Sune Auken

1 Introduction: Genre in the Climate Debate

The fundamental idea of the present volume is that an engagement with the genres involved in the climate debate can be a key to understanding, developing, and perhaps even changing the debate.

The book's starting point is twofold. On the one hand, a well-known problem, the gap between the near-unanimous agreement in science about the basics of human made, or anthropogenic, climate change (ACC), and the widespread lack of acceptance of this agreement in the public sphere. On the other, a field of study, genre research, which has been through an explosive development during the last three decades, but is still a long way from having made its full impact on research and is largely unknown beyond the academy.

Briefly stated, the connection between the two is that genres play vital roles in human interaction. We express ourselves in genres, learn in genres, and act in genres. Therefore, the question about how knowledge of ACC spreads – or, as the case may be, does not spread – from the scientific sphere to a broader public will to a very large extent be influenced by the genres in play, and by the use of those genres by individual actors.

More than this, however, is the *role* played by genres – and by genre users – in the climate debate. Genres are strong carriers of tacit cultural knowledge (Devitt, 2004; Auken, 2015a), and their role in social interchanges and institutional communication have been analyzed many times over (for instance, Andersen, 2015; Artemeva, 2008; Bazerman, 1994; Berkenkotter, 2011; Bhatia, 1993; Devitt, 1991). However, there is also a more problematic side to genres, since genres are habitual and may acquire what Paré has called an "illusion of normalcy" (2002). Genres may even, in Judy Segal's apt phrase, become carriers of a "cultural reproduction of ignorance" (2007, 4; see also Segal, 2012). Genres are carriers of power relations, social roles, and ideologies, and may as such, both by their very existence and through conscious use by individual actors, hold back knowledge and skewer action.

The book, thus, takes up the ACC debate as a question of genre. It aims to demonstrate how established genre structures both facilitate and hold back knowledge about ACC. Moreover, the book describes how individuals or groups of actors use, modify, contradict, manipulate, and sometimes even create genres to achieve their aim. Therefore, the basic idea from a knowledge point-of-view is to explore how a theory set can shed new light on a lingering conundrum. However, given the exigent character of climate change, and the unsolved problems in climate communication, the reach of such new light may prove to be much wider.

1.1 The Protest Sign and the Research Article

Compare two statements about ACC. The first, written in upper-case letters across a hand painted picture of the world, is taken from a protest sign displayed at the Chicago People's Climate March on April 29th, 2017. The text reads "Climate change is real. In other news, water is wet." (See Levenson, 2017.) The second is from a research article dealing with the scientific agreement about the reality of ACC: "Climate scientists overwhelmingly agree that humans are causing recent global warming. The consensus position is articulated by the Intergovernmental Panel on Climate Change (IPCC) statement that 'human influence has been the dominant cause of the observed warming since the mid-20th century' (Qin et al., 2014, 17)". (Cook et al., 2016, 150).

The two statements carry the same basic claim – that the evidence for the reality of ACC is beyond reasonable doubt – and they share the assumption that this knowledge should lead to political and societal action. However, the differences between the two statements are equally obvious, and neither would work in the context of the other. The protest sign juxtaposes the statement that climate change is real with another statement "In other news, water is wet". This is an established expression that marks something as so blindingly obvious, that even saying it should be as trite as publishing a news story about water being wet. This kind of metaphorical argument would be unconvincing in a research article.

The statement from the research article is an extended ethos argument; the article posits the reality of ACC by presenting the agreement of the scientist most knowledgeable about the topic. This specific ethos argument, the argument from expertise, is well-known in science communication and prevalent in climate communication. As the overwhelming majority of the public, including politicians, investors, journalists, and debaters, are non-scientist they are unable to understand, much less vouch for, the science involved in establishing the reality, the causes, and the consequences of ACC, the "percieved consensus" of those who actually understand the topic becomes important (Lewandowsky, Gignac, & Vaughan, 2012). Cook et al. (2016) work to establish the evidence for that agreement. However, the statement is far too long, and requires too much prerequisite knowledge, to fit neatly on a protest sign.

The differences, thus, are not of message – or even necessarily of knowledge; a person knowledgeable in climate science could have written the protest sign too. They are differences of *genre*. Each of the two statements appear in a particular situation, with a particular communicative purpose and subject to a particular set of rhetorical constraints. The text on the poster is simple, and its message can be seen and read from a distance. It is written over a picture of the Earth and carried in a march alongside other signs; it thus adds to the rhetorical strength of another genre, the march, and at the same time relies on said march to frame and carry its message. The text is whimsical, but it is also affirmative, strong and unhedged.

The text from the research article also relies on its genre to make its point. Compared to the protest sign it is hedged using terms such as "overwhelmingly agree,"

"consensus position" and "dominant cause" and "observed" each implying the existence of counter-information or counterclaims. The statement in question is embedded in a research article, which provides the arguments and the evidence for the claim, mostly presented in statements that are even less likely to ever make it onto protest signs. However, when seen in the context of its own genre the article's presentation of its claims are muscular and assertive; and the hedges in the quote are themselves of a sort that may hedge, but in fact leave little room for the alternate viewpoints implied. Language as strong as this is rare in research articles on complex systems such as the Earth's atmosphere. Seen in the context of its genre, the statement comes very close to saying: "In other news: water is wet".

The two concrete texts, the poster and the article, probably never touched. At most, it is possible, if unlikely, that the painter of the sign read the article. However, the two genres are clearly connected. Despite their differences, they are not at odds, but interdependent. The protest sign presupposes an established knowledge with strong enough evidence to support the claim, and the whole existence of the march, including the poster, is unthinkable without both an extensive climate science and an enormous effort in communicating the findings of said science.

The research article on the other hand derives from a situation in which scientific agreement on ACC has become a critical issue in the public debate, in which it is necessary, so to speak, to be able to say, "Climate change is real. In other news, water is wet." It establishes part of the evidence for claims like this, and even discusses the usefulness in the public sphere of the scientific agreement on ACC. On the other hand, the research study itself can only communicate its findings to a relatively small group of scientists, researchers, and possibly a few other interested parties. It depends on an uptake from other actors into more popular genres; genres that are able to reach a wider audience and put pressure on decision makers in economy and politics. Beyond the protest sign, these genres could include petitions, tweets, and statements in parliamentary hearings, news satire, or subdued dissemination pieces that try to reach a less convinced audience, like the series of videos and articles on prominent climate scientist Katharine Hayhoe's homepage.[1]

Thus, the two genres interlock. Even if an exact path of influence cannot be established between the research article and the protest sign, it is fair to say that there is a clear connection between the genres. Articles like Cook et al. (2016) have, sometimes directly, but mostly through a variety of different channels, influenced public perceptions of ACC in such a way that it has become obvious to the painter of the protest sign to adorn it with the statement "Climate change is real. In other news, water is wet."

---

1 Seen Feb. 21st, 2019. On blogging as genre see, among others, Devitt (2009a); Miller (2017); Miller & Shepherd (2004).

1.2 Genre Research

In the context of *genre research*, the joint starting point for the chapters to follow is the North American Rhetorical Genre Studies (RGS) – albeit with excursions into related theoretical traditions depending on the topic of each chapter and the individual research interest of each author. The established narrative about this goes back to Carolyn Miller's trailblazing study "Genre as Social Action" (1984) and describes a change in which a genre is seen as "a situation-based fusion of form and substance" (153).[2] The meaning of this is not – even if it has sometimes been taken up this way – that formal or thematic elements of an utterance are of little or no significance. In the case of the two genres mentioned above, for instance, Miller's approach would mean that their formal characteristics and their thematic content ("substance" in Miller's terminology) should be seen in relation to the function of the two genres. This is suggested, of course, in the analysis above, but to reiterate: both genres, the protest sign and the research article, have a situation in which they are trying to act, and their form and content are organized to fit that purpose.[3]

Working from Miller's study and other foundational publications (for instance, Bakhtin, 1986; Bazerman, 1988, Berkenkotter & Huckin, 1993; Bhatia, 1993; Devitt, 1991, 1993; Freedman & Medway, 1994; Jamieson, 1975; and Swales, 1990), functional perspective scholars within the RGS tradition have developed genre into a multifaceted core concept of several disciplines: rhetoric, linguistics, communication and media studies, information studies, and composition. In the process, genre research has developed a nuanced vocabulary for describing, in particular, genre use in institutional and educational settings, often in a nuanced dialogue with the genre research from the English for Specific Purposes tradition, to which Swales and Bhatia mentioned above belong (See Devitt, 2015), and – to a lesser degree – the genre reseach prevalent within systemic functional linguistics. (For the distinction between the three traditions see Hyon, 1996).

The functional perspective has been prevalent in contemporary genre research in the RGS-tradition, and is only rarely challenged in theory (but see Auken, 2015b;

---

2 I refer to this as the "established narrative" of genre research because its basic structure is repeated time and time again in contemporary works on genre, and emphatically not because there is anything wrong with the narrative. It can be challenged, of course, but there is much truth in it. For an extensive rendering of the development and positions of contemporary genre research see Bawarshi & Reiff, 2010; for shorter versions see Miller, Devitt, & Gallagher, 2018; and Auken, 2018. A number of the central studies in the RGS-tradition can be found in Miller & Devitt, 2018. Challenges against the overall narrative can be found in, for instance, Freadman, 2012.

3 Throughout genre research, before and after Miller, the triad between the situational, the thematic, and formal sides of genre is rendered in a varied terminology and with differing interpretations of the relationship or hierarcy of the three sides. For a partial discussion and disambiguation, see Auken, 2015.

Devitt, 2009a). Alongside this development, the primary topic of contemporary genre research has come to be the genres in use. Thus, what is sometimes called humble genres, everyday genres, de-facto genres, or rhetorical genres have come to occupy center stage in the analysis of genre. Within RGS many important studies have been done on genres in practical use, and much less on the study of topics like literature, art, music, film, and high oratory which were at the center of attention in previous decades (but see Auken, 2014; Devitt, 2000; Frow, 2014; Nyboe, 2016; and Warren, 2019). This is connected with the shift in emphasis to the functional side of genre, as a new theory focus enables new studies, and they, in turn, strengthen theory. Many central distinctions in genre theory have sprung from case studies. However, as will be evident also from the studies in the present volume, researchers in the RGS-tradition rarely if ever isolate themselves to a functional perspective in their research practice. Rather, like Miller, they rely on a variety of situational, thematic and formal traits of the indvidual genres and utterances under scrutiny.

If we try to define genres based on existing research, we may say that they are flexible and versatile cultural categories structuring human understanding and communication. On the one hand, they are strongly regulative, but on the other hand, they allow considerable freedom on the part of both the utterer and the recipient. Genres combine to form larger patterns through social and organizational structuring into genre sets, systems, hierarchies, and chains, and through creative uptakes on the part of individual genre users. This tentative definition can be expanded into the six basic tenets of genre reseach, described in Auken (2018) which hold that

- Genres are almost omnipresent in human culture
- Genres unite regulation and innovation
- Genres combine to form larger patterns including other genres
- Genres are connected in time through uptake
- Interpretation thorough genre is often tacit and rarely understood as interpretation through genre
- Genres are ideological, but our perception of them tends to naturalize them or take them as a given.

Genre research is an expansive field, and there are concepts, even core concepts, not covered by these six tenets, but they summarize much of what is agreed upon, or simply taken for granted, in genre research across the differing fields. In particular, the fourth tenet has risen to prominence in the last approximately 15 years, as Freadman's bakhtinesque concept "uptake" has taken hold as one of the kingpins of contemporary genre research (Freadman, 1994, 2002; see also – among many others – Devitt, 2016; Dryer, 2016; Emmons, 2009; Thieme, 2006). This will be evident also in the chapters ahead. The broadened interest in uptake as an active act on the part of the genre user also marks a gradual shift in emphasis within genre research towards a more active appreciation of the role of the individual actor, as the uptake is an act by somebody and always involves an element of choice and freedom (Freadman, 2014).

This, in turn, affects how the second tenet is handled in genre research, as the "innovation" side of genre use gets more attention.

Recently, moves have been made in genre research to extend its reach further through anthologies about genres in the public sphere (Reiff & Bawarshi, 2016) and genres in new media environments (Miller & Kelly, 2017). For science, there is a notable change in genre use as the traditional distinction between professional genres and popularizations (see the already classic rendering in Fahnestock, 1986) is somewhat complicated with para-scientific genres (Kelly & Miller, 2016). The present volume continues the current trajectory in genre scholarship to explore how genres are changing, as traditional boundaries between professional and public spheres erode, and how the internet is influencing these changes. It does so by investigating a subject that to a very large extent plays out in the public sphere, and where genre emergence and the new media environments both have crucial roles to play, as evidenced by the chapters of Smart & Falconer (denialist discourse communities), Auken & Møller (news satire), and Mehlenbacher & Mehlenbacher (science activism on Twitter).

Furthermore, the volume adds a sustained engagement with a single crucial political topic. It thus takes one step further in moving genre research into a field of applied, or challenge-based, research in which the insights established in basic research are brought to bear on central societal issues. From the point of view of genre research, this means that a number of questions come into play that are if not neglected then at least underexplored in existing research. These questions include, but are not necessarily limited to, 1) the role and use of genre in campaigning to achieve – or limit – changes in society, and 2) the transmission of information and action across genre systems (Bazerman, 1994).

The first question picks up the understanding that genres are means to accomplish social purposes, as set out by Miller (1984) and systematized and expanded by RGS in the following decades, and moves it into the field of political debate and political campaigning. It thus expands the reach of genre research into an area of study where only minimal work has hitherto been done, but where its insights promise to be relevant. This expansion will pave the way for future research into the workings of genre in politics and in public debate. To execute this move successfully, the volume includes both a targeted theory chapter aiming to discuss how genres can be used for campaigning and debate (Devitt), and numerous discussions of theoretical points relevant to the same issue in the other chapters (for instance Reiff & Bawarshi and Mehlenbacher & Mehlenbacher).

The second question concerning the uptake between genre systems expands another core idea of genre research, the concept of genre use as uptake. Uses of genre are seen as creative reactions to (or "uptakes" of) previous uses of genre in what is effectively a social perpetuum mobile. A particular challenge is connected to the movement of action and information *across* the boundaries of genre systems, which is precarious at best even when regulated by metagenres (Giltrow, 2002) and interme-

diary genres (Tachino, 2012). (Metagenres are genres that regulate how other genres are to be performed; intermediary genres are genres that facilitate the uptake of one genre by another.) Freadman, who uses a different terminology, notes the problem as important, but it has yet to receive the attention in genre research it merits.

This problem is, however, at the core of the present volume, since the transfer of knowledge and action between the genre system of the sciences and those of the surrounding society is the key starting point for the volume. The demarcation lines between the sciences and the surrounding society have been drawn to great rhetorical, institutional, and political effect (Gieryn, 1983, 1995; Taylor, 1991), but the strength of the demarcation also makes crossing it fraught with difficulty. From a genre perspective, the stronger and more formalized the boundary between genre systems is, the more it is "open to mistake or even to abuse" (Freadman, 2002, 44). More so to the degree that the transmission is weighted with political, economic, personal, or ideological consequences for the actors. Therefore, from the point of view of genre research the climate debate is an ideal subject to discuss the uptake between genre systems as it both deals with strongly established demarcations and with highly invested actors.

1.3 Scientific Evidence and Public Opinion

In the case of the protest sign and the research article, the back-and-forth transmission between the two *genres* was fairly straightforward, even if the concrete artifacts never met. Often however, the transmission between scientific evidence and public opinion is much less straightforward. As Cook et al. (2016) indicated, the scientific agreement about the reality and the severity of ACC is long-standing and well-nigh unanimous (see also Anderegga, Prallb, Harold, & Schneidera, 2010; Benestad et al., 2016; Cook et al., 2013; Oreskes, 2004; Powell, 2016; Skuce et al., 2016), but no such agreement exists in public discourse. The public understanding concerning climate change has remained divided for decades (Brulle, Carmichael, & Jenkins, 2012; Hamilton, 2011; Hornsey, Harris, Bain, & Fielding, 2016; Lewis, Palm, & Feng, 2019; Nisbet & Myers, 2007), and political and economic decision-making has progressed at a crawl. "Clearly, there is an urgent need for effective ways to engage diverse audiences about global climate change" (Wu & Lee, 2015). By consequence, the political and societal reaction to ACC has hitherto been far too weak compared to the magnitude of the problems. Indeed, with the withdrawal of the United States from the Paris Agreement, progress may even be the wrong choice of words. This happens in the face not only of the overwhelming conclusive scientific evidence, but also of rising global temperatures and a steep climb in extreme weather events.

The key reasons for the slow pace of progress in the climate debate are fairly well known. There is widespread misinformation about the scientific agreement concerning ACC, some of it caused by false balance-coverage of the issue in the media. There

are even strong political actors actively spreading disinformation about ACC (Lewandowski, Oberauer, & Gignac, 2013; Oreskes & Conway, 2010; Supran & Oreskes, 2017; Søe, 2016, 2017; see also Smart & Falconer, this volume). Moreover, to many the issue not only seems distant, delayed in time, affecting places far away, or working in ways we are to an extent shielded from, but it is also so scary, and potentially life-changing, that it makes many people reticent to even engage with the topic (Gifford, 2011). Thus, the gap between science and the public debate concerning ACC has less to do with the difficulties of translating complex scientific propositions, and more to do with differences of ideology, of political and economic interests, and with the general reluctance of the public to recognize the severity of ACC and act accordingly (Moser, 2010, 2016). Thus, the established channels for science communication have made progress, at points great progress, but much remains to be done, and – given the exigent circumstances presented by ACC – needs to be done. This includes trying to establish new approaches to the field. The studies in the present volume represent one such attempt.

1.4 Humanistic Climate Studies

The field of *humanistic climate studies* is vast, rapidly developing and spread across a number of individual disciplines (Moser, 2010, 2016). There are whole journals dedicated solely to climate change issues (including *WIREs Climate Change* and *Nature Climate Change*), containing numerous articles relating to the humanities and the social sciences; others have it as a recurrent subject.[4] Also, journals like *Science Communication* and *Global Environmental Change* have climate change communication as one of their most pervasive topics. The disciplines working with climate change from a humanistic and social science perspective include, but are not limited to, science communication, sociology, law, rhetoric, ethnography, psychology, media studies, humor studies, and a variety of aesthetic fields.

Given all this, a claim for absolute novelty in the field is hard to sustain. However, there are indications that a valuable contribution is possible. There are very few studies that work with ACC from a genre perspective (the best examples are Smart, 2016; and Bazerman, 2010. The latter study has been reworked into the context of the present volume. For a related treatment, see Tillery, 2003; see also Bazerman, Little, & Chavin, 2003). However, given that one of the core insights of genre research is that genre is an active factor in well-nigh all human culture, communication and cognition, it is to be expected that genre plays defining roles in the debate over ACC as well.

---

4 By consequence of this, the representation of the topic in these short paragraphs is a meagre, and thus to an extent unfair, representation of a very large and – scholarly speaking – extremely rich research field. A full rendering of the state of the art in humanistic climate research is considerably beyond the scope of the present chapter.

Thus, it is unsurprising to find that a number of important humanistic climate studies analyze or rely on genre features in the ACC-debate, but do not relate to existing genre research. For example, Boykoff (2007; 2013), as well as Boykoff & Boykoff (2004; 2007), and Boykoff & Goodman (2009), all work with genre features in news media; Ceccarelli (2011) discusses both uptake and known genre features of scientific and public debate, and Ouariachi, Olvera-Lobo, & Gutiérrez-Pérez (2017) discuss climate change communication in a strong recent genre, online games. However, only one of these studies, Boykoff & Goodman (2009), even mentions genre, and none of them relate to existing research in the field. This is not in any way a shortcoming in these excellent studies, but it does point to an unexplored, or at least under explored, approach.

Furthermore, a literature review suggests that there is a widespread awareness of structural and ideological issues in humanistic climate studies. However, there is little awareness of the way the structural and ideological issues are determined by the genres in play, and individual genres are approached without knowledge of genre research as a coherent field of knowledge. Therefore, what the volume has to offer is an extensively developed and organized body of knowledge concerning the way genres shape and are shaped by human interaction. The present volume, thus, aims to shed new light on the implied knowledge and ideology (Devitt, 2009b; Paré, 2002; Segal, 2007) of the genres in use in the climate debate and on the complex generic interchange between genres and genre systems in the climate debate.

1.5 The Structure of the Volume

The two chapters that follow the present introduction set out the theoretical background for the analyses and discussions of the volume. In chapter 2, "Genre *for* Social Action: Transforming Worlds Through Genre Awareness and Action", Amy Devitt presents a more generalized analysis of the use of genre in activism. The title, obviously, mirrors Miller's groundbreaking article with one major difference: The shift from "as" to "for". This shift does not mark an opposition to Miller, but rather an extension of her argument into a new field. From the point of view of genre research, this sets the stage for the chapters to follow. Indeed, it is worth noting that the basic idea for the present volume springs from earlier sketches of this chapter. Genre research has established an extensive vocabulary aimed at understanding how genres work in institutions, in new media, in the public sphere and in personal exchanges. However, it has done little with politics and possibly even less with public campaigning. Devitt's chapter establishes a central part of the theoretical groundwork needed for such an analysis; relocating the research from the general function of genre, "as", to the active usage of it, "for". Given Devitt's extensive engagement with the foundations of existing research, the chapter can further serve as an orientation to the reader unfamiliar with genre research.

In chapter 3, "Scientific Knowledge, Public Knowledge, and Public Policy: How Genres Form and Disrupt Knowledge for Acting about Anthropogenic Climate Change", Charles Bazerman presents an analysis of the specific challenges and boundaries connected to the uptake from the genre system of the sciences to other central genre systems in politics, in the media, in business life, etc. This transmission – and the translation of it into action – is anything but automatic, and these spheres do not always work in concert. There are significant obstacles and even resistance to communication of knowledge across boundaries, and many of these boundaries have to do with the inter- and counterplay of the genres involved. The chapter details how citizen involvement has played a central role in driving the other spheres into action, and how governments have gradually taken over that role albeit still with major disruptions taking place, in particular from some business actors, for whom action to mitigate climate change was calculated to be more costly than the effects of the change.

This is followed by two chapters discussing some ways in which knowledge about ACC is disrupted in the uptake between the genre systems of the sciences and the surrounding society. In chapter 4, "How the US Congress Knows and Evades Knowing About Anthropogenic Climate Change: The Record Created in Committee Hearings, 2004–2016" Charles Bazerman and Josh Kuntzman discuss the acceptance and non-acceptance of knowledge about ACC in the political system in an analysis of hearings on ACC in the US Congress. The chapter examines the records of congressional hearings as a crucial political genre, because hearings are one of the central genres through which the US congress recognizes knowledge relevant to its work. However, the actors performing the genre, particularly the committee chairs who control the agenda, have the option to disrupt the knowledge process. As a consequence, a contentious and wide-reaching issue like the reality and severity of ACC may not be recognized as the US Congress, despite the overwhelming scientific consensus, and despite the hearings, because committee members often challenge statements about its reality. Moreover, expert testimonies by scientists are often countered by testimonies from denialists – in a variation of the false balance issues known within news media coverage of ACC as mentioned above. Thus, the hearings that should serve to inform the US Congress about ACC, are used by certain actors to hold back Congress' recognition of ACC.

Whereas Bazerman & Kuntzman consider a highly official and formalized genre, chapter 5, "Genre, Uptake, and the Recontextualization of Climate-Change Science by 'Denialist' Cultural Communities" by Graham Smart and Matthew Falconer addresses a quite different side of the debate. The chapter describes how the evidence established in the sciences is taken up in denialist discourse coalitions. Specifically, Smart and Falconer look at how three denialist cultural communities use the digital discourses of websites, blog posts, podcasts, e-newsletters, and linked e-documents in recontextualizing – that is, in this case, intentionally misrepresenting, transmuting,

and/or refuting – readily available information on the accepted scientific view of climate change in order to inhibit the intended uptake of this information.

The following four chapters pick up individual genres that have potential to navigate the gap between the understanding of ACC in the sciences and in the public sphere. The first two chapters address humor genres. In chapter 6, ""THINK BIG and then do absolutely NÜSCHTE". News Satire and the Climate Debate", Sune Auken and Mette Møller address the representation and use of ACC in the fast moving and independent news satire genre. The chapter approaches both the genre's main traditions: TV-shows inspired by the work of *The Daily Show with Jon Stewart*, which generally represents the actual news and satirises it, and the newspaper-mimicry of *The Onion* and its apprentices, which invents news stories that satirise current events. As a genre, news satire combines parody and satire, as it mock-mimics the established news genres and use them as vehicles of laughter, taunts and criticism against the surrounding society and against the news genres themselves. The chapter discusses how news satire represents ACC, and how the genre may affect climate change perception. News satire transcends false balance issues in mainstream media and consistently confirms the reality and severity of ACC, thereby highlighting the importance of climate action.

In chapter 7, "This will all be yours – and under water: Climate Change Depictions in Editorial Cartoons", Esben Bjerggaard Nielsen and Felix Felix Kühn Ravn discuss a genre that is generically bound and institutionally limited by its context in the editorial section of newspapers and thus occupies a discursive niche that is markedly different from that occupied by news satire. The chapter details the social motives and formal intricacies involved in the editorial cartoon. The chapter focuses on different ways in which the editorial cartoon as a genre navigates between specific and more general contexts, as it targets ACC and the debate surrounding it. The chapter demonstrates how the editorial cartoon may present different exigencies and policy positions by means of humor that skewers its satirical target. The chapter presents a range of argumentative themes such as "consequences", "capitalism", "climate change deniers" and "climate skepticism" that are prevalent in American editorial cartoons.

After this, the next two chapters each analyse genres used to influence politicians and public opinion. Again, one of these, the petition, is strictly bound and formalized, whereas the other, the tweet, is discursively much more free-floating. In chapter 8, "How to Turn Accumulated Knowledge into Action": Uptake, Public Petitions, and the Climate Change Debate", Mary Jo Reiff and Anis Bawarshi take up the public petition. The chapter discusses the actions and interactions that take place between and around the act of petitioning and provides further insight into the forces that shape uptakes of petitions and that limit and enable its social actions. The plural "actions" is intended, as petitions, though they look like singular actions, are complex sites of interaction where the supposed official uptake into corporate or government action may not be the actual, or for that matter: expected, uptake of the petition. It may lead

to mobilization, other kinds of activism, or a heightened attention to the subject petitioned for, even if the official uptake is limited.

The subject of the following chapter, the tweet, is a genre of "backdoor action". Chapter 9, "Rogue Rhetorical Actors: Scientists and the Social Action of Tweeting" by Ashley Rose Mehlenbacher and Brad Mehlenbacher, analyses tweets from scientists who have been barred by political decisions from using their official genres for factually based ACC communication. The case describes a number of exchanges that broke out on Twitter as several government agencies received a gag order by the newly elected Trump-adminstration, and scientists took to tweeting to counter the gag. It describes their motives, their rhetorical strategies, and the challenges they face as they try to communicate about climate change on a fast-paced medium like Twitter. The chapter discusses how genre awareness is crucial in the fast paced and rapidly evolving genre landscape on social media. Thus, in the process, a genre of science communication shifted into a partisan political typification. Mehlenbacher & Mehlenbacher's point is not that it is wrong or problematic for scientists to engage in new genres of public communication, but rather that this engagement needs to be carried out with a reflective awareness of the genres involved, their possible uptakes, and the situation in which they function.

The volume's final chapter is a more personal reflection. In Chapter 10, "Genre, Anthropogenic Climate Change, and the Need to Smell your Body Odor. A Personal Postscript", Sune Auken picks up the overarching themes of the volume and reflects on the role of genre in the debate over anthropogenic climate change. Genre is a discursive battle ground in which actors maneuver to achieve their social purposes; not just on a personal or organizational level, but even in large-scale attempts to influence the direction of society. Therefore, the postscript suggests that an increased genre awareness has the potential to transform our approach to the manifold genres that meet us as we try to make sense of the debate over anthropogenic climate change, and in that sense, the studies in the present volume are only a modest first beginning.

Therefore, the chapters form a progression from salient theoretical concepts and themes, and specific problems towards different ways of addressing these problems within the genre framework. Taken together they describe some of the genre challenges and opportunities involved when we move across the genres to activate knowledge from the sciences into society at large. We are faced with challenges and opportunities of genre whether we try to act as researchers and teachers, as private citizens, or as political actors and activists, and no matter whether we tweet, write science blogs, attend meetings, or carry around protest signs saying, "Climate change is real. In other news, water is wet."

References

Anderegga, W.R.L., Prallb, J.W., Harold, J.W., & Schneidera, S.H. (2010). Expert credibility in climate change. *Proceedings of the National Academy of Sciences of the United States, 107*(27), 12107–12109. doi:10.1073/pnas.1003187107.

Andersen, J. (Ed.) (2015). *Genre theory in information studies.* Bingley: Emerald Group Publishing Limited. doi:10.1108/S2055-537720140000011019.

Artemeva, N. (2008). Approaches to learning genres: A bibliographical essay. In N. Artemeva & A. Freedman (Eds.), *Rhetorical genre studies and beyond* (pp. 1–99). Winnipeg: Inkshed Publication.

Auken, S. (2014). Genre as fictional action. *Nordisk Tidsskrift for Informationsvidenskab og Kultur-formidling*, *2*(3), 19–28.

Auken, S. (2015a). Genre and interpretation. In S. Auken, P.S. Lauridsen, & A.J. Rasmussen (Eds.), *Genre and ...* (154–183). Copenhagen: Ekbátana (Copenhagen Studies in Genre; vol. 2). https://curis.ku.dk/portal/files/140400280/6._Genre_and_Interpretation_1_.pdf.

Auken, S. (2015b). Utterance and function in genre studies: A literary perspective. In J. Andersen (Ed.), *Genre theory in information studies* (pp. 155–178). Bingley: Emerald Group Publishing Limited. doi: 10.1108/S2055-537720140000011009.

Auken, S. (2018). Understanding genre. *Journal of Zhejiang International Studies University*, 3(2), 14–27.

Bakhtin, M.M. (1986). The problem of speech genres (V.W. McGee, Trans.). In C. Emerson & M. Holquist (Eds.), *Speech genres and other late essays* (pp. 60–102). Austin: University of Texas Press.

Bawarshi, A. (2000). The genre function. *College English*, 62(3), 335–360. doi:10.2307/378935

Bawarshi, A. (2016). Beyond the genre fixation: A translingual perspective on genre. *College English*, 78(3), 243–249.

Bawarshi, A., & Reiff, M.J. (2010). *Genre. An introduction to history, theory, research, and pedagogy*. Fort Collins: Parlor Press.

Bazerman, C. (1988). *Shaping written knowledge.* Madison: The University of Wisconsin Press.

Bazerman, C. (1994). Systems of genres and the enactment of social intentions. In A. Freedman & P. Medway (Eds.), *Genre and the new rhetoric* (79–101). London: Taylor & Francis.

Bazerman, C. (2010). Scientific knowledge, public knowledge, and public policy: Genred formation and disruption of knowledge for acting about global warming. *Linguagem em (Dis)curso, 10*, 445–463.

Bazerman, C., Little, J., & Chavin, T. (2003). The production of information for genred activity spaces. Informational motives and consequences of the Environmental Impact Statement. *Written Communication, 20*(4), 455–477. doi:0741088303260375.

Benestad, R.E., Nuccitelli, D., Lewandowsky, S., Hayhoe, K., Hygen, H.O., Dorland, R. v., & Cook, J. (2016). Learning from mistakes in climate research. *Theoretical and Applied Climatology, 126*(3–4), 699–703. doi:10.1007/s00704-015-1597-5.

Berkenkotter, C., & Hanganu-Bresch, C. (2011). Occult genres and the certification of madness in a 19th-century lunatic asylum. *Written Communication, 28*(2), 220–250. doi:10.1177/0741088311401557.

Berkenkotter, C., & Huckin, T.N. (1993). Rethinking genre from a sociocognitive perspective. *Written Communication, 10*(4), 475–509. doi:10.1177/0741088393010004001.

Bhatia, V.K. (1993).*Analysing genre: Language use in professional settings*. London: Longman.

Boykoff, M.T. (2007). Flogging a dead norm? Newspaper coverage of anthropogenic climate change in the United States and United Kingdom from 2003 to 2006. *Area, 39*(4), 470–481. doi:10.1111/j.1475-4762.2007.00769.x.

Boykoff, M.T. (2013). Public enemy no. 1? Understanding media representations of outlier views on climate change. *American Behavioral Scientist, 57*(6), 796–817. doi:10.1177/0002764213476846.

Boykoff, M.T., & Boykoff, J.M. (2004). Balance as bias: Global warming and the US prestige press. *Global Environmental Change, 14*, 125–136. doi:10.1016/j.gloenvcha.2003.10.001.

Boykoff, M.T., & Boykoff, J.M. (2007). Climate change and journalistic norms: A case-study of US mass-media coverage. *Geoforum, 38*, 1190–1204. doi:10.1016/j.geoforum.2007.01.008.

Boykoff, M.T., & Goodman, M.K. (2009). Conspicuous redemption? Reflections on the promises and perils of the 'Celebritization' of climate change. *Geoforum, 40*, 395–406. doi:10.1016/j.geoforum.2008.04.006.

Brulle, R.J., Carmichael, J., & Jenkins, J.C. (2012). Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the U.S., 2002–2010. *Climate Change, 114*, 169–188. doi:10.1007/s10584-012-0403-y.

Ceccarelli, L. (2011). Manufactured scientific controversy: Science, rhetoric, and public debate. *Rhetoric and Public Affairs, 14*(2), 195–228. doi:10.1353/rap.2010.0222.

Cook, J., Nuccitelli, D., Green, S.A., Richardson, M., Winkler, B., Painting, R., Skuce, A. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters, 8*, 24024–7. doi:10.1088/1748-9326/8/2/024024.

Cook, J., Oreskes, N., Doran, P.T., Anderegg, W.R.L., Verheggen, B., Maibach, E.W., … Rice, K. (2016). Consensus on consensus: a synthesis of consensus estimates on human-caused global warming. *Environmental Research Letters, 11*, 1–7. doi:10.1088/1748-9326/11/4/048002.

Devitt, A. (1991). Intertextuality in tax accounting: Generic, referential and functional. In C. Bazerman & J. Paradis (Eds.), *Dynamics of the professions: Historical and contemporary studies in writing in professional communities* (pp. 291–303). Madison: University of Wisconsin Press.

Devitt, A. (1993). Generalizing about genre: New conceptions of an old concept. *College Composition and Communication, 44*(4), 573–586. doi:10.2307/358391.

Devitt, A. (2000). Integrating rhetorical and literary theories of genre. *College English, 6*, 698–718. doi:10.2307/379009.

Devitt, A. (2004). *Writing genres*. Carbondale: Southern Illinois UP.

Devitt, A. (2009a). Re-fusing form in genre study. In J. Giltrow & D. Stein (Eds.), *Genres in the Internet* (pp. 27–47). Philadelphia: John Benjamins Publishing Company. doi:10.1075/pbns.188.02dev.

Devitt, A. (2009b). Teaching critical genre awareness. In C. Bazerman, A. Bonini, & D. Figueiredo (Eds.), *Genre in a changing world* (337–351). Fort Collins, Colorado: Parlor Press.

Devitt, A. (2015). Genre performances: John Swales' *Genre analysis* and rhetorical-linguistic genre studies. *Journal of English for Academic Purposes, 19*, 44–51. doi:10.1016/j.jeap.2015.05.008.

Devitt, A. (2016). Uncovering occluded publics: Untangling public, personal, and technical spheres in jury deliberations. In M.J. Reiff & A. Bawarshi (Eds.), *Genre and the performance of publics* (pp. 139–156). doi:10.7330/9781607324430.c007.

Dryer, D.B. (2016). Disambiguating uptake: Toward a tactical research agenda on citizens' writing. In M.J. Reiff & A. Bawarshi (Eds.), *Genre and the performance of publics* (60–79). Logan: Utah State University Press.

Emmons, K.K. (2009). Uptake and the biomedical subject. In C. Bazerman, A. Bonini, & D. Figueiredo (Eds.), *Genre in a changing world* (pp. 134–157). Lafayette: Parlor Press.

Fahnestock, J. (1986). The rhetorical life of scientific facts. *Written Communication, 3*(3), 275–296. doi:10.7330/9781607324430.c003.

Freadman, A. (1994). Anyone for tennis? In A. Freedman & P. Medway (Eds.), *Genre and the new rhetoric* (43–66). London: Taylor & Francis.

Freadman, A. (2002). Uptake. In R. Coe, L. Lingard, & T. Teslenko (Eds.), *The rhetoric and ideology of genre* (39–53). Cresskill Hampton Press.

Freadman, A. (2012). The traps and trappings of genre theory. *Applied Linguistics, 33*(5), 544–563. doi:10.1093/applin/ams050.

Freadman, A. (2014). Where is the subject? Rhetorical genre theory and the question of the writer. *Journal of Academic Language and Learning, 8*(3), A1–A11.

Freedman, A. (1999). Beyond the text. Towards understanding the teaching and learning of genres. *TESOL Quarterly, 33*(4), 764–767. doi:10.2307/3587890.

Freedman, A., & Medway, P. (Eds.). (1994). *Genre and the new rhetoric*. London: Taylor & Francis.

Frow, J. (2014). *Genre* (2nd ed.). New York: Routledge.

Gieryn, T.F. (1983). Boundary-work and the demarcation of science from non-science: Strains and interests in professional ideologies of scientists. *American Sociological Review, 48*(6), 781–794.

Gieryn, T.F. (1995). Boundaries of science. In S. Jasanoff, G.E. Markle, J.C. Peterson, & T. Pinch (Eds.), *Handbook of science and technology studies* (392–443). Thousand Oaks, California: SAGE Publications Inc. doi:10.2307/2095325.

Gifford, R. (2011). The dragons of inaction. Psychological barriers that limit climate change mitigation and adaptation. *American Psychologist, 66*(290–302). doi:10.1037/a0023566.

Giltrow, J. (2002). Meta-genre. In R. Coe, L. Lingard, & T. Teslenko (Eds.), *The rhetoric and ideology of genre* (187–205). Creskill: Hampton Press.

Hamilton, L.C. (2011). Education, politics and opinions about climate change evidence for interaction effects. *Climate Change, 104*(231–242). doi:10.1007/s10584-010-9957-8.

Hornsey, M.J., Harris, E.A., Bain, P.G., & Fielding, K.S. (2016). Meta-analyses of the determinants and outcomes of belief in climate change. *Nature Climate Change, 6*, 622–627. doi:10.1038/NCLIMATE2943.

Hyon, S. (1996). Genre in three traditions: Implications for ESL. *TESOL Quarterly, 30*(4), 863–722.

Kelly, A.R., & Miller, C. (2016). Intersections: Scientific and parascientific communication on the Internet. In A.G. Gross & J. Buehl (Eds.), *Science and the Internet: Communicating knowledge in a digital age* (pp. 221–246). Amityville, NY: Baywood Publishing Company.

Lewandowsky, S., Gignac, G.E., & Vaughan, S. (2012). The pivotal role of perceived scientific consensus in acceptance of science. *Nature Climate Change, 3*, 399–404. doi:10.1038/NCLIMATE1720.

Lewandowsky, S., Oberauer, K., & Gignac, G.E. (2013). NASA faked the Moon landing – Therefore, (climate) science is a hoax: An anatomy of the motivated rejection of science. *Psychological Science, 24*(5), 622–633. doi:10.1177/0956797612457686.

Lewis, G.B., Palm, R., & Feng, B. (2019). Cross-national variation in determinants of climate change concern. *Environmental Politics, 28*(5), 793–821. doi:10.1080/09644016.2018.1512261

Miller, C. (1984). Genre as social action. *Quarterly Journal of Speech, 70*(2), 151–167. doi:10.1080/00335638409383686.

Miller, C., & Devitt, A. (Eds.). (2018). *Landmark essays on rhetorical genre studies.* Oxford: Routledge.

Miller, C., Devitt, A., & Gallagher, V. (2018). Genre: Permanence and change. *Rhetoric Society Quarterly, 48*(3), 269–277. doi:10.1080/02773945.2018.1454194.

Miller, C., & Kelly [now Mehlenbacher], A.R. (Eds.). (2017). *Emerging genres in new media environments*. London: Palgrave Macmillan.

Moser, S.C. (2010). Communicating climate change: History, challenges, process and future directions. *WIREs Climate Change, 1,* 31–53. doi:10.1002/wcc.011.

Moser, S.C. (2016). Reflections on climate change communication research and practice in the second decade of the 21st century: What more is there to say? *WIREs Climate Change, 7*, 345–369. doi:10.1002/wcc.403.

Nisbet, M.C., & Myers, T. (2007). Twenty years of public opinion about global warming. *The Public Opinion Quarterly, 71*(3), 444–470. Retrieved from https://www.jstor.org/stable/4500386.

Nyboe, J.Ø. (2016). The game of the name: Genre labels as genre and signature. *Scandinavian Studies, 88*(4), 364–392.

Oreskes, N. (2004). The scientific consensus on climate change. *Science, 306*, 1686. doi:10.1126/science.1103618.

Oreskes, N. (2010). *Merchants of doubt*. New York: Bloomsbury Press.

Ouariachi, T., Olvera-Lobo, M.D., & Gutiérrez-Pérez, J. (2017). Analyzing climate change communication through online games: Development and application of validated criteria. *Science Communication, 39*(1), 10–44. doi:10.1177/1075547016687998.

Paré, A. (2002). Genre and identity: Individuals, institutions, and ideology. In R. Coe, L. Lingard, & T. Teslenko (Eds.), *The rhetoric and ideology of genre* (57–71). Cresskill: Hampton Press.

Paré, A., Starke-Meyerring, D., & McAlpine, L. (2009). The dissertation as multi-genre: Many readers, many readings. In C. Bazerman, A. Bonini, & D. Figueiredo (Eds.), *Genre in a changing world* (179–193). Fort Collins, Colorado: Parlor Press.

Powell, J.L. (2016). The consensus on anthropogenic global warming matters. *Bulletin of Science, Technology & Society, 36*(3), 157–163. doi:10.1177/027046761770707.

Reiff, M.J., & Bawarshi, A. (Eds.). (2016). *Genre and the performance of publics*. Logan: Utah State University Press.

Segal, J.Z. (2007). Breast cancer narratives as public rhetoric: Genre itself and the maintenance of ignorance. *Linguistics and the Human Sciences, 3*(1), 3–23. doi:10.1558/lhs.v3i1.3.

Segal, J.Z. (2012). Cancer experience and its narration: An accidental study. *Literature and Medicine, 30*(2), 292–318. doi:10.1353/lm.2012.0017.

Skuce, A.G., Cook, J., Richardson, M., Winkler, B., Rice, K., Green, S.A., Nuccitelli, D. (2016). Does it matter if the consensus on anthropogenic global warming is 97% or 99.99%? *Bulletin of Science, Technology & Society, 36*(3), 150–156. doi:10.1177/0270467617702781.

Smart, G. (2016). Discourse coalitions, science blogs, and the public debate over global climate change. In M.J. Reiff & A. Bawarshi (Eds.), *Genre and the performance of publics* (157–177). Logan: Utah State University Press. doi:10.7330/9781607324430.c008.

Supran, G., & Oreskes, N. (2017). Assessing ExxonMobil's climate change communications (1977–2014). *Environmental Research Letters, 12*, 1–18. doi:10.1088/1748-9326/aa815f.

Swales, J. (1990). *Genre analysis. English in academic and research settings*. Cambridge: Cambridge University Press.

Søe, S.O. (2016). The urge to detect, the need to clarify: Gricean perspectives on information, misinformation and disinformation. (PhD). Copenhagen: University of Copenhagen.

Søe, S.O. (2017). Algorithmic detection of misinformation and disinformation: Gricean perspectives. *Journal of Documentation*, *74*(2), 309–332. doi:10.1108/JD-05-2017-0075.

Tachino, T. (2012). Theorizing uptake and knowledge mobilization: A case for intermediary genre. *Written Communication, 29*(4), 455–476. doi:10.1177/0741088312457908.

Taylor, C.A. (1991). Defining the scientific community: A rhetorical perspective on demarcation. *Communication Monographs, 58*(4), 402–420. doi:10.1080/03637759109376238.

Thieme, K. (2006). Uptake and genre: The Canadian reception of suffrage militancy. *Women's Studies International Forum*, *29*, 279–288. doi:10.1016/j.wsif.2006.04.007.

Tillery, D. (2003). Radioactive waste and technical doubts: Genre and environmental opposition to nuclear waste sites. *Techical Communication Quarterly, 12*(4), 405–421. doi:10.1207/s15427625tcq1204_4.

Warren, M.J.C. (2019). *Food and transformation in ancient Mediterranean literature* (Vol. 14). Atlanta: SBL Press.

Wu, J.S., & Lee, J.J. (2015). Climate change games as tools for education and engagement. *Nature Climate Change, 5*, 413–418. doi:10.1038/NCLIMATE2566.