sphere is a complex theoretical concept that describes how numerous publics are connected to each other through the structural means of the Internet. It highlights the potential for new communities, which can form around issues or platforms, for information diffusion through network ties as well as online debates and for agenda setting processes that circumvent the mass media altogether or influence it. At the same time, however, the networked public sphere is not to be seen as a replacement of the mass media public sphere but rather as a further development that connects new publics with 'old' ones. It thus emphasizes the mass media's relevance for the public sphere but also posits that it is not the only visible and influential public sphere anymore. In this context I introduce counterpublic theory to propose that counterpublics can also be theoretically integrated in the networked public sphere but

have to be understood as specific publics that have to be identified both theoretically as well as empirically.

Against this background, my overarching research question regarding the integration of counterpublics is situated. Integration is operationalized here as similarity of discourses, connectivity and collective identity (Kleinen-von Königslöw, 2010). By using these three dimensions I am able to highlight the “agonistic” (Mouffe, 1999) struggle between mainstream and counterpublic on several levels and shed light on the difficult relationship between mainstream and counterpublic.

As a next step I present climate skepticism in Germany as a highly relevant and peculiar case that can be analyzed through the lens of counterpublic theory and that it is lacking in research. Counterpublic theory in this context is an especially interesting way to understand the debate between mainstream and skeptics since counterpublic theory does not frame it as an issue of deliberation or knowledge/ignorance but rather as a social conflict between different sides against the background of “structural diversities and dominant consensus structures of public spheres as a whole” (Toepfl & Piwoni, 2015, p. 483). Whereas other studies often looked for diverse comments and a reciprocal debate this theoretical background also allows the interpretation of the appearance or lack of skeptic voices within a greater context.

Research questions

In a first step it seems essential to understand which role climate skeptics play within the German online discourse on climate change. The underlying assumption here is that if climate skeptics are truly a counterpublic the exclusion mechanisms that were visible in other studies (Elgesem et al., 2015; Williams et al., 2015) should also be visible –or perhaps even more so– in the German case where climate skeptics are not part of the ‘classical’ public sphere. Nuernbergk (2013), for example, could show that counterpublic blogs often posted to the mass media but the mass media rarely linked to the counterpublic blogs, thus signaling their exclusion. In order to analyze how well integrated climate skeptics are with regard to what Kleinen-von Königslöw (2010) calls connectivity I propose to conduct a hyperlink network analysis to understand how climate skeptic websites and blogs are connected to each other and the mainstream climate sites. I thus want to answer the following questions:

RQ1: How is the German climate change online discourse structured and what role do climate skeptics play in it? Can we observe, for example, patterns of fragmentation or polarization?

In a next step it seems necessary to take a closer look at the mass media. As it was noted in chapter 4.2 a systematic frame analysis of the German mass media's climate reporting is lacking up to now. However, the framing of an issue is essential for a similar discourse and the baseline for a counterpublic's identity (Kleinen-von Königslöw, 2010; Nuernbergk, 2013; Snow & Benford, 1992; Toepfl & Piwoni, 2015). Additionally, the mass media can still be considered to be one of the most influential publics within the networked public sphere but, at the same time, could also be more open for counterpublic voices due to the Internet's gatwatching and agenda setting processes (Hellsten & Vasileiadou, 2015; Nuernbergk, 2013; Wimmer, 2012). By looking for climate skeptic frames within the mass media I am thus looking for an empirical foundation for taking a closer look at the discourses' similarity (Kleinen-von Königslöw, 2010). In the second paper I am thus interested in:

RQ2: What climate skeptic frames can be identified in the German mass media's reporting on climate change and how prominent are these?

In a final step it seems necessary to focus primarily on the climate skeptics themselves. Whereas in the first paper the main question deals with their structural connectivity within the online discourse and the second focuses on skeptic frames in the mass media's coverage, the third should take the places climate skeptics 'go' to online into consideration, whether they stay on skeptic sites or also argue and interact outside their potential echo chambers. Since several studies showed that skeptics are especially active in the comment sections and Lörcher and Taddicken's (2015) study was based on a somewhat close definition of climate skepticism and limited with regard to the amount of analyzed comment sections, a further and in-depth content analysis of comment sections seems necessary. When keeping Kleinen-von Königslöw's (2010) dimensions of similarity of discourses, connectivity and collective identity in mind the analysis of the online comments should be focusing on the visibility of skeptics in different comment sections and the skeptical frames they use. This is regarded necessary since it has already been shown that not all skeptics are skeptical about the same things. Finally,

the question is if and how mainstream users react to skeptics. The third research question is:

RQ3 How visible are climate skeptics online in the comment sections of the German mass media and several climate blogs? What frames do they use and how do users from the mainstream react to them?

Paper	Focus	Method	Dimension(s) of integration
Alliance of Antagonism	- Structural connection	- Hyperlink network analysis	- Connectivity
Questioning the Doubt	- Framing	- Explorative qualitative content analysis	- Similarity of discourses
Public Spheres of Skepticism	- Frequency - Framing - Reaction	- Hyperlink network analysis - Qualitative quantitative content analysis	- Similarity of discourses - Connectivity - Collective Identity

Table 3: Differentiation of this thesis' paper and their focus of analysis

Methods

To tackle these research questions and the overarching question regarding the integration of counterpublics in the networked public sphere, several methods will be combined (see Table 3). The first question will be answered with a hyperlink network analysis to identify communities and calculate centrality metrics to identify possible fragmentation or polarization effects (Halavais, 2008; Park, 2003; Vincent, Jean-Loup, Renaud, & Etienne, 2008). This is a well-known method in the information sciences that also grew in popularity in the communication sciences over the last few years (Nuernbergk, 2013, p. 327ff.). The second question, on the other hand, will be answered with a qualitative-explorative content analysis to identify emphasis frames. These frames consist of several so-called 'idea elements' which can be considered the smallest unit within a frame (Gamson & Modigliani, 1989; see also chapter 6.3.3). This is a popular method within sociology and communication science to identify frames within public communication which can then be used for a quantitative analysis (Ferree et al., 2002b; Gerhards & Schäfer, 2006; Rhomberg & Kaiser, 2015). Consequently, to answer the third question a qualitative-quantitative analysis based on the identified frames will be conducted to show frequencies as well as statistical correlations that allow for more

general inferences about the relationship between the frame usage, the users and the comment sections (Diekmann, 2010; Früh, 2015; Riffe, Lacy, & Fico, 2005).

By using digital methods as well as qualitative and quantitative methods this thesis aims to unveil the structural network context, the qualitative content aspect as well as the actual frequency and structural discourse patterns and to show how these are connected to each other (Franke & Wald, 2006; Lindner, 2010). By using this multi-method approach to analyze the skeptic counterpublic's integration in the networked public sphere I am also able to contribute to the debates surrounding echo chambers in the public sphere. But whereas most studies only looked at the structural connection (or lack of) this thesis takes several layers into account (i.e. hyperlinks, frame usage, user visibility, interaction). In the next step I will present the three case studies that were conducted based on these assumptions.

6. Case Studies

The case studies that I will present here are structured around the research questions outlined above. The first study will focus on the German climate online discourse based on a hyperlink network analysis. The second will focus on the skeptic frames that are used in the German mass media. And the third will then look for climate skepticism in several comment sections of the mass media and climate blogs.

6.1 Study: Alliance of Antagonism: Counterpublics and Polarisation in the German Online Climate Change Discourse⁷⁹

6.1.1 Introduction

Climate change is a controversial and even polarizing issue for many reasons. There is no single political solution for tackling climate change and its associated challenges, and it is unclear what economic consequences a solution may entail, or whether it is

⁷⁹ This study was conducted and written together with Cornelius Puschmann.

scientifically wiser to adapt to global warming incrementally, or attempt to mitigate it altogether. The notion that climate change is a dangerous and consequently urgent issue that threatens society is increasingly accepted internationally (Schmidt et al., 2013). Consequently, political parties, grassroots activist organizations, charities, companies, as well as scientific and religious institutions, fight climate change on a local, national, and transnational level. And yet there is a vocal minority within both the global and national climate discourses that questions climate change or even denies its existence – so-called ‘climate skeptics’. This is even more prominent online where skeptics are able to form communities in which they can validate and strengthen each other’s opinions and arguments. Even though much is known about the skeptics’ framing of climate change, their demographics and industry ties, there is presently little research on their standing within society and the types of coalitions that skeptics form (e.g. Elgin, 2015; McCright & Dunlap, 2000). This, too, holds true for climate discourse in general, which is shaped by the actors mentioned above, all of whom aim to make their voices heard in the public sphere in order to define how climate change is discussed (Anderson, 2009). To fully understand conflicting framings of the same issue, a structural perspective is needed, since it enables us to identify different factions, as well as to see the tension between mainstream and outlier positions. In this paper we accordingly focus on the overarching research question: How is online climate change discourse structured?

Since this question is relatively broad, we focus on the case of the German-language climate change discourse and conduct a hyperlink network analysis that allows us to identify coalitions, associations, and opponents within it. We combine this approach with a content analysis which allows us a more confident interpretation of the network’s structure. We choose this specific case for several reasons: it offers us both a national and a transnational perspective (Germany, Austria and Switzerland); there exists a broad consensus within these countries that climate change is happening, consequently a wide range of involved actors acknowledge climate change as such but disagree on potential counter-measures; and, additionally, the climate skeptic groups constitute in our reading constitute counterpublics. Accordingly, our overarching research question can be subdivided:

RQ1: What is the relationship between the ‘mainstream’ public sphere(s) and the climate skeptic counterpublic with regards to reciprocity and inclusion?

RQ2: What is the relationship between different kinds of actors and topics with regards to clusters and potential coalitions?

By answering these questions we will both offer an insight into the highly polarized German-language climate discourse and describe a particular national debate, as well as provide suggestions for the role of counterpublics within the networked public sphere.

6.1.2 Climate Change and the Internet

Since climate change is an abstract and complex issue that we cannot experience directly, we are highly dependent on information and opinions received through the mass media and online sources (Schäfer, 2012). Consequently, the public debate on climate change is hotly contested as there is not only a debate between actors from different societal fields who want to promote their respective positions (Anderson, 2009). As information is a key resource in these debates, significant research focuses on the involved actors, the messages they are trying to send, how they are represented by the media and, more recently, how these actors are connected with each other.

Climate scientists in particular enjoy a questionable prominence within the climate discourse as both their work as well as their private lives are frequently under public scrutiny. When e-mails by climate scientists were leaked right before a climate summit in 2009 – an incident dubbed ‘Climategate’ – journalists and skeptics were quick to cast climate research in doubt, though no evidence for scientific misconduct could be found (Grundmann, 2012). The role of climate scientists within politics, however, and if, where and how actively they communicate online, interact with journalists or if they donate to environmental causes are still aspects of academic interest (e.g. Bromley-Trujillo, Stoutenborough, & Vedlitz, 2015). In his meta-analysis on climate change communication online Schäfer (2012: 3) concludes that “climate

scientists and scientific institutions from the field do not seem to be the major players in online climate communication.”

This stands in stark contrast to the way non-governmental organizations (NGOs) utilize the new opportunities the internet offers to them with regards to different channels, ways of campaigning, potential national and transnational alliances and a wide reach to inform and mobilize users (e.g. Ackland & Gibson, 2004; Shumate & Dewitt, 2008). Politicians, on the other hand, seem to prefer conventional modes of communication when talking about climate change. And yet little is known regarding politicians’ online communication on climate change (Schäfer, 2012). Hyperlink studies show that governmental actors tend to link among each other and disregard other societal fields. Elgin (2015), for example, found that particular institutions tend to preferentially link within their own field, forming distinct clusters. As we will argue, establishment and counterpublic differ markedly in their make-up of actors, with the establishment cluster dominated by institutions and the counterpublic cluster dominated by individuals and small, loosely-knit groups.

6.1.3 The Online Public Sphere and Counterpublics

The theoretical concept of the public sphere has been shown to be an especially useful framework since it allows for a normative evaluation, a descriptive analysis of communication relationships online, and can be productively combined with hyperlink network analysis (Benkler, 2006; Papacharissi, 2002; Rogers, 2002). The internet has reinvigorated the idea of a virtual space which has the potential to empower the civil society and give previously excluded minorities a voice (Dahlberg, 2011; Downey & Fenton, 2003).

Classical conceptualizations of the public sphere strongly rely on the work of Jürgen Habermas who proposes the need for a strong civil society, for an alert mass media, and a critical counterpublic so that a working public sphere can be created and a public opinion can be formed (Habermas, 2006[1962], 2008b). Albeit Habermas’ work is still seen as inspiration for many online scholars, the idea of what constitutes a public sphere has been critically revised. Whereas classic public sphere concepts tried to conceptualize the relationship between politics, mass media and civil society and focused on the political public sphere (e.g. Fraser, 1990; Habermas, 2006[1962]; Peters,

1993) more recent attempts define the public sphere as an amalgam of communication on different platforms with shifting roles and interaction among actors from various societal fields (e.g. Benkler, 2006; Neuberger, 2014; Papacharissi, 2002).

The online public sphere, often times also called networked public sphere (Benkler, 2006; Nuernbergk, 2014), emphasizes the network character of the internet and its influence on all societal actors, the mode of communication and traditional understanding of roles (Neuberger, 2014). As Benkler et al. (2015, p. 3) point out, the networked public sphere describes “the range of practices, organizations, and technologies that have emerged from networked communication as an alternative arena for public discourse, political debate, and mobilization alongside, and in interaction with, traditional media.” For Boyd, networked publics “are simultaneously (1) the space constructed through networked technologies and (2) the imagined collective that emerges as a result of the intersection of people, technology, and practice.” (2010, p. 39) The authors both emphasize the network’s social dimension as well as its technological basis. Consequently, it is now widely acknowledged that there is not one public sphere but rather multiple publics – some smaller, some larger, some local, some transnational – that are (loosely) connected and have the potential to influence each other (e.g. Bakshy, Rosenn, Marlow, & Adamic, 2012; Chadwick, 2011).

One major point of criticism about the classic public sphere concept deals with the exclusion of minorities or unpopular opinions and the possible formation of a counterpublic (Downey & Fenton, 2003; Fraser, 1990; Mouffe, 1999). Since these groups are excluded from and/or do not want to be heard in the public sphere they retreat to a safe space where they can voice their opinions, exchange arguments and build a counterpublic of their own that stands in stark contrast to the hegemonic public sphere. Since counterpublics touch upon questions of polarisation and fragmentation (Habermas, 2008b) one major question deals with the counterpublic’s identity and its value for democracy. Counterpublics are often reduced to minorities that seek to change society and democracy for the better, but are not represented in the public debate (e.g. Chávez, 2011; Dahlberg, 2011; Fraser, 1990). However, problematic movements like Neonazi and other radical groups also seek representation in public discourse, despite their opposition to democracy (Cammaerts, 2009; Downey & Fenton, 2003; Toepfl & Piwoni, 2015). We consequently propose that counterpublics do not only include progressive social movements but also potentially problematic movements. But as Asen (Asen, 2000, p. 426) points out, it is instrumental not to confuse a multiplicity of

publics with counterpublics. In this paper, we consequently understand a counterpublic as an (1) issue-specific public since publics often form around issues (Benkler et al., 2015, p. e.g.) that (2) opposes the hegemonic view and is (3) excluded by the mainstream and/or (4) excludes itself from the mainstream in favor of an enclave. We will next discuss whether climate skepticism can be considered a counterpublic.

6.1.4 Climate ‘Skepticism’ and its Potential as a Counterpublic

The rift between ‘skeptics’ and what we will call ‘mainstream’ in the remainder of this paper has been the topic of several studies (for a summary Howarth & Sharman, 2015). It has, for example, been shown that skeptics are usually politically more conservative (McCright & Dunlap, 2011b), tend to be more open for conspiracy theories (Lewandowsky, Gignac, et al., 2015), adapt their narratives quickly according to ongoing events (Lewandowsky, Risbey, & Oreskes, 2015), are not only questioning climate change itself but also climate science (Kaiser & Rhomberg, 2015) and that some skeptical think tanks have ties to energy companies (McCright & Dunlap, 2000).

A central point of contention when talking about climate skepticism is the terminology itself. Naturally, ‘skepticism’ is something positive; especially in science (Ditto & Lopez, 1992). Consequently, some scholars are hesitant in calling ‘skeptics’ as such and prefer terms like contrarians or deniers (Kaiser & Rhomberg, 2015, p. 3). Even though we agree with Howarth and Sharman (2015) that labeling a position is problematic we are in line with Kaiser and Rhomberg (2015) who argue that the term ‘skeptics’ seems to be the most inclusive and less offending label. In the same vein we will use the term ‘mainstream’ for the other side of the debate which agrees upon the findings of the IPCC and whom the skeptics prefer to label deprecatingly as ‘alarmist’.

But can climate skeptics be considered a counterpublic? According to Asen’s (2000, p. 427) reminder that counterpublics also have to recognize their exclusion and articulate it in a way this, naturally, differs from country to country. In the USA, for example, climate skepticism is more popular within the public and among conservative politicians than in Germany, where the Green party is a major political force (e.g. Boykoff, 2011; Engels et al., 2013). In the German-language climate discourse which includes Germany, Austria and Switzerland climate skepticism is almost invisible – at least in the media (e.g. Brunnengräber, 2013; Kaiser & Rhomberg, 2015). But as

Lörcher and Taddicken (2015) point out, skeptics are more active online. Since we understand counterpublics as (1) issue-specific and (2) opposing the hegemonic view we tend to understand skeptics in the German language networked public sphere as a counterpublic. However, we also define counterpublics as (3) excluded by the mainstream and/or (4) by themselves in favor of an enclave. But as we are not able to test these two factors theoretically, we will test them empirically in this analysis.

6.1.5 Hyperlink Networks as Indicators for Polarization and Counterpublics

Contested issues such as climate change lend themselves particularly well to the function of an ideological dividing line, with a faction on each side of the issue. Many studies of blogging have been concerned with community formation, that is, with how individuals who are otherwise unacquainted become involved in discussions with each other, and with how these individuals express their group identity (Adamic & Glance, 2005; Huffaker & Calvert, 2005). The potential of blogs for supporting broader public deliberation of societal issues has also been widely discussed in the literature, with mixed conclusions (Koop & Jansen, 2009; McKenna & Pole, 2004; Wright, 2012). Several authors argue that the participating of bloggers in debates on climate change influences not only the public agenda, but may impact the mainstream media as well (Nisbet & Kotcher, 2009).

Due to their decentralized and informal nature, social media mesh well with the values and organizational needs of both individuals and grassroots social movements that operate outside the political mainstream (Castells, 2004). In a hallmark study of polarization in political blogs, Adamic and Glance (2005) were able to characterize the behavior of the two camps, finding that conservatives linked to each other more frequently and in a denser pattern. They conclude that they encountered a “divided blogosphere” (p. 43), with the likelihood of bloggers from each faction linking to site from the other faction considerably lower than external links. Marlow (2004) argues that links between blogs act as a proxy to social structure, and that blogroll links in particular are indicators of popularity and allegiance, while permalinks reflect influence more closely. And Ackland and O’Neil (2011) find compelling evidence that hyperlink structures correlate with discourse frames in a social network study of 161 environmental organizations’ homepages.

The majority of studies that examine blog discourse using a network analysis approach base their assessments on hyperlink data taken from within posts. Frequently that data is scraped from blogs automatically using software to facilitate and scale up the data collection process. Lists of links manually curated by website owners (blogrolls; cf. Bross, Hennig, Berger, & Meinel, 2010) are often excluded from these analyses, and there is also a surprising paucity of discussion in the scholarly literature as to their function. McKenna and Pole (2004) trace the origins of blogrolls to programmers linking to each other's online journals in the late 1990s, when standardized software for publishing blogs was not widespread and such link exchanges functioned as a gift and recognition culture. Marlow (2004) argues that that blogroll links should be interpreted as explicit signs of endorsement. For Koop and Jansen (2009) blogrolls are indicative of more long-term and ideological allegiances, rather than ephemeral signals that identify informative resources which play a role in relation short-term issues only. Conversely, both Ackland and Gibson (2004), and Adamic and Glance (2005) take on a more negative view, remarking that blogroll links have a tendency to become stale, in contrast to 'fresh' permalinks used in a blog post, which are considered to be more up to date, and accordingly characterize ongoing communicative interaction more reliably than blogrolls do. The authors suggest that more current discourse is better captured by post hyperlinks, rather than blogrolls. Blog rolls appear to be less suitable for studies of ongoing communication on particular individual issues, but should act as reliable indicators of ideological allegiances between active contributors to the well-established online debate on climate change by virtue of their comparable longevity. Sites that act as resources without themselves contributing are absent from our data, as are sites that appear only on a selective set of issues for a short time, but are not regularly involved in climate change debates. What we retain is therefore a core graph of actors in German-language climate change discourse.

6.1.6 Data and Methods

Our study consists of a content analysis of websites and a network analysis of the hyperlinks that connect them. The dataset was compiled manually in July 2015 following links on websites' blogrolls, using snowball sampling. As the initial starting point, four German climate blogs were chosen based on previous research on the

German-language climate discourse (e.g. Krauss, 2012; Lörcher & Taddicken, 2015).⁸⁰ We only added websites that were included in a site's blogroll or link list but restricted ourselves to (1) German-language sites, that (2) had a blogroll or link list and dealt with (3) climate to some extent (indicated by a tag, the site's (sub-)title, or the title of a recent post). A manual approach was chosen because web crawlers have limitations with regard to counting false positives (e.g. traffic counters from scripts) as regular links. Manual collection also seemed more appropriate for our research questions, which stress the roles of links as an instrument for signaling affiliation. By following links from the website *science-skeptical.de* we arrived at a network initially consisting of 9,871 nodes connected by 16,608 edges which also included the other three starting points. We then filtered this network to include only those nodes with at least one reciprocal connection with another node. The resulting network consists of 257 nodes connected by 985 edges. Despite filtering in the described fashion, the filtered graph is still directed, as not all connections within the graph are reciprocal. We consider mutual blogroll or linklist links to be a particularly salient indicator that the blog or site is a participant in the wider online debate on climate change, in contrast to a resource that is widely linked without contributing actively. Many sites with a relevance to climate change issues, but without an active role in the debate, such as the website of the IPCC and *Wikipedia*, fall within this category. Filtering allowed us to focus on those actors that actively contribute to the discourse and that are recognized by others as doing so, which we believe suggests their overall relevance to public debate on climate change. It also reduced the size of the graph to a level that facilitates both visual inspection and manual classification.

After filtering, we proceeded by coding the websites in the dataset by the following properties: *topic* (the major and overarching topic of the website/blog as identified by the header, sidebar, and keywords provided), the site's *stance* (whether the site qualified as mainstream, skeptical or undefined/unclear in its position on climate change) and who the *content creators* behind the sites are. The analysis was carried out by two coders (Krippendorff's alpha for all categories $\geq .9$). In what follows, we compare the network graph to a randomly generated network to contextualize its properties, then discuss its characteristics and point out three relevant clusters within the

⁸⁰ These sites were two climate skeptic blogs (*eike-klima-energie.eu*; *science-skeptical.de*) and two mainstream blogs (*klima-der-gerechtigkeit.de*; *globalklima.blogspot.de*).

network. Finally, we examine the relation of actors, topics and stance towards climate per the content analysis and relate this to the network structure.

6.1.7 Results: Comparison of the Climate Network with a Random Graph

A challenge when analyzing network data is that any statistical comparison requires a baseline. In order to evaluate the macro-level structural properties of a network, presenting it side by side with other examples can be illustrative. In the following, we conduct a comparison of the climate website network with a simulated graph that has a number of nodes and edges similar to the empirical network. The direct comparison reveals the degree of polarization present in the empirical network compared to one that is shaped purely by structural properties determined by an algorithm that determines its shape (see Figure 1 for both graphs). We generate the random graph via the Erdős-Rényi model (ER), calculated via the igraph library for R (cf. Csardi & Nepusz, 2006). While fitting is required for any algorithm to approximate an empirical network, we present a probabilistic network to provide an analytical baseline to which the climate network graph can be compared.

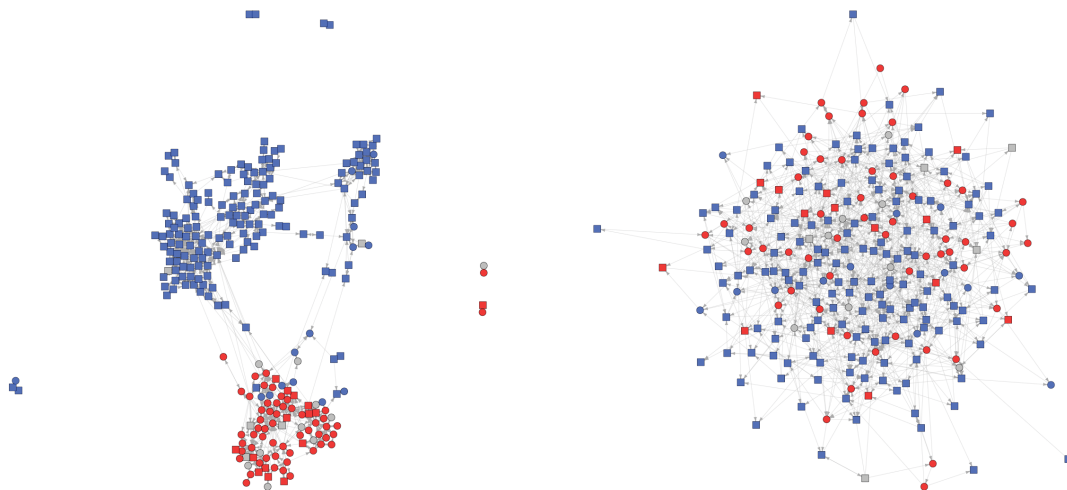


Figure 1: Climate website network graph (left) and Erdős-Rényi random graph (right), both with 257 nodes and 985 edges. Blue nodes represent climate ‘mainstream’ websites, red nodes represent climate ‘skeptical’ sources. Circles represent individuals, squares represent institutions. See Table 1 for full network statistics

Visual inspection of the empirical climate network together with the ER graph highlights a number of properties that are relevant to its characterization (see Table 4). The two graphs differ markedly in their mean distance and diameter, with the empirical network exhibiting much higher values for both metrics. The degree distribution of the two graphs also differs, with the climate network exhibiting considerable skew, and a higher global clustering coefficient. The perhaps most notable attribute of the blog network is its level of polarization, reflected structurally by three distinct clusters connected by a small number of bridging nodes with high betweenness centrality. Hu, Thulasiraman, and Verma (2013) propose a polarization score calculated by subtracting the mean betweenness centrality from the maximum betweenness centrality of the graph and dividing the result by the mean. The resulting polarization score is considerably greater for the website graph, with the random ER graph trailing far behind.

Network	Nodes	Edges	Indegree (median)	Outdegree (median)	Distance (mean)	Diameter	Clustering coefficient	Polarization
climate website network	257	985	2	3	6.23	17	.27	11.71
random network	257	985	4	4	4.19	9	.03	2.23

Table 4: Core network statistics for the climate change website network and for the simulated graph. Nodes, edges and diameter represent absolute counts, indegree and outdegree are median values, all other figures represent mean values

The degree distributions of the graphs further illustrates their respective differences and the non-random characteristics of the climate network graph (see Figure 2). The ER graph has a normal degree distribution as a result of its random assignment of edges, i.e. for most nodes the number of edges is close to the mean. This sets it apart from many empirical networks that have heavy distribution tails. The climate website graph has a left-skewed distribution that reflects a few sites with very high degree, while the majority of sites has a degree that is roughly half that of the ER model.

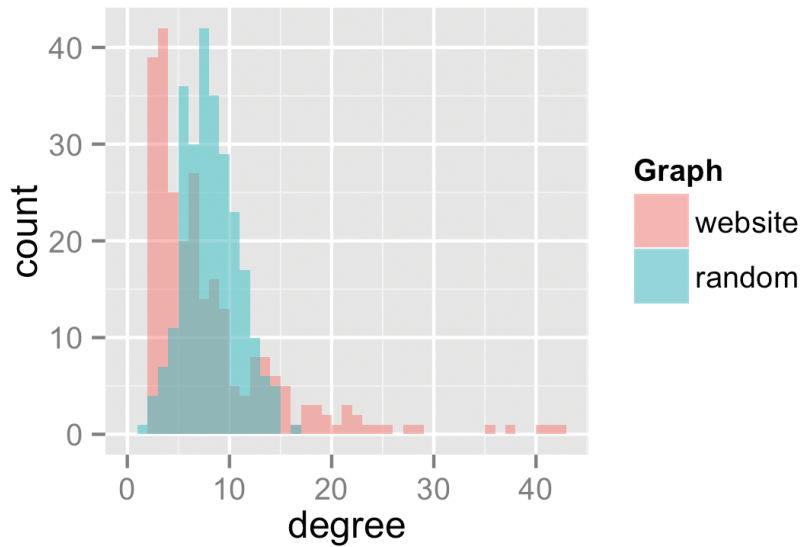


Figure 2: Histogram of degree distributions in the website graph (light red) and the Erdős-Rényi random graph (light blue)

Examining the degree distributions in concert with the local clustering coefficient distributions of the four networks further emphasizes the high level of polarization in the climate network. The website graph exhibits an essentially flat distribution curve and a far greater range of clustering coefficients (see Figure 3). The ER has what resembles a power law distribution, with very few sites exhibiting a high degree of clustering, while most nodes have a low local clustering coefficient.

Like a citation graph, the climate network superficially has properties similar to a scale-free network in terms of its degree and clustering coefficient distribution, but different in respect to its high degree of polarization. What is more, assortatively its clusters form along the mainstream-skeptical line as well as in relation to a homophily among similar types of actors (scientific organizations, NGOs, public institutions, companies, individuals etc.) that we describe in more detail below.

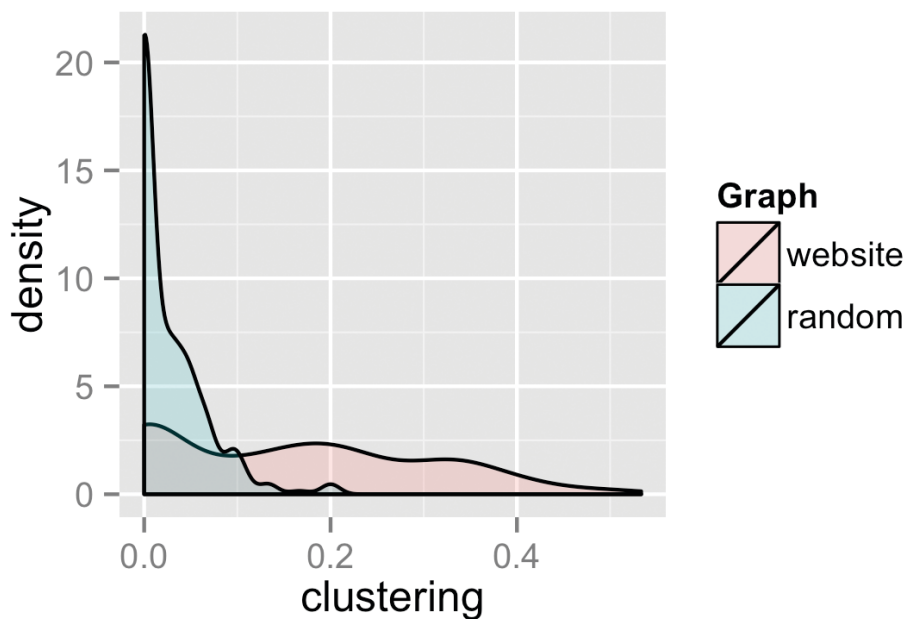


Figure 3: Density plot of the local clustering coefficient distributions in the website graph (light red) and the Erdős-Rényi random graph (light blue)

6.1.8 Results: Centralization and Assortativity of the Climate Network

In the following, we discuss the climate website network’s meso-level properties together with the results of the content analysis in more detail (see Tables 4 and 5, as well as Figure 1). Figure 1 shows the relation of climate ‘mainstream’ (blue) and climate ‘skeptical’ (red) websites. Circles represent individuals, while squares represent institutions like the Federal Environmental Agency or the German Aerospace Center (DLR). The graph reveals not only a polarization along the climate change mainstream and skeptical stance divisions, but also internal divisions in the mainstream section (upper left and upper part of the graph). While the largest cluster in the upper left section consists largely of institutions (science organisations, political parties, government institutions, NGOs), the slightly smaller upper cluster consists of a mixture of grass-roots NGOs and small, informal groups. The tendency for websites to associate themselves with other sites of the same faction or actor type is statistically reflected in the network’s assortativity in relation to these variables (Newman, 2002). While a site’s topic is non-assortative (0.02), the website network is both strongly assortative for

faction (0.46) and actor type (0.43), while the random graph is close to zero on both counts (0.04 and -0.02).

In Figure 1, the upper cluster in the website graph is the *climate activist cluster*. It is characterized by climate change activists who band together in local initiatives opposed to issues such as coal mining, nuclear power or power grid expansion. Several of the blogs within the cluster promote climate camps in order to inform and mobilize citizens. Moreover, the cluster is politically left-leaning, with ties to the Green Party, the German left party Die Linke but also to the politically radical Antifa movement. This cluster is remarkable compared to the remainder of the mainstream faction due its combination of radical leftist as well as more moderately civil society and political parties banding together for the common cause of environmental protection.

Climate network	Nodes	Indegree	Outdegree	Weighted Degree	Closeness	Betweenness	Eigenvector
..by actor type (assortativity: 0.43)							
individual	60	3.32	4.02	7.33	5.04	633.14	0.09
group	19	6.47	4.79	11.26	4.86	2203.24	0.17
individual scientist	6	1.50	1.50	3.00	6.36	156.72	0.01
scientific organization	40	5.78	5.12	10.90	5.44	1351.11	0.30
political party	5	2.40	5.00	7.40	4.65	308.99	0.03
government	31	4.03	4.10	8.13	6.23	1349.53	0.10
NGO	53	3.60	3.26	6.87	6.40	1118.89	0.06
media	5	5.00	2.40	7.40	5.76	4349.02	0.11
business	22	2.00	2.18	4.18	5.37	851.10	0.03
church	10	1.80	2.50	4.30	7.69	622.49	0.01
unclear	6	1.33	4.83	6.17	4.60	384.88	0.04
..by stance (assortativity: 0.46)							
mainstream	172	3.67	3.65	7.31	6.07	1155.85	0.11
skeptical	70	4.56	4.54	9.10	4.88	1176.65	0.12
undefined/unclear	15	2.33	2.67	5.00	4.84	356.53	0.06

Table 5: Network statistics and centrality metrics for groups of actors (a) and stances (b)

The upper left cluster, by contrast, consists of scientific and large public institutions, companies and NGOs committed to climate change in one of several ways. It is politically mainstream and represents the interest of socioeconomic elites. The interlinking between actors from science and administration has been shown in other hyperlink studies before (cf. Elgin, 2015: 238) and underlines the close connection between these societal fields that can be explained by the political relevance of climate change research. Additionally, this relates to previously described assumptions about the shaping of the public sphere. Peters (1993), for example, proposed the idea of a center and a periphery within society, with political actors in the center and actors from civil society at the periphery. This is echoed by our results on the online public sphere of climate change discourse, with civil society actors at the fringes of our network and institutions closely connected at the network's core. We therefore call this cluster *climate institutional*.

In marked contrast to the mainstream faction, the *climate skeptical cluster* is dominated by individuals. It consists of several climate skeptic blogs that focus on climate science, climate politics but also associated issues like energy politics and environmental protection. Additionally, there are also individual bloggers who combine climate skepticism with a range of other issues, from the perpetrated marginalization of smokers, xenophobia, racism and 'men's rights' to conspiracy theories on issues such as so-called chemtrails and the global monetary system. An air of general antagonism regarding what is perceived to be 'political correctness' or the majority opinion is common, with many sites linking to non-mainstream news sources as evidence for their claims (e.g. PI-news.de). The most prominent sites, such as Science-Skeptical or EIKE are –even though skeptical– comparatively moderate and focus on climate topics. The insularity of the skeptic cluster is highlighted by a lack of moderating individual voices outside of the institutional cluster, within which virtually all references are faction-internal.

In summary, climate change is a largely technocratic and managerial issue in the climate mainstream faction and a lightning rod for political mistrust and antagonism in the climate skeptical individualist cluster. The climate activist camp is even further away from the climate skeptics than the institutional cluster, largely because of its politically opposed outlook. Table 5 presents core statistics and centrality measures for the network by actor type and faction.

6.1.9 Results: Relations of Actor, Topic and Stance Groups

In a second step, we focus our attention on the network properties of edges between different actors and topics, as well as the mainstream and skeptical camps, as they result from the manual content analysis. Table 6 shows the relation between the dimensions of stance and actor type. It shows that climate skeptics are over-proportionally likely to be individuals, while scientific organizations, government administration and NGOs are uniformly in the mainstream faction. The picture for news websites and political parties is more mixed, though they are only a few cases in both categories.

	individual	group	scientist	sci orga	pol party	gov	NGO	media	business	unclear	church
mainstream	10	4	6	40	3	30	47	2	20	0	10
skeptical	42	13	0	0	2	0	4	3	1	5	0
undefined/ unclear	8	2	0	0	0	1	2	0	1	1	0

Table 6: Contingency table of node counts by factions (mainstream-skeptical) and actors

Table 7 shows the relationship of stance to website topic. This reveals that most mainstream sites are in the climate change or environment category, while the skeptics are particularly numerous in ‘general interest’ and politics. This emphasizes the different conceptualizations of the type of issue that climate change constitutes for the two camps, with it serving as a building block of identity politics to the skeptical faction, while being a largely technocratic concern to the mainstream-institutional cluster.

	politics	science	economy	society	climate change	energy	environment	general interest
mainstream	4	8	4	6	100	11	33	6
skeptical	16	1	0	4	15	5	2	27
undefined/unclear	3	0	0	3	0	2	1	6

Table 7: Contingency table of node counts by factions (mainstream-skeptical) and topics

Finally, how do the different types of actors and factions relate to each other in terms of linking patterns? Table 8 shows the number of edges grouped together by types of content creators, while Table 9 shows the same aggregate linking data for the

factions. To assess these combinations in relative terms, we can compare them with frequencies calculated by randomizing the connection, in other words, by comparing

Rank	Types of edges (content creators)	Edges observed	Edges expected
1	science -> science	154	49
2	individual -> individual	119	52
3	NGO -> NGO	118	35
4	individual -> group	68	26
5	public administration -> science	57	30
6	group -> individual	43	22
7	public administration -> public administration	43	15
8	science -> public administration	40	26
9	group -> group	26	12
10	unclear -> individual	18	8
11	NGO -> public administration	18	30
12	individual -> NGO	16	48
13	business -> public administration	15	6
14	business -> business	13	3
15	church -> church	13	0
16	public administration -> business	13	3
17	public administration -> NGO	13	28
18	NGO -> group	11	16
19	individual -> media	10	5
20	church -> NGO	10	5

Table 8: Number of edges between actor types by frequency

observed and expected combination frequencies. This reveals that scientific organizations, NGOs and individuals link to their own respective group twice to three times as often as chance would predict.

This pattern also holds for combinations such as public administration linking to science. Conversely, the approach also reveals which combinations should be more frequent in a random network. Random pairing would predict that individuals link to scientific organisations much more often than they do. Scientific organisations also hardly link to NGOs and individuals do not link to public administration websites. The situation is somewhat less extreme with other actors, but the tendency to link to actors of the same time is notable and echoes previous findings (Elgin, 2015; Shumate & Dewitt, 2008). This has relevant implications for both the study of online publics and climate change discourse. Institutional actors and individuals form clusters, suggesting that the mainstream-skeptical split is further exacerbated by a tendency among actors to

talk amongst themselves. While government institutions cannot link to individual blogs that articulate extreme political views, the resulting balkanization of the debate seems problematic.

Rank	Types of edges (mainstream-skeptical)	Edges observed	Edges expected
1	mainstream -> mainstream	607	408
2	skeptical -> skeptical	270	108
3	undefined/unclear -> skeptical	35	14
4	skeptical -> undefined/unclear	29	13
5	skeptical -> mainstream	19	197
6	mainstream -> skeptical	14	197
7	mainstream -> undefined/unclear	6	22
8	undefined/unclear -> mainstream	5	26

Table 9: Number of edges between factions (mainstream-skeptical) by frequency

The status of skeptics as a counterpublic is highlighted by the distribution of inter-faction links between the two camps. Both camps are much more likely to link to others of the same conviction as their own, but skeptics are even more likely to do so than are mainstream sites. This points towards the isolation of skeptical voices in relation to other views. Additionally, there are a few mainstream sites within the skeptic cluster but no skeptic sites within the mainstream thus also showing that skeptical and individual viewpoints rely on mainstream and institutional voices in order to frame their criticism (e.g. by having an own section within their blogrolls called ‘alarmists’), while mainstream actors legitimate themselves through reference to scientific authority. Indeed, when looking at the climate activist cluster and its linking pattern it seems that for most civil society actors the question whether climate change is real has been resolved, since there are almost no links to scientific actors.

6.1.10 Conclusion

The goal of this study was to show how the German-language online climate discourse is structured. We were particularly interested in the network’s polarisation compared to other networks, its clusters and the role climate skeptics play. In order to do so we conducted a hyperlink network analysis of German-language climate-websites based on blogrolls and link lists that can be seen as a proxy for allegiance.

We are able to show four noteworthy results: First, we show that climate skeptics form a counterpublic within the German-language climate discourse since they are an issue-specific, public that challenges the hegemonic view and that gets excluded from the mainstream but also isolates itself further. Skeptic websites are mostly created by individuals who only link rarely to more established and more moderate actors. Second, the skeptic counterpublic is not restricted to voices pertaining to climate change but, more importantly, forms an alliance of antagonism with other extreme factions such as misogynists, racists or conspiracy theorists, i.e. radical positions which are also not represented in society's general discourse. What all these factions seem to have in common is a contempt and antagonism for what they perceive to be political correctness or do-gooders. Even though the connection between climate skepticism and conspiracy theories has been made before (e.g. Lewandowsky, Gignac & Oberauer, 2015) our study is, to our knowledge, the first which shows the structural connections between climate skeptics, conspiracy theorists and other somewhat problematic factions. We are thus also able to answer Downey and Fenton's (2003) question "do links lead to a greater sense of solidarity between similar but distinct radical groups?" (p. 199) somewhat positively. However, it remains to be seen whether it is possible to change this cluster's "antagonisms" into "agonism" (Mouffe, 1999, p. 755). Third, we are able to show that political and scientific actors are closely connected to each other but mostly ignore the other actors and also do not try to connect with actors from the wider civil society. Even though not surprising, it is interesting to note since these linking patterns show who political and scientific institutions deem noteworthy or as an authority (mostly these links also are connected with project fundings) – and who not. One hope in this respect were individual blogs by scientists which could have connected science and civil society. And although scientific blogs like *Klimalounge* were very much linked to, they themselves tend to not associate with other sites by blogrolls most of the time and thus actually emphasize the rift between politics and science and the civil society. And fourth, we identify a climate activist cluster that neither deems scientific institutions or blogs nor climate skeptic actors as relevant. It is inherently political and beyond the question if climate change is happening and rather focus on what society has to do to counter it.

However, this study also has some limitations. Due to our decision to crawl the blogrolls and link lists manually it is possible that not all link lists or blogrolls have been included (e.g. because the website was down or the link lists were well hidden).

We are nevertheless confident that our network represents the German-language online discourse on climate change accurately since our manual snowball crawl method allowed us to extensively follow the links until the sites were not about climate change or in German anymore and thus draw a much clearer border than a webcrawler could have done. Additionally, our study design does not allow us to make more precise statements about the different framings of climate change skepticism within the skeptic counterpublic. We agree with Fraser (1990), however, who suggests that counterpublics are “spaces of withdrawal and regroupment” and may serve as “bases and training grounds for agitational activities directed toward wider publics” (p. 68). But as counterpublics often try to extend the public sphere by making their voices and opinions heard (Wimmer, 2007) we feel that more research is needed that takes a look at the different types of skepticism both within the skeptic and mainstream clusters. As Toepfl and Piwoni (2015) point out comment sections on news websites may also be ideal spaces for counterpublic action and Lörcher and Taddicken (2015) add that skeptics are indeed present in the German-language comment sections. Finally, we were also surprised by the coalitions climate skeptics formed with other radical and democratically somewhat more problematic groups. Since we stopped our crawl at sites that did not deal with climate change we were only able to get a glance at the broader coalition of ‘antagonism’. More research is needed to shine a light at the structures and framings of this cluster due to its democratically problematic unruly alliance.

6.2 Interim Conclusion: ‘Alliance of Antagonism’

In the paper ‘Alliance of Antagonism’ we were able to show that the skeptic counterpublic and the mainstream are only loosely connected. Indeed, it can be posited that skeptics form an echo chamber (Sunstein, 2001) since there are only few mainstream actors in the skeptic community and skeptics form a close-knit community. This, then, also shows that skeptics are barely integrated in the German networked public sphere with regard to the dimension of connectivity. In the next chapter I will thus focus on the mass media’s reporting to see if skeptic frames can be found within the coverage as this can be considered to be a further signal for integration (similarity of discourses).

6.3 Study: Questioning the Doubt: Climate Skepticism in German Newspaper Reporting on COP17⁸¹

6.3.1 Introduction

The public debate—both online and offline—on climate change is hotly contested. Not only do scientists, industry lobbyists, policy-makers, non-governmental organizations, or journalists publicly struggle to establish their particular perspectives on the issue, there is also an ongoing battle between so-called “alarmists” and “skeptics” (Antilla, 2005). Alarmists are, in this case, people who—supposedly—“blindly” advocate the concept of anthropogenic climate change, whereas the word “skeptics” is used to describe those who question climate change, human caused global warming or the greenhouse effect. Given that so many different positions on climate change exist, this dichotomy is an artificial over-generalization and yet it helps to describe the constant conflict, which repeatedly forces people, and even scientists, to first acknowledge that human made global warming is indeed happening before they are able to criticize a specific scientific paper or a climate policy (cf. Pielke, 2013). One could even argue that the debate is rather combative: Krauss (2012), e.g. calls his analysis of the German climate blogosphere *Extension of the Combat Zone* and Mann’s (2012) popular book on the subject is titled *The Hockey Stick and the Climate Wars*.

Naturally both interests and positions will find their way into the public debate and may affect climate politics and public opinion. For example, in 2009, Australia’s Prime Minister, Tony Abbott, called the idea behind anthropogenic climate change “crap” (Readfearn, 2014). However, these discourses differ from nation to nation. In the USA, for example, climate change skepticism is more prominent in the media’s⁸² reporting than in Germany or the UK (Grundmann & Scott, 2014; Painter & Ashe, 2012). In Germany especially, skeptics and skeptical topics are almost non-existent in the mass media (Grundmann, 2007; Grundmann & Scott, 2014; Hornschuh, 2008; Peters & Heinrichs, 2008). Consequently we do not really know much about German skeptics. There are indeed some cross-national analyses on climate skepticism in the

⁸¹ This study was conducted and written together with Markus Rhomberg.

⁸² We use media in this context as a synonym for the news media. Even though these include both radio and TV, for this paper we specifically focus on newspapers and their respective online outlets.

news media, but most of them ignored Germany (cf. Painter, 2013; Painter & Ashe, 2012).

Yet German climate skeptics exist. Two surveys show that there is a stable minority of 25–30% that do not believe in the notion of climate change or mankind’s responsibility for it—or at least question it (Hna.de, 2011; Spiegel.de, 2010). A more recent study found that there were about 5–19% of skeptics in Germany (Engels et al., 2013). The authors concluded that German skeptics cannot be “explained” by their educational background, but found that it “correlates with less support of renewable energy sources” (Engels et al., 2013, p. 1018). And Brunnengraber (2013) proposes in his analysis that “all signs support that climate change skeptics in Germany are gaining ground and connect their climate skepticism with other topics such as the *Energiewende*⁸³” (p. 47, own translation). Given that climate skepticism has been connected to the public’s (in)action on carbon-reducing behavior and a lack of support for climate policies (Ding, Maibach, Zhao, Roser-Renouf, & Leiserowitz, 2011; Whitmarsh, 2011)—and that other studies did not look at the way skeptics frame their arguments in particular—a closer look at the German public climate debate is needed. This holds especially true since the mass media are responsible for most of what we know about scientific issues—and consequently climate change (Hjarvard, 2008; Luhmann, 2000; Neverla & Taddicken, 2012). Thus it is important to research the German media’s reporting on climate change, specifically focusing on critical undertones, confusing statements, and unquestioned skeptical arguments as we do not really know what arguments German skeptics employ. Consequently we ask in the analysis at hand: What skeptical frames are being used by the German news media in their climate change reporting?

In order to fill this research gap and to shed light on the question of how climate skepticism is shaped by the media, we conducted an explorative content analysis of the German media’s coverage of one “critical discourse moment” (Carvalho & Burgess, 2005): the 17th Conference of the Parties (COP17) to the United Nations Framework Convention on Climate Change in Durban, South Africa, in 2011. By using this method we aim to demonstrate (1) how skeptical arguments and critical undertones are reported and (2) identify possible skeptical frames. This paper is structured as follows: First, we define and frame the term “climate skepticism” by conceptualizing skepticism and

⁸³ “*Energiewende*” describes the politically enforced transformation from fossil fuel to renewable energy sources and literally translates to “energy turn.”

differentiating it from other terms such as “contrarians” and “deniers”. Second, we take a closer look at the framing concept and provide a brief literature review on the skeptical framing of climate change in the news media. Third, we address this study’s methodology by introducing our two-step content analysis approach and specify the design of the analysis, discuss our results and finally offer a perspective on future investigations.

6.3.2 Theoretical Framework: Conceptualizing Climate Skepticism

In order to analyze climate skepticism in public debate we first have to define what is understood by climate change *skepticism* and who is seen as a *skeptic*. Skepticism is a very broad and vague term, which can be both used as praise or rebuke (Ditto & Lopez, 1992). Arguing from a scientific background, the negative connotation of the word skeptic might seem particularly strange as skepticism can be interpreted as a scientific core value. In this study nevertheless, this term is favored, since there are a variety of names which all try to describe different developments in various tones. The most often used terms *skeptic*, *contrarian* and *denier* all describe different aspects and are a constant topic of discussion, which not only touches upon questions of different types of skepticism but also whether some terms or labels even foster the exclusion of skeptics and thus reinforce the debate’s polarization (Anderegg, Prall, Harold, et al., 2010; Capstick & Pidgeon, 2014; Howarth & Sharman, 2015; O’Neill & Boykoff, 2011). Although the possible differentiation between these terms seems sensible, their distinction is empirically problematic since the boundaries are so fluid. Thus, a more promising approach is not to focus on the people but rather on the arguments, and to differentiate between the different types of climate change skepticism.

In his brief analysis the climate scientist Rahmstorf (2005) identified three kinds of skepticism: questioning (1) climate change’s existence (trend skepticism), (2) mankind’s influence (attribution skepticism), and (3) the consequences of climate change (impact skepticism). Whereas Rahmstorf is mostly concerned with the arguments which cast doubt directly on climate change, other researchers stress the importance of public (mis)trust in the scientific consensus (Capstick & Pidgeon, 2014; Leiserowitz, Maibach, Roser-Renouf, Smith, et al., 2013; McCright & Dunlap, 2011b; Whitmarsh, 2011). Skeptics not only doubt climate change but also those who study and

publish about it. Some skeptics went as far as to claim that the thousands of emails which were leaked in 2009—an event called “Climategate”—were proof of a conspiracy by climate scientists—a claim refuted by several investigations but which stuck within skeptic circles (for a summary see Maibach et al. (2012)). Consequently Engels and her colleagues (2013) added a fourth skeptic category: the scientific consensus on anthropogenic climate change (consensus skepticism).

Although these categories could also lead to ambiguities (Howarth & Sharman, 2015) they are more distinct and already empirically tested (Engels et al., 2013; Painter & Ashe, 2012; Poortinga et al., 2011). In this paper, climate skepticism is therefore understood as either the questioning of the existence of climate change, its anthropogenic cause, its dangerous impacts or the science behind it, or any combination of these factors. Naturally, this is a basic and somewhat lacking definition that can be explained by (1) the skeptics’ fragmentation— some skeptics deny anything that remotely seems like climate change (e.g. the greenhouse effect), some accept climate change as a reality but deny the human influence on it and some do not know and do not care and thus favor the position which does not imply that they have to change themselves (Stoll-Kleemann et al., 2001)—but since we are (2) interested in all potential skeptical arguments in a supposedly skeptic-free country’s public discourse, we deliberately chose a broader definition thus allowing us to collect more arguments. Hence the heuristic term “skeptic” is used, which subsumes many different positions and is therefore the most viable for this study’s explorative approach.

6.3.3 Framing Climate Change

The concept of framing is as popular as it is “scattered” (Entman, 1993, p. 51). Consequently, there exist several definitions and methods of how to capture the essence of framing. However they all share the basic idea that framing describes *how* a topic or a piece of information is presented and/or processed (cf. Scheufele & Tewksbury, 2007). In a prominent definition by Gamson and Modigliani (1989, p. 3) framing is defined as “making sense of relevant events, suggesting what is at issue”. Scheufele and Tewksbury (2007) add the underlying assumption that “how an issue is characterized in news reports can have an influence on how it is understood by audiences” (p. 11). Since the way information is framed by the media has consequences for the audience, it is

imperative to look at the framing of controversial topics. This holds true for climate change where different actors (e.g., politicians, scientists, and lobbyists) are trying to circulate their frames and messages (Nisbet, 2009; Schlichting, 2012).

Even though information about climate change and its skepticism appear in the public sphere in a variety of ways including conversations, panel discussions, weblogs, or social web services as *Twitter* or *Facebook*, the mass media remains the most prominent forum (Gerhards & Schäfer, 2006). Media content is an important factor for the salience of an individual's interpretation of an issue and is especially critical for the complex (and at times abstract) issue of climate change (Rhomberg, 2012).

One can view policy issues as, in part, a symbolic contest over which interpretation will prevail (Gamson & Modigliani, 1989). To make sense of these policy debates, audiences use frames provided by the media as interpretative shortcuts (Gerhards & Schäfer, 2006; Nisbet, 2009). As climate change skepticism is a minority attitude both in science and society, message framing in the media is one instrument skeptics use in order to impact society (Anderegg et al., 2010; Engels et al., 2013).

A substantial number of studies have identified skeptical elements with regard to climate science (or climate change in general) in media coverage (Boykoff & Boykoff, 2004; Painter & Ashe, 2012; Trumbo, 1996; Weingart, Engels, & Pansegrau, 2000; Zehr, 2000). Many of these studies used frame-analysis to establish patterns of argumentation toward climate change. Analyzing 141 environmentally skeptical books from 1972 to 2005, Jacques, Dunlap, and Freeman (2008, p. 354) found four prominent frames⁸⁴: (1) environmental problems are not being taken seriously and “scientific evidence documenting these problems” is being dismissed, (2) hence environmental policy is not necessary, (3) while “environmental skepticism endorses an anti-regulatory/anti-corporate liability position that flows from the first two claims,” and (4) if environmental policies were enforced it would threaten “Western progress.” Antilla (2005, p. 344) found four distinct frames within the US newspaper coverage of climate science: it was either framed as “valid science,” as having “ambiguous cause or effects,” as “uncertain science” or as “controversial science.” Albeit the valid science frame was the most prominent, Antilla suggested that the amount of critical or skeptical frames was enough to confuse the readers. The uncertain science frame has been found in several studies on climate coverage (Boykoff & Boykoff, 2004; Painter, 2013; Zehr,

⁸⁴ In their study they call them themes instead of frames. Within our broad understanding of frames, however, we are able to imply them in our definition.

2000, 2009). Hence Shehata and Hopmann (2012) expected to find the scientific uncertainty frame in the USA and Swedish press coverage of the Kyoto and Bali conferences as well. However they were surprised by the total absence of this frame in their analysis, a result they explained with the climate summit's very "specific news-reporting context where the problem definitions are clearly institutionally defined" (Shehata & Hopmann, 2012, p. 188).

Regarding content, there are further reasons why the mass media are acknowledging and thus mentioning skepticism on a (more or less) regular basis. Zehr (2000), for example, did not only find that the uncertainty frame is a salient topic in the media's coverage but also highlighted that it is mostly presented as a conflict. The reason for this is twofold: conflict has a high news value (Galtung & Ruge, 1965) and can be interpreted as showing both sides of a topic (Palfreman, 2006). In this context news value is understood as the combination of several factors (e.g. frequency, unambiguity, or proximity) which are inherently part of an event but which reporters may also add or emphasize to make their story more interesting (Schulz, 1976). The factor negativity (e.g. conflict) is relevant since it offers an explanation to the question of why skeptics and their arguments are mentioned or even appear in news reports as experts although they are occasionally not qualified to do so: it shows that the topic is controversial (Brossard, Shanahan, & McComas, 2004; Galtung & Ruge, 1965; Lahsen, 2005; Schulz, 1976). This supposed controversy also creates the sometimes misleading image of balance. This is especially problematic since 97% of the scientific community supports the notion of an anthropogenic climate change (Anderegg et al., 2010). Although Boykoff (2007) found that the amount of "balanced" reporting on climate change was decreasing in the USA, "balance as bias" (Boykoff & Boykoff, 2004) is still an issue (Getler, 2012; Peach, 2012). It is moreover worth mentioning that there are national differences with regard to journalistic norms such as objectivity and inherently balance: the norm of balance is much more prevalent in the US news media than in Europe, for example Germany (Hanitzsch, 2007; Weaver, 1998).

6.3.4 Method

Even though there have been a variety of studies on media reporting of climate skeptic frames internationally, most studies in Germany did not specifically look for climate

skeptic frames (Brüggemann & Engesser, 2014; Grundmann, 2007; Grundmann & Scott, 2014; Hornschuh, 2008; Peters & Heinrichs, 2008; Post, 2008). In order to find these elements we conducted a two-step content analysis of the German news media's reporting on COP17. This empirical content analysis approach was twofold by first using a qualitative coding process and then followed-up with a quantitative content analysis of the media debate. As O'Mahony and Schäfer (2005, p. 104)(2005, p. 104) put it: "The methodological bridging of these two traditions is urgently required" (Ferree et al., 2002a; Hajer, 2003).

The first empirical step consisted of an explorative approach in order to identify clear statements, so-called idea elements (cf. Gamson & Modigliani, 1989), which we understand as issue-specific statements within media texts and thus are the smallest unit of our analysis (cf. Weßler, 1999). Working step by step, idea elements will be identified in the media then aggregated to frames, which, in a third step, will be abstracted to media packages. Each idea element is attached to one frame and each frame is attached to one media package. A media package "has an internal structure. At its core is a central organizing idea, or frame, for making sense of relevant events, suggesting what is at issue" (Gamson & Modigliani, 1989, p. 3). The packages provide meaning to an issue. In order to capture such framing by actors and journalists (Brüggemann, 2014; Gerhards & Schäfer, 2006) we focused on the prevalent arguments within the text and how the frame was evaluated.

This inductive process generates a map of discourse content, which provides a matrix for the second coding step, a quantitative-statistical content analysis of the media discourse. This approach is a well-tested method in attempts to analyze public debates in both sociological and communication studies (Ferree et al., 2002; Gamson & Modigliani, 1989; Gerhards & Schäfer, 2006).

We decided to analyze German newspapers (including their respective online outlets) since 76% of the German population access these in order to read the news (Statista, 2014). We therefore chose the daily newspapers (as well as their online editions) *Frankfurter Allgemeine Zeitung (FAZ)*, *Süddeutsche Zeitung (SZ)*, *Die Welt, die tageszeitung (taz)*, the daily business newspaper *Handelsblatt*, the weekly magazines *Der Spiegel* and *Die Zeit* and Germany's largest tabloid, *Bild*⁸⁵.

⁸⁵ *Bild* is not only Germany's largest newspaper, i.e. with the highest circulation rate, but also its most-visited news website (Meedia.de, 2012).

The international event COP17 in Durban was selected for two reasons. First, there were crucial events surrounding the conference which ensured a vital debate, such as Canada leaving the Kyoto Protocol; the extension of the conference for two more days due to the participants' inability to agree on specific terms; the alliance of poor countries with the European Union, and the general evaluation that the conference's final results were a letdown. Second, COP17 was an important international "staged event" (Dayan & Katz, 1992) with climate change as the main topic "where an enormous amount of knowledge production, economic lobbying, civic activism, and bargaining gravitate around potentially consequential political decision making" (Kunelius & Eide, 2012, p. 267). Studies have shown that big international events like climate conferences, which qualify as "critical discourse moments" (Carvalho & Burgess, 2005, p. 1466), directly influence the amount of reports the news media publish on climate change, which in turn provides the possibility to study more thematically relevant articles than usual (Schäfer, Ivanova, & Schmidt, 2012). We note that Takahashi (2011) as well as Shehata and Hopmann (2012) found little to no skeptical frames in their respective studies on climate conference reporting and the latter hypothesized that this might be due to a specific kind of framing which was the result of the conferences (p. 188f.). Learning from these results we opted for a broader definition of climate skepticism and a similarly open keyword search consisting of the words "Durban + Klima*"⁸⁶.

The articles used in this study were collected from databases such as *LexisNexis* and the newspapers' official archives. The time period was set to range from two weeks prior to two weeks after the conference and spanned from 14 November 2011 to 25 December 2011. After having collected all articles and removing the duplicates the sample consisted of a total of 379 articles for coding. For the first and explorative step of the content analysis a random sample of 25% ($n=95$ articles) was carefully analyzed in order to find skeptical statements with regard to climate change or climate science. These statements were not limited to a quantitative threshold or the person voicing them in order to include journalists' evaluations as well, but rather only to the issue. This means that all statements that could be interpreted as skeptical were added at first. This was in order to not overeagerly discard possible frames and additionally to present the

⁸⁶ This search string which translates into "Durban + Climate*" was the one we used for *LexisNexis* and thus our guide for the other archives, although it has to be mentioned that the online archives we used differed with regard to search operators. Additionally to *LexisNexis* we used the online archives of *Handelsblatt*, *FAZ*, *taz*, and *BILD*.

variety of skeptical elements within the German news media's reporting on COP17. These specific statements from the articles were then thematically clustered and transformed into more general idea elements. We counted idea elements only once per article, since it has been established that one time is enough to establish one's framing in a news article (Gerhards & Schäfer, 2006). The idea elements were then grouped together with thematically similar statements. These were then clustered into overarching frame and media packages, which we applied to a codebook⁸⁷ (cf. Gamson & Modigliani, 1989; Gerhards & Schäfer, 2006). Additionally we also added further prominent idea elements from the literature which we thought were important and which were not present in the first step such as "the Greenhouse effect doesn't exist" (e.g. Hobson & Niemeyer, 2013; Stoll-Kleemann et al., 2001). Then three coders read and coded all 379 articles.⁸⁸

6.3.5 Results

Contrary to Shehata and Hopmann (2012) as well as Takahashi (2011) we identified skeptical statements within the German news media's reporting on COP17 in Durban. Within our sample ($N= 379$) 52 articles with 122 statements qualified as skeptical. Thus almost 15% of all articles on COP17 included skeptical idea elements. These 122 skeptical statements could then be aggregated into 31 idea elements that could be assigned to seven frame packages (see Table 1). These frame packages were then clustered into two overarching media packages, linking skepticism with (1) *the phenomenon of climate change* and (2) *climate science*. We found 38 articles with skeptical elements regarding the phenomenon of climate change, 28 with skeptical elements regarding climate science, and 14 that included both media packages.

Idea elements

As stated above, each frame consists of multiple idea elements. Due to this paper's explorative nature it is important to demonstrate how we chose our relevant statements,

⁸⁷ These not only asked for already existing idea elements and frames but also contained open variables for possible new ones.

⁸⁸ In order to assess the inter coder reliability we did a pretest in which Krippendorff's alpha between the three coders was .67 or higher for all categories—a value which we deemed to be acceptable (Gerhards, Offerhaus, & Roose, 2007; Schäfer, 2008).

which we then clustered into idea elements and frame packages. The first step was the identification of relevant statements, which were skeptical of climate change or climate science. In order to not too eagerly dismiss statements, we marked each relevant phrase in each article and then created a list of all these sentences. After discussing each case in a group, we then carefully discarded each idea element, which was not relevant to the topic of climate skepticism—e.g. skeptical statements which questioned the potential of climate conferences or specific political initiatives—and then looked for similarities within our list for purposes of merging (Table 10).

The list of quotes that served as the basis for creation of the idea elements consisted of statements in the articles, such as the following:

- (1) “Republicans call climate change a hoax and adjust their politics to the coal and oil industry.” (*Der Spiegel*, 17 December 2011)
- (2) “As long as the paradigm of human induced climate change predominates—which is the case despite of rising scientific doubt.” (*Die Welt*, 14 December 2011)
- (3) “But will global warming lead to a disaster? The end of the world seems to be delayed.” (*Die Welt*, 28 November 2011)
- (4) “Last year the argument that there would be no more snow was buried under deep layers of snow—even in the metropolitan area of Munich.” (*SZ*, 5 December 2011)

These quotes were then transformed into more concise directed idea elements, which nevertheless maintained their argumentative idea⁸⁹:

- (a) the denial of climate change
- (b) questioning its existence
- (c) questioning its relevance
- (d) indication that the current weather does not fit with climate change.

⁸⁹ Other examples for the transformation from a statement to an idea elements are: “The sun is supposedly to blame” (*Die Welt*, 28 November 2011) which got translated into “the sun is the main factor” or “The spokesmen of the climate catastrophe which rule the public, treat dissenters similar to like deviationists are treated in Stalinist parties” (*Die Welt*, 28 November 2011) which got transformed into “climate science oppresses critics.”

The most prominent idea elements we found in our sample were “questioning climate change’s existence” ($n= 12$) and “questioning mankind’s influence” ($n= 10$). Another two “popular” idea elements were the “denial of climate change” ($n= 8$) and the idea that “CO₂ is not to blame” ($n= 8$). Most of the idea elements ($n= 80$) were found in the print media’s reporting, whereas only 42 idea elements were found in online articles.

Media Package	Frame Package	Idea Element	Total
Phenomenon of Climate Change	Existence	Denial of climate change	8
		Questioning climate change’s existence	12
		There is no global warming/warming has paused	6
		Current weather indicates no warming	4
	Causes	Questioning mankind’s influence	10
		Sun is the main factor	5
		Greenhouse effect doesn’t exist	1
		CO ₂ is not to blame	8
		Cosmic rays are one main factor	1
		Climate change’s impact won’t be so bad	5
	Impact	Climate change will have positive consequences	5
		There won’t be bad consequences with adaptation	1
		Nature will adapt to climate change	1
		Climate change’s impact is unclear	2
		Climate science is used by politics	6
Climate Science	Politicization	Climate science has political goals	4
		Climate science doesn’t know much	3
	Uncertainty	Climate science’s about climate change is decreasing	3
		Climate models are not reliable	1
		Climate scientists are hiding uncertainties	1
		Climate sciences is wrong about climate change	2
		Alarmism	Alarmism may lead to fatalism
	“Conspiracy”	Climate scientists are using scare tactics	7
		Climate scientists exaggerate their findings	5
		There’s no consensus within climate science	2
		Climate science oppresses critics	3
		Climate scientists are all in cahoots	3
		“Climategate” showed that climate scientists are dishonest	5
		Climate scientists have their own agenda	2
		Climate scientists modified their data	2
	Climate scientists ignore the usual quality standards	2	
	Total		122

Table 10: Amount of identified skeptical idea elements

Media Package	Frame Package	Media								Total
		SZ	FAZ	Welt	taz	Handelsblatt	Spiegel	Zeit	Bild	
Climate Change	Existence	5	2	1	1	0	3	13	1	26
	Causes	2	4	5	0	0	0	3	0	14
	Impact	1	0	4	0	1	0	2	0	8
Climate Science	Politicization	0	2	2	0	0	2	2	0	8
	Uncertainty	1	2	4	0	0	1	2	0	10
	Alarmism	1	4	6	0	1	1	0	0	13
	"Conspiracies"	0	5	4	1	0	2	3	0	15
Total		10	19	26	2	2	9	25	1	94

Table 11: Usage of Skeptical Frame Packages by Media Outlets

Frames and media packages

We then clustered the established idea elements into frame packages to identify “the central organizing idea” (Gamson & Modigliani, 1989, p. 3). This meant identifying a common denominator for the idea elements such as for example (1) the denial of climate change, (2) questioning its existence, (3) questioning its relevance, (4) saying that there is no global warming, and (5) indication that the current weather does not fit with climate change. As all of those idea elements were skeptical of climate change on a broad and fundamental level we established the frame “skepticism with regards to climate change’s existence.” This was indeed the most used frame within our sample ($n= 26$), followed by arguing that there are “conspiracies” within climate science ($n= 15$) and skepticism with regard to the “causes of climate change” ($n= 14$) (Table 11).

When looking at the different media outlets it is rather obvious that the most “skeptical” outlets are the conservative daily *Die Welt*, which used skeptical frames 26 times and the liberal weekly *Die Zeit* ($n= 25$; including their respective online outlets). Whereas *Die Welt*’s results can be explained due to their conservative editorial stance (cf. ideology and climate skepticism: Carvalho & Burgess, 2005; Painter & Ashe, 2012), it is rather surprising that the liberal *Die Zeit* used skeptical frames 25 times within their reporting with the *existence* frame being the most used ($n= 13$). The latter can be explained due to several articles published both in print and online which explicitly covered the topic of climate skepticism, such as the article “Unreasonable skeptics” (own translation; published on 8 December 2011) which listed several prominent skeptic arguments which the guest authors who were climate scientists then refuted. The conservative daily *FAZ* is the third “largest” user of skeptical frames ($n= 19$). The tabloid *Bild*, in contrast, only used one skeptical frame (regarding the existence of climate change), which is noteworthy since Boykoff (2008) found in his analysis of

the UK tabloid press that the tabloids preferred to provide skeptics more room to speak compared to the quality papers.

After having shown how we generated frame packages from idea elements, the next step was to identify overarching topically relevant media packages. When we are examining frames such as “existence of climate change,” “causes of climate change,” and “impact of climate change” and compare these with other frames such as “conspiracies within climate science” it is rather obvious that there is a stark difference: the first three deal with the phenomenon of climate change whereas the latter focus on the subject of climate science. Hence we established two overarching media packages. The first media package deals with the questioning of the phenomenon of climate change and the second with skepticism with regard to climate science.

Evaluation of climate skepticism

In addition to the identification of skeptic statements we also looked for how those statements were evaluated, because albeit a text may imply a skeptical statement this does not necessarily mean that it also gets evaluated positively. Since all the idea elements were directed and skeptical in nature (e.g. there is no global warming), a positive evaluation would be backing up a skeptical statement whereas a negative evaluation would be refuting it. For example, the tabloid *Bild* only used one skeptical idea element within its reporting in which it questioned the existence of climate change—a statement which it then evaluated negatively in the next sentence by saying that climate change does in fact exist (*bild.de*, 1 December 2011). In general 50% of the idea elements ($n= 61$) were evaluated positively, thus favoring the skeptical message. But it is also worth noting that 39.3% of the idea elements were evaluated negatively, hence questioning the skeptical arguments. Only 10.7% were not evaluated clearly, i.e. ambiguous.⁹⁰ The frame “skepticism with regards to the phenomenon of climate change” was evaluated equally (30 negative idea elements, 11 neutral, 28 positive), whereas the media’s reporting on climate science was more skeptical (18 negative, 2 neutral, 33 positive).

⁹⁰ A journalist from *Die Welt*, for example, wrote about climate change’s anthropogenic cause: “Even the question of mankind’s share in climate change, that is the question of guilt, can’t be discussed.” (28 November 2011) Even though the anthropogenic root was questioned the reporter did not claim outright that mankind was not responsible for climate change. Thus the statement was coded as unclear.

The above mentioned difference between *Die Welt* and *Die Zeit* is more obvious when looking at the evaluation of the established idea elements: Of all 40 idea elements which *Die Welt* used none were evaluated negatively, 4 neutrally and 36 positively. Thus the newspaper can be interpreted as supportive of skeptical ideas. *Die Zeit* on the other hand evaluated only 2 of 32 idea elements positively, while remaining neutral on 3 and negating 27. Whereas *Die Welt* mainly discussed the causes of climate change ($n=14$), *Die Zeit* focused on the existence of climate change ($n=16$).

The conservative *FAZ* evaluated skeptical idea elements—similar to *Die Welt*—rather positively: 14 of their 23 idea elements were evaluated positively, two neutrally and seven negatively. The statement that climate scientists are alarmist, for example, was used four times and was evaluated positively in three of those cases. The liberal newspaper *SZ* evaluated six idea elements positively as well as six negatively with the most positively evaluated skeptical idea element being that the current weather indicates that there is no climate change ($n=4$; three times positively, one times negatively).

With regard to the evaluation of frames it is interesting to see that most of the idea elements of the “existence of climate change” frame were evaluated negatively ($n=18$), with seven neutrally and five positively. The “causes of climate change,” however, were evaluated rather positively ($n=16$), with three being neutral and six positive. Another frame worth mentioning was the “alarmism” frame, which was evaluated rather positively ($n=11$) with only three idea elements being evaluated negatively.

We then searched for correlations between different factors, for instance if a specific idea element significantly correlates with articles published by the conservative daily *Die Welt* or whether an article published by the liberal weekly *Die Zeit* correlates with an idea element being evaluated negatively. Although for both cases (and several others) a weak or strong significance was found there was no notable correlation ($p > 0.3$). These results reflect the phenomenon that there were few articles in which skeptical statements were stated and that some of the 52 pieces were especially “skeptical” (e.g. the *Zeit* article in which several skeptical myths got debunked) thus effectively uniting most of the idea elements in them. In fact, 15 articles were “responsible” for 60% of the idea elements we found, whereas 26 articles only included one.

6.3.6 Interpretation

In summary this study was able to show that the German news media's reporting on the COP17 in Durban included a set of skeptical statements with regard to climate change and climate science. Almost 15% of all articles on COP17 in the selected media outlets dealt with climate skepticism or included skeptical arguments. While we were surprised by the amount of skeptical arguments, we did not identify a specific underlying skeptical "narrative" but rather found these statements to be rare, scattered and occasionally even used as explanation and not as argument. One article, for example, attempted to explain why the USA was not more actively involved in the conference talks and then continued to discuss the fact that there are still American politicians who do not believe in global warming. Even though the results echo Hornschuh's (2008, pp. 141–153) analysis of the German climate change discourse— as well as other studies (Grundmann, 2007; Grundmann & Scott, 2014) that only found isolated skeptic arguments—our results indicate that the amount of skeptical arguments slowly but steadily increased over the years.⁹¹

Our results also suggest that there is a slight correspondence between the political leaning of a media outlet and the use of skeptical frames. Whereas the conservative *Die Welt* is rather skeptical about climate science but more so of climate change and its causes, the liberal *Die Zeit* tends to make skeptical statements about climate change (e.g. about the phenomenon of climate change) and climate science (e.g. about the "conspiracy" within climate science) but then harshly refutes those and explains why those arguments are wrong. This finding of a possible ideological gap is echoed by the international research on countries such as the USA or Great Britain where the difference between liberal and conservative media is more distinct than in Germany (Carvalho, 2007; Feldman, Maibach, Roser-Renouf, & Leiserowitz, 2012; Painter & Ashe, 2012).

These results show that in order to get a broader picture of the media discourse, it is important to not only look at the frequency of statements but also at the journalist's evaluation of these statements. This study could therefore not only show how often frames are used, but also how those frames are being evaluated by the media outlets. It

⁹¹ Hornschuh (2008, p. 151, own translation) calls the relative amount of articles which include skeptical arguments "marginal" and found "ca. 40 out of several hundred articles" in the *FAZ* in a time frame over five years. We, in comparison, found 52 articles (although in six newspapers) over a time frame of roughly a month, six articles appearing in *FAZ*.

is thus interesting to keep in mind that idea elements that were skeptical of the phenomenon of climate change were evaluated rather equally (30 negative, 11 neutral, 28 positive), whereas the media's reporting on climate science was more skeptical (18 negative, 2 neutral, 33 positive). This could, for example, indicate that some climate journalists (especially conservative ones) are more skeptical about climate scientists than about climate science, i.e. that reporters do not necessarily question the results but rather how scientists frame them (alarmism) or treat skeptical colleagues ("conspiracy"). Another, more likely, interpretation would be that it is perhaps more socially acceptable to cast doubt on climate scientists than climate science itself. One reason for this mistrust in climate science may, to some extent, be due to Climategate. As Maibach and colleagues (2012) point out Climategate had a negative influence on some parts of the American public (both population and media). Since Climategate was referred to directly five times and the conspiracy frame 15 times, it is possible that this was also the case in Germany.

Interestingly we did not find any "genuine" German skeptical idea elements or frames. Instead the idea elements we did find were similar to other international research on this topic (Hobson & Niemeyer, 2013; McCright & Dunlap, 2000; Painter & Ashe, 2012; Zehr, 2000). We thus conclude that climate change skepticism is a transnational Western phenomenon, which might become embedded in the respective national context⁹²—the frames, however, remain the same.

Although we found skeptical frames within the German news media's reporting on COP17 it has to be noted that these elements are rare and unequally distributed and thus hard to interpret. Germany's biggest tabloid *Bild*, for example, which is both sensationalist and controversial and thus theoretically a prime suspect for climate skepticism, was—surprisingly—free of skeptical frames, whereas its "bigger sister" *Die Welt*⁹³ contained skeptical elements in over 17% of its articles. Skepticism—although it may be rising slowly—thus can still be seen as a fringe phenomenon in Germany. It also is worth noting that it sometimes only gets mentioned in order to reject it instantly and establish the narrative of anthropogenic climate change. It can thus be asked whether those who are engaged in the climate debate (journalists, scholars, politicians, etc.) might overestimate the skeptic's popularity and by using and negating their frames,

⁹² In Germany, for example, where Brunnengräber (2013) proposes the possible connection between skepticism and Energiewende.

⁹³ Both are owned by Axel Springer SE.

provide them more space within the public discourse than the skeptics would initially have.

6.3.7 Conclusion

This explorative study's results shed light on the German news media's reporting on COP17 in Durban. Our analysis was able to show that skeptical elements do exist within the German news media's reporting. In terms of future research, given that we chose to neglect the actors in favor of a more in-depth approach, the next step would be to not only identify frames but also contextualize them with prominent actors and search for potential cluster networks. We also only looked at the print and online news media. Further research should also take into account both television news and communication via social networks. As different studies on alternative media have shown, skeptical views are particularly discussed on the Internet in media outlets and forums, which do not rely on a journalistic gatekeeper, but are more dependent on user-generated content and an active community (cf. Carvalho, 2010; Lockwood, 2010). Also more global research on climate change skepticism is needed (especially in South America, Africa, the Middle East, Russia and to some extent Asia) to further understand what arguments are used to hinder the global fight against dangerous climate change (Schäfer & Schlichting, 2014).

Another important aspect for future research is the phenomenon of *defeatism* (Heyd, 2011; Lo, 2014) which subsumes arguments which are not skeptical per se but which can be strategically used to promote inaction (prominent examples would be “we can't do anything about climate change anyway”; or “if we reduce our CO₂ emissions the economy will suffer”) and which may indeed be more significant than one might think, seeing that this line of thought is less controversial and can be used more easily in the public debate.

Recently, Capstick and Pidgeon (2014) described something similar using the category “social/behavioral skepticism” which included climate change fatigue. Heyd (2011, p. 7) even suggests that “defeatism or fatalism in view of climate change may lead to worse consequences than are already to be expected” and proposes that defeatism may be connected to complacency (p. 9). We thus believe that in future research the connection between defeatist as well as skeptical frames and their effect on

people should be looked at closely, not only to understand how these may contribute to inaction but also how these arguments may be countered.

6.4 Interim Conclusion: 'Questioning the Doubt'

In the paper 'Questioning the Doubt' we were able to show that the skeptic counterpublic and the mainstream are only loosely connected with regard to similarity of discourses. Even though we identified skeptic frames, these were rare and were often also questioned or rejected by the journalists. This, then, adds to the results of the paper 'Alliance of Antagonism' as we find that skeptics are also barely represented in the mass media and thus they are excluded from the mainstream on two levels. In the next chapter I will therefore focus on comment sections as a form of user-generated content as I have established that these offer new opportunities for counterpublic actors to make their voice heard and directly interact with users from the mainstream (see chapter 3.3.2).

6.5 Study: Public Spheres of Skepticism: Climate Skeptic Online Comments in the German Networked Public Sphere

6.5.1 Introduction

The idea of an online public sphere in which issues can be discussed freely and openly by citizens has been a constant topic of discussion in academia (e.g. Dahlberg, 2001, 2011; Gerhards & Schäfer, 2010). Based on the promise of a power free, equal, open, more inclusive and deliberative discourse the Internet was supposed to strengthen the public sphere and democracy (Benkler, 2006; Gerhards & Schäfer, 2010; Papacharissi, 2002). Especially the potential for deliberation turned out to be a false hope with several empirical studies stating an overall poor discourse quality in the web (e.g. Freelon, 2013; Papacharissi, 2004) and with Sunstein (2001) even suggesting that deliberation among equally minded groups could lead to a more fragmented and radicalized public sphere.

Others, however, saw this fragmentation as an opportunity for minorities to form spaces in which they are able to speak freely and without fear of oppression: the so-called counterpublics (Castells, 2007; Dahlberg, 2011; Downey & Fenton, 2003). These counterpublics can be best understood as places which are in opposition to the hegemony (Dahlberg, 2007). Even though theoretically and empirically prominent, few studies have looked at the intersection where mainstream public and counterpublic meet (Dahlberg, 2007, p. 839). And yet the discursive struggle between mainstream public and counterpublic may offer new perspectives on exclusion processes within the public sphere and how counterpublics are trying to make their voices heard (Nuernbergk, 2013). In this paper I suggest that this struggle is more likely to be found in comment sections than in the mass media (c.f. Toepfl & Piwoni, 2015). To analyze if and with which framing counterpublics are trying to make their voices within these ‘battlegrounds of contestations’ heard this paper focuses on the case of climate skepticism in the German networked public sphere.

Indeed, there are few topics that are as long-term, universal, complex, abstract and important as climate change (IPCC, 2013). Even though it is scientifically largely undisputed that climate change is happening and caused by human activity (Cook et al., 2013) the discourse is heavily polarized with the so-called ‘skeptics’ rejecting this mainstream position and promoting their denial of climate change (Elgesem et al., 2015; Hobson & Niemeyer, 2013; Sharman, 2014). The rift between mainstream and skeptics is especially drastic in Germany where the overwhelming majority accepts the theory of an anthropogenic induced climate change and where skeptic voices are rare in the media coverage and not represented by the political mainstream (Grundmann & Scott, 2014; Kaiser & Rhomberg, 2015; Metag et al., 2015). In this paper skeptics are understood as a counterpublic that is active online. In this sense I am interested in the relationship between mainstream and counterpublic with regards to activity, how skeptics frame their message and how the mainstream reacts to these. By answering these questions empirical as well as theoretical conclusions will be drawn. In order to understand how skeptics may try to influence the public discourse online a qualitative-quantitative content analysis of 10,262 comments from four news sites and six climate blogs was conducted. Whereas the mass media outlines were chosen based on the literature the blogs were identified with a hyperlink network analysis thus combining digital with ‘classical’ methods.

First, I will outline how counterpublics and the networked can be understood, integrated and how comments are relevant to this, then the case of climate change skepticism in Germany will be described. In the empirical part, the methods and results will be presented and then connected with the theoretical concept of the networked public sphere.

6.5.2 The Networked Public Sphere and Counterpublics

One prominent source of inspiration when talking about counterpublics and the public sphere in general is Habermas' (1996, p. 360) definition of the public sphere which he defines as "a network for communicating information and points of view". By emphasizing both the communicative as well as the network character of the public sphere he foreclosed key aspects that scholars associate with today's networked public sphere and which describe the interconnectedness of different online publics and, strongly linked, the change of roles, information diffusion, coalition building and political participation (Benkler, 2006; Benkler et al., 2015; Boyd, 2010; Neuberger, 2014). Indeed, the networked public sphere can be described as "the range of practices, organizations, and technologies that have emerged from networked communication as an alternative arena for public discourse, political debate, and mobilization alongside, and in interaction with, traditional media." (Benkler et al., 2015, p. 3) However, the Internet did not abolish the inequalities and oppression minorities faced in the real world but rather reproduced them online (Dahlberg, 2007; Downey & Fenton, 2003). Minorities and other marginalized or 'problematic' groups, for example, are often times still excluded from the mainstream discourse and may form a counterpublic as a reaction (Jackson & Foucault Welles, 2015; Leung & Lee, 2014; Renninger, 2015).

The idea of counterpublics emphasizes the public sphere's fragmented character and posits that there are marginalized alternative publics that are in opposition to the oppressing hegemonic discourse (Fraser, 1990; Mouffe, 1999). They usually form around complex social issues like women's rights or social justice and are a reaction to social exclusion and represent their struggle to find their place within the public sphere (Fraser, 1990; Nuernbergk, 2013; Toepfl & Piwoni, 2015). This exclusion, however, has ambivalent consequences, as Fraser (1990: 68) remarks: "On the one hand, they

function as spaces of withdrawal and regroupment; on the other hand, they also function as bases and training grounds for agitational activities directed toward wider publics”.

However, these assumptions often times draw on a normative perspective and thus exclude problematic marginalized groups (e.g. rightwing extremists) that do not aim to strengthen democracy or fight for a more equal and inclusive discourse (e.g. Nuernbergk, 2013). Against this background it is proposed to open up the term counterpublic in favor of a more inclusive understanding (c.f. Cammaerts, 2009; Downey & Fenton, 2003).

A counterpublic is thus defined as (1) structured around a specific issue that is morally or politically polarizing, (2) opposed to the dominant hegemony within this discourse, (3) marginalized and/or excluded from the public discourse and (4) with its own influential media outlets (e.g. blogs, forums, etc.). The most prominent strategy of a counterpublic is to contest the hegemonic position and thus extending the public sphere (Dahlberg, 2007). This is mostly done through measures like establishing new frames, re-framing a story or setting new topics (Toepfl & Piwoni, 2015). As Snow and Benford (1992) point out framing is instrumental for a movement’s collective identity formation. Framing in this context can be understood as “making sense of relevant events, suggesting what is at issue” (Gamson & Modigliani, 1989, p. 3) and is a widely used way of analyzing debates in the public sphere (e.g. Gerhards & Schäfer, 2010).

In this sense counterpublics can be integrated into the networked public sphere as it emphasizes the loose or even fragmented and yet existing connection of publics online that nevertheless can potentially influence each other. It also includes different kinds of modes (e.g. comments, Tweets, etc.) and types of communication (e.g. weblogs, news media sites but also the associated comment sections) that are not as dependent from the mass media as prior conceptualizations of the public sphere (Benkler, 2006). Comment sections are especially interesting since they are one of the most popular forms of user generated content (Friemel & Dötsch, 2015, p. 151) and show the integration of two publics since they are directly connected to more influential publics as, for example, mass media sites (Gerhards & Schäfer, 2010). In this paper comment sections are thus understood as associated publics that differ from the articles with regards to reach and access since they are less frequently read as the articles although they are on the same page (Friemel & Dötsch, 2015).

Against this background, it is important to note that a growing body of research deals with the questions of who is actually writing these comments and what possible

effects these may have. Friemel and Dötsch (2015) found through surveys that commenters on Swiss news sites tend to be more conservative than the average reader and suggest that this may lead to a distortion of the perceived public opinion. Anderson et al. (2013) show that incivil user comments had an influence on the way readers perceived an article's content – a finding that is in line with the impact user comments have on product evaluation (Flanagin et al., 2014). And Toepfl and Piwoni (2015) found supporters of the right-wing party AfD to be very active within the comment sections of news sites and suggested that they transformed the comment sections into counterpublics. In sum, it is obvious that online comments are an influential way to communicate one's ideas that is also used by counterpublics as a way to counterargue the hegemony position and which is also happening on the debate on climate change.

6.5.3 Climate Skeptics as a Counterpublic

Much research has been dedicated to the subject of climate skepticism in order to get a better idea of who is more likely to question climate change and what frames are being used to do so. There are, for example, studies that point out that skeptics in the US tend to be politically more conservative and are in favor of the free market (Cook & Lewandowsky, 2016; McCright & Dunlap, 2011b) which, to some extent, is also true for European countries (McCright et al., 2016), that conservative news media tends to be more skeptic than the liberal (Carvalho & Burgess, 2005), that skeptic think tanks have ties to the corporate sector (McCright & Dunlap, 2000), that skeptics not only question the phenomenon of climate change but also climate science and adapt their framing to recent developments (Kaiser & Rhomberg, 2015; Lewandowsky, Risbey, et al., 2015) and are more open to conspiracy theories than others (Cook & Lewandowsky, 2016). Additionally, the question of how to call skeptics is not only a reoccurring topic in academia (Howarth & Sharman, 2015) but also in skeptic circles (Elgesem et al., 2015).⁹⁴

Whereas in the US climate change skepticism, even though a minority, can be considered part of the public discourse on climate change it is a fringe attitude in Germany. Engels et al. (2013, p. 1023) conclude in a representative survey that climate

⁹⁴ Even though a constant topic for discussion the label 'skeptic' was chosen over the less inclusive 'deniers' or 'contrarians'.

change is generally accepted in Germany by the majority and that climate skepticism “has not spread widely across the population”. In addition, Metag, Füchslin and Schäfer (2015) find in a representative survey 10% of the Germans to be “doubtful” about climate change. Media content analysis offers a similar picture: Grundmann and Scott (2014), for example, were not able to identify climate skeptic statements within the German media coverage on climate change. In contrast, Kaiser and Rhomberg (2015) found skeptic frames within 7% of the German news coverage on the climate conference in Durban. This shows that in the general populace as well as in the mass media climate skepticism is rare and unpopular. Online, however, climate skepticism seems to be more prevalent in comment sections and climate skeptic websites (Lörcher & Taddicken, 2015; Porten-Cheé & Eilders, 2015).

6.5.4 Hypotheses

Based on these theoretical assumptions and findings I propose six hypotheses that deal with the counterpublic’s exclusion and inclusion in comment sections of news sites and blogs. As climate skeptics are a minority in Germany (Metag et al., 2015) that rarely gets represented in the mass media (Grundmann & Scott, 2014; Kaiser & Rhomberg, 2015) and which tends to be more prevalent online (Lörcher & Taddicken, 2015) I suggest:

H1.1: Climate skepticism is more prevalent in the comment sections than in the general populace (10%).

Since several studies from the US were able to show the connection between skeptics and a conservative political stance (Carvalho & Burgess, 2005; McCright & Dunlap, 2011b) it is further assumed:

H1.2: Climate skeptic comments will be more frequent in the comment sections of the conservative media outlets *Bild* and *Welt* in comparison to the liberal *Spiegel* and *Zeit*.

The question, however, is what messages and frames skeptics will use in which public. Based on Fraser's (1990: 68) suggestion that counterpublics are places for withdrawal and identity formation, Toepfl and Piwoni's (2015) finding that counterpublic comments can differ between media types and prior research that shows that skeptics tend to adjust their framing quickly (Lewandowsky, Risbey, et al., 2015) it is assumed that:

H2.1: Skeptics will be more skeptical about the phenomenon of climate change on skeptic sites compared to mainstream sites.

As doubting climate change's existence can be seen as a core value for skeptics that is also highly refuted by the mainstream and studies that show that skeptics also tend to cast doubt on climate science (Hobson & Niemeyer, 2013), I posit:

H2.2: Climate skeptics will be more critical of climate science in the mainstream comment sections than in the skeptic ones.

Since counterpublics are excluded from the mainstream public sphere it can be assumed that the processes of exclusion and inclusion that constitute its state as counterpublic can be found in the online comments as well with regard to how members from the counterpublic are being treated.

H3.1: Skeptical comments will be reacted negatively upon in the mainstream comment sections whereas they will be reacted positively upon in the counterpublic ones.

Another way of measuring agreement and disagreement with a position can be to like or dislike a comment (if the sites implemented that feature) (Gerlitz & Helmond, 2013). Since liking is a very convenient feature it can be assumed that even users who do not want to participate in a debate (e.g. skeptics who do not feel comfortable with sharing their opinion) might use it which could be a possibility for a counterpublic to show allegiance without actively having to debate the other side. I thus assume:

H3.2: Skeptical comments will have more likes than mainstream ones.

6.5.5 Methods

In order to answer the hypotheses a manual qualitative-quantitative content analysis of 10.262 comments from ten comment sections was conducted. The comments were taken from the following German websites: the conservative news sites *Bild.de* (*Bild*) and *Welt.de* (*Welt*), the liberal news sites *Spiegel.de* (*Spiegel*) and *Zeit.de* (*Zeit*), the climate skeptic blogs *Eike-Klima-Energie.eu* (*Eike*) and *Science-Skeptical.de* (*ScS*), the climate “activist” blogs *Klimaretter.info* (*Klimaretter*) and *Klima-der-Gerechtigkeit.de* (*KdG*) as well as the climate science blogs *Scilogs.de/Klimalounge* (*Klimalounge*) and *Klimazwiebel.blogspot.de* (*Klimazwiebel*).

The ten sites were selected based on a specific set of criteria for each the news media and the blogs. The news media outlets were selected based on the factors reach, journalistic stance and interactivity in the comment section so that a wide reach of different opinions could be collected. Additionally media outlets that guaranteed skeptical voices in their climate coverage were chosen based on the assumption that these are more likely to draw skeptics in the comment sections, too (Kaiser & Rhomberg, 2015).

The blogs were selected on the basis of a hyperlink study⁹⁵ of the German language climate discourse (Figure 4). By utilizing this method both the networked character of the public sphere as well as the network’s polarization can be shown. A network analyses identified a big mainstream administrative, one skeptic and one mainstream activist community. Since the most relevant websites from the mainstream administrative communities were sites by institutions that do neither offer a constant coverage nor interaction via comments, I focused on the skeptic and the activist communities. The sites were then selected by the following criteria: relevance (measured by indegree within the network), blog stance (activist, scientific or skeptic), topic (it had to mainly deal with climate issues), language (mainly German), activity (recent news updates) as well as interactivity (comment sections). The case of *KdG* was problematic since our network analysis showed it to be relevant within the German climate discourse and even though it is updated regularly it has a rather inactive community. It was thus compared with other possible blogs from the activist cluster but

⁹⁵ The hyperlink study was conducted in June 2014 and included all German language websites that dealt with climate issues. The crawl was done manually via snowball crawl that included blogrolls and linklists and started with the sites *Science-Skeptical.de* and *Klima-der-Gerechtigkeit.de* since both had sufficient blogrolls.

since there were no other sites that fit the criteria as well it was decided to keep *KdG* in the sample.

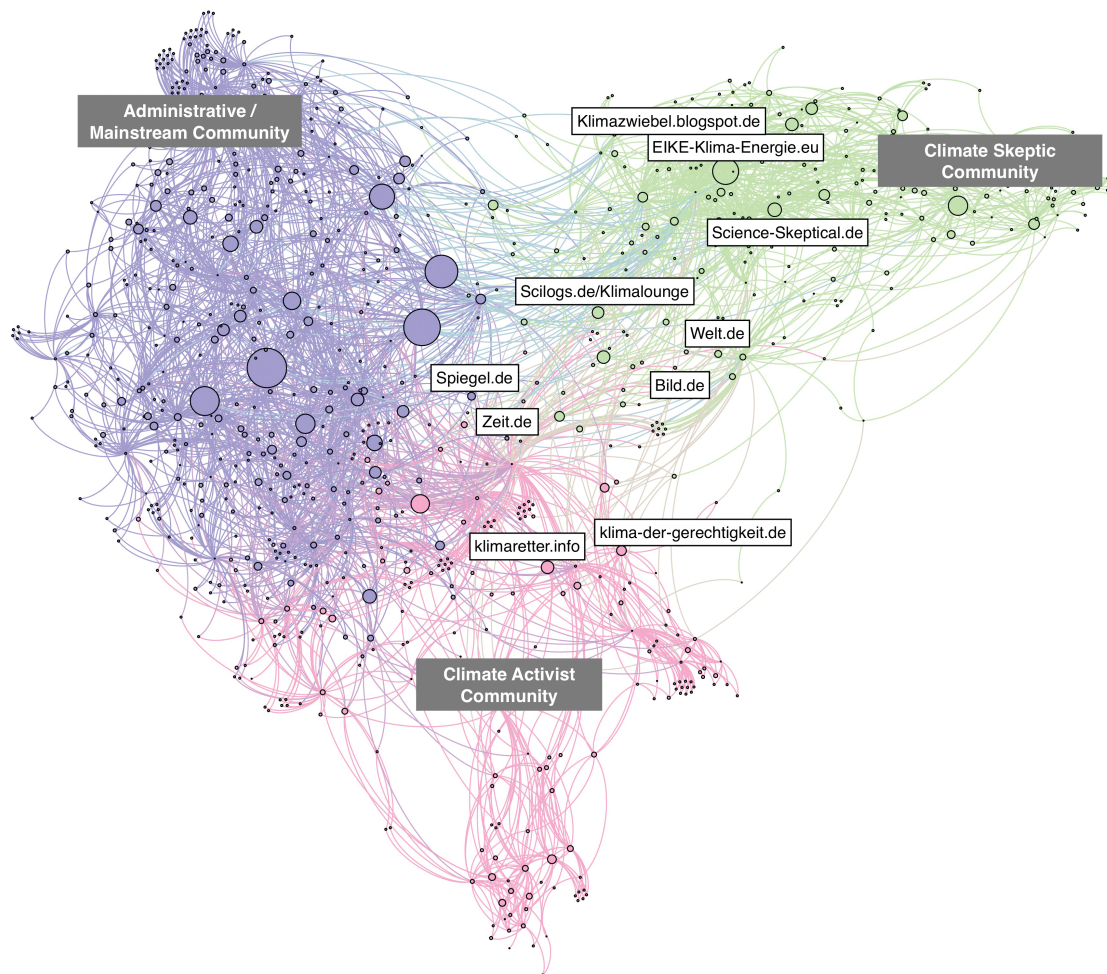


Figure 4: Hyperlink network of the German language climate discourse (communities identified with modularity; node size = Indegree; layout algorithm = ForceAtlas2)

The relevant time frame was one week prior and one week after each IPCC working group's meeting and report publication in 2013 and 2014 which amounted to 36 days in total.⁹⁶ The IPCC reports' publications were chosen because it gave news outlets as well as blogs the opportunity to write about climate politics, climate science and other related topics. In order to get all relevant comments in these timeframes all mass media articles with the German versions of the search terms "climate*", "earth warming", "global warming", "ipcc" were collected. In addition, all blog posts were

⁹⁶ The first time frame was between 21.09.2013 and 02.10.2013 (WG1), the second was between 23.03.2014 and 02.04.2014 (WG2) and the third was between 06.04.2014 and 17.04.2014 (WG3).

included since the selected blogs are less active than the mass media and deal predominantly with climate change. This resulted in 382 articles.

In the next step all comments were scraped from the websites with the tools Import.io (e.g. *Spiegel*, *Zeit* or *ScS*), DisqusScraper (den Tex, 2015); e.g. *Welt*, *KdG*) but also manually via scraping the Html code (*Bild*, *Eike*). This resulted in 16.289 scraped comments. Since this study's aim is to look for skeptical comments and how they were reacted upon the first 100 comments were used since a random sample does often times not allow a coder to see to which parent comment a user is reaction upon thus rendering this specific analysis impossible (c.f. Ziegele et al., 2014). So 10.262 comments remained within the data set.

These comments were then coded by five coders according to a codebook which was based on prior research on skeptic frames (Hobson & Niemeyer, 2013; Kaiser & Rhomberg, 2015; Rahmstorf, 2005) from which the two overarching frames “skeptical of the phenomenon of climate change” and “skeptical of climate science” and their idea elements could be identified. These frames, often time called emphasis frames (Cacciatore et al., 2016), consist of idea elements that can be considered to be directed statements (e.g. ‘climate change does not exist’ or ‘mankind is not to blame for climate change’) that define a frame's core (Gerhards & Schäfer, 2006; Toepfl & Piwoni, 2015). Krippendorff's Alpha for this coding was deemed acceptable (>0.9 for formal variables and >0.7 for the content variables like comment stance and idea elements).

6.5.6 Results: Skeptic Comments in Different Comment Sections

In a first step all irrelevant comments (i.e. comments that did not touch upon climate issues) were sorted out in order to simplify the coding process and give the coders more time to focus on the comments that possibly contained climate skeptic content. Due to this precaution over 50% of the scraped comments could be discarded. The rest ($n=4,425$) remained in the sample. Interestingly, over 60% of the comments on *Bild*, *Spiegel* and *Zeit* were irrelevant for this study whereas the climate blogs had more relevant comments (except for *ScS* and *Klimaratter*) than the mass media outlets (see Table 12).

However, this study's main interest lies on how the climate skeptic counterpublic tries to make their voice heard on each platform and with what frames. The results show

indeed that climate skeptics utilize comment sections for their agenda: 42.8% of all relevant comments were skeptical of climate change or climate science, while only 25.0% were promoting the mainstream perspective on climate change and climate science (Table 13). When taking all 10,262 comments in consideration 18.4% were skeptical and only 8.4% represented the mainstream position. Both numbers stand in strong contrast to the German populace in which a vast majority (about 70%) is concerned about climate change and only 10% are doubtful (Metag et al., 2015, p. 14). H1 can thus be confirmed.

In a next step the focus will be on whether skeptics are more visible in the conservative media's comment sections compared to the liberal's. Indeed, climate skeptics are extremely active in the comment sections of *Bild* and *Welt* (see Table 13). Even though this could have been expected to some extent, the fact that roughly 75% of all relevant comments on each platform are skeptic is certainly surprising and shows how active skeptics are in associated mass media publics and that, even though Engels et al. (2013) were not able to establish a connection between a conservative political stance and climate skepticism this also seems to be the case for Germany. When comparing these numbers to the skeptic blogs of *Eike* and *ScS* it is noteworthy that most of the comments there are actually unclear, i.e. could neither be attributed to a mainstream, skeptic or ambivalent position.

Outlet	Irrelevant	Relevant	Total
Bild (n=760)	67.9	32.1	100
Spiegel (n=3,618)	67.6	32.4	100
Welt (n=863)	41.1	58.9	100
Zeit (n=1,948)	61.2	38.8	100
Eike (n=1,311)	23.7	76.3	100
ScS (n=789)	57.9	42.1	100
Klimaretter (n=704)	74.3	25.7	100
KdG (n=9)	11.1	88.9	100
Klimalounge (n=79)	11.4	88.6	100
Klimazwiebel (n=181)	14.9	85.1	100
Total (n=10,262)	56.9	43.1	100

Table 12: Relevance of Comments per Outlet in % (n=10.262)

Another interesting finding is that the liberal news media outlets which are even more in line with the mainstream position as the conservative media outlets (Carvalho

& Burgess, 2005) have nevertheless a very active climate skeptic userbase. Especially *Spiegel* as Germany's most active news comment forum⁹⁷ is somewhat surprising in the divide between journalistic and user stance. It has to be noted that although the skeptics are vocal within *Zeit*'s comment sections they also have the most vocal users when it comes to the mainstream view. This also shows that the userbases of the sites differ notably both in the way they are skeptical but also in the way people promote mainstream ideas. In the same vein, the climate activist as well as climate science blogs had less skeptics and a more vocal user base that defended the mainstream perspective.

Another aspect worth mentioning is the high amount of unclear comments. This can be explained with a silent consensus among both publics: the mainstream public does not deem it necessary to repeatedly state that climate change is happening and thus more comments are focused on more advanced issues. This seems to be happening in the skeptic counterpublic as well. Except where on the mainstream sites the users seem to take climate change as granted, on skeptic sites the users seem to take climate change denial as the bottom line and thus prefer talking about their disdain about specific climate policies or energy topics but not really adding why they are against it. This explicit lack of stating one's 'allegiance' may also explain the amount of skeptics within the media publics since skeptic users may actually perceive this general neutrality or indifference as invitation for stating their opinions.

Type	Outlet	Position of Comments			
		Mainstream	Ambivalent	Skeptic	Unclear
Conservative	Bild (n=244)	15.6	0.0	74.6	9.8
Media	Welt (n=508)	11.0	0.8	76.8	11.4
Liberal Media	Spiegel (n=1,173)	26.1	0.4	41.8	31.7
	Zeit (n=755)	34.7	2.6	31.4	31.3
Counterpublic blogs	Eike (n=1,000)	6.8	0.9	38.0	54.3
	ScS (n=332)	4.8	2.1	46.1	47.0
Climate activist blogs	KR (n=181)	37.6	1.1	17.7	43.6
	KdG (n=8)	25.0	0.0	0.0	75.0
Climate science blogs	KL (n=70)	42.9	0.0	15.7	41.4
	KZW (n=154)	31.2	6.5	11.7	50.6
Total (n=4,425)		20.2	1.3	42.8	35.7

Table 13: Position of Comments per outlet (n=4,425)

⁹⁷ Users from *Spiegel* wrote about 53% of the 16,298 comments.

The difference between the outlets is getting even more visible when comparing their means (Table 14). Unsurprisingly, the climate skeptic blog *ScS* has the most skeptical comment section, closely followed by the conservative media outlet *Welt*, the skeptical blog *Eike* and the tabloid *Bild*. Indeed, there is no significant difference between these four sites when comparing their means, thus suggesting that they form a skeptical ‘cluster’ in which skeptic users are equally vocal. This is also true for the contrasting mainstream position where two closely connected cluster can be identified which consist of *Zeit*, *Klimaretter*, *Klimalounge* and *Klimazwiebel*. Interestingly *Spiegel*’s comment section (and, expectedly, *KdG*) differs significantly from all other ones which most likely can be explained with its popularity and more diverse userbase.

Now that the amount of skeptic comments on each platform has been established and H1.1 and H1.2 could be confirmed the next step is to take a closer look on how the users frame their skeptic positions.

Outlet	Bild	Welt	Spon	Zeit	Eike	ScS	Klimaretter	KdG	Klima-lounge	Klima-zwiebel
Bild (Mean: 2.65)	/	-.09	.43*	.70*	-.03	-.12	1.01*	1.66*	1.12*	1.05*
Welt (Mean: 2.74)	.09	/	.51*	.79*	.06	-.04	1.10*	1.74*	1.21*	1.14*
Spiegel (Mean: 2.23)	-.43*	-.51*	/	.28*	-.45*	-.55*	.58*	1.23*	.69*	.62*
Zeit (Mean: 1.95)	-.70*	-.79*	-.28*	/	-.73*	-.83*	.31	.95*	.42	.35*
Eike (Mean: 2.68)	.03	-.06	.45*	.73*	/	-.10	1.04*	1.68*	1.15*	1.08*
ScS (Mean: 2.78)	.12	.04	.55*	.83*	.10	/	1.13*	1.78*	1.24*	1.17*
Klimaretter (Mean: 1.65)	-1.01*	-1.10*	-.58*	-.31	-1.04*	-1.13*	/	.65*	.11	.04
KdG (Mean: 1.0)	-1.66*	-1.74*	-1.23*	-.95*	-1.68*	-1.78*	-.65*	/	-.54*	-.61*
Klimalounge (Mean: 1.54)	-1.12*	-1.21*	-.69*	-.42	-1.15*	-1.24*	-.11	.54*	/	-.07
Klimazwiebel (Mean: 1.61)	-1.05*	-1.14*	-.62*	-.35*	-1.08*	-1.17*	-.04	.61*	.07	/

Table 14: Mean comparison of skepticism in each outlet’s comment section (1 = mainstream, 2 = ambivalent, 3 = skeptic). * represents significant differences between means (<0.05). Significances have been calculated with the Games-Howell test. Highlighted cells show similarity, red represents skeptic and blue mainstream positions. For this comparison all unclear comments have been discarded.

6.5.7 Results: Climate Skeptic Frames

To answer H2.1 and H2.2 it is important to look at the frames that are being used in the comment sections and whether these comment sections differ notably from each other. It was assumed that skeptics will be more skeptical about climate change in their own counterpublic whereas they will promote less controversial skeptical frames about climate science in the mainstream comment sections.

Based on this assumption, the similarities between the mass media and skeptic blogs are surprising (see Table 15). Only on *Zeit* (52.8%) and *ScS* (56.3%) is doubting climate science more prevalent than questioning climate change. On *Bild* (53.0%), *Welt* (54.1%), *Spiegel* (53.8%) and *Eike* (62.5) however skeptics were more dismissive of climate change.

Type	Outlet	Frames								Total
		Climate Change			Politica- tion	Climate Science			Other	
		Existence	Causes	Impact			Uncertainty	Conspiracy		Alarmism
Conservative Media	<i>Bild</i> (n=272)	10.7	33.5	8.8	5.9	16.2	18.0	7.0	0.0	100.0
	<i>Welt</i> (n=603)	14.4	31.2	8.5	8.1	20.7	11.4	5.6	0.0	100.0
Liberal Media	<i>Spiegel</i> (n=759)	11.1	33.7	9.0	5.4	22.3	10.8	7.8	0.0	100.0
	<i>Zeit</i> (n=381)	14.2	27.8	5.2	9.2	24.4	10.0	9.2	0.0	100.0
Counter- public Blogs	<i>Eike</i> (n=604)	13.1	40.1	9.3	3.6	18.7	9.1	6.1	0.0	100.0
	<i>ScS</i> (n=229)	9.2	26.6	7.9	7.9	23.1	17.9	5.7	1.7	100.0
Climate activist blog	<i>KR</i> (n=56)	12.5	16.1	16.1	7.1	28.6	12.5	7.1	0.0	100.0
Climate science blog	<i>KL</i> (n=16)	6.3	18.8	18.8	0.0	37.5	18.8	0.0	0.0	100.0
	<i>KZW</i> (n=25)	24.0	16.0	16.0	4.0	32.0	4.0	4.0	0.0	100.0
Total		12.5	32.6	8.6	6.3	21.3	11.7	6.9	0.1	100.0

Table 15: Skeptical Frames per Comment Section in % (n=2,945)

There are nevertheless differences between the comment sections: there are, for example, only three comment sections (*Klimaretter*, *Klimalounge*, *Klimazwiebel*) in which the *Climate Change's Causes* frame (e.g. users voiced their doubts about mankind's influence or claimed that CO2 is not harmful) is not the most popular one. On these three sites *Climate Science's Uncertainty* (e.g. users claimed that climate science was not a "real" science or that the data is not reliable) was more heavily used which may be explained with the three blog's focus on climate science and/or politics.

In comparison, the skeptic users on *Zeit* seem to be more critical of *Climate Science's Uncertainty* but also its *Alarmism*. When taking into consideration that *Zeit* was also the only news media comment section which had more mainstream than skeptic comments this may suggest that the skeptics on *Zeit* are aware of their discourse minority and thus try to be more subtle by questioning climate science. This, however, could also be explained with the fact that *Zeit* is a rather elite and liberal magazine as well as news site and thus may attract more subtle or 'light' skeptics.

When comparing the mass media with skeptic blogs some differences are obvious: On *Eike*, for example, the users are very skeptic about climate change's causes and especially so about CO₂ which they often times label as good for the planet. In comparison, the users of *ScS* tend to question climate science. This is not surprising as the blog's main focus lies on science (the others being politics, climate and energy). These clear differences between the leading German skeptic blogs may suggest that there is some kind of 'labor sharing'.

In general, H2.1 and H2.2 have to be discarded. Even though there are slight differences between the comment sections with regards to frames used, the counterpublic comment sections differ not significantly from mainstream comment sections like *Bild*, *Welt* or *Spiegel*. However, on *Zeit*, *KR* and *KL* skeptics tend to be more critical of climate science instead of climate change.

6.5.8 Results: Exclusion and Inclusion of Skeptics

In order to look at possible exclusion and inclusion effects within the comment sections one not only has to look at what skeptics are saying but also how other users react to it and how the comments are liked by other users. The first important thing to note is that of the 4,425 relevant comments within the sample 2,504 were a direct reply to another comment and roughly half of them ($n=1,378$) were a direct response to a skeptic comment. In general the reactions were mostly either corrective (i.e. the users corrected the skeptics and often went into great detail as to why they were wrong) and less so critical (i.e. the users dismissed the skeptics' comments or made fun of them).⁹⁸

⁹⁸ The reaction types were inductively extracted and discussed during the coder schools and had a Krippendorff's alpha >0.7.

As shown in Table 16 there is a difference between each site's comment section. This gets especially obvious when looking at the sites that have a lot of skeptic comments like *Bild*, *Welt*, *Eike* or *ScS*. On all four sites users seem to be supportive of skeptics. *ScS*, even though a skeptic blog, is the least friendly of the sites. In fact 22% of all reactions across all sites were comments of agreement. Naturally, only few of those (3.6%) were also written by users from the mainstream faction that, for example, agreed sarcastically with the skeptic user, tried to build a bridge for further discourse or misread the skeptical comment.

It is also noteworthy how different *Eike* and *ScS* are when it comes to more negative responses to skeptic comments. Whereas on *Eike* few comments are critical of other skeptics, users on *ScS* are more negative of other users. This, however, is not due to users from the mainstream who want to 'take the fight' to the skeptic blogs but rather due to other skeptics who may potentially be too soft for the others or who may not understand certain scientific principles. Generally speaking, 25% of all reactions on *Eike* were from mainstream users whereas on *ScS* only 11.3% were written by them. This suggests that even in their own echo chamber skeptics are confronted with criticism and tough questions both from users from the mainstream but also their own.

Type	Outlet	Reaction to skeptical comments						Total
		critical	correcting	appealing to authority	questioning	consensual	agreeing	
Conservative media	<i>Bild</i> (n=108)	38.9	13.0	0.0	3.7	0.9	43.5	100.0
	<i>Welt</i> (n=144)	30.6	24.3	0.0	7.6	1.4	36.1	100.0
Liberal media	<i>Spon</i> (n=500)	38.4	37.0	0.6	4.6	5.3	14.1	100.0
	<i>Zeit</i> (n=226)	10.4	59.5	11.3	6.3	4.5	8.1	100.0
Counterpublic blogs	<i>Eike</i> (n=234)	11.1	41.9	0.0	8.5	6.0	32.5	100.0
	<i>ScS</i> (n=134)	30.6	24.6	3.7	3.7	9.0	28.4	100.0
Climate activist blogs	<i>Klimaretter</i> (n=24)	25.0	37.5	0.0	29.2	4.2	4.2	100.0
Climate science blogs	<i>Klimalounge</i> (n=4)	0.0	100.0	0.0	0.0	0.0	0.0	100.0
	<i>Klimazwiebel</i> (n=12)	33.3	41.7	0.0	16.7	0.0	8.3	100.0
Total		27.4	37.2	2.4	6.2	4.8	22.0	100.0

Table 16: Reactions to Skeptic Comments per Comment Section in % (n=1,377)

As was shown above *Bild* and *Welt* are very similar to the skeptic blogs and this also shows in the way users react upon skeptic comments. On *Bild* 81% of the reactions were written by skeptics and on *Welt* 75%. This stands in stark contrast to the liberal news media comment sections of *Zeit* and *Spiegel* where the mainstream factions are

more prominent and vocal. On *Zeit* the mainstream users wrote 78% of the reactions and on *Spiegel* it was 49%. Consequently, the comments are more critical as well as corrective and there is very little agreement. This also is true for the climate activist and science blogs where only few comments were skeptic in the first place and most users ignored them.

In general, even though skeptics are in their supposed ‘echo chamber’ (Garrett, 2009) there are users from the mainstream who appear to be on a ‘mission’ to counter the skeptic myths and talking points. However, this phenomenon pales in comparison to the counterpublic’s activity in mainstream comment sections. The hypotheses that skeptics comments will be more welcome on skeptic than on mainstream sites thus has to be discarded.

To answer H3.2 and analyze the support skeptics get the amount of ‘likes’ the comments got from other users is examined. Since not all platforms offered the options to like comments I will focus on the sites which do: *Bild*, *Welt*, *Zeit* and *Klimaretter*. On *Bild* an average comment –disregarding if relevant or not– got roughly 20 likes, on *Welt* 33, on *Zeit* 5 and on *Klimaretter* 1. When focusing on the relevant comments of the four platforms one can see that there is a significant difference with regard to how comments were liked (Table 17).

Comment stance	Average Likes per Outlet			
	Bild (mean: 19.84)	Welt (mean: 32.60)	Zeit (mean: 4.68)	Klimaretter (mean: .78)
Mainstream	8.97*	12.46	3.98	0.59†
Ambivalent	/	13.75	4.79	0.00†
Skeptic	23.42*	44.99*	4.95	0.16

Table 17: Average Likes per Outlet and Position ($n=3.678$). * indicates significant mean difference between the comment stances (<0.05). † indicates significant mean difference between the mainstream and ambivalent position (<0.05). Significances have been calculated with the Games-Howell test.

Indeed, counterpublic arguments are not only reacted more positively upon in *Bild* and *Welt* but they are also significantly more likely to be liked on these platforms in comparison to ambivalent or mainstream comments. On *Zeit* the differences between the means are not significant but it is interesting to note that ambivalent and counterpublic comments were liked more often than mainstream ones – a finding that is

in stark contrast to how users reacted upon skeptic comments on *Zeit*. This may either be explained by the skeptics' loyalty to each other or the phenomenon of 'lurkers' (i.e. users that browse and read but do not actively engage in communication). Unsurprisingly, on *Klimaretter* users liked mainstream comments more than skeptic ones but were very hesitant to like comments in general.

These results show that skeptics are not necessarily excluded in all mainstream associated publics and that some publics are even friendlier to counterpublic positions than in the counterpublics themselves.

6.5.9 Discussion

In this paper I set out to examine the relationship between mainstream public sphere and the climate skeptic counterpublic in Germany. By analyzing 10,262 online comments on ten different websites I was able to show three things:

First, counterpublic voices are prominent within all sites even though skeptics are a minority in German and marginalized in the mass media. Roughly 40% of all relevant comments about climate change or science were skeptical which is four times more than one would expect from the populace. Surprisingly, skeptics were not only the dominant voice within their counterpublic but more so in the comment sections of conservative media *Welt* and *Bild*. This does not only add to the literature that connects climate skepticism with a conservative mindset (McCright & Dunlap, 2011b) but also is in line with research that suggests that minorities are more likely to speak out in places where like-minded people are (Porten-Cheé & Eilders, 2015).

Second, it was hypothesized that skeptics would adjust their framing of climate change and climate science according to the comment section they write in, because some arguments may be more mainstream friendly than others. This, however, was not the case and demonstrates that marginalized skeptics tend to speak out regardless the place. This is also in line with Porten-Chée and Eilders' (2015) finding that skeptics are more vocal than their social standing may suggest. Although skeptics adapted their framing to recent events and added the 'hiatus' to their repertoire (i.e. the supposed pause in global warming) one third of the idea elements were 'classical' denialist arguments that cast doubt about climate change's existence and mankind's influence.

Third, although skeptics are very active most reactions to their comments are critical. Even within their own counterpublic skeptics as well as users from the mainstream attack skeptic users. A reason for the challenging environment in the counterpublic may be that there is no clear skeptic common ground. Where some users are vocally against the ‘climate church’ and deny climate change altogether, others admit that climate change is happening but posit that the consequences will be good for mankind (Rahmstorf, 2005). In this sense, their identity seems not to form around a specific skeptic idea but rather an antagonistic position that is in opposition to the mainstream. Another possibility could be that skeptics try to counter each other in their own space in order to test and strengthen their own arguments and thus make each other less vulnerable to hegemonic positions. It has to be noted, however, that skeptic comments on conservative comments received significantly more likes than mainstream comments, suggesting that either skeptic users use this feature more actively than others or that the userbase as a whole is more skeptical.

This paper contributes to the literature on the networked public sphere and counterpublics in three ways: it structurally shows the network’s polarization with a hyperlink network analysis and then highlights the discursive struggle between mainstream public sphere and counterpublic that takes place in all analyzed comment sections and which shows how connected the different publics are with each other. I, however, do not agree with Toepfl and Piwoni’s (2015) assessment that a counterpublic majority within the comment sections makes them a counterpublic but rather posit that comment sections are per se contested with members from the counterpublic trying to seize their chance by brigading relevant threads. Even though some publics are closer to counterpublic than others (e.g. politically) the development of this discursive struggle is something which should be looked at in future research.

I also propose that counterpublics should not be idealized as a progressive grassroots movement that necessarily aims to improve democracy and the societal discourse. By looking at a somewhat problematic public that negates the scientific consensus and is prone to conspiracy theories it can be shown that these need to be included in the counterpublic theory as well in order to fully analyze exclusion and inclusion processes in the networked public sphere.

Finally, it can be shown that counterpublics are not a unity which necessarily are founded on one core principle that might be necessary for its identity but can also be fostered by exclusion from the mainstream public sphere and the consequent feeling of

antagonism. I thus suggest that the networked public sphere not only connects mainstream public and counterpublic but that its core idea is also valid within the counterpublics themselves.

6.5.10 Limitations & Outlook

This paper has several limitations: First, by opting for a manual content analysis there had to be compromises with regard to sample size. Even though this allowed for analyzing the skeptical frames and reactions upon other comments future studies should look into computer-assisted methods like LDA for a full analysis. Second, climate skepticism is a peculiar case since there is no clear delineation between what is skeptical and what not. To-be studies could, for example, also take a closer look at political climate skepticism. Third, the networked public sphere theory is a very useful framework, however there need to be more theoretical as well as empirical research with regard to the integration of counterpublics within this concept.

6.6 Interim Conclusion: ‘Public Spheres of Skepticism’

In the paper ‘Public Spheres of Skepticism’ I presented that climate skeptics are very active in online comment sections and are often more vocal than users from the mainstream. I could thus show that in the analysed online comment sections skeptics can be considered integrated with regard to connectivity and similarity of discourses. However, there was little integration with respect to a collective identity as there were significant differences regarding to how skeptics were treated in the mainstream comment sections compared to their counterpublic comment sections. This paper, then, shows that skeptics are more integrated than the previous studies suggested and do not ‘hide’ in their echo chamber. In the next chapter I will sum up and discuss the results of the three studies to then tackle the overarching research question of whether the climate skeptic counterpublic is integrated in the German networked public sphere and to what extent.

7. Conclusion: The Integration of Counterpublics in the Networked Public Sphere

In this thesis I set out to analyze if and to what extent the climate skeptic counterpublic is integrated in the German networked public sphere. The level of integration was measured based on the criteria similarity of discourses, connectivity and collective identity. These criteria were further differentiated. Similarity of discourses was understood as the usage of climate skeptic frames in the mass media and comment sections. Connectivity was operationalized on a structural level (i.e. do climate skeptic and mainstream sites link to each other) but also with regard to the skeptic users' visibility in the mainstream comment sections and the mainstream users' visibility in the counterpublic comment sections. Collective identity, then, referred to the general consensus in the comment sections regarding climate change but also how users reacted to skeptic users. To answer the main research question I will first outline the results of the different studies to then combine them with regard to the integration of climate skeptics in the networked public sphere.

Study 1: Alliance of Antagonism

In the first study we were interested in how the German climate change online discourse was structured with regard to linking practices and asked what roles skeptics play in it. To answer these questions a manual snowball crawl of climate blogs and websites was conducted in which only the links of blogrolls or linklists were counted. We then coded all sites that had at least one in- and one outlink with regard to their affiliation (i.e. institution or individual) and their stance on climate change (mainstream/skeptic). In a next step a network analysis of the linking relationship between the different sites was calculated with regard to their centrality metrics and community structures and visualized as a graph.

The result shows a highly polarized network that is structured along mainstream/skeptic 'party' lines. It is indeed noteworthy how seldom skeptic and mainstream websites link to each other: mainstream sites only link 14 times to skeptic ones and skeptic sites only 19 times to mainstream ones. When looking at the network, however, one can see that whereas some mainstream sites can be found in the skeptic

community, there are zero skeptic actors within the mainstream communities. This can very well be understood as a sign that skeptics form their own counterpublic. And against the background of counterpublic theory this can be seen as the skeptics' exclusion from the main debate which, then created their own climate skeptic counterpublic. The counterpublic's exclusion seems even more emphasized when looking at the actors behind the websites: whereas most of the skeptics are individuals who host their own blog, a substantial amount of the mainstream sites consists of institutions (e.g. universities, federal agencies). Keeping Sunstein's (2001) understanding of echo chambers in mind, it can be stated that climate skeptics form their own counterpublic within the German networked public sphere.

Another result that emphasizes this assumption is what we call 'alliance of antagonism' which is a description of the websites that can be also found within the skeptic cluster and which range from neo-Nazi to conspiracy theory sites. When keeping in mind that there is even no clear consent between skeptics about what to be skeptical of the addition of further actors who are also climate skeptic but also have other agendas may be interpreted as "antagonism" (Mouffe, 1999) in its truest form, i.e. the opposition of the mainstream.

We were thus able to show that there is little structural connectivity between climate skeptics and mainstream as there was little connectivity to begin with which shows how excluded the skeptic counterpublic is in the German networked public sphere. These results, then, suggest that skeptics form an echo chamber since they are not only excluded from the mainstream but the other sites (e.g. far right-wing sites) within the skeptic community also point towards a potential (political) radicalization. In general, climate skeptics are on the level of hyperlinks barely integrated in the networked public sphere.

Study 2: Questioning the Doubt

In the second study our main interest was to identify the skeptic frames within the mass media's coverage of the climate summit in Durban in 2013. We conducted an explorative qualitative content analysis of 379 articles from eight national newspapers (and their online versions).

By doing so, we were able to identify 31 unique skeptical idea elements that could be aggregated to seven frames. These frames could then be aggregated into two

overarching media packages. One media package dealt with skepticism with regard to the phenomenon of climate change, whereas the other dealt with skepticism with regard to climate science. The former consisted of three frames: skepticism about the existence of climate change, its causes and its impact. This is very much in line with Rahmstorf's (2005) typology. Additionally, we found four frames that emphasized – i.e. questioned – different aspects of climate science: its politicization, its uncertainty, its alarmism as well as its conspiracy. We showed that even though there was no clear skeptical medium, the conservative news outlet was more skeptical about climate change than the other outlets, whereas the more liberal ones did on occasion use the frames but, at the same time, heavily refuted them. In general, the media outlets tended to be more skeptical about climate science than about climate change. This can, to some extent, also be explained with our more open understanding of climate skepticism that also includes ambivalent cases. In sum, we identified skeptical idea elements in about 15 percent of the articles. However, only 7 percent of these idea elements were evaluated positively, i.e. truly skeptical.

When looking at these results through the lens of counterpublic theory it becomes obvious that skeptics are mostly excluded from the mass media discourse. Although we identified more skeptical elements in mass media's reporting than other studies (Grundmann, 2007; Grundmann & Scott, 2014), our results are in line with the general tenor. This, too, is a clear indicator that skeptics build their own counterpublics. When keeping other studies (Engels et al., 2013; Metag et al., 2015) in mind one could even state that they are underrepresented in mass media's reporting. Thus, when looking at the counterpublic's integration with regard to similarity of discourses we also have to note that skeptics are rarely integrated in mass media's reporting and that there is little integration of counterpublic views in mass media reporting. Even when some of their frames are used there is a chance that their opinion is being opposed or contradicted which may lead to an active retreat into a counterpublic where the alternative media reflect one's opinion.

Study 3: Public Spheres of Skepticism

In the final study I was interested in the skeptic's visibility in the comment sections of the German mass media and several climate blogs, the frames they use and how users from the mainstream react to them. To do so 10,262 comments from ten comment

sections (4 mass media, 2 climate skeptic blogs, 2 climate science blogs, 2 climate activist blogs) were manually coded and then quantitatively analyzed.

The results show that climate skeptics are very active and visible on their own sites but also in the mass media's comment sections which, at least in the cases of the conservative outlets, can even be considered counterpublics. Even on the liberal sites at least one third of the relevant comments were written by skeptics. In general, 40 percent of the relevant comments were skeptical about either climate change and/or climate science. This shows that climate skeptics, even though excluded from the mass media and the German climate discourse with regard to links, do not solely retreat to their counterpublic but actively look for possibilities to voice their opinion and especially do so in the media induced public spheres.

When looking at the frames skeptics used in the comment sections of the mass media as well as different climate blogs, I could show that the frame usage, even though different from site to site, shows no clear pattern regarding the type of outlet (conservative/liberal media; counterpublic/climate activist/climate science blog). In general, the comment sections of the mass media outlets were similar to each other and only in the liberal *Zeit* comment section climate science skepticism was more popular than on others. The counterskeptical blogs, however, differed with regard to their frame usage which can be most likely be explained with their different thematic focus: whereas *Eike* focuses more on climate politics, *ScS* focuses more on climate science. Interestingly enough, the climate science blogs *Klimazwiebel* and *Klimalounge* differed prominently from each other. On the former, skepticism with regard to climate change was more prominent, whereas on the latter skeptical climate science frames were more widespread. The climate activist blog *Klimaretter* is comparable to *Klimalounge* even though it focuses mostly on climate politics. In general, it can be stated that skeptical frames about climate change were slightly more used than those about climate science.

Taking these results into account it seems that although the users on each site differ with regard to what they are skeptical about, they are not vastly different from each other and argue similarly on different sites. This suggests that there is indeed a similarity of discourses as all skeptical frames are used on all sites, albeit that skeptics are especially active in the mass media and counterpublic comment sections and less so on climate activist and science comment sections. Yet, it is remarkable in this context how visible the skeptics are in all comment sections. Even on the climate activist or science blogs skeptics accounted for 10 to 17 percent of the comments. At the same time it has

to be noted that there was also mainstream minority in the counterpublic comment sections (5 to 7 percent). Since I understand visibility as a proxy for connectivity, the analysis for this study on counterpublic integration in the networked public sphere differs from the previous ones. Indeed, it can be stated that skeptics actively bridge the gap between their counterpublic echo chamber and the mainstream publics to make their voice heard. In return, even though there are some users from the mainstream who try to ‘convert’ or ‘correct’ the skeptics, the mainstream mostly ignores the skeptics and if users from the mainstream chose to react to skeptic users it is mostly in a corrective or critical manner. In addition, the high amount of unclear comments on all sites can be understood as two opposing identities: whereas skeptics do not see the need to argue their skepticism in the counterpublic comment sections, users from the mainstream feel the same way with regard to their support of the theory of anthropogenic climate change. These results, then, can be also seen as the skeptic’s attempt to extend the public sphere through counterdiscourses.

The analysis of the comment sections thus shows that even though skeptics are not integrated on a structural level or represented in the mass media, they are very active in the comment sections. In this context, they can be considered integrated in the networked public sphere and since similar skeptic frames are used in almost all comment sections since skeptics are highly active, thus connecting the counterpublic with the mainstream public. There is, however, a clash of identities that seems to be insurmountable since, as the user reactions show, the mainstream reacts very critically to skeptics whereas skeptics are very friendly to each other.

When taking all these results (see Table 18) into account the question remains: is the skeptic counterpublic integrated in the German networked public sphere, and if so to what extent? Naturally, when looking at a counterpublic the result cannot be positive. Indeed, I was able to show that when looking at the hyperlink network analysis climate skeptics can be considered an echo chamber that is only loosely connected with the mainstream public sphere. By looking at the mass media’s reporting that barely consisted skeptic frames the skeptics’ exclusion by the mainstream was also confirmed on the level of the mass media public sphere. Against this background one could very well echo Sunstein (2001, 2007) and suggest that German climate skeptics form their own exclusive enclave in which they radicalize themselves even more and no longer participate in the broader public sphere. This, however, as the third study shows, would

be premature. Undeniably, skeptic users do not stay within their counterpublic but reach out and voice their opinion in other publics. They also did not radicalize themselves in their echo chamber as Sunstein suggested but rather used similar frames throughout all comment sections. It could, however, be argued that the skeptics ‘brigaded’ the conservative news outlets and claimed them as counterpublic. Yet, studies have shown that debates between polarized positions can lead to a less entrenched perspective and decrease polarization (Hart, Feldman, Leiserowitz, & Maibach, 2015; Mutz, 2002; Parsons, 2010). This, then, shows that skeptics, albeit mostly excluded, are still integrated within the German networked public sphere and actively involved in discussing climate change and climate science. Since users from the mainstream also argue on climate skeptic blogs, this shows that the connectivity of each other goes both ways (even though skeptics are far more active in mainstream comment sections than vice versa).

In general, this thesis was able to show where and how skeptics are active within the German networked public sphere and also how they are excluded from the mainstream. I call this entanglement between climate skeptic counterpublic and mainstream positions in different publics and on several empirical levels (hyperlinks, media content, user comments) that differ from level to level with regard to the visibility of skeptic content ‘spheres of skepticism’. The term refers both to the skeptic content as well as to the different publics within the networked public sphere and yet emphasizes their connection on a structural, content and user level.

From a theoretical point of view this thesis could show that looking at polarized online discourses through the lens of counterpublic theory can be fruitful in order to understand the debates as a battle for contestation and a social debate rather than a failed attempt of deliberation. Indeed, by understanding skeptics as counterpublic this thesis could also give empirical weight to Engesser and Wimmer’s (2009) suggestion that counterpublics cannot be considered without the Internet anymore since it offers counterpublics easy and cheap ways to make their voice heard. By looking at the relationship between counterpublic and mainstream from the perspective of integration I was also able point out that examining similarity of discourses, connectivity and collective identity can be a valuable way to understand and measure integration mechanisms. I, then, was finally able to demonstrate that studies which look at the exclusion of publics (or echo chambers) only on the basis of one level of interaction (e.g. hyperlinks, mentions, follower/followee-relationship, etc.) are highly limited since

even though on one level – as in this study – a counterpublic may be excluded or exclude itself, on another level it might as well try to be heard and interact with others.

Paper	Dimensions of Integration	Description	Results	Degree of integration
Alliance of Antagonism	connectivity	Highly polarized network with little connection between mainstream and counterpublic	Skeptics are excluded from the mainstream but also rarely link to mainstream sites Skeptics can be considered to form an “echo chamber” Skeptics form an “alliance of antagonism” with other groups which all have the rejection of the mainstream in common	low
Questioning the Doubt	similarity of discourses	Identification of skeptic frames regarding climate change (existence, causes, impact) and climate science (politicization, uncertainty, alarmism, conspiracy)	skeptics are mostly excluded from the mass media: roughly 7,5% of the articles contained skeptic frames, whereas in 6% of the articles skeptic frames were being evaluated critically conservative outlet <i>Welt</i> was the outlet with the most skeptical frames	low
Public Spheres of Skepticism	connectivity	skeptic users are highly visible in the analyzed comment sections (over 40% of the relevant comments were skeptical)	the skeptic counterpublic is to some extent integrated in the German networked public sphere as skeptics and their frames are visible in the mainstream publics and mainstream users are active in the counterpublic	high
	similarity of discourses	skeptics did not adjust their messages with regard to where they posted their comments, i.e. there was no clear difference between counterpublic and mainstream publics		high
	collective identity	there is a clear skeptic consensus in the conservative and counterpublic comment sections (<i>Bild</i> and <i>Welt</i> in particular where over 70% were skeptical) that differs significantly from the other comment sections	mainstream users reacted critically to skeptics' comments and also confronted skeptics within their counterpublic	low

Table 18: Results per paper concerning the different dimensions of integration

By choosing the case of climate skepticism and thus of people who reject scientific findings and question a wide consensus in climate science I opted for a critical case since honesty is a fundamental component of the public sphere (Habermas, 2006[1962]). Indeed, Neidhardt (1994, p. 24, own translation) thus wonders “What chances for survival do lies have?” and Peters (1994, p. 66, own translation) even suggests that lies and manipulation would lead to a collapse of the “public space for the participants since the affected persons have been stripped of their freedom to respond.” And even though I do not want to suggest that skeptics per se lie, the question remains

if and how deliberation with skeptics is possible if they choose to disregard scientific facts. However, I suggest that even though deliberation in the Habermasian (1992; 2006[1962]) sense is desirable it is not necessarily needed for a functioning public sphere (c.f. Rauchfleisch & Kovic, in press) and for facilitating a public debate that connects counterpublic and mainstream public. Comment sections can be considered to be an important aspect of this contestation since they connect mainstream and counterpublic users, make counterdiscourses visible and possible and can potentially lead to a less polarized discourse. This thesis, then, shows that the contestation between counterpublics and the mainstream takes places on several levels of the Internet that are connected with each other but also have to be considered as such to contextualize the results with each other.

8. Outlook

In this thesis I set out to analyze if and to what extent counterpublics can be integrated in the networked public sphere. The case of climate skepticism in Germany was used to answer this research goal by conducting a hyperlink network analysis, an explorative-qualitative content analysis of the news media's reporting as well as a qualitative-quantitative content analysis on online comments on different websites. Albeit the integration (or mostly lack thereof) could be shown empirically, there are a few aspects that I was not able to consider fully in this thesis.

As I showed in chapter 3.1.4 the online public sphere (but also the public sphere in general) can be looked at from several angles. By looking at climate skepticism I opted for the issue public of climate change and even though this issue was looked at from several angles (hyperlinks, mass media and comment sections) future research could add more perspectives. Most notably, the role of the users within online communication with regard to their intentions is much needed. This was, for example, outlined by Adolf (2015) who suggested that future public sphere research should not only look at the public communication at hand but also at the users' intention to communicate publicly. By adding users' motivation I would have, for example, been able to contextualize the high amount of skepticism in the mass media's comment sections and find out their motives for writing there. Similarly, it would be also

interesting to know when users tend to not participate in a debate, for example why a user when confronted with a lot of climate skeptic comments decides to enter or leave the debate.

At the same time it seems important to also question users' with regard to their feeling of inclusion or exclusion. Do climate skeptics, for example, feel excluded or, at the same time, part of a climate skeptic counterpublic that may even be part of their identity? And if so, do climate skeptics get more extreme in their counterpublic as Sunstein (2001; 2009) but also recent research about political issues in the USA (Binder, Dalrymple, Brossard, & Scheufele, 2009; Hart et al., 2015; Keating, Van Boven, & Judd, 2016) suggested? This, then, would also highlight the individual user perspective within a counterpublic and their potentially feeling of an 'imagined community' (Anderson, 2006). In addition, future research could also look into the potential effect counterpublic messages, for example in comment sections, can have on other users with regard to how they perceive an issue but also if this leads to further polarization or rather to an understanding of the other position and a less polarized worldview (Hart et al., 2015; Mutz, 2002; Parsons, 2010).

It also has to be noted that even though I focused in this thesis on climate skepticism in the German networked public sphere the results regarding the frames that skeptics use and the polarized discourse between mainstream and skeptics are comparable to other studies that did not focus on Germany (Elgesem et al., 2015; Hoffarth & Hodson, 2016; Painter & Ashe, 2012). It would thus be interesting to take a closer look at how connected skeptics are transnationally and if they form a transnational counterpublic in which the national climate skeptic publics are integrated. Additionally, as I conducted three studies within different timeframes the results of the studies, even though comparable, are confined as they do not cover the same events. Future studies thus could conduct a similar study as this thesis with one timeframe.

Another aspect that is worthy of scholarly attention is how moderation in comment sections can help deliberation and, in turn, lead to a less polarized discourse. As others have pointed out moderation can foster but also stifle user engagement (Geiger, 2016; Hughey & Daniels, 2013; Loosen & Schmidt, 2012; Meyer & Carey, 2014). In a next study scholars should thus consider also including interviews with moderators and/or obtaining the data from the sites directly so that deleted comments can be included. In a similar vein future research could also take a closer look on the direct relationship between news media as well as blog article and comments, that is if

something in the article triggers a specific kind of comment (in this case if a skeptical frame within an article results in more skeptical comments). Even though this has been done with regard to news factors (Weber, 2013; Ziegele et al., 2014) it would be interesting to see if specific positions or frames trigger more of the same and if this leads to a more deliberative or a one-sided debate, for example that only skeptics voice their opinions and members from the mainstream decide not to participate.

Finally, I propose that the relationship between counterpublic and public sphere should be analyzed empirically more in the future. Indeed, even though I am partial with regard to Sunstein's (2001, 2009) diagnosis that the Internet fosters smaller communities and even enclaves, this thesis was able to show that identifying echo chambers and a polarized discourse on one level does not necessarily mean that there are no other forms of connection and integration. Indeed, future research should thus analyze the integration of counterpublics on several levels to help us understand what factors might drive people away – and what keeps them.

9. References

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10. Appendix

10.1 Codebook for Paper 1: ‘Alliance of Antagonism’

V1. Topic

What is the major and overarching topic of the website / blog? The websites header and sidebar serve as main indicator for this category. If these state that the site focuses on more issues and one of them deals with climate change, code as such.

If climate change is one of the two main topics, code 5.

1. Politics
2. Science
3. Economy
4. Society
5. Climate Change
6. Energy
7. Environment
8. General Interest

V2. Skepticism

What “side” is the site leaning to? Keywords like “Klimalüge”, “Klimaschwindel” or the trope of “global cooling” are indicators for skeptical sites. Further aspects would be being skeptical of climate change in general, its consequences, its roots as well as climate science.

- 0 = undefined / unclear
- 1 = climate “friendly”
- 2 = climate skeptic

V3. Content Creators

Who is responsible for the website’s content? Indicators are “About us” pages or the imprint.

If the author(s) of the website/blog differ from the person/institution that is noted in the imprint, code the *content creator* first and if this is not possible (due to intransparency, etc) the person/institution in the imprint.

1 = individual citizen

2 = group of citizens

3 = individual scientist(s)

4 = scientific organization (university websites, department websites, scientific institutions)

5 = political organization (party website or official website of party member)

6 = administrative website (governmental websites and affiliated websites)

7 = civil society (NGOs, foundations, grass root movements)

9 = classic mass media (traditional journalistic outlets with roots in print, TV or radio)

10 = extended mass media (online news-sites)

11 = economic actor (business / entrepreneur / e-commerce site)

12 = unclear

13 = religious actor

V4. Currentness

1 = content is from 2015

2 = content is from 2015 and regularly updated (more than three posts from the year)

3 = content is from 2014

4 = content is from 2014 and regularly updated (more than three posts from the year)

5 = content is from 2013 or older

6 = unclear

10.2 Appendix for Paper 1: 'Public Spheres of Skepticism'

10.2.1 Codebook

V1	Artikelnummer	Vgl. die Nummer des Artikels, auf die die Kommentare reagieren
V2	Verortung des Mediums	
	1	Massenmedien
	2	Mainstream
	3	Klimaskeptisch
V3	Kommentarnummer	001-100 (nach Reihenfolge Älteste zuerst)
V4	Codierer*in	
	1	Sabrina Pensel
	2	Jonas Kaiser
	3	Sarah Klewes
	4	Jeanette Orminski
	5	Jenny Ritter
V5	Autor // erfolgt automatisch	
V6	Überschrift des Kommentars (so verfügbar)	
V7	Anlass	
	0	Kein Anlass erkennbar
	1	Direkte Reaktion auf den Artikel (auch direktes Zitat aus dem Artikel; bei SPON: Zitat von Sysop)
	2	Direkte Reaktion auf einen Kommentar (entweder via Zitat, direkte Nennung (@XY) oder via Kommentarstruktur (sprich Antworten werden direkt an den Kommentar angeschlossen))
	3	Externer Anlass (offensichtlicher Verweis auf andere Ereignisse, Artikel, Nachrichtensendungen, die thematisch auch nicht mit dem Artikel oder dem Kommentar in einen Zusammenhang gebracht werden können)
	4	Von der Redaktion entfernt
V8	Bezug Artikel	Bezug bedeutet in diesem Fall der <i>direkte</i> Verweis auf den Artikel in expliziter Form. Dies bedeutet: ein expliziter Verweis auf den <i>Autorken</i> , den <i>Artikel</i> (in Form von Zitaten oder Formulierungen wie „wie der Artikel auch sagt“, o.Ä.), die <i>Artikelüberschrift</i> oder im Falle eines Interviews den <i>Interviewpartner</i> . Ein Zitat des Artikels kann auch bei SPON als Kommentarantwort erscheinen. Dies beginnt idR mit „Zitat von Sysop“.
	0	Kein Bezug erkennbar
	1	Bezug erkennbar
V9	Relevanz	Filtervariable, die über die weitere Codierung entscheidet. So in dem Kommentar kein relevantes Thema angeschnitten wird, d.h. nicht über <ul style="list-style-type: none">- Klimawandel (mögliche Signalwörter: Klima, Anpassung/Adaption, Vermeidung/Mitigation, globale Erwärmung, Erderwärmung, Klimakatastrophe, Meeresspiegelanstieg, Klimaflüchtlinge, etc.)

- **Klimawissenschaft** (mögliche Signalwörter: IPCC, Klimarat, Klimaberichte, Klimaforscher, Modelle, Berechnungen, Potsdam-Institut für Klimafolgenforschung, Climategate, etc.),
- **Klimapolitik** (mögliche Signalwörter: Klimagipfel, COP, Klimaschutz, CO2 Emissionen, CO2-Zertifikate, Treibhausgase, Rio+20, Zwei-Grad-Ziel etc.)

gesprochen wird, wird hier 0 codiert. Sollten sich der Kommentare mit einem der Themen beschäftigen, aber nicht skeptisch sein, so wird dennoch weiter codiert. Sollte es sich beim *Kommentar um eine Reaktion auf ein relevantes Thema handeln*, bei dem **kein neues** Thema etabliert wird, sondern lediglich –ohne die Wörter zu nennen– das bereits etablierte Thema weitergeführt wird, so ist dies ebenfalls relevant!

NOTE: Eng verwandte Themen, wie etwa die Energiewende, die Förderung von Erneuerbaren Energien, oÄ sind **nicht** automatisch relevant. Auch Diskussionen über das Für und Wider von Kohlekraftwerken ist zwar thematisch eng assoziiert, jedoch nicht relevant, wenn das Thema nicht bewusst mit obigen Themen verknüpft wird.

Kodieranweisung: So kein klares Hauptthema erkennbar bitte das erste genannte Thema kodieren!

0	Irrelevant
1	Relevant

FILTER

Wenn V9 = 0; nur noch die Likes in V21 codieren (so nicht schon automatisch erledigt)

V10 Thema

Als Thema wird hier das Hauptthema des Kommentars codiert. Also das, worum es in dem Kommentar geht. Werden Demonstrationen erwähnt, so werden diese bspw. mit 402 codiert. Gesellschaftliche Themen, die nicht im Codebuch abgedeckt werden, werden mit 400 codiert. Hierbei geht es **nicht nur** um Klima-Themen!

Siehe Themenliste

V11 Klimaskeptischer Inhalt

Klimaskepsis wird hier grob als das Hinterfragen des anthropogen induzierten Klimawandels gefasst. Dies geschieht idR durch das Anzweifeln der *Existenz* („KW gibt es nicht“, „KW gab es schon immer“, etc.), der *Ursache* („der Mensch kann das Klima nicht verändern“, etc.), den Folgen („KW ist gut für den Menschen“, etc.) oder der Klimawissenschaft („ist keine richtige Wissenschaft“, „die lügen alle“, etc.).

Vgl. hierzu auch das *Zusatzdokument Klimaskepsis*.

Werden in dem Kommentar klimaskeptische Inhalte geäußert?

0	Nicht identifizierbar
1	Klimaskeptisch
2	Pro-Klima (Mainstream-Meinung)

V12.1-3 Klimaskeptische Idee-Elemente

Hier können maximal drei klimaskeptische Inhalte codiert werden. Entnehmen Sie diese bitte der Idee-Element-Liste. Wenn ein Idee-Element nicht vorkommt, so nutzen Sie bitte die Andere-Variable bei dem relevanten Frame. So Sie das Gefühl haben, dass kein Frame passt, so nutzen Sie bitte 999. Bspw. der Vorwurf einer Medienverschwörung. Falls kein Frame genutzt wird: 0.

(siehe Idee-Element-Liste)

V13.1- Bewertung Idee-Elemente
3.

- 1 Negativ (ablehnend)
- 2 Neutral (erwähnend, aber nicht klar, ob skeptisch oder nicht)
- 3 Positiv (d.h. skeptisch)

V14 Ton

Hier wird der Ton codiert, in welchem der Kommentar verfasst ist. Achten Sie hierbei besonders auf Wörter und auf Satzzeichen.

- 1 Freundlich
Positive Formulierungen, Zustimmungen, Solidaritätsbekundungen, Rechtgeben, Grüßen, etc.
- 2 Neutral
Weder freundlich, noch konfrontativ formulierter Kommentar. Meinung darf vertreten sein, aber insgesamt werden neutrale Begriffe genutzt, d.h. nicht geschimpft, nicht herab gesetzt, normal Satzzeichen gesetzt, etc.
- 3 Aufgebracht
Aufgebrachter Tonfall, der sich durch das Verwenden von vielen Ausrufezeichen oder Fragezeichen, leichten Verbalattacken (das kann man doch verstehen!) und im Rahmen der Kommentare akzeptablen Wortwahl (Blödsinn!) äußert.
- 4 Beschimpfend
Nutzung härterer Wörter, persönliche Angriffe (Unterstellung von Dummheit), etc.
- 5 Andere

V15 Verschwörungstheorien

Werden in den Kommentaren folgende Verschwörungstheorien erwähnt?

- 0 Keine Verschwörungstheorie
- 1 Chemtrails
(Die Annahme, dass die Flugzeugkondensstreifen weitere giftige Stoffe beinhalten, dies jedoch vertuscht wird)
- 2 9/11 (Vermutungen, dass es sich dabei um einen „inside job“ handelte, dass die US-amerikanische Regierung die Anschläge wissentlich zugelassen haben, etc.)
- 3 Besetzung BRD
(Behauptungen, dass die BRD nach wie vor besetzt und insofern kein eigenständiger Staat ist)
- 4 Medienverschwörung
(Behauptung, dass die Medien unter einer Decke stecken und bestimmte Themen, Meinungen und Akteure konzertiert unterdrücken; c.f. Lügenpresse, etc.)
- 5 Andere

V16 Bewertung Verschwörungstheorie

- 1 Negativ (ablehnend)
- 2 Neutral
- 3 Positiv (d.h. ernsthafte Anführung der VT „was wäre wenn“, oder Darstellung als Fakt)

V17 Wird in dem Kommentar das Waldsterben erwähnt?

V.a. in den 1980ern ein großes Problem (mögliche Signalwörter: Baumsterben, saurer Regen)

- 0 Nein
- 1 Ja

V18 Wird in dem Kommentar Atomkraft erwähnt?

Signalwörter: Atomenergie, Atomkraft, Kernkraft, Kernenergie

0 Nein

1 Ja

V19 Wird in dem Kommentar die Energiewende erwähnt?

Signalwörter: EEG oder Energiewende

0 Nein

1 Ja

V20 Reaktion auf klimaskeptische Inhalte

Wie wird auf klimaskeptische Inhalte reagiert? Wird eine Autorität bemüht, die Argumente hinterfragt, der User belehrt, versucht einen Konsens zu erzielen oder beschimpft?

0 Keine Reaktion auf klimaskeptischen Beitrag

1 Belahrend

(d.h. korrigierend, verbessernd, weitere Quellen heranziehend, die Quellen des anderen mit anderen Quellen widerlegend, etc.)

2 Fragend

(d.h. Nachfragen, Verständnisfragen, etc.)

3 Autoritativ

(an der Autorität des Kommentierenden zweifeln, die eigene Autorität hervorheben oder die Autorität eines Dritten über die der anderen stellen)

4 Kritisierend

(am gegenüber zweifeln, Kritik üben, Intelligenz in Frage ziehen, beleidigend, abwertend)

5 Konsenssuchend

(versuchen, auf einen gemeinsamen Nenner zu kommen, Gemeinsamkeiten herauszustellen, in bestimmten Punkten übereinstimmen)

6 Zustimmung

(Argumenten zustimmend, Recht geben, verstärken, etc.)

V21 Likes // erfolgt automatisch

10.2.2 List of Actors

1000 Politik (Allgemein)
1001 Exekutive (Regierung, Minister, Mitarbeiter)
1002 Bundeskanzleramt
1004 BMVBS – Bundesministerium für Verkehr, Bau und Stadtentwicklung
1005 BMU – Bundesministerium für Umwelt
1006 BMWi – BM für Wirtschaft und Technologie
1007 UBA (Umweltbundesamt)
1010 Bundestag
1011 CDU/CSU im Bundestag
1012 FDP im Bundestag
1013 SPD im Bundestag
1014 Bündnis 90/Die Grünen im Bundestag
1015 Die Linke im Bundestag
1017 Regierungsparteien im Bundestag: CDU/CSU und FDP

1018 Oppositionsparteien im Bundestag
1020 Bundesrat
1021 CDU/CSU im Bundesrat
1022 FDP im Bundesrat
1023 SPD im Bundesrat
1024 Bündnis 90/Die Grünen im Bundesrat
1025 Die Linke im Bundesrat
1027 Vertretung eines Bundeslandes im Bundesrat
1031 CDU/CSU
1032 FDP
1033 SPD
1034 Bündnis 90/Die Grünen
1035 Die Linke
1036 Piratenpartei
1037 Andere Partei
1050 Bundespräsident/Bundespräsidialamt
1060 Ministerpräsidenten der Bundesländer
1070 Umweltministerien der Bundesländer
1080 Exekutiven der Bundesländer (Regierung, Minister, Mitarbeiter)
1090 Sonstige Politik Deutschland (national, regional, lokal)
1100 Politiker*innen/politische Institutionen anderer Länder
1200 Europäische Union (EU)
1300 Vereinte Nationen (UN)
1500 Weltgesundheitsorganisation (WHO)
1550 OECD
1600 Andere internationale Organisation

2000 Wirtschaft (Allgemein)
2001 Energieunternehmen (RWE, Vattenfall, Eon, EnBW, aber auch Solarunternehmen)
2005 Versicherungen und Rückversicherer National
2006 andere Unternehmen National
2010 Börse/Aktienmarkt National
2020 Wirtschaftsverband National (BDEW, etc.)
2030 Gewerkschaft National
2040 sonstige Wirtschaft National
2100 Internationale Wirtschaft
2101 Int. Energieunternehmen
2105 Int. Versicherungen und Rückversicherer
2106 Int. andere Unternehmen
2110 Int. Börse/Aktienmarkt
2120 Int. Wirtschaftsverband
2130 Int. Gewerkschaft

3000 Medien – On- und Offline (Allgemein)
3010 BILD
3020 SPIEGEL
3030 Welt
3040 ZEIT
3050 EIKE
3060 Science Skeptical
3070 Klimaretter
3180 Klima der Gerechtigkeit
3090 Klimalounge

3100 Klimazwiebel
3110 Presseagenturen
3140 Mischung diverser Agenturen
3150 Mischung Agentur / Journalist*innen
3200 Internationale Medien / Journalist*innen
3300 Deutsche Medien

4000 Wissenschaft (Allgemein)
4005 Potsdam-Institut für Klimafolgenforschung (PIK) (bspw. Rahmstorf, Schnellhuber)
4010 Helmholtz-Zentrum Geesthacht (bspw. Hans von Storch)
4020 Max-Planck-Institut für Meteorologie (bspw. Mojib Latif)
4030 Wuppertal Institut für Klima, Umwelt, Energie (bspw. Uwe Schneidewind)
4040 anderes Klima-Institut/Klimawissenschaftler*in National
4050 Meteorologie National
4060 Naturwissenschaft National
4070 Sozial- und Geisteswissenschaft National
4080 Humanmedizin National
4090 Rechtswissenschaft National
4100 Ökonomie National (z.B. MPG, DFG)
4110 Wissenschaftsadministration (z.B. MPG, DFG) National
4120 sonstige Wissenschaft National
4130 Int. Klimawissenschaft
4140 Int. Meteorologie
4150 Int. Naturwissenschaft
4160 Int. Sozial- und Geisteswissenschaft
4170 Int. Humanmedizin
4180 Int. Rechtswissenschaft
4190 Int. Wissenschaftsadministration
4200 Int. sonstige Wissenschaft
4210 Demoskopie/Meinungsforschung
4220 Int. Demoskopie, Meinungsforschung
4300 IPCC
4400 NASA

5000 Zivilgesellschaft Allgemein
5010 Bürger*innen / Bürgerbewegungen National
5020 Leser*innen / Zuschauer*innen / Hörer*innen National
5030 User*innen National
5040 Stiftungen / Soziale Bewegungen / NGOs National
5050 Greenpeace National
5060 Eike (Europäisches Institut für Klima und Energie) National
5070 Künstler*innen National
5080 Andere National
5100 Int. Zivilgesellschaft Allgemein
5110 Int. Bürger*innen / Bürgerbewegungen
5120 Int. Leser*innen / Zuschauer*innen / Hörer*innen
5130 Int. User*innen
5140 Int. Stiftungen / Soziale Bewegungen / NGOs
5150 Int. Greenpeace
5160 Int Klimaskeptische Akteure (Heartland, Cato-Institut, Heritage Foundation, etc.)
5170 Int. Künstler*innen
5180 Int. Andere

6000 Justiz Allgemein
6010 Bundesverfassungsgericht

6020 Sonstige Gerichte
6030 Sonstige Juristische Institutionen / Jurist*innen
6100 Int. Justiz Allgemein
6110 Int. Oberstes Gericht
6120 Int. Sonstige Gerichte
6130 Int. Sonstige Juristische Institutionen / Jurist*innen

7000 Religion (Allgemein)
7010 Religiöse Institution
7020 religiöse Person(en)
7100 Int. Religion (Allgemein)
7110 Int. Religiöse Institution
7120 Int. Religiöse Person(en)

8000 Sonstige Akteure
8100 Int. Sonstige Akteure

10.2.3 List of Idea Elements

Nr	Frames / Idee-Elemente
	Skepsis am Phänomen Klimawandel
	Existenz des Klimawandels
101	Existenz des Klimawandels wird abgestritten (auch "Klimaleugner")
102	Existenz des Klimawandels wird angezweifelt (auch "Klimaskeptiker")
103	Existenz des Klimawandels wird für belanglos/unerheblich/irrelevant erklärt
104	Die Erde hat sich die letzten zehn Jahre nicht erwärmt (Zeitraum variiert)
105	Wetter zeigt keine Erwärmung (Es ist gerade sehr kalt, etc.)
	Ursachen des Klimawandels
111	Menschlicher Einfluss am Klimawandel wird abgestritten/angezweifelt
112	Sonne wird für Klimawandel (mit)verantwortlich gemacht
113	Klimawandel ist ein normales Phänomen
114	Es gibt andere Gründe für die Erwärmung (Vulkane, Methan, ...)
115	CO2 ist nicht so stark für die Erwärmung verantwortlich / nicht giftig (oder Treibhausgase, bzw. das Verbrennen von fossilen Brennstoffen)
116	Kosmische Strahlung ist für die Erwärmung verantwortlich
117	Treibhauseffekt existiert nicht
	Folgen des Klimawandels
121	Folgen des Klimawandels werden abgestritten oder sind nicht so schlimm
122	Klimawandel wird positive Folgen (für bestimmte Länder/Regionen) haben
123	Negative Folgen des Klimawandels nur bei fehlender Adaption
124	Länder/Regionen von den Folgen des Klimawandels nicht betroffen
125	Menschen, Pflanzen und Tiere können sich an KW anpassen (Adaption)

126	Naturkatastrophen haben nichts mit Klimawandel zu tun
	Skepsis an der Klimawissenschaft
	Politisierung der Klimawissenschaft
201	Klimawissenschaft wird von der Politik benutzt
202	Klimawissenschaft verfolgt politische Ziele
203	Die IPCC ist eine politische Organisation
204	Klimawissenschaft betreibt mehr Politik als Wissenschaft
	Unsicherheit der Klimawissenschaft
211	Klimawissenschaft weiß vieles nicht
212	Forschungen der oder eines Wissenschaftler/s weist/en Unsicherheiten auf
213	Klimamodelle sind nicht verlässlich (wie bspw. Temperaturmodelle)
214	Die Daten sind nicht verlässlich
215	Wissenschaft kann noch nicht mal das Wetter vorhersagen
216	Klimawissenschaft ist keine (richtige) Wissenschaft
	Verschwörung der Klimawissenschaft
221	Es gibt keinen Konsens innerhalb der Klimawissenschaft
222	Klimawissenschaft unterdrückt kritische Meinungen und schließt Kritiker aus
223	Klimawissenschaftler stecken „alle unter einer Decke“
224	Climategate beweist, dass Klimawissenschaftler lügen und betrügen oder nicht ehrlich sind
225	Klimawissenschaftler verfolgen eigene Interessen
226	Klimawissenschaftler sind alle gekauft
227	Klimawissenschaft lügt
	Alarmismus der Klimawissenschaft
231	Alarmismus kann zu Fatalismus führen
232	Wissenschaftler betreiben Panikmache
233	Klimawissenschaftler übertreiben ihre Ergebnisse (absichtlich)
0	Kein IE gefunden (v.a. bei "normalen" Klima-Diskussionen)
999	Missing (nicht codierbar)