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Faculty of Arts and Social Sciences

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For Ulla Agin

Abstract

The climate crisis is one of the largest global challenges that humanity has ever faced. Despite the scientific consensus on the threat, action is not occurring on the pace or level needed to stave off the consequences. As climate change is made up by complex and conjoined causes and effects, the issue is also riddled with communicative challenges which those calling for action need to tackle. Climate change communication research has, however, mainly focused on how traditional news media frame the climate change issue and overlooks climate activist and movement groups. This despite these actors being key for shifting public perceptions and public opinion. Although research on other communication actors exist, it is far from extensive and the research field overlooks the publics perceptions of the sender in relation to the construction of climate messages. Through survey data and an experiment, this doctoral thesis explores the public's inclination towards different protest action repertoires and addresses the research gap in the climate movement message construction. Herein, the actions and words of three subgroups within the larger environmental movement are considered as one part of a larger message whole. The groups chosen action repertoires are viewed as part of the activists' performed message and the linguistic communication styles created by lexical choices related to emotional appeals are part of the activists' verbal/textual message. The results indicate that there is much to be gained from adhering to an alignment between lexical choices and action repertoires. Alignment may be key for understanding why some movement subgroups are successful in inspiring certain actions whilst others inspire other actions. Communication-action alignment is a way to approach the interconnectedness of actions and words for complex and abstract issues that require message recipients to construct consonant mental models to break potential cognitive dissonance.

Keywords: *climate change communication, social movements, communicative action repertoire alignment, emotional appeals, threat perception*

What can we, as individuals, do? Use less energy? Replace our light bulbs? Drive less, walk more, ride bikes? Recycle? Eat organic? Eat local? Green our homes? Buy green?

All of this is fine and necessary, but the most important thing is missing: political action!

(Lakoff, 2010, p. 77)

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Karlstad, May 1 2022
Sol Agin

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Abbreviations

ACC – Anthropogenic Climate Change

CAR – Communicative Action Repertoire

CARA – Communicative Action Repertoire Alignment

CARM – Communicative Action Repertoire Misalignment

CH_4 - Methane

CO_2 – Carbon Dioxide

COP – Conference of the Parties

COP26 – Glasgow Climate Summit 2021

ELF – Earth Liberation Front

ENGO – Environmental Non-governmental Organisation

ESM – Environmental Social Movement

ESS – European Social Survey

EVS – European Values Study

FFF – Fridays for Future

GHG – Greenhouse Gases

IDM – Information Deficit Model

IECA – International Environmental Communication Association

IPCC – Intergovernmental Panel on Climate Change

N_2O – Nitrous Oxide

NGO – Non-governmental Organisation

MNC – Multinational Corporation

TNC – Transnational Corporations

UNEP – United Nations Environment Programme

UNFCCC – United Nations Framework Convention on Climate Change

WoS – Web of Science

XR – Extinction Rebellion

Part I: Synthesis chapters

Chapter 1. Introduction

There are no passengers on Spaceship Earth. We are all the crew.

The Spaceship Earth, McLuhan's nod (as quoted in Vallero, 2006, p. 367) to the classic piece by Buckminster Fuller (1969), describes the planet Earth as a spaceship and humankind as the crew. Generations of crew members have come and gone; therefore, the current captains and pilots are not responsible for setting the course, as they are just maintaining it. Unfortunately for the crew, the spaceship came without an instruction manual, crisis protocol or reverse gear, leaving the crew to figure it out as they go. Now the Spaceship Earth is on the outskirts of a large asteroid field, and small rocks have started to hammer on the hull at irregular intervals. The current trajectory will take the ship deeper into this field to a dangerous point where it is jam-packed with both big and small asteroids.

When the asteroid field first became noticeable, the scientific faction of the crew informed both the pilots and the captains about the risks of the current path. However, they both opted for a wait-and-see stance despite the scientists' advice. Trying to persuade them to act, the scientist, therefore, started to use the ship's speaker system to inform the rest of the ship's crew that they were fast approaching 'danger close'. Whilst a few of the crew seemed to listen, fewer understood the complex technical nature of this danger. And as the crew does not consist of a homogenous 'we', rather of multiple groups of 'we', interpretations of these messages are varied. Thus, now there is a disagreement between the different groups regarding the dangers of the asteroid field. Whilst most seem to agree on the need for a course alteration to avert the worst part of the asteroid field, there is also disagreement amongst some on whether the asteroid field is a threat at all, or if it even exists. A few of the pilots and the captains have thus begun to use the ship's speaker system themselves, arguing that the ship should stay on its current trajectory, as they surely can cope with a few asteroids and repair potential damages when (or if) they occur. These opposing messages are sowing doubt amongst other groups within the crew. Whom should they trust? A course alteration would be a monumental enterprise, and besides, are not the severe problems in the field's middle something for a future generation to deal with?

The doubt has led to the largest general faction of the crew splitting into even smaller factions of 'we' as well, drawing those of similar opinions into even smaller clusters. With the inaction of several of the ship's pilots and captains, contention with the current status quo has started to grow amongst some of the smaller general factions of the crew,

particularly the younger ones who are part of the generational cohort that will have to deal with the problem in the future. These groups have taken it upon themselves to back up the scientific faction and are therefore trying to persuade others to join their 'we'. If they are an unquestionable majority that demands an adjustment in course loudly enough, surely the disagreeing pilots and captains must act? But being loud and demanding has proven difficult, as the different groups within the general 'we' respond very differently to the performed actions and communicative efforts of the contentious groups. Some find the alarmism used by one group inspiring; others become overwhelmed with paralysing fear in its wake. Some find the contentious groups which convey an optimistic 'yes-we-can-there-is-still-time' message motivating, whilst it makes others feel at ease and perceive the asteroid field as a less urgent threat. Thus, a delay in action occurs on multiple levels since swaying the opinions of the general crew, and leading them towards preventive collective action, presents a challenge on its own. But the asteroid field is not going away, and the Spaceship Earth is still heading straight for its middle.

Chapter overview: from the imaginary spaceship to climate change in contemporary society

The Spaceship Earth analogy is simplified but points towards the complex interactions and influences which shape the public's perceptions of a complex and abstract global threat. The analogy indicates that there is no universal solution on how to communicate threats to create collective action for preventive social change. It does, however, highlight the need to expand the knowledge on which type of message resonates with which audience faction and leads to a certain kind of action response *from* the recipients and how that relates to the actions taken *by* the sender. Communicative disagreement may foster a social dilemma and create *cognitive dissonance* (one of several theoretical concepts mentioned in this chapter to which we shall return in Chapter 2). In addition, many are the tactics utilised to influence the public's perceptions, and, likewise, many are the actors who try to create either public engagement or disengagement. One frequently mentioned actor, as an instigator for social change, is social movements, but, as hinted at in the analogy, their approach may appeal to some and not to others. Furthermore, social movement consists of several smaller groups

(which will also be discussed in Chapter 2), where different groups may have different ideas about how a problem should be addressed. This makes social movements interesting to explore as message constructors and senders in relation to their utilised action tactics. This first chapter intends to introduce the scope of this doctoral compilation thesis. The thesis as a whole is a piece in the puzzle of risk message optimising for public engagement by those opposing the status quo, i.e., the social movements.

The *message* is, in this thesis, understood as the combination of both the verbal/textual messages (the communication) and the performed messages (the actions) of the social movement actors. These messages are constructed with the intention to influence the public's attitudes and beliefs and to create individual and collective action amongst the public (the public engagement effects). However, message optimisation is context-dependent since message recipients' responses "to information is shaped by the social context, their own need for personal security and the extent to which they trust the source of specific items of information" (Alaszewski, 2005, p. 104). Each type of situation brings forth its own challenges and possibilities for message construction, and therefore this thesis must start with the context. Herein, the context is one of the most urgent and complex challenges humanity has ever faced: the metaphorical asteroid field, namely climate change.

As climate change is a large issue made up of many smaller parts, which all contribute to the overarching threat, the issue requires the conceptualisation and creation of conceptual *mental models* by the message recipients. In this thesis, this conceptualisation and the mental models' creation are related to *construal level theory* and the idea that all but the situation a person is currently experiencing needs to be mentally constructed to be understandable. This indicates that context is key, but it also presents a challenge for those who try to construct these messages. This chapter starts with the contextual issue of climate change. Furthermore, albeit used as the contextual case to concretise in this thesis, it should be noted that climate change is not the only complex or abstract issue for which message constructors face these kinds of challenges. Others who try to construct messages of abstract and complex issues also face similar problems of mental models' creation in relation to their message construction and the transmission of that message, making the core of this thesis applicable to other contexts as well.

Climate change: an existential threat and a global social dilemma

Whether in its natural state of variability or anthropogenic, the climate in itself is a complex phenomenon, and the forces that impact the climate are equally complex. When discussing climate change in this thesis, it is discussed in reference to anthropogenic climate change, i.e., non-natural causes that impact the natural climate variability. Natural changes in climate are usually attributed to either internal climate variability or external forcing, meaning that the variability either stems from the planets' natural processes or is impacted by something outside of the planets' naturally occurring phenomena (Nath et al., 2018). Natural climate variability refers to the variations that happen on different time scales and have non-human-driven causes. These can be regional or global, for example, an internal phenomena such as El Niño and La Niña, or external forcings, such as cosmic rays, both of which stimulate changes in climate and weather.

On the other hand, anthropogenic climate change includes the numerous causes of *human-induced global warming* as well as the impacts of these changes on the natural variation in the Earth's climate system (e.g., extreme changes in normally predictable weather patterns, ocean acidification and sea-level rise). Primarily, these changes are tied to the levels of greenhouse gasses [GHGs] emitted by humans, such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and several fluorinated gases (Olivier & Peters, 2020). These emissions count as external climate forces and affect the internal climate variability since these forces impact the natural cycles of the climate system. According to the Intergovernmental Panel on Climate Change [IPCC], GHGs are closely linked to human activities and have been increasingly growing in both range and rapidity since the Industrial Revolution (IPCC, 2015). These GHGs are responsible for the so-called greenhouse effect (IPCC, 2015), which occurs when the atmosphere traps the heat that radiates from the planet's surface instead of letting it seep out into space. GHG emissions have many sources but are commonly connected to the extraction and burning of fossil fuels, and CO_2 is perhaps the most well-known of the GHGs in the minds of the public.

With a prognosis of a world that may be 4-5 °C warmer by the year 2100 due to GHG emissions (IPCC, 2021; Solomon et al., 2007; Walsh et al., 2014), climate change is one of the most threatening and multi-layered environmental challenges that humanity has ever had to face. Moreover, it is not only an environmental threat, but it is also a very large,

complex and abstract social dilemma. Thus, it is not only an issue that is of interest to the natural sciences, as it also presents the social sciences with several research problems. One such problem is how to communicate the issue to large and diverse audiences to inspire pre-emptive actions and break the social dilemma that surrounds climate change. Social dilemmas occur when short-term self-interest conflicts with long-term collective interest (Van Lange et al., 2013; Van Lange & Huckelba, 2021), and *collective* is a keyword in this context, since

> [l]arge-scale environmental crises are generally collective phenomena: they usually result from collective, rather than personal, behavior and how they are cognitively represented and appraised is determined by collectively shared interpretations (e.g., differing across ideological groups) and bases for concern for collectives (e.g., humankind, future generations) rather than for individuals. (Fritsche et al., 2018, p. 245)

That humanity needs to act in the long-term collective interest as a response to the climate threat is something that scientists agree upon (Ripple et al., 2017), and to achieve it, the threat needs tackling both on an individual and collective level (Stollberg & Jonas, 2021). With the existential threat that climate change poses, it would be easy to assume that the global collective whole of humanity would be willing to take the substantial actions needed to stave off the impacts of climate change, but implementing mitigation policies and putting adaptation strategies in place has proved hard. This is evident from the many climate summits and Conferences of the Parties [COPs] that have taken place over the last couple of decades, intending to deal with climate change from a proactive angle. Creating action on climate change requires more than mere knowledge about the threat. It requires substantial and widespread understanding and a sense of urgency; i.e., it requires risk/threat perception and collective emotions (Fritsche et al., 2018; Stollberg & Jonas, 2021). This means that messages conveyed to a broad public on the knowledge about and urgency of climate change must include the scientific complexity and the abstractness of the issue as well as the societal impacts and the everyday risks climate change entails. Furthermore, the messages need to include all the above on both individual and global levels to reduce the social dilemma. This implies that for the risks to be comprehensible for those without a background in specialised research areas, i.e., the general public, the overarching structure

of climate change and its more direct consequences require much mental construction by these message recipients. This presents a challenge for those who try to construct messages on the matter; to simplify and clarify without belittling the issue, or confuse the recipients.

The importance and difficulty of mental construction of abstract and complex issues

Complex and abstract issues require information recipients to mentally construct the many causes and the many potential outcomes that the issues entail as well as the interlinkage of these. As they must be conceptualised, the complexity and abstractness mean that the mental models' constructions may differ from individual to individual. Therefore, individuals in many cases have their own view of what an issue is, the urgency and level of threat it poses and, consequently, of how to handle it.

The case of ozone depletion in the 1970s and the 1980s has been highlighted as an example of the important role a unified issue image plays in shaping public perceptions (mental models) and preventive action implementation (see e.g., Baldwin & Lenton, 2020; Grevsmühl, 2018). The collective actions taken to "halting and reversing damage to the ozone layer is one of humanity's greatest environmental success stories" (Baldwin & Lenton, 2020, p. 1) and thus a prime example of what collective actions are capable of accomplishing. In the case of ozone depletion, the scientific aspects of the issue were made more accessible to the general public (i.e., easier to mentally construct) through the metaphor of a 'hole' in the ozone layer, a metaphor that news media outlets highlighted in their coverage (Grevsmühl, 2018). In the case of ozone depletion, this metaphor proved to be important, as it helped the global audience to mentally construct the issue in a way that provided a clear, less diverse mental model of the causes and consequences. It also led to publicity and more coverage in the media (Grevsmühl, 2018). The exposure that ozone depletion got through the media was one of the reasons behind the construction of broad public concern, and the articulation of that concern through several environmental non-governmental organisations [ENGOs] was a contributing factor for government officials and policymakers taking action on the issue (Andersen & Sarma, 2002). Yet, decisive collective action is exactly what is lacking in the case of climate change. Even though ozone depletion and climate change share some similar traits (Levy, 1997), the global actions

needed to alleviate ozone depletion did not involve as drastic changes on either an individual or societal level as those that are needed to combat climate change. Ozone depletion was also less complex than climate change and therefore easier to mentally construct. In the case of ozone depletion, the media used the 'hole' metaphor as grounds for "catastrophic framing" (Grevsmühl, 2018, p. 80), but due to its complexity and the abstractness of that complexity, the issue of climate change lacks a unifying image that is easily framed by the media.

Since the 1970s, several metaphorical constructs for the changing climate have been adopted in an attempt to create a unified image. Constructs such as the *greenhouse effect*, *global warming* and *climate change* have all been used. And now (with a relatively recent but not yet widespread change in lexical style), usage of the term *climate crisis* is increasing (Kunelius & Roosvall, 2021). Albeit widely circulated, neither of these metaphorical constructs fully encompasses the gravity of the issue or all the complex aspects that it entails. This indicates that it is hard, if not impossible, to create a unified image that does not clash with or contradict someone's mental construction of the problem. Furthermore, these changing metaphorical constructs imply that new mental models need to be constructed for each metaphor, making it even harder for the public to construct cohesive mental models of the climate change issue. This is problematic because these metaphorical constructs can be utilised to shift public opinion and inspire preventive actions, as was the case with ozone depletion. As an example of just how important and delicate message construction is in this context, in late 2021, the COP26 president Alok Sharma delivered a tearful apology for the changing of *one single word* in the Glasgow Climate Pact. During the last minutes of the conference, India and China watered down the commitments regarding coal power by demanding that the term 'phasing out' be changed to 'phasing down' (Glover, 2021). Whilst 'out' and 'down' both signal a decrease, 'down' is not as finite and allows for even small decreases to be in line with the agreement on coal power. This not only allows for smaller changes; it also signals less urgency.

From media framing to messages from other information actors

It has been suggested that "increased news attention to promote wider public understanding of the problem's technical nature [will lead] the public to view it with the

urgency that [scientists] do" (Nisbet, 2009, p. 14). Since environmental threats need to be identified by scientific measurements, however, the majority of environmental news stories tend to have a "strong scientific component" (Bell, 1994, p. 259). This component then needs to be conveyed in an accessible way for the component to be mentally constructed in a comprehensible way by an audience without a background in science. When it comes to media reporting on climate change, the fragmented metaphorical constructs thus make representations less harmonised, and even though they are moving more in that direction (Brüggermann & Engesser, 2017), a universal message calling for climate action cannot be constructed or conveyed.

The lack of a universal message on climate change does not mean that news media[1] fail to report on climate change from various angles, nor that media and communication research omits climate communication as a field of inquiry. However, research within media and communication studies that focus on climate change communication strongly privileges news media communication from a framing perspective. There is an abundance of studies on how news media represent climate change and related issues, especially on how elite media represent these issues. Other creators of mediated messages of climate change, e.g., social movements, public authorities and entertainment media, are examined to a much lesser extent within this academic discipline. As news media play a strong role in shaping how the general public understands the issue of climate change (Bolsen & Shapiro, 2018), exploring the framing of climate change within news media is both interesting and necessary. This is especially true given that in line with the quantity of coverage theory of media effects, media coverage of climate change and climate-related events directly affects the level of public concern (Carmichael & Brulle, 2017), and public opinion is considerably impacted by the quantity and frequency of media coverage (Dumitrescu & Mughan, 2010; McCombs, 2018; Zaller, 1992). During large climate-related events, such as the United Nations Conferences of the Parties [COPs], the media frame these events, which means that they "take on the role of actors that can shape public perceptions and opinions"

[1] The term news media is here defined as 'the publisher, editors, journalists and others who constitute the communications industry and profession, and who disseminate information, largely through newspapers, magazines, television, radio and the Internet' (Boykoff & Roberts, 2007, p. 3).

(Roosvall & Tegelberg, 2018, p.11) of both the events and the issue. Thus, the overall image the media report on helps set the agenda (Boykoff & Boykoff, 2004) even if that image is varied in its appearance. The media are therefore part of the overarching information ecology in which social movements, ENGOs and other actors aiming at disseminating information and influencing public opinion are included. Even if news media are important for shaping public opinions and for shaping the public's understanding of climate change, the same can, through obfuscation of information, be said about news media's role in shaping misconceptions and misunderstandings as well. It is essential to understand how the media represent and frame the issue of climate change to better understand what lies behind the shaping of the public climate perceptions. Even though there are studies on how audiences interpret news media messaging on climate change (e.g., Bolin & Hamilton, 2018; Happer & Philo, 2016), there are few studies on how audiences interpret other forms of media messaging, e.g., mediated messages produced and sent by social movements. Article 1 of this compilation thesis, *Mapping the field of climate change communication 1993–2018: Geographically biased, theoretically narrow, and methodologically limited* by Agin and Karlsson (2021), identified a large research gap in this regard.

The first article within this doctoral compilation thesis showed that it is easy to find studies on media representation of climate change within the field of media and environmental communication research. Yet, the extreme emphasis on news media framing poses a problem: this line of research only partially deals with the *shaping* of understandings of climate change through researching how climate issues are framed in news media. Furthermore, it deals even less with the previously constructed mental models of the information recipients, as how a message is perceived in relation to previous knowledge cannot be concluded by frame analysis alone. As Bell pointed out, *misreporting* is not the only thing that affects communicative misunderstandings on climate change; it is also about the "misunderstandings by the audience" (1994, p. 260). Thus, we are dealing with two types of audience understandings/misunderstandings concerning climate change communication: one type connected to the *shaping* of them (which relates to current framing by news media), and another type which is connected to the audience's *previously constructed mental models*. Both understandings/misunderstandings interact, making frame analysis of news media a somewhat superficial entry point to a deeper discussion of public perceptions

and message construction. Since news media are far from the only information senders in the climate context, several types of messages from various sources are circulating. These also contribute to the shaping of understandings/misunderstandings and to how the mental models have previously been constructed.

Not only does the current research situation create and maintain a weighted knowledge situation in which other message creators are marginalised (Agin & Karlsson, 2021; Badullovich et al., 2020), but it also prevents research from moving forward. Instead of scientists and policymakers creating knowledge *for* scientists and policymakers, as was the case in the early days of climate change communication (Moser, 2010), we have now moved on to a situation where research is conducted "by scientists *for* self-validation instead of progression" (Agin & Karlsson, 2021, p. 444). From the vast amount of climate framing research conducted (e.g., McEvoy et al., 2013; Morton et al., 2011; Spencer & Pidgeon, 2010; Stevenson et al., 2018; Vu et al., 2019; Wardekker & Lorenz, 2019), it can be argued that we know how news media frame climate change and how they may shape public perceptions. Furthermore, framing is used as a rather vague and inconsistent theoretical tool in research (Tewksbury & Scheufele, 2009), and it is not methodologically possible to investigate how frames interact with previously constructed perceptions of audiences by merely looking at how news media frame the climate issue. To begin with, it requires an understanding of other actors' roles in shaping that perception. The media are one part but not the stand-alone factor in shaping public perceptions. Even though general audiences are frequently researched, they are so mainly examined from a media representation perspective (e.g., Boykoff, 2013; Carvallho, 2007; Newman et al., 2018). Thus, general audiences are rather high on the research agenda, but there is still a need to understand public perceptions beyond media representation and frame interpretation. To understand how climate communication and climate perceptions connect with *public engagement*, we need to add information sources other than news media to this line of research. We need to include other message constructors to understand how messages on complex and abstract issues (such as climate change) can be constructed to create a strong enough public opinion to influence policymakers.

As has been pointed out, news media are not the only communication actors that shape the understanding of climate change and try to influence public perceptions and

opinions. Others (e.g., scientists, movements and elites) are part of this process as well, and by marginalising them in climate change communication research, we run the risk of not only a weighted but also a rather narrow view on climate change from a communication perspective. Scientists, non-governmental organisations, politicians and companies have long known about and, in many cases, tried to convey the urgency of climate change mitigation actions but with little substantial effect. It has been recognised that the mere presentation of scientific facts does not automatically cause people to engage with climate change (Roser-Renouf et al., 2014). To create engagement and elicit the massive social change needed for tackling the climate issue and its related social dilemma, an additional actor needs to be taken into consideration: social movements. These have a unique position in society and the current information ecology, as they, in one sense, are a counteraction to the inaction of organisations, politicians and companies as "a social movement develops when a feeling of dissatisfaction spreads, and insufficiently flexible institutions are unable to respond" (della Porta & Diani, 2020, p. 13). Social movements are groups that advocate for collective behavioural change through the groups' collective participation in actions that promote the change for which they strive. They are formed by groups of individuals who find a particular societal issue to be contentious, and through their viewpoints they find common ground, on which they then demand change.

Research problem: Climate communication research omits social movements as shapers of public opinion and conveyers of risk perception

Messages explaining the abstraction and complexity of climate change are, as we have seen, not as easily or straightforwardly encoded as one might think at first glance. Messages on climate change need to entail not only the overarching concept but also the causes, effects and adaptation and/or mitigation strategies needed to address the issue. Highlighting the importance of conveying the scientific consensus as an important step to alter attitudes and behaviours, is a suggestion upon which several other researchers have agreed (e.g., Bolsen & Shapiro, 2018; Ding et al., 2011; Lewandowsky, 2012; Lewandowsky et al., 2013; Maibach & van der Linden, 2016; Myers et al., 2015; van der Linden et al., 2014, 2015). This,

however, is easier said than done, and there are plenty of suggestions on the best practice approaches to science communication (e.g., Shome & Marx, 2009). Thus, we have research that suggests that communicating the scientific consensus is key to communicating the urgency of climate change, research that highlights the importance of news media when it comes to public perceptions and public understanding of the issue and research that shows that many are already concerned about or alarmed by the changing climate (Goldberg et al., 2020). Nonetheless, we are still lacking substantial action on a large and collective scale. Creating this large-scale collective action is what social movement activists aim for.

Historically, social movements have been key to shifting public opinion, getting people to engage in certain issues and putting pressure on legislators to follow the demands of the people, thereby affecting policy outcomes (Agnone, 2007; Villamayor-Thomas & García-López, 2018; Weaver, 2008). This makes them important policy and public opinion actors, and their expressions of contention can challenge the social order (Saunders, 2013). Yet, movements face the same communicative challenges as other message constructors do when it comes to complex and abstract issues. But social movements are not as bound to established and standardised formats of communication as more formal institutions and agents. Rather they, as expressed in the social movement literature, have three sets of *action repertoires* from which to choose. These repertoires can be thought of as a part of the message performed by utilising either (1) more established *conventional actions*, (2) more unruly and *disruptive actions* or (3) disturbing and unsettling *violent actions* (Tarrow, 1998). Thus, social movements may have the tools to sway public opinion both through their actions and through their verbal/textual messages. We will return to both the challenges and repertoires in Chapter 2.

Earlier, we saw that ENGOs (which include environmental social movements) played an important part in shifting public opinion in the case of ozone depletion (Andersen & Sarma, 2002). This suggests that social movements hold an interesting position in society, as they inhabit the space between the public and authorities. Yet, media and communication research has primarily centred around movements' use of media technologies and their media strategies, whilst social movement studies have mainly focused on the actions as expressions of contention. When social movements and activists are included in communication research, they are mainly investigated in two ways: how they are portrayed

in news media (e.g., Amenta et al., 2017; Hunt & Gruszczynski, 2021; McCurdy, 2012) or how they utilise social media as a tool for strategic communication and/or networking (e.g., Cammaerts, 2015; Hwang & Kim, 2015; Leong et al., 2019; Youngman & York, 2012). Activists, and the movements to which they adhere, find strength in numbers, and therefore research on how they network has its merits. However, this line of intersectional research is related more to how movements organise themselves and how they distribute their messages on these platforms, the use of hashtags, etc. The result of this is that knowledge production within social movement communication is a result of an academic parti pris, where dissemination and/or the transmission of information is given precedence over other communicative departure points. However, since social movements' capability to mobilise people, it puts them in a unique policy-influencing position within the political sphere, what they communicate and how their messages are constructed and perceived in relation to their actions are also highly relevant. Social movements are both part of the people and part of the political sphere, but they are still somewhere in-between in terms of societal influence. And in terms of message construction, they are rather pretermitted.

This also means that the description of media and communication scholars as tending to be "so media-centric that they have failed to extend their thinking to political and social movement theory" (Cammaerts et al., 2013, p. 3) and likewise that social movement/protest studies rarely engage with media and communication studies either (Cammaerts et al. 2013) still holds. This limited 'field-centricity' has had the consequence that social movement studies focus on action and media and communication studies on the usage of media technology and media strategies, and they do so mostly separately. From the perspective of the sender, research has been more interested in more formal non-governmental organisations [NGOs] (e.g., Greenpeace), multinational and transnational corporations [MNCs/TNCs] (Agin & Karlsson, 2021) and celebrities as advocates (e.g., the studies by Anderson, 2011; Boykoff & Goodman, 2009; Leas et al., 2016) than in activists. It is not sufficient to focus solely on either the usage of or the possibilities that media technologies offer activists, nor is it sufficient to focus solely on how media strategies can be adopted to disseminate a message, unless we understand the message. Furthermore, is it not sufficient to focus research on the actions of different actors without a fundamental understanding of how these actions are shaped in conjunction with the message the actor

wishes to convey. The mean of mediated dissemination is not connected to the movement per se; the recipient predominantly chooses it due to other factors, such as access, media literacy and preferences, which can thus amplify and reinforce pre-existing beliefs (Bolin & Hamilton, 2018).

Whilst much has been written on how actions taken by social movement actors impact public support (e.g., Feinberg et al., 2020; Gutting, 2020; Orazani & Leidner, 2019; Simpson et al., 2018), little attention has been paid to the formation of their textual/verbal messages, the actual emotional appeals made by movements (Troost et al., 2013) and even less so to how these textual/verbal messages and the movements' performed messages (actions) in combination form an overarching message. It is not only what is being communicated or the actions in themselves that create engagement, and thus I argue that it is important to view actions as a form of communication in themselves. The conjunction of both will affect the interpretation, and the effects may differ depending on the message-action combination. This is because the content is not only part of the message but an extension of the sender's ethos and thus their choice of action repertoire, which affects, and is affected by, the recipient's interpretation, attitudes, values and expectations to a larger extent than the means of mediated dissemination is. Thus, studying movements from a media perspective, or an action perspective, without a deliberate understanding of the message construction and the relation between words and actions, could lead to an incomplete analysis and inconsistent conclusions.

The one-sided focus (or field-centricity) within climate change communication research constitutes a problem for research. I posit that there is a need for stronger bridges between information dissemination, message reception, social movement actions and collective actions taken by the public, and I argue that one potential bridge is in the composition of the connexion between the verbal/textual messages and performed messages of these movements. One way of addressing this problem, to be able to further the knowledge of climate change advocacy communication, is by investigating the communication styles of messages (i.e., the linguistical choices that bestow the message with a certain style related to the emotional appeal) and action types (i.e. the categorical classification of actions as either conventional, disruptive or violent). Moreover, investigation of these needs to be done in conjunction, as actions of activists (i.e. the

senders in this case) can be thought of as both a part of the message and also as an alternate means of transmission. Thus, this compilation thesis revolves around the construction and effect of these messages: the encoding/decoding in combination with the kind of action repertoire adopted by different groups of climate activists.

Purpose

This doctoral compilation thesis is grounded in a theoretical understanding that the actions and communication styles of the subgroups together form an overarching message that the recipients will decode in relation to each other. Therefore, this thesis intends to explore the interlinkage of these verbal/textual messages with the actions of the subgroup. Furthermore, I argue that they need to be investigated with the sender as a variable for message perception and reception, as the recipients' perception of the sender may influence their conceptualisation and construction of mental models. Against this backdrop, the overarching purpose of this doctoral compilation thesis is to strengthen the theoretical knowledge on how to communicate complex and abstract issues by providing an empirical investigation on the interlinkage between collective actions and communication styles, using groups of contemporary climate change activists as a case. The more specific aims are the following:

1) to understand how recipients' inclination towards participation in protest activities is related to different action repertoires and known factors for collective action motivation;
2) to explore if and how lexical styles are related to certain emotional appeals and how these lexical styles, in conjunction with certain action repertoires, affect the information recipients' inclination for collective action;
3) to discuss if and how the concept of communication-action alignment (can be theoretically conceptualised and methodologically utilised.

Research questions

To better understand the connection between collective action and communication, we need to understand collective action. Specifically, we need to understand what makes

people in general inclined to participate in a protest, as this can be viewed as an indicator of how predisposed individuals are to collective action behaviours, which connects with their perception of movement actors adhering to certain protest actions. Thus, the first research question is two-pronged. The first part (RQ1a) helps to answer to what extent previously known factors for protest participation, i.e., media usage, issue attitudes, sense of collective efficacy, organisation affiliation and demography, influence the inclination towards protest participation in general. This question relates to the first aim and the second article:

> *RQ1a: To what extent do known factors of collective action encouragement generally influence an individual's inclination towards protest participation?*

As we shall see in Chapter 2, social movements' collective actions can be divided into conventional, disruptive or violent categories of actions (Tarrow, 1998), and the general public's perception of these action categories can vary. Hence, it is not only important to understand what factors influence individuals' inclination towards protest participation in general but also which factors influence participation in the two most common action categories (convention and disruption), including how these action categories are connected to individuals' socio-geographical context, i.e., their position in political, socio-economic and geographical systems. Both RQ1a and RQ1b revolve around the inclination towards protest participation within a European context. The second article in the compilation will thus also help answer the second part of research question one, and it is also related to the first aim:

> *RQ1b: How are these known factors tied to different collective actions, and what is the correlation between socio-geographical differences and the inclination towards participation in conventional or disruptive collective actions?*

As stated earlier, one of the central arguments in this doctoral thesis is that the collective action types and communication styles of groups within a larger social movement are conjoined, interdependent of each other and shape an overarching message. Furthermore, the communication and actions then, hypothetically, need to align for the communication

and actions to be perceived as a coherent message, and alignment/misalignment will impact the interpretation and actions taken by the message recipients. The second question is related to the experimental study conducted in the third article and investigates the message recipients' attitudes and inclination towards either information dissemination or collective action depending on the action type and communication style of the message sender. To explore the symbiotic relationship between actions and communication in the second aim, the second research question in this thesis has a broader scope than the previous two, as it bridges actions and communication:

> *RQ2: In what way do lexical choices of emotional appeals affect the interpretation of messages from movement subgroups with different action categories, and how do they influence the stated action behaviours and attitudes?*

Taking an interdisciplinary approach to communication and movements is crucial to bridging the gap that Cammaerts et al. (2013) pointed out. Without considering the interdependent relation of communication and action and their alignment, the knowledge of the role social movements and their subgroups play as policy and public opinion actors and influencers within the contemporary information ecology will be inconsistent. Therefore, the fourth research question is centred around a discussion on how to approach the interdependency of communication and action and their alignment from a theoretical and methodological angle. Connected to the third aim and the fourth article in the compilation, the final part of this doctoral thesis revolves around an analytical discussion of the following question:

> *RQ3: How can communication-action alignment be theoretically conceptualised and methodologically utilised?*

In this compilation thesis, three climate activist groups are used as representative cases of the climate change subset within the larger environmental movement in this thesis. These are Fridays for Future (FFF), Extinction Rebellion (XR) and Earth Liberation Front (ELF). An introductory overview of these movements can be found in Chapter 3. They are particularly prominent in relation to research questions two and three. A deeper

introduction to the movement subgroups and their connection to the different communication styles and action repertoires will be given in the empirical background in Chapter 3.

Contribution

Potential solutions to the communicative challenge of climate change are not only beneficial for society as a means to stave off the impacts of climate change or similar threats. They are also beneficial for researchers, as they not only provide expanded knowledge on message construction but also contribute to audience studies and reception theories, particularly via how messages on urgent, abstract and complex societal threats obtain meaning and how the public interprets these messages in relation to the message constructor's ethos. By investigating a potentially symbiotic relationship between action and communication style, we can gain more in-depth knowledge as to how certain actions and messages from activists work interchangeably and influence the action behaviour and engagement of the recipients of this two-part overarching message. Thus, this thesis contributes to a deeper understanding of the impact that communication and collective action in conjunction have on individuals' perceptions of movements messages and the individuals' inclination towards certain attitudes and behaviours after receiving the message/experiencing the action performance. Furthermore, it will add empirical knowledge concerning in which socio-geographical context one type of collective action category is preferred and will contribute with a theoretical perspective on how potential communication-action alignment could be conceptualised and methodologically evaluated. Additionally, the first article within the compilation discovered insufficiencies in search engines commonly used for literature searches in science and suggests a way to address these insufficiencies. Thus, this article contributes to methodological development for those carrying out literature reviews not only in climate change communication but in all fields.

Article overview

This doctoral thesis is set at the intersection of climate change communication (how to communicate about climate change) and social movement studies (how to choose and

encourage protest actions for social change). Furthermore, as we saw in the chapter overview, context is key. Thus, this intersection is also partially related to linguistic pragmatics (how context contributes to meaning, specifically how context shapes and influences meaning) as we are dealing with both climate change as the context and also with the performed message (the actions) taken by the climate movement as something that shapes and influences meaning. The articles included in this compilation are meant to be both stand-alone pieces and parts of a larger picture. Thus, they have their own theoretical outlooks and their own independent research questions, but as part of this compilation, they also help answer the previously outlined overarching questions. This compilation thesis consists of one advanced systematic literature review, which serves as the background piece that helped identify the research gap leading to the articulation of the research problem. The second and third pieces are research articles, and the fourth is a theoretical piece. Each of them is a small piece of a larger puzzle, comprising the theme of this thesis and corresponding to the aims and research questions outlined earlier. The full-length articles can be found in the last part of this book, but in the following sections are brief overviews of their content and a short description of how they are utilised within these synthesis chapters.

Two of the four articles were co-authored with Professor Michael Karlsson, which means that clarification of each author's contribution to these two articles is required. For Article 1, the conceptualisation, review of previous reviews, data curation and formal analysis were done by me, with advice from Professor Karlsson. Karlsson also contributed to the method design, and both of us worked on the writing of the paper. For Article 3, Karlsson was the lead author and was responsible for the data curation and formal analysis. Both of us were involved in the conceptualisation, methodology and writing of the original draft.

Article 1: Mapping the field of climate change communication 1993 2018: Geographically biased, theoretically narrow, and methodologically limited.

This first article is a systematic literature review, co-authored with Professor Karlsson. This review aimed to shed light on the field of environmental and climate change communication in a broader sense and to make possible research gaps more apparent.

Through an extensive quantitative content analysis of journal articles (N=407), this study provides an understanding of the methodological, theoretical and geographical approaches within the field. The findings show that a typical study within the field is a quantitative content analysis of traditional news media in the West. It also uncovered some important insufficiencies in the search engines commonly used when carrying out literature reviews. This article was predominantly written as a way to obtain a large overview of the field as well as to see research trends over a larger period of time. The field dates further back than 1993, but it was around this time that it became a more frequently investigated area of research and brought forth a larger debate on climate change communication. In the context of this compilation, the literature review serves to showcase overlooked objects of studies and present research areas that are related but not adequately adjoined to contemporary environmental communication research. One such research area is sociology, and one object of study that is tied to both environmental communication and sociology is activists. Building on these results, the foundation of the research problem was identified, and further literature on media and communication research and social movement studies were examined. The additional literature has been incorporated into Chapters 1 and 2 of the synthesis chapters and can thus be found therein.

Article 2: Conventional and disruptive protest propensity: A comparative survey study across Europe.

From the perspective of social movements as actors challenging the existing status quo, it is often an underlying assumption that those who are passionate about a certain issue are the ones that take action (Troost et al., 2013). However, this argument may be too simplistic. Many different factors likely shape an individual's inclination to participate in different forms of protest actions. In this study, I examine multiple factors known to affect protest participation and their correlation with actions adhering to both the conventional and the disruptive action repertoire. I argue that the individual's inclination to partake in protest actions (i.e., signing petitions, joining in boycotts, attending lawful demonstrations or joining unofficial strikes) is not only related to passion but that the motivations differ depending on whether the suggested action is considered conventional or disruptive. Through multiple linear regression (OLS) analysis of data (N=36,379) from the European

Values Study 2017, this study analyses how media usage, organisation affiliation, collective efficacy, demography and political perceptions affect the propensity to protest participation. The results show that organisational affiliation and regionality are highly important for protest propensity in all cases but that the degree varies within the action types. Conventional protests are also less influenced by political distrust. However, for unofficial strikes, these motivational factors have a low explanation value, meaning that strikes are motivated by other factors. Building on the results in this article, the membership aspects are highlighted as these further underlines the need for studies on environmental organisations and environmental social movements. In combination, articles one and two strengthen the argument that environmental movements are important to explore and understand in a research context. The results in this article strengthen the importance of understanding environmental communication that stems from organisations and movements, particularly in relation to action repertoire and geography or the political/societal system.

Article 3: Communicating the expected: The importance of aligning messages and actions of environmental social movement subgroups' climate change communication

The third article was also co-authored with Professor Karlsson, and it consists of a 2x2 experiment (N=288), in which the role of communication styles is at the centre of attention. In it, two environmental movement subgroups, XR and FFF, are used to exemplify two senders of climate communication messages in a protest context. These two subgroups were chosen as representatives of two different action repertoires, with XR representing disruptive actions and FFF conventional ones. Drawing on fear and hope appeals commonly discussed within climate change communication, we adapted a text to resemble standard communication from either of these subgroups (i.e., both in aesthetics and lexical choices). We constructed one alarmist and one optimistic message for each of the subgroups and asked respondents to answer a two-part survey questionnaire and read one of the texts that were randomly assigned to them. Through this, we saw tendencies in how communication style and action type are interconnected in terms of the perception and

reception of a message. The general trend was that the respondents rewarded XR when they were alarmist and FFF when they were optimistic. Furthermore, we also saw strong tendencies in the impact that communication-action alignment had on respondents' inclination towards certain behaviours. An alarmist-disruptive alignment showed stronger tendencies towards respondents taking collective action, and conventional-optimistic alignment showed stronger tendencies towards information dissemination behaviour among the respondents. Not only does this highlight the importance of understanding social movement communication, but it also points towards the idea that knowledge can be gained from further investigation of the different roles and impact of subgroups within a movement. For this compilation, the tendencies in these results indicate that there may be a theoretical link between the action repertoire and the communication style (i.e., the lexical choices).

Article 4: Communicative action repertoire alignment (CARA): A theoretical model and methodological approach for the evaluation of lexical-action alignment in social movements

The fourth and final paper examines the theoretical link between action and communication. The idea presented in this paper is rather straightforward; words and action need to align within social movement subgroups for them to gain support. This paper is theoretical in its nature, and the idea is exemplified by three subgroups within the broader environmental movement. XR is still used to represent disruptive actions, and FFF is still the representative of conventional action. However, following the concept of action repertoires found in social movement studies, a third subgroup called ELF was chosen to represent the violent action type. Through a combination of repertoires found in social movement studies, language studies and linguistics, I here propose a theoretical model of alignment between three different communication styles (alarmism, optimism and aggression) and action repertoires (disruption, convention and violence) and discuss the consequences of misalignment. A small misalignment (e.g., a conventional action and an alarmist communication style) may lead to recipient confusion, but a larger misalignment (e.g., a conventional action and an aggressive communication style) may be perceived as

contradictory. I named this communicative action repertoire (CAR). Furthermore, through the addition of cognitive dissonance, a theoretical concept predominantly used in, but not limited to, the field of psychology, I also suggest how to identify communication-action alignment and misalignment to understand how social movement actors can optimise their impact and reduce confusion (communicative action repertoire *alignment*, or CARA). Additionally, in combination with the tendencies shown in the experiment study, the idea of communication-action alignment also shows that the subgroups of a larger movement need to consider their purpose in the larger context (i.e., what reaction do they want from the communication recipients – dissemination of information or collective action?) before they choose an action repertoire or a communication style. From a researcher's point of view, I suggest that CAR/CARA can be used to investigate what type of discourse resonates best with different issue audiences and the general audience and to identify and understand structural and societal changes in social movements (e.g., when aspects of a disruptive action repertoire become more accepted and thus more 'conventionalised').

Chapter 2. Analytical framework

Chapter overview: Merging theories and literature for analysis

Thus far, the introduction to this thesis has put forth the problem of conveying complex and abstract risks, exemplified through the issue of climate change, and touched upon the challenges this difficulty presents for both the encoder and the decoder of a message. These obstacles are related to how the sender communicates with the aim of constructing a mental image for the recipients of the threat climate change poses, and how the sender communicate to inspire recipients to take collective action to avert its consequences. If we accept the scientific consensus on climate change (Ripple et al., 2017), the problem of how to minimise cognitive dissonance and reduce the social dilemma through the communication of the abstract and complex in this context becomes apparent. In the second chapter of this thesis, this difficulty is the guiding light. In the world of academia, the complexity of disseminating information about climate change is also reflected through the research being conducted, as it spans several fields of inquiry and disciplinary traditions, e.g., media and communication, sociology and economics, as well as political, psychological and natural sciences (Nerlich et al., 2010) and includes numerous objects of study (Agin & Karlsson, 2021). Much attention has been given to the issue of climate change since the 1950s in both the academic realm and in public discussion, and both attention and coverage are still on an upward trajectory (Agin & Karlsson, 2021). With developments such as the Kyoto Protocol in 1997, the Paris Agreement in 2015, and most recently, the Glasgow Climate Pact in 2021 (preceded by the release of IPCC's Sixth Assessment Report, *Climate Change 2021: The Physical Science Basis*), the climate change debate has been placed high on the global agenda. This has, in turn, resulted in ample messages related to climate change being constructed, disseminated and interpreted. But it has also become evident that climate change communication is inherently riddled with challenges for effective delivery (Markowitz & Guckian, 2018). The conversation on how, or even if there is a need, to act is an ongoing one in our contemporary society, as some actors and stakeholders are deliberately imparting views which oppose the scientific consensus (Beder, 2014).

The beginning of this chapter focuses on how mental models and the perceptions of message recipients can be understood and integrated with theoretical stances on emotional appeals from a communication perspective, and how complex and abstract threats can thus be conveyed to create coherent mental models amongst message recipients.

The different approaches also include several challenges that message constructors are faced with, in the climate change context, and these are situated in relation to the different repertoires. A framework of three overarching domains of repertoires is introduced and expanded upon, as a suggested pathway for breaking the cognitive dissonance/social dilemma through threat perception. These repertoires stem from three research fields; (1) linguistics, (2) educational science, and (3) social movement studies, where the intersecting domains are communication-oriented and accentuated throughout the chapter (see Figure 1 at the end of this chapter for a visual overview). This chapter introduces these repertoires and their context, and discusses their theoretical overlaps in relation to communication. The emphasis is placed on how pro-environmental/pro-action messages can be constructed through emotional appeals and how these appeals can be thought of as particular communication styles through the choice of lexes, rather than as mere message frames.

Action repertoires, i.e., the performed messages of the subgroups, have also previously been mentioned as an additional dimension of movement communication. Here it is suggested that neither actions nor words are enough to construct a coherent mental model to reduce cognitive dissonance and create action. The point made is that action repertoires are important to examine in relation to both the chosen actions and words, instead of continuing to examine media communication outlets. However, although stated as a problem in Chapter 1, the overemphasis and the media-centricity within climate change communication are also necessary for knowledge about certain general communicative issues, particularly from the perspective of the public's perceptions. In this chapter, the media-related research is utilised as a background for understanding these communicative issues (e.g., in the section on threat perception), which is key to the analytical framework. As the overarching purpose of this doctoral compilation thesis is to strengthen theoretical knowledge through empirical investigation on the interlinkage between action repertoires and communication styles, using the three aforementioned subgroups as a case of context, this chapter outlines an analytical framework that suggests a way to approach this interlinkage.

Public support and the levels of climate change concern

According to Bernauer and McGrath (2016), strong public support is needed to create any change in climate policies and regulations, as any form of mitigation strategy will impact almost all citizens. Without public support, any attempt at larger, more comprehensive climate policies is simply not realistic or feasible. Furthermore, they argue that democratic policy-makers are largely encouraged to adopt policies that resonate with a majority of voters (Bernauer & McGrath, 2016). This relates well to activists, as the social movement and the subset(s) to which they adhere are crucial actors for bringing about change in societies (Crossley, 2002), especially as they can be seen as in-between mediators of the public and authorities. The reasons as to why individuals participate in some forms of political/protest action have long been part of social movement studies, social psychology, and political science (Císař, 2015; Rohlinger & Gentile, 2017; Van Stekelenburg & Klandermans, 2013), but the academic discussion has mainly centred around what motivates collective action in general (e.g., Meyerhoff & Liebe, 2006; Van Stekelenburg & Klandermans, 2017; Walgrave et al., 2013). Investigating what motivates people to participate in protests is, naturally, important, as the participants in protest actions are part of "a modern type of contentious politics" (Tilly et al., 2020, p. 169). However, even if individuals are motivated to act, far from all of them take any action, which is why the general approach to collective action motivation needs additional (action repertoire-specific) empirical data on motivational factors.

Climate change is an issue about which most people do report that they are cautious, concerned, or even alarmed (Goldberg et al., 2020; Leiserowitz et al., 2022), indicating that there is some form of psychological understanding of the threat the issue poses. But despite stating that they are, at the very least, concerned, few take actions on the matter that correspond with their self-reported level of threat perception, and the steps taken by this small number vary greatly in both range and extent (Carman et al., 2021). Thus, it is not necessarily only a question of being motivated or worried, but also of how the individuals perceive the efficacy of their potential actions and what cues they discern from their social/societal setting. As the actions needed to change the current trajectory are substantial, they would alter everyday life for individuals, particularly since the suggested adaptation and mitigation strategies are estimated to have considerable impacts on politics,

businesses, and individuals' lifestyles (Badullovich et al., 2020). However, the extent of many of these impacts can still only be speculated about (Markkanen & Anger-Kraavi, 2019). Thus, despite knowing that climate change is a cause for alarm, those who are concerned may perceive the preventive actions as far too uncertain or as having more direct negative impacts on their life than climate change will for the foreseeable future, making them less prone to action. It can also be that their own actions are regarded as too small in comparison to the magnitude of actions that are needed. In that sense, concern and action in relation to climate change are also connected with what is known as cognitive dissonance.

Cognitive dissonance and the social dilemma in the context of climate change

Cognitive dissonance is a concept that stems from Festinger (1957) and refers to when an individual's knowledge and beliefs about an issue do not match the actions they take in relation to their beliefs. In the case of climate change, this manifests itself with individuals acting more in short-term self-interest instead of with long-term collective interests in mind, which is the very definition of a social dilemma (Van Lange et al., 2013; Van Lange & Huckelba, 2021). One example would be when individuals choose to fly or take a car when needing to travel, as it is more convenient or cheaper (and therefore more directly beneficial for the individual) than other more environmentally friendly options which are inconvenient or more expensive (but which would benefit humankind and the planet in the long run).

Cognitive dissonance is a rather common phenomenon and theoretical departure point within the field of behavioural psychology and media and communication research. Unfortunately, it is less investigated in relation to climate change attitudes, beliefs and behaviours, as well as how the risks of climate change are being articulated and how messages on these risks are constructed from a linguistic perspective. This is unfortunate, as awareness of cognitive dissonance and its role in the larger social dilemma could be of use when trying to construct climate messages aimed at providing coherent mental models of the climate issue. In extension, the lack of investigation of cognitive dissonance minimisation also implies that the tools that may help humankind overcome the social dilemma related to climate change remain obscured. The various levels of concern, the

threat that climate change itself poses, the personal and societal changes that are needed to halt its trajectory, and the potential personal and societal gains and losses of both the threat and its solutions also link the matter of climate change communication to both social change and risk communication. Therefore, it is thus also connected to how changes and risks are mentally constructed, and how people perceive actual and potential threats and preventive actions, as well as potential changes in attitudinal/behavioural responses towards societal changes.

An individual's perception regarding threats is frequently highlighted as a contributing factor for taking personal, everyday action, as it is linked to their perceived capability to reduce risk and avoid danger (Stern, 2000). It is also linked to the shaping of attitudes about threats, and the attitudes in themselves can spur individuals to actions that then initiate changes on larger scales (e.g., Ballew et al., 2019; Leiserowitz, 2006; Smith & Mayer, 2018) and for shaping climate policy (Lujala et al., 2015). Threat perception has been found to be an influential factor for pro-environmental behaviours (e.g., as stated early on by Baldassare and Katz in 1992 and Fransson and Gärling in 1999). However, for the public to understand threats and the potential ways to avert them, the danger and the means of threat reduction need to be conveyed to the public, and social movements can help convey messages of risk (Zanoccon et al., 2018). For climate change communicators, this presents a challenge, since it is not a clear or straightforward issue.

Competing threat perceptions and the complexity of climate change communication

In the early days of climate change research, the matter was at first communicated by scientists and policy-makers *for* scientists and policy-makers, meaning that it mainly consisted of technical reports, specialised conferences papers or policy meeting materials (Moser, 2010). What was imparted about the changing climate was thus hard to understand and comprehend for individuals without a background in specialised research areas, making it very difficult for a broader audience to construct more than fragmented mental models of the issue. To shift public attitudes and create action, the issue, the causes, and the implications of climate change need to be conveyed to a far wider and more diverse

audience than only specialists. However, the scientific jargon and use of technical lexes have made the historical and current climate communication hard to understand for a general audience which, in turn, may have also led to the fragmentation of their mental models of climate change. This can be interpreted as the public having been partially excluded from the climate change conversation simply through the specialised, technical lexical format of the delivery. A more inclusive language is needed if a communicator is to achieve the strong public support Bernauer and McGrath (2016) stated was needed to create change in climate regulations and policies.

The problem of fragmentation in mental model construction is not a thing of the past. It still lingers, since environmental threats still need to be identified by scientific measurements, and most of the environmental information thus inherently includes a "strong scientific component" (Bell, 1994, p. 259). Furthermore, the scientific components regarding the implications of climate change were, and are still, often framed as *potential* scenarios, which present the information recipient with uncertainty as to the effects of climate change. This may solidify the fragmented mental models even further, as "[d]eep uncertainty also creates room for counter-narratives that seed doubt around anthropogenic climate change or the need for action" (Constantino & Weber, 2021, p. 155, referencing McKie, 2019). Not all have an interest in portraying the issue of climate change as the severe threat it is, which means that this uncertainty is fertile ground for disinformation and misinformation from actors who want to continue the current status quo. One of the groups that wish to uphold the status quo is the fossil fuel industry. One player that is powerful in either maintaining or overturning this status quo is the media, because as institutions, the media have the potential to steer political debate and influence policy decisions (Christensen, 2013). However, simply asking the news media to present information on the scientific consensus and call for action is not a feasible option either. As Beder states, "Most media organisations are owned by multinational multi-billion dollar corporations that are involved in a number of business apart from the media […]. The owners of the media influence the selection, shaping and framing of the news to attract advertisers […]" (2004, p. 3). Much of the disinformation that stems from prominent media channels, sowing scepticism and encoding doubt in climate messages, do have ties to the fossil fuel industry. One example is News Corp, whose owner Rupert Murdoch is a

"majority equity share-holder in Genie Energy […] Genie is a major investor in US and Israeli shale oil and gas projects" (Ahmed, 2014, n.p.). Political leaders and interest groups with varying ideological backgrounds are also key in this context, not only in promoting discourses conflicting with the consensus through the news media, but by promoting polarising views as well (Bolsen & Shapiro, 2018). News media are generally associated more or less with a certain ideology, and "[p]artisan media are expected to privilege their political ideology by giving voice to specific issues and their respective advocates" (Schmid-Petri et al., 2017, p. 502).

The communicative situation thus becomes even more problematic, as politics is often influenced by lobby groups, some of which are being generously funded by fossil fuel firms (Frumhoff & Oreskes, 2015). These groups (politicians, news media conglomerates and large business owners) represent parts of what is often thought of as an "elite" that the surroundings take cues from. Several studies (e.g., Carmichael & Brulle, 2017; Darmofal, 2005; Yin, 1999) show that these types of elite cues are closely tied to the beliefs and attitudes towards climate change among the general population. In conjunction with the personal interests of the elites, these help to portray the climate change issue as polarised through partisan media representations and therefore continue to reinforce the existing status quo. The social movement actors are thus, through their political aims and communication tactics, pitted against and situated within this information ecology, which in one way reinforces the social movement actors' role between the people and the authorities.

The problem with such a polarised portrayal is, however, not only linked to elites and money. Even in those cases where a news corporation or media organisation is taking the threat of climate change seriously and tries to convey information in line with the scientific consensus, their journalists face a difficult challenge. Not only do they have to balance their role as conveyors of information, but they must also battle the complexity of the climate change issue as well. In line with their role as journalists that try to remain objective, they are trying to find space for all voices on a matter to be heard. This means that even when they try their hardest to provide balanced reporting by incorporating minority viewpoints (e.g., allowing scientists who disagree with the general scientific

consensus on climate change to state their opinion in equal measure), they create a false balance that rather makes the reporting biased instead (Fahy, 2017; McDonald, 2009).

Thus, despite the scientific consensus on climate change, climate scepticism and denialism are still being widely pushed through influential news media. To reduce doubt and to inform the public about the reality of the climate change threat, it has been suggested that "increased news attention to promote wider public understanding of the problem's technical nature [will lead] the public to view it with the urgency that [scientists] do" (Nisbet, 2009, p. 14), indicating that the lack of action is related to an information deficit amongst the recipients. Highlighting the importance of conveying the scientific consensus, as an important step in altering attitudes and behaviours, is a suggestion that several other researchers have agreed upon (e.g., Bolsen & Shapiro, 2018; Ding et al., 2011; Lewandowsky, 2012; Lewandowsky et al., 2013; Maibach & van der Linden, 2016; Myers et al., 2015; van der Linden et al., 2014, 2015), but is easier said than done, and there are plenty of suggestions on the best practice approaches to science communication (e.g., Shome & Marx, 2009). There is also a debate on whether information deficit really is the issue with climate change communication, or if it is rather a simplistic approach to how attitudes, beliefs and behaviours on a polarised issue relate to knowledge production (Suldovsky, 2017). As such, communicators are challenged with the problem of communicating this complex, abstract, and technical issue through less technical lexes, i.e., trying to convey information on the severity and the level of threat in a more comprehensible way for laypeople.

Furthermore, the uncertainty permits people to separate themselves from the message (Morton et al., 2011), which means that the threat of climate change becomes hypothetical rather than tangible. The less than 100% accuracy of existing climate models and predictions of consequences is one likely reason for the current inaction. It may be why many within the general audience, and some policy-makers, who agree with the scientific consensus, still adopt a wait-and-see stance on actions. However, a wait-and-see approach is not suitable in the case of climate change, since:

> there are substantial delays in every link of a long chain stretching from the implementation of emission abatement policies to emissions reductions to changes in atmospheric GHG concentrations to surface warming to changes in ice sheets, sea level, agricultural

> productivity, extinction rates, and other impacts. […] Mitigating the risks therefore requires action long before additional harm is evident. (Sterman, 2008, p. 532)

The communicators are thus also faced with the dilemma of calling for action *before* the effect of climate change is apparent. But, on the other hand, the issue of climate change can also be viewed as a pot on a stove. Even if one turns the heat off before the water starts to boil, the stove plate will still be hot for a period of time and the water will get even hotter before it starts to cool down again. Hence, a communicator/message constructor faces the abovementioned challenges and must take them into consideration whilst also pointing out that the effects of actions will not be visible directly *after* implementation. Rather, they must convey that the actions need to be ongoing despite the lack of visible direct effects. As an example, during the beginning of the COVID-19 pandemic in 2020, much of the global transportation and other emission-related activities came to a standstill, which resulted in CO_2 emissions decreasing by 6.4% on a global scale – a number that was lower than many thought it would be, considering the extent of the standstill (Le Quéré et al., 2020; Tollefson, 2021). Consequently, seeing the substantial direct effects of preventive actions is unlikely, which, for the information recipients, means that temporality is another key issue for the mental models they need to construct. This is an issue we will return to in relation to emotions and urgency later in this chapter.

Mental models and lexes: A potential pathway for cognitive dissonance reduction

Regardless of what risk one is trying to convey and encourage people to act upon, the information recipients need "a diverse set of cognitive, social, and emotional skills in order to understand the information that they receive, interpret its relevance for their lives and communities, and articulate their views to others" (Morgan et al., 2002, p. 2). Both threats and the means to reduce them need to be communicated in clear ways to make people aware of the risks on these multiple geographical and temporal levels. The scientific component and the framing of potentiality, in the case of climate change, presents the message constructors/information senders with several communicative challenges. As the complexity and the degree of certainty regarding the issue affects how the recipients

mentally construct the issue, message constructors that are trying to alter or add to those mental models need to take these challenges into consideration. These challenges, the hot pot, and the block quote by Sterman (2008), relate both the mental models and the communicative challenges to construal level theory (Trope & Liberman, 2010), as the recipients need to not only mentally construct the problem or the potential outcomes of climate change, but also the warning signs connected to this issue.

Construal level theory is primarily based on the idea that humans can only truly experience the situation they are currently undergoing, and thus all other things need to be mentally constructed. For example, during an ongoing heatwave an individual can feel and experience the effects and consequences of the heat, whilst if it is a future heatwave that is being discussed, the individual needs to mentally construct the sensation of breathing warm air and the feeling of trickling sweat (as exemplified by Brügger et al., 2015) based on previous experiences or imagery/descriptions. This mental construction of visualisation aids the individual in constructing part of their mental model regarding a particular issue. The technical nature of climate change messages thus urges a communicator to consider semantic barriers for effective communication, of which Eisenberg and Goodall (2009) wrote. Contemporary climate communicators and message constructors need to find suitable words that will help convey familiar expressions which, in turn, will convey climate change information in a way that includes the global population in the conversation, instead of excluding them. The words help the public construct appropriate mental models of a potential future scenario, based on memories and past experiences. Yet, the selection of words and evaluation of the suitability of a term require much thought, particularly as meaning can be interpreted differently depending on the person(s) interacting with that particular word, as the meanings of words are subjective (Enfield, 2015). It is not merely the surrounding verbal/textual context in which the word is situated that gives it its meaning, but also the recipients' interpretation and perception of the world that shape that meaning and tie it to a certain semantic category (Violi, 2001). Naturally, there is a certain degree of regularity in the variations of interpretations and perceptions, much like when messages are encoded according to a certain set of rules and symbols, but there is still a variation that affects the decoding. Thus, the intended meaning of a word in the senders' encoding of a message cannot be guaranteed to pass the decoding process of the message

recipient with the intended interpretation intact. This is especially so because the recipients' interpretation and perception of the world are shaped by the expectations, preconceptions, and presumptions formed by the message context (Violi, 2001). The words the message constructor chooses are key, but they are not stand-alone factors for creating collective action. However, before we move on to action, some clarification and expansion on the emotional appeals, which can be thought of as particular communication styles through the choice of lexes, are needed.

Emotional appeals: Perceptions of effectiveness and urgency

For collective action to take place, collective motivation is needed, and in the context of climate change, communicating the risks of the issue is key. Emotions are suggested as a way to effectively communicate these complex risks to broad audiences (e.g., Bloodhart et al., 2019; Nabi et al., 2018; Roeser, 2012). Emotions have also been related to research on social identity, where collective emotions are considered as factors for collective actions (Harrison & Mallett, 2013; Harth et al., 2013; van Zomeren et al., 2008). Within the scholarly literature, there are two noteworthy types of emotional frames that emerge concerning climate change communication: fear appeals (*alarmism*) or hope (*optimism*), both of which are tied to the audience's perception of a threat. Threat perception is a known factor for an individual's pro-environmental behaviour (e.g., Baldassare & Katz, 1992; Fransson & Gärling, 1999). Furthermore, these appeals are related to the inconsistent conclusions mentioned in the research problem, as the mental construction/mental model approach and the formation of threat perceptions can be applied on several different levels of climate change and communication, e.g., on a specific matter within the broader issue or within a specific societal, social, or geographical context. However, in this doctoral compilation thesis, the theoretical application primarily revolves around the perspectives of emotional appeals for action and the minimisation of cognitive dissonance on a more wide-ranging level. Emotional appeals have been suggested as an approach for effectively communicating the complex and abstract risks of climate change to broad and diverse audiences (e.g., Bloodhart et al., 2019; Nabi et al., 2018; Roeser, 2012). There are several emotions tied to climate change, but the focus herein is on the two most frequently highlighted in this context, i.e., fear and hope.

Fear appeals

Fear is a powerful emotional response to threats as it is "a strong motivator for people to change their behavior to avert a potentially negative outcome" (Chen, 2016, p. 75), and messages that arouse fear with the intention to persuade an individual to certain actions are known as fear appeals (Witte & Allen, 2000). Three different focuses are found within this theoretical realm, with studies revolving around either: (1) the message and its content, (2) the messages' recommended behaviour, or (3) the characteristics of the message recipients (Tannenbaum et al., 2015) and their relation to intentions, attitudes and behaviours. Equally, three different factions splitting the discussion seems to exist: (1) those who find evidence for fear appeals being effective (e.g., Tannenbaum et al., 2015); (2) those who attribute to it some effect but stress it should be exercised with caution as it may backfire (e.g., Feinberg & Willer, 2011; Moser, 2007; Witte & Allen, 2000); and (3) those who find that it is not effective or even counterproductive (e.g., Bain et al., 2012; Smith & Leiserowitz, 2014). These types of appeals must maintain a fine balance between communicating the severity of an issue and doing so in a way that allows the message recipients to feel that they can avoid the danger through certain behaviours (i.e., the appeal ideally triggers a mental fight attitude as the outcome of inaction would be some form of loss). However, if a threat is perceived as too severe, it may lead the message recipient to a psychological freeze-mode instead (Moser & Dilling, 2004). Fear appeals can thus both motivate but also leave the message recipient feeling overpowered by the threat and consequently powerless to act upon it to prevent the threatening outcome (O'Neill & Nicholson-Cole, 2009). The risk is that an individual loses all hope of avoiding the conveyed danger.

Hope appeals

When faced with a threat, it is also normal to hope for the best possible outcome and to strive for that outcome to avoid the negative impacts of the threat. Thus, hope is another frequently highlighted emotional appeal that can help motivate an individual to take action (Bailey et al., 2007). Messages intended to arouse hope are thus known as hope appeals (Chadwick, 2015). Hope can lead the message recipient to experience a sense of collective efficacy (McAfee et al., 2019), that the actions they take in response to a threat together

with others will help them avert the danger. Collective efficacy is an important influence on social identity (Fielding et al., 2008), and a strong sense of group identification can "result in an 'inner obligation' to participate on behalf of the group" (Van Stekelenburg & Klandermans, 2013, p. 892). But just as with fear appeals, there is debate about the potential mobilisation effects of hope appeals. According to van Zomeren et al. (2019), the experience of hope does not increase collective motivation for collective action: although it may make the recipient of a message feel good, it does not mobilise. This means that hope is both a psychological opening and a hindrance for effective climate change communication, since hope appeals can be deceptive: hope has been recognised as inspiring action, but also as lowering the perception of *urgency* in this context, and thereby reducing individuals' propensity for taking action (Hornsey & Fielding, 2016).

Urgency and proximity

Within the climate change context, Risbey put forth an eloquent description of how a decision to act can be seen as an urgent one: "in the simplest cases, a decision is urgent if the time span between the present time and the impact is similar to the time span required to prevent the impact from occurring once a decision has been made" (2008, pp. 28). If the recipients interpret the time conveyed through the appeal to be a long one, the level of urgency with which an individual or society needs to act will decrease. This is further complicated as people's perception of time also differs (Margolies & Crawford, 2008). So, even if emotions might be key for the perception of threat, we see that the conclusions on which appeal is the most effective, and on how to balance these two emotions in message construction, are inconclusive and debated. Thus, there is a disagreement within the scientific literature on whether fear or hope is the best way to emotionally appeal for action (Fritsche & Masson, 2021). Furthermore, emotional responses are very individual, and what one individual may perceive as an urgent threat may not invoke the same sense of urgency and fear for another. This further underlines the connection between communication interpretation and the psychology of perceptions.

Nevertheless, it has been suggested that climate change communicators should construct messages "that connect with audience values, increase the issue's relevance by emphasizing local consequences, and emphasize the co-benefits of emissions reduction"

(Roser-Renouf et al., 2014), which connects these emotions to the concept of proximity. Proximity is, however, yet another double-edged sword and it has been argued that the abstractions of the climate change issue which are connected to proximity can both amplify and lessen the motivation for pro-environmental behaviours (Jones et al., 2017; Kwan et al., 2019; Stollberg & Jonas, 2021).

Thus, achieving a balance in communication on environmental issues is key, and should include messages that are both realistic and urgent (proximate), but that invoke a sense of efficacy for the presented solutions (Hart & Feldman, 2014; Hine et al., 2016) to create a 'yes-we-can' attitude in the recipients. The conclusion drawn from this is that fear appeals and messages of hope may vary in their effectiveness, and there is inconsistency in the previous research. As Moser so eloquently phrased it: "frames resonate with some audiences, and not with others. As such, they also mobilize some individuals to action, and rally others to resistance or opposition" (2010, p. 39). Content, suggested behaviour and the recipients are all important parts of both fear appeals/alarmism and hope/optimism, but few have taken the recipients' perceptions of the sender into consideration in this context.

Communicative challenges of proximity and emotional appeals

As mentioned earlier, mental models are related to temporality and urgency, as well as collective efficacy. However, there is also the issue of spatiality, highlighted in the suggestion of emphasising local consequences by Roser-Renouf et al. (2014). Both temporality and spatiality relate to some form of perception of proximity, and these perceptions are important for the level of threat perception and thus the construction of mental models as well, since they both contribute to the psychological proximity of the climate change issue. But, as we saw above, within this strand of research there is no apparent or straightforward conclusion, which presents the communicators and message constructors with further challenges but very little guidance.

The local/global aspect has also been well debated in the scientific literature, and the results vary. According to Spence et al. (2012), there seems to be a purely spatial bias, meaning that people (in both developing and developed countries) tend to perceive environmental issues on a global level as more serious than they do problems on a local

one, since the worldwide problems are perceived as more severe and therefore more urgent. However, in a comparative study of 18 countries, there were indications that respondents in developing countries were more concerned with local impacts than respondents from industrialised countries (Gifford et al., 2009), which contrasts with the statement by Spence et al. (2012). One potential reason behind this may be that developing nations tend to be more gravely affected by climate change and its long-lasting consequences. The global level conveys a larger threat, but the local makes its effects more concrete. This is of particular interest here, as this implies that the geographical scope communicated will provide the message recipient with different perceptions of the threat, even if the appeal remains the same. Thus, messages of either fear or hope appeals need to be constructed with these different perceptions in mind.

Relating to this, Lee et al. (2019) state that psychological distance, in the light of construal level theory, plays an important role in generating pro-environmental behaviours and attitudes since the "degree of psychological distance from an event determines its concreteness (or abstractness) in mental consideration" (pp. 431-432). The concept of climate change is hard to experience (since it includes weather changes over long periods of time), but people do experience extreme weather events on a personal level which may impact their own local environment on a more or less regular basis. These experiences may be a way to communicate about the issue, as these experiences can be recalled and therefore used for attempting to alter the recipients' mental models (as in the earlier example of imagining a heatwave by Brügger et al., 2015). Proximity (both spatial and temporal) is important for threat level perception, which also connects these communication challenges to the psychological barriers for effective communication (outlined by Eisenberg and Goodall, 2009). This means that in the context of climate change, the urgency that is to be conveyed also needs to be mentally constructed so that the consequences of climate change are *psychologically proximate* by highlighting their spatial and temporal proximity. For a communicator, the challenge then lies in communicating both (1) the solvability of the climate change issue through hope appeals, but (2) doing so without belittling the urgency, and (3) at the same time arousing just the right amount of fear to motivate action whilst avoiding triggering the psychological 'freeze-mode'. The communicator also needs to consider proximity when creating emotional appeals.

The creation of fear and hope appeals is thus, in one way, connected to semantic communication barriers, as outlined by Eisenberg and Goodall (2009) as well. It is a matter of how the severity and the solvability of a threat are expressed. But, to make matters even more complex and to relate to the previous section, Meyerowitz and Chaiken (1987) stated that 'loss frames' (which can be thought of as fear invoking messages) are more effective than the opposite, known as 'gain frames', whilst Rothman et al. (2006) pointed to the contrary. Taking a more middle-ground perspective, Lee and Aaker (2004) stated that individuals are most open in regard to frames that fit with their preferred purpose/outcome, indicating that the optimal message is one tailored to a specific individual. This indicates that the quote by Moser (2010) in the introduction, which stated that some frames may lead to action for some individuals whilst the same frames lead others to challenge or disagree with the conveyed message, is valid. Thus, communicating an abstract and complex issue is more complicated than merely finding a suitable frame. Yet, frames may be broken down to lexical choices that are typical for a particular frame, and the lexes the message constructor chooses can be key for balancing the appeal frames in a semantically appropriate way. Thus, a certain understanding of the *linguistic repertoires* within emotional appeals are needed for the message constructor to be able to alter their lexical choices and tailor their messages for their target audience.

From emotional appeals to linguistic repertoires

As have been pointed out on several occasions thus far, the context is key for the perception of climate change, and thus this compilation thesis follows the line of linguistic pragmatics. Linguistic pragmatics focuses on how context contributes to meaning (Scott-Phillips, 2017). Not only does the issue of climate change provide the context to this in this thesis, but different societal structures and the two aforementioned types of emotional appeals are part of the overall context as well. From all the outlined perspectives within this chapter, it is apparent that there is no proper or scientifically proven 'right' way to communicate about climate change. Furthermore, what can be seen as 'right' can also be discussed at great length, but is herein thought of as communication that fulfils its aims. Through the use of linguistics and implementation of certain lexes, it should be theoretically possible to move beyond the common concept of frame analysis in discourse, and rather focus on the role

that lexical choices play in a larger communication context. As has been mentioned, within the theoretical sphere of emotional appeals, three foci of studies can be found: (1) a message and its content, (2) the recommended behaviour of the messages, and (3) message recipient characteristics (Tannenbaum et al., 2015), all of which relate to the scope of this thesis and to a suggested pathway for message optimisation through certain linguistic repertoires. It is also here that the societal/social context becomes more apparent, as this context is crucial for lexical choices through its effects on interpretation and association.

Within language studies, the *linguistic repertoire* (or sometimes the verbal repertoire) stems from Gumperz (1964) and it is primarily defined as "the set of language varieties exhibited in the speaking and writing patterns of a speech community. […] the linguistic repertoire of any speech community may consist of several languages and may include several varieties of each language" (Finegan, 2004, p. 329). As outlined in the fourth article of this compilation thesis, this concept is primarily utilised when multilingualism and dialects are discussed, but it has certain fundamental features which makes it interesting when discussing communication and collective action as well. Finegan (2004) describes these fundamental features as the three primary elements of speech situations: (1) the purpose, (2) the setting, and (3) the participants, which distinguishes them from the classical components of rhetoric (i.e., the speaker, the speech, and the audience), which in media and communication studies are normally translated as the sender, the message and the recipient. According to Finegan (2004), the purpose includes the activity and the aim of the written or verbal message, while the setting includes potential alterations to the language of the written or verbal message that are made due to the topic and the genre of the message. The setting also includes the location, referring to the use of different language styles in different settings (i.e., *contexts*). This means that even if the aim of the message remains, the location or the social/societal situation or context may call for *alterations in language style* (e.g., the different lexical choices in a political setting compared to the same goal presented in an academic or in a religious setting). The final component, participants, includes *the impact that the ethos of the speaker*, and the recipient and their respective role within society and social context, have on the language of the written or verbal message (Finegan, 2004).

More recently, within the field of linguistics, there has been an increase in the attention paid to the language used to communicate about climate change and extreme

weather (e.g., Bromhead, 2021; Döring, 2018; Eriksen et al., 2010; Fløttum, 2017; Stibbe, 2015). However, few have attempted the categorisation of words in the climate context, apart from Ereaut and Segnit (2006). Building on the idea of the linguistic repertoire, Ereaut and Segnit (2006) made a valuable contribution to the categorical classification of words. In their work, linguistic repertoires are seen as a borrowed and adapted framework for analysis, which stems from discourse analysis, and these repertoires are "systems of language that are routinely used for describing and evaluating actions, events and people". According to Ereaut and Segnit, linguistic repertoires "might include a distinctive lexicon, a set of grammatical or stylistic features, or particular images, metaphors, idioms, stories and categories" (2006, p. 12). As such, these repertoires relate to the words used in relation to the context, specifically in this thesis to fear and hope, as linguistic repertoires may help semantically categorise certain words and phrases into emotional categories.

The work of Ereaut and Segnit (2006) still stands out as an important contribution of actual methodological categorisation, and it is their categorisation that will be used as the basis for the categorisation of lexes here. They propose two large linguistic repertoires in the context of climate change: the *alarmist repertoire* and the *optimist repertoire*. The latter is, however, divided into two categories itself, with the first one consisting of "It'll be alright" messages, and the second more pragmatic through its "It'll be alright if we **do** something" emphasis (both quotes from Ereaut & Segnit, 2006, p. 12., bold emphasis added). Furthermore, the two optimistic repertoires are both divided into even smaller ones, where the one which the authors name "the small actions repertoire" is central. The alarmist repertoire is not divided in the same way as the optimistic repertoire(s) are, but according to the authors, the alarmist repertoire is still as prevalent as the small actions one, and is used by many actors, including environmental advocacy groups (Ereaut & Segnit, 2006), making it highly applicable as a partial analysis framework relating to the first sphere in Figure 1 later in this chapter. The linguistic repertoires "are important because they are not merely styles or registers – they constitute different versions of what might be considered 'common sense', different ways of making sense of the world" (Ereaut & Segnit, 2006, p. 12), which means that the linguistic repertoires can be used to approach the concepts of mental models and cognitive dissonance.

From fear and hope to alarmism and optimism

Messages that are intended to invoke fear in the recipients fall into the alarmist repertoire that Ereaut and Segnit outlined, as the repertoire is identified through its use of extreme lexes that emphasises dangers and potential losses. It is also one of the most widely utilised ones in climate change communication (Ereaut & Segnit, 2006), as the repertoire can primarily be used to bring the climate change issue closer to the recipients using disturbing lexes. However, much like the inconclusive results on the effects of fear appeals, the usage of alarmist lexes is seldom as effective as it is thought to be. Rather, "more often it distances people from the problem" (Ereaut & Segnit, 2006, p. 13), as it presents the recipients with a mental model of the threat as an unavoidable danger, sparking the 'freeze-mode' which Moser and Dilling (2004) noted. Specifically, the alarmist repertoire

> employs a quasi-religious register of doom, death, judgement, heaven and hell, using words such as 'catastrophe', 'chaos' and 'havoc'. It uses language of acceleration, increase, intractability, irreversibility and momentum ('temperatures shot up', 'process of changes… surged ahead', 'a tipping point beyond which break-up is explosively rapid' […]). It allows for no middle ground – it is simply extreme. Metaphors and omens or predictions of war and violence extend the physical threat into societal threat: 'the breakdown of civilisation'. (Ereaut & Segnit, 2006, p. 13)

On the other side of the previously outlined emotional appeal spectra, we find the messages that try to raise hope and create a sense of collective efficacy. These can be thought of as included in the overarching optimistic repertoire. Although diverse, ranging from settlerdom, rhetorical scepticism, statements claiming that the warming of the planet is good, or that all issues related to climate change will be solved by future technological advancements (Ereaut & Segnit, 2006), the language of climate change most often fall into the optimistic category that the authors call the 'small actions' repertoire. According to Ereaut and Segnit, this is the most used repertoire in campaign communications as it asks the general audience to (as the name implies) do small things for the benefit of the collective. The small actions repertoire is divided into personal and corporate types, but the one described as personal is, according to Ereaut and Segnit, "clearly a vital one to understand in relation to achieving large-scale behaviour change" (2006, p. 20), and this

makes this particular strand of the optimistic repertoire especially relevant for this compilation thesis. The language of the small actions repertoire is described as "one of ease, convenience and effortless agency through phrases such as 'without spending money', 'basic', 'don't have to go down a car size', 'virtually effort-free', 'it's about making small changes'" (Ereaut & Segnit, 2006, p. 20). The personal small action repertoire is often used by communicators in combination with the alarmist repertoire, e.g., when newspapers highlight their stories on climate change with headlines such as "Easy things you can do to save the world from the climate crisis". Although this may downplay the dangers of climate change and in one sense mock those who perceive the issue as alarming, the use of only the personal small actions repertoire is, according to Ereaut and Segnit (2006), also problematic. The use of solely optimism and small actions may have the same effect as hope appeals alone; it may reduce the level of perceived urgency and belittle the severity of the consequences of the issue. However, altering and balancing lexical choices may be a more viable option for merging emotional appeals than the merging of frames. Additionally, as will be discussed later, and which relates to the third article, the linguistic repertoires may be perceived differently depending on the sender and the perceptions the message recipient has of the specific sender.

Communicative repertoires: A matter of what is suitable for the context

Within language studies, it is not only linguistic repertoires that grew out of the work on multilingualism by Gumperz, but also *communicative repertoires*, which were altered and expanded upon by "focusing on the resources deployed by individuals, rather than attempting to generalize about the 'verbal repertoire' of 'the community' of speakers" (Rymes, 2010, p. 529). Rymes' work is primarily situated in the field of educational science, but this further highlights the need for interdisciplinary approaches in communication studies and social movement studies. The interdisciplinary importance of Rymes' work can be found in the scope of the communicative repertoire: that it does not only include written or verbal communication within a society, but also entailed a focus on the individual's body language (Rymes, 2010, 2014). Within linguistic pragmatics, the context is key and can theoretically help bridge the aforementioned gap on protest communication by treating the action repertoire of a movement subgroup as the context from which action and

communication stem. According to Rymes, the context is further highlighted through individual communicative repertoires, as we all create these repertoires for ourselves and do so based on our own societal/social context. Rymes argues that studies on how communicative repertoires emerge can help create knowledge on how specific 'language' types are developed, as well as understanding which language type is more appropriate on certain occasions and suitable for particular contexts (Rymes, 2010).

This relates to the concept of a speech being *aptus* in classical rhetoric theory, i.e., fitting for the setting (Kjær Christensen & Hasle, 2007). For movement communication and the furthering of potential message optimisation, this context-driven suitability is particularly interesting. If we accept the ideas of the linguistic and communicative repertoires, and the role context plays in choosing the most appropriate type of lexes within both repertoires, we see that the verbal/written messages need to be constructed with the context, the recipients, and the aim in mind. However, the ethos of the sender and body language are also pieces of the puzzle and relate to the second part of the movement messages, i.e., the performed messages, which are the art of the sender's ethos and contribute to the perceptions the message recipient has on the specific sender. Hence, we will now turn our attention to these performances, the action repertoires.

Repertoires of communication and action: More than action and dissemination

Within social movement studies, there are also several different sets of repertoires being discussed. One of these is the *repertoires of communication*, which have been explored by Kriesi et al. (2009) and further expanded upon by Mattoni (2013). The repertoire of communication is not to be confused with the communicative repertoire outlined above, as the function of the repertoire of communication is not linguistical in its nature. In its original form, the repertoire of communication was meant to "characterize the standardized ways and means that are used to conduct a given type of campaign" (Kriesi et al., 2009, p. 350), indicating that this has less to do with what is articulated and is more connected to what is being done with a message. As Mattoni developed this concept further, its connection to media practices became more evident, as "social movement actors develop

repertoires of communication from which they can choose and the employ specific sets of *activist media practices*" (Mattoni, 2013, p. 46, italics in original). This means that the activists themselves construct their preferred media strategies which stem from their interaction with particular media actors/outlets (Mattoni, 2013). This fortifies the findings outlined in the research problem: that what is being communicated by the social movement actors in their messages has not caught the same research attention as the movements' media strategies for the dissemination of their messages. As we saw earlier, the research located at the intersection of media and communication, and social movement studies, revolves more around the repertoire of communication, e.g., via investigations into social media as a tool for strategic communication and/or networking (see Cammaerts, 2015; Hwang & Kim, 2015; Leong et al., 2019; Youngman & York, 2012), than aspects of the communicative or linguistic repertoires that relate to the content of the communication. As stated in the fourth article of this thesis, "the communication repertoire indicates a relationship with media, not that of communication structure" (Agin, 2022, n.p.), and thus not with message construction by movements either.

The perhaps most prevalent types of repertoires in contemporary discussions on social movements are the so-called *action repertoires*. Stemming from the work on the repertoire of contention and collective action by Tilly, Tarrow articulated that there are three separate action repertoires found within the larger contention repertoire, namely those of "violence, disruption, and convention" (1998, p. 104). In one way, the repertoire of contention can be seen as the toolbox in which a wide range of actions can be found. The repertoire of contention is then divided into three major categories, or action repertoires (Tarrow, 2011), namely conventional, disruptive, and violent. However, connected to each of the action repertoires we find several different types of actions that can be performed within the boundaries of each repertoire.

The conventional collective action repertoires and the performances that come with this repertoire are often perceived by the public as more socially acceptable ways of expressing contention, as these actions have a peaceful tone and generally cause less trouble than the other types (Tarrow, 1998). Through their low-risk actions, e.g., petitions, peaceful marches and other non-threatening actions, conventional collective actions generally appeal to a broader audience and therefore it is common for conventional actions to attract large

numbers of participators/performers. Disruptive actions are not as socially accepted as their conventional counterparts, but are less frowned upon than violent ones. Disruptive collective action includes activities that cause disturbances in everyday life and promotes civil disobedience. The actions of choice include, but are not limited to, unofficial strikes, occupations, blocking off key places or communication routes and loud, unruly demonstrations. Although disruption is not necessarily violent, disruptive actions may be perceived as threatening due to the disturbance they cause. Moreover, it should be noted that the perception of what is considered disruptive is also dependent on the context in which the action takes place (Tarrow, 1998). Due to their unpredictable and unruly premise, disruptive actions are more difficult to suppress than conventional ones. They also strengthen the solidarity amongst the participants to a greater extent than conventional actions do (Tarrow, 1998). History is riddled with examples of violent collective actions, as they are one of the easiest types of actions for smaller groups to instigate due to the low cost and low level of coordination needed (Tarrow, 1998). All that is necessary is something that can be thrown or wielded to inflict harm or damage. Whilst conventional and disruptive collective actions are the most common action repertoires in democratic societies, violent ones tend to scare off larger parts of the general public and are therefore less common (Tarrow, 1998). This has led the occurrence of violent actions to dwindle in the West and they are not as prevalent as they once were (della Porta, 1995). Violent actions are also less common in the contemporary climate change context, as these types of actions may be used to "weld supporters together, dehumanize opponents, and demonstrate a movement's prowess" (Tarrow, 1998, p. 94), and the overall aim of the climate subgroup is to get people to come together despite differences in opinions, for the greater good of humanity and the planet.

The classification of which performed action falls in which action repertoire can be debated at great length, as what kind of performance is considered socially acceptable (conventional), disruptive, or even violent may vary depending on social and cultural context (DiGrazia, 2014; Tarrow, 2011). However, these repertoires serve as tactics for the movements to choose from (Earl & Kimport, 2011) within each given context, and it can be argued that the distinction may be made by whether the performed action is considered to be either high-risk/high-cost or low-risk/low-cost (McAdam, 1986; Nepstad & Smith,

1999; Wiltfang & McAdam, 1991). It may also, as has been demonstrated by DiGrazia, be related to the level of resources of the individual participating in the performance of the action: "the more unconventional activities seem to be the domain of the less privileged and lower status individuals, who perhaps need to engage in more extreme forms of actions to get access to political power" (2014, p. 128).

Based on the above, on the definition of the repertoire of contention as a "limited set of routines that are learned, shared, and acted out through a relatively deliberate process of choice" (Tarrow, 1998, p. 30), and on Tarrow's description of it as "a structural and a cultural concept, involving not only what people *do*, when they are engaged in conflict with others, but what they *know how to do* and what others *expect* them to do" (Tarrow, 1998, p. 30), it is possible to view the repertoire of contention as a scheme on how movement actors can choose to act (i.e., which action repertoire they adopt or reject) in particular situations to partially or fully achieve their goals.

Repertoires as tools for understanding, interpretation and context suitability

In this chapter, mental models and the perceptions of message recipients in this context have been amalgamated with how an abstract and complex issue such as climate change can be communicated to create coherent mental models amongst message recipients. The emphasis was put on how emotional appeals relate to message construction, and how these appeals can be thought of as different communication styles based on the lexical choices. Drawing on repertoires that stem from linguistics, educational science, and social movement studies, Figure 1 visualises the analytical framework outlined in this chapter. The repertoires in linguistics relate to the emotional appeals utilised in a message, those in educational science to the communicative repertoire and therefore the context of a message, and those in social movement studies to the dissemination of a message. As pointed out in the chapter introduction, the intersections (i.e., *vesica piscis* 4-6 in the Venn diagram) are communication-oriented and related to the aims of this doctoral compilation thesis.

1. Repertoires in linguistics.

2. Repertoires in educational science.

3. Repertoires in social movement studies.

4. The understanding/ interpretation of the communication style by both the members of a subgroup and the public.

5. The understanding of words used by social movement subgroups in their actions.

6. The different contexts that different types of actions imply and the communication style they entail.

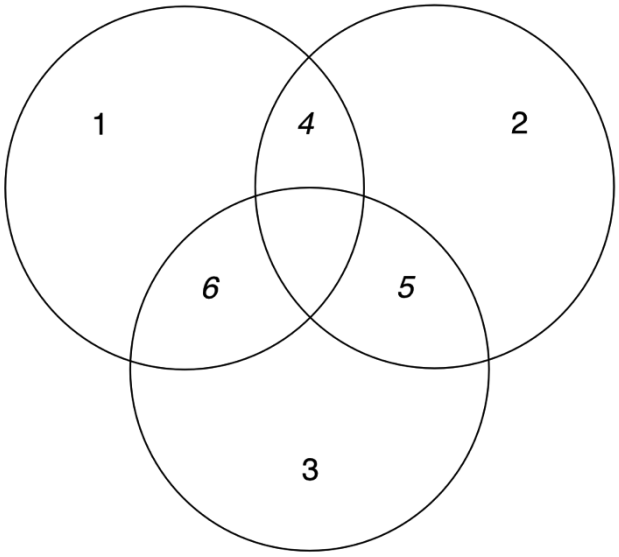

Figure 1: Visualisation of the analytical framework

Through the action repertoires and the repertoire of communication, a subgroup within a larger movement can choose from several repertoires for their actions, and for the dissemination of information through media outlets, as tactics to achieve their goal. However, it is not all about what is acted out or how it is transmitted. The construction and the content of the message matter as well, as exemplified by Lakoff's observation that "successful social movements require the coherence provided by coherent framing" (2010, p. 79).

The problematic aspect for the subgroups is, however, the same as for any message constructor/sender of climate change messages: that climate change and the threats that are linked to this issue are highly complex and abstract, and involve multiple, interconnected layers, which means that constructing a clear, simple and coherent message which encompasses the gravity of the issue, and can be interpreted and applied on both a local and a global scale, remains challenging. But the subgroups do not have to rely only on verbal/textual or even visual communication alone. They are a unique message constructor and sender within this context, as their verbal/textual messages are not only transmitted via various types of media, but also through their physical expression of contention: the action repertoires. As has been articulated earlier, the three types of action repertoires include numerous types of actions through which subgroups can disseminate their messages, but these actions are in themselves an extension of that messages. Whilst other

actors trying to raise public concern, build or sway public opinion, and create social change also act, the action repertoires are unique to movement actors (e.g., you rarely see a news reporter, lobbyist, or a politician gluing themselves to the street to disrupt traffic or chaining themselves to a tree, at least not in their professional role).

These actions can thus be seen as a performed message that either emphasises or contradicts the verbal/textual message, since when a subgroup chooses their primary action approach, this choice brings with it an "expected" structure and culture (in line with that of Almond and Verba, 1963, proposed in relation to political culture). With this combination of verbal/textual and performed messages, the role of the specific movement subgroup becomes noteworthy, as the chosen form of performed message in one way sets the tone for what is *aptus* in the verbal/textual message and the other way around. Earlier, I argued that the disagreement on which emotional appeal to use may stem from a lack of investigation of the message recipients' perception of the information source. The role of the source has been highlighted as an important factor for the overall effectiveness of any communication (Bolsen et al., 2019), and according to Morgan et al., "[e]ffective risk communications require authoritative and trustworthy sources" (2002, p. 4). Therefore, the recipients' perception of how these qualities apply to the source must be taken into consideration as well. The linguistic repertoire should be seen as key for the construction of effective messages regarding complex and abstract issues, as Ereaut and Segnit claimed that "they are frameworks for inference and for making judgements, such as what a thing means, what is right and what is wrong, what is acceptable and not acceptable, and what flows logically from what" (2006, p. 12).

Within this compilation thesis, the sender is exemplified by the climate subgroups of the larger environmental movement and the linguistic repertoires can here be of use for the subgroups as a bridge between the verbal/textual and performed messages. By applying this analytical framework through the studies within this thesis, it is thus possible to build upon the interconnectedness between the different action repertoires and communication styles within movement communication, leading to the yet undefined centre of the diagram. We shall return to this centre in the theoretical conceptualisation relating to research question 3 in Chapter 4.

Chapter 3. Empirical background and methodology

Empirical background

Among the many communication models that have been developed throughout the history of the field of communication research, it is clear that there are numerous elements which shape the communication parameters. The multiple senders, messages, means of transmission, noise, feedback loops, channels and recipients receiving the messages constructed within a particular context are just a few examples. Some of these were also visible in the spaceship analogy. However, regardless of which communication model one chooses to scrutinise, there are three components that are recurring in almost all of them: (1) the sender (the *who*), (2) the message (the *what*, including the *effect*), and (3) the receiver (the *whom*). These three components can in one sense be traced back to ancient Greece, where Aristotle put forth three elements that he argued were needed for effective communication: (1) the speaker, (2) the speech, and (3) the listener. While several of these models have included the channel (often thought of as the medium) and other aspects such as transmission and feedback, these three components can arguably be seen as the fundamental building blocks of all kinds of communication.

Thus, to recap, as climate change communication falls into the category of both risk communication and social change communication, the complexity of communicating the matter becomes related to how the senders encode risk and change, as well as how the recipients decode these messages. With climate change communication being very much dependent on the context, the perceptions and the beliefs an individual has about our contemporary society and the climate issue in itself (i.e., the previously constructed mental models), these perceptions and beliefs should influence individuals' interpretation of messages on this particular topic. But these previously constructed mental models are not only related to society and the issue. The recipients also carry with them previously constructed mental models of the sender as well. Therefore, this thesis is rooted in the idea that the actions and the communication styles of the subgroups together form an overarching message that the recipients will decode in relation to each other.

Within this thesis, these three communicative components relate to Articles 2-4: Article 2 deals with the information recipients within a European context, and approaches the recipient's inclination to personally participate in either conventional or disruptive actions. This connects with the first specific aim, which is to understand how recipients'

inclinations for participation in protest activities are related to different action repertoires and known factors for collective action motivation, and with RQ1a and RQ1b:

> *RQ1a: To what extent do known factors of collective action encouragement generally influence an individual's inclination towards protest participation?*

> *RQ1b: How are these known factors tied to different collective actions, and what is the correlation between socio-geographical differences and the inclination towards participation in conventional or disruptive collective actions?*

Article 3 includes strands of all three components, as it starts with the receivers and investigates their attitudes towards alarmistic or optimistic textual communication styles dependent on recipients' perception of the message sender. This thus relates to the second specific aim, which is to explore if and how the lexical style related to certain emotional appeals and how particular action repertoires in conjunction affect the recipients' inclination for collective action. This exploration is performed through Article 3 and intends to answer RQ2:

> *RQ2: In what way do lexical choices of emotional appeals affect the interpretation of messages from movement subgroups with different action categories, and how do they influence the stated action behaviours and attitudes?*

As a theoretical piece, the fourth article is a theoretical consideration of the conditions and relationships between various components in the communication models. Drawing from the theoretical outline given in Chapter 2 (and which will be expanded upon in Chapter 4), it suggests a methodological approach for evaluating alignment of the action messages and the communication style of verbal/textual messages of the senders. The fourth article concerns the third specific aim of discussing RQ3:

> *RQ3: How can communication-action alignment be theoretically conceptualised and methodologically utilised?*

Hence, it is intentionally left out of this chapter and instead discussed in Chapter 4. As the synthesis chapters are oriented towards an overarching purpose, parts of the methods are omitted or expanded upon in relation to them. Full methodological accounts for the research questions in each separate paper can be found in Part II.

Setting the scene: Subdivisions, subsets and subgroups within the larger environmental social movement

The ambits of this thesis are climate activists and the content of the message they put forth parallel to the actions they take, and the general public's perception and reception of climate change messages and actions. This means that I refer here to the climate change faction of the larger environmental movement as the sender, the general public as recipients and the movement's external communication and actions in conjunction as the messages. In this thesis, I view the term "social movement" as an umbrella concept under which numerous overarching movements (*subdivisions*) are divided depending on the issue of interest. These subdivisions are in themselves made up of several issue-specific *subsets* comprised of even more specialised *subgroups* (Figure 2). Beneath the term "environmental movement" is a multitude of more specific environmental-related issues that people rally behind, e.g., climate change, waste reduction and pollution. These overarching issues are what I refer to as the *subsets* within the overarching movement. These are not groups in themselves, but a mere classification of the various topics that are related to the environment at large. Within each of these subsets, however, we find multitudes of groups of people who take some form or other of collective action related to the subset and do so under different group names. These groups are what I refer to as *subgroups*: large or small groups of people that unite for the issue of each subset, related to the overarching subdivisions' thematic matter.

The subgroups range from larger, more formal and institutionalised groups (e.g., Greenpeace), to smaller, community-based, single-issue grassroots groups (e.g., the local Native American groups opposing the Keystone XL or Dakota Access pipelines in the US), that employ any of Tarrow's (1998) collective action repertoires. Although subgroups are not necessarily limited to a specific subset, their stipulated aim and purpose form good indicators as to which subset they primarily adhere to.

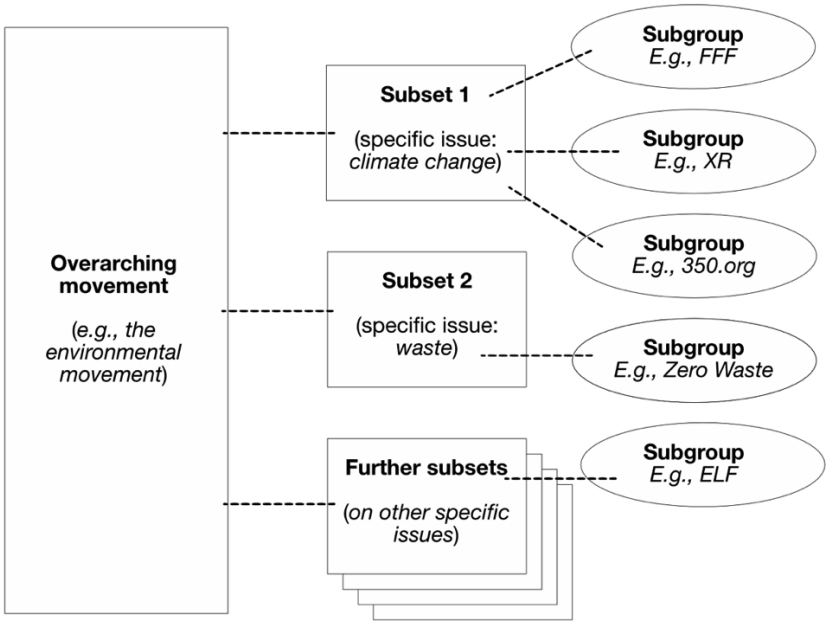

Figure 2. A simplified categorisation of movement, subsets, and subgroups

The first two chapters have focused mainly on the message construction from the perspective of issue complexity, the recipients as a broad and diverse audience, and the senders' context (the environmental movement and its climate subset). To discuss the different categorisations of collective action (Tarrow, 1998), three subgroups within the climate subset are herein used as an entry point to this subset: Fridays for Future, Extinction Rebellion, and Earth Liberation Front. As these are rather different, both in terms of origin, action repertoires, and voiced aims, a brief introduction is in place.

For this doctoral thesis, two subgroups that represent the current social climate (Fridays for Future and Extinction Rebellion) were chosen as the representative cases of the climate change subset within the larger environmental movement. These two groups emerged in 2018, and both have grown into large, international collectives in the short amount of time since. The primary reasons as to why these particular subgroups were chosen are their specific *collective action repertoires*. Fridays for Future can be classified as conventional in their action types, and Extinction Rebellion as disruptive. This is also the reason why a third, the subgroup Earth Liberation Front, was chosen as well, as this subgroups' actions can be classified as violent. Fridays for Future and Extinction Rebellion were also partially selected due to the public's familiarity with them, for the third article (see

Part II). All three subgroups stem from a Northern/Western European context, meaning that their contention originates in similar protest attitude milieus (see Article 2).

Fridays for Future: The conventional subgroup

In this thesis, the subgroup named Fridays for Future (henceforth FFF), is used as a case study for conventional actions. As previously mentioned, FFF as a group came about after Thunberg initiated her school strike in 2018, an action that may be seen as unconventional. The exclusion from the political power mentioned by DiGrazia (2014) may be one argument as to why strikes were the initial performed action by FFF, as the youth through their age, and thus their ineligibility to vote, are excluded from the political arena. However, since then, the group has grown and is now a global collective that according to FFF's own statistics have involved approximately 16 million individuals in some form of climate change-related peaceful protest action under the banner of FFF (Fridays for Future, n.d.-a). FFF still holds Thunberg's initial action, the school strike, in high regard, but is also known for large and peaceful protest marches, like the one at which Thunberg spoke during COP26, where she called the conference a "failure" and a "global north greenwash festival" ("Greta Thunberg Tells Protest that COP26 has been a 'Failure'", 2021). FFF's main textual/verbal message is for people to unite behind the currently available science, and for the world to take action according to the evidence and conclusions science has to offer (de Moor et al, 2021; Fridays for Future, n.d.-b). One can find the main goal of FFF on its international website, which is "to put moral pressure on policy-makers, to make them listen to the scientists, and then to take forceful action to limit global warming" (Fridays for Future, n.d.-b). With its "listen to the scientists" statement, the FFF can be seen as a supporter of the information deficit model (IDM), believing that more information, and especially scientific information, will lead to action. FFF has three primary demands that are related to their main message: (1) to keep the increased global temperature below 1.5°C, compared to pre-industrial levels, (2) to obtain climate justice and intergenerational climate equity, and (3) to acknowledge and follow the line of the current scientific consensus on climate change (Fridays for Future, n.d.-a). Although striking as an action could be considered unconventional, the context in which the school strikes are performed, and the fact that since 8 September 2018, it is now limited in performance to Fridays only in

conjunction with the other more classically conventional actions taken, the school strikes can arguably be viewed as conventional, at least in a Western/Nordic context.

Extinction Rebellion: The disruptive subgroup

The second subgroup discussed in this thesis is the Extinction Rebellion (henceforth XR), which represents the disruptive actions. Parallel with Thunberg's school strike, a small group of activists in the UK was preparing for "a public declaration of rebellion in London's Parliament Square on 31 October 2018" (Saunders et al., 2020). Much like FFF, XR also rapidly grew and expanded to several other countries (Ginanjar & Mubarrok, 2020; Westwell & Bunting, 2020), making it a mass movement. It is also a decentralised organisation, without a clear figurehead, although Roger Hallam and Gail Bradbrook are often referred to as leaders by the press (Fotaki & Foroughi, 2021). Anyone can "organize and autonomously take action in the name and spirit of XR, as long as the action fits with XR's principle and values" (Fotaki & Foroughi, 2021, p. 7). XR has three textual/verbal main aims which they want governments to comply with. The first demand is to tell the truth and includes the requirement that governments worldwide declare a climate and ecological emergency (Extinction Rebellion, n.d.). The second one is to act now, which includes the call to stop biodiversity loss and achieve net-zero carbon emissions by 2025 (Extinction Rebellion, n.d.; Saunders et al., 2020). Thirdly, they make a demand of going beyond politics, which means that governments should form and be led by the decisions of citizens' assemblies when it comes to making decisions on a fair transition to net-zero carbon emissions (Extinction Rebellion, n.d.; Saunders et al., 2020). Inspired by the Occupy movement (Fotaki & Foroughi, 2021) XR are known for their promotion of a non-violent civil disobedience action approach with which they try to "influence public discourse about the environment and social activism" (Ginanjar & Mubarrok, 2020, p. 43) and encourage members to take individual action as well (Fotaki & Foroughi, 2021). Their action messages urge their participators to disrupt traffic, stage mass 'die-ins', and organise large and obstructive protest rallies in central and crowded locations. In addition, they also encourage mass arrests as a form of disruptive action, with the intention to overwhelm police resources (Richardson, 2020; Saunders et al., 2020).

Earth Liberation Front: The violent subgroup

The Earth Liberation Front (henceforth ELF) is the oldest of the three subgroups discussed in this doctoral thesis, as it was formed in the UK in early 1992 (Leader & Probst, 2003; Molland, 2006). It sprung out of "the more radical members of the activist environmental group 'Earth First!'" (Leader & Probst, 2003, p. 38) who disagreed with the actions taken by Earth First!. ELF is the hardest of the three subgroups within this thesis to examine, as it is made up of a clandestine cell system (Best & Nocella, 2006) which rarely publishes any press releases or official communiqués (Molland, 2006). ELF is also outspokenly a movement of leaderless resistance (Joosse, 2007; Leader & Probst, 2003) with cells in over 20 countries (Loadenthal, 2013). Their aim differs from XR and FFF, but their overarching goal is, however, to bring attention and action to the current destruction and exploitation of the natural environment that humanity is causing. The ELF activists call themselves Elves, and they employ ecotage as their action of choice, which is a form of sabotage aiming to protect the environment. Along with many other methods of destruction, they rely heavily on arson (Best & Nocella, 2006). Their aims are to "inflict maximum economic damage on those profiting from the destruction and exploitation of the natural environment [and] [t]o reveal and educate the public about the atrocities committed against the earth and all species that populate it" (Molland, 2006, p. 50), among others. During the 1990s, ELF cells started to emerge worldwide, and their sabotage actions became very noticeable in the US, where they caused substantial destruction across the nation (Molland, 2006). These violent sabotage actions eventually led the Federal Bureau of Investigation to classify ELF as a domestic eco-terrorist organisation in the early 2000s (*The Threat of Eco-Terrorism*, 2002) after the FBI "linked the ELF to 600 criminal acts committed between 1996 and 2002, totaling $43 million in damages" (Joosse, 2007, p. 352). ELF is the least connected of the three groups to the climate change subset, and to the articles in this doctoral thesis. However, it has been included for exemplifying purposes in relation to the fourth article, as it is a fairly well-known actor within the larger environmental movement and the ELF action repertoire is of particular interest for the purpose of this thesis.

The subgroups relations to the research questions

Related to RQ2 and RQ3, FFF and XR will be used as exemplifying cases. However, to encompass all three of the categories Tarrow highlights, the additional group of ELF will have a minor exemplifying role. FFF and XR are not part of RQ1a (which investigates which known factors of collective action encouragement generally influence an individual's inclination for protest participation) or RQ1b (which explores which known factors that are tied to different collective actions and the correlation between socio-geographical differences and the inclination for participation in conventional or disruptive collective actions) per se. But both FFF and XR emerged within the European context and made their entrance in the climate change debate within this setting before they became larger players in the broader global debate. As noted, FFF can be categorised as conventional and XR as disruptive. Looking at the European context for the inclination to participate in either of these collective action repertoire performances should allow for a theoretical discussion of these two RQs and RQ3 in Chapter 4, especially in relation to the context dependency of performance categorisation.

Epistemological and ontological considerations

The word context has been used frequently up to this point. With such an emphasis on context dependency, and on presumptions and preconceptions, the more generalised approach to research design which quantitative methods provide may seem strange or even incorrect to some. However, as I argue that the presumptions and preconceptions which an individual has form the presupposition which an individual carries into *any context* and thus affect the reception and interpretation of a message, they need to be approached in a more generalisable way. Together with the categorisation of subgroups as fluid parts of one or more subsets within a larger movement, this is very much in line with how Dewey thought of experience: that our beliefs develop from our past actions, and the results of our actions originate in our beliefs, which indicates that when beliefs and actions interact, meaning is created through experience (as cited by Morgan, 2014). Additionally, Dewey thought that the process of interpretation is key for experience, that beliefs must be interpreted to create action, and action must be interpreted to foster beliefs. Thus, surveying message recipients in a more generalised manner during the mobilisation process in other

ways than through in-depth, qualitative interviews or observation studies "allows the researcher not only to collect a large amount of information on protestors, but also to design questionnaires that address relevant and unexplored questions about individual participation, and to collect higher quality data" (Andretta & della Porta, 2014, p. 309).

Dewey also distinguishes between habit and inquiry within experience. Habits are experiences that do not require much decision-making on our behalf, as our beliefs and actions are semi-automated. Inquiry, however, is intriguing, as it is "a process of self-conscious decision making" (Morgan, 2014, p. 1046) where the potential outcomes of our beliefs need to be re-examined and resolved through our actions. Furthermore, the five steps in Dewey's systematic approach to inquiry is highly relatable within the intersectional discussion of social movement communication and climate change communication, as the approach involves (1) identification of a situation or issue as problematic, (2) the difference issue definition makes, (3) the development of potential actions to address the issue, (4) the evaluation of the potential consequences of actions, and (5) the taking of actions one feels will be most suitable for addressing the issue (Biesta & Barbules, 2004; Morgan, 2014). This also relates to the experimental study (Article 3), where these five types of inquiry are inbuilt.

Furthermore, these five inquiry types could be discussed and understood in relation to Tilly's (2006) three categories of claims within social movements: *identity*, *standing* and *programme*. First, social movement actors rely on their presumptions to identify a societal issue that is problematic (e.g., environmental issues). This includes their *identity*, as the identity includes the reason for the existence of the activists, and thus justifies the existence of the movement. Secondly, how a movement's actors define the issue and which parts they (based on their beliefs and preconceptions) decide to emphasise (i.e., which parts they highlight as most important) is tied to their *standing*. Standing is, briefly explained, the activists' claim of inhabiting a certain position within a larger movement/debate (e.g., focusing on climate change within the larger environmental debate). Thirdly, once the identity and the positioning are in place, the potential calls to action (the potential *programme*) need to be developed and evaluated, before they are finally accepted as the activists' official programme. All this combined, then, constitutes this particular group's collective action repertoire, which formulates the context in which they communicate. Thus, these action

repertoires should also be linked to linguistic pragmatics, as they are key for the creation/interpretation of the meaning of the words that make up the messages the activists communicate, as well as the context of these messages. With this as a backdrop, the question is now about how to approach this methodologically.

Methodological approaches

This thesis rests on three specific aims, with the first two related to methodological deliberations. Both aims are recipient-oriented, with the first one aiming at understanding the inclination for participation in protest activities, and the second one how the alignment of performed and verbal/textual messages affects the recipients' inclination for collective action. Article 1 (Agin & Karlsson, 2021) does not relate directly to any of the objectives in this thesis per se. Rather, it is the rationale leading up to the research problem. However, as it forms a foundation on which this thesis rests, it is prudent for the sake of transparency, and for the validity of the research problem, to present the methodology behind it.

Hide-and-seek with search engines: The literature review in Article 1

The aim of Article 1 was to survey the field of environmental and climate change communication research in a broad sense to make any potential gaps more apparent. Thus, a systematic literature approach was most suitable methodological approach. As we were not the first to attempt this, we drew inspiration from several earlier reviews (i.e., Anderson, 2009; Comfort & Park, 2018; Hansen, 2011; Olausson & Berglez, 2014; Runhaar et al., 2018; Schäfer & Schlichting, 2014;). The first step conducted was in line with Schäfer and Schlichting (2014), and consisted of a general search of articles in English on Web of Science [WoS]. The search was limited to a timespan between January 1950 – December 2018 and we used the Boolean search string TS=("climate change" OR "global warming" AND "communication" OR "media"). Global warming was included as a precautionary measure to make the search inclusive and sensitive to developments in the discourse of climate change. After this, a categorical filter was applied as a delimitation, as the initial search returned 6,706 hits. All categories connected to the social science dimension of environmental communication and media were selected, and the search also included articles that was made available online upon acceptance (despite the possibility that their

official reference date may have been altered to 2019 after being included in a specific journal issue after initial publication). The delimitation above narrowed the search down to 2,536 articles and made the key journals apparent. The search was then delimited further to these key journals (those with more than 10 articles published during the chosen timespan), as the majority of the scholarly debate on environmental and climate change communication evidently took place in these. This search yielded a total of 1,743 articles.

However, with this approach, we realised that certain prominent journals within environmental communication did not appear in the search, despite being listed on WoS. Due to this, the decision to make an additional search was made, this time in the journals listed as relevant by the *International Environmental Communication Association* [IECA]. One journal was, however, removed from this list, as it does not publish research articles. Via each of the newly included journals' homepages we applied the same Boolean search string and the same delimitation, which rendered the result of an additional 1,098 articles. After this, a manual screening of the total number from both WoS and the individual journal search was conducted. Out of the 2,841 articles, 2,564 were removed, as these either "only used climate change as an example (i.e., focused on air pollution data in the atmosphere) or had used some form of non-social science medium as a means of investigation (e.g., lasers)" (Agin & Karlsson, 2021, p. 436). At this stage one major problematic issue became apparent: not all relevant articles we knew about showed up through usage of the search string, including highly cited works. This was because the WoS search had not included several journals in which more than 10 relevant articles were published, even though more than 10 articles in these journals were highly relevant. Therefore, we proceeded by applying the same procedure on the IECA journals as on those in the WoS search and then the same manual screening of articles found in this additional step. This procedure led us to the total N=407, which were the ones included in the final content analysis.

The code sheet included variables such as year of publication, citations, gender and country of first author, country and continent of data collection, a string variable containing the theoretical outlook, variables for both methods for data collection and analysis, the primary research focus, the object of study and the media (if any) that was investigated. The full variable overview, including references to the studies the various variables drew inspiration from, and the full display of results can be found in Article 1 in Part II.

Why do people protest? Multiple regression of survey data in Article 2

The second article in this compilation relates to RQ1a (*To what extent do known factors of collective action encouragement generally influence an individual's inclination towards protest participation?*) and RQ1b (*How are these known factors tied to different collective actions, and what is the correlation between socio-geographical differences and the inclination towards participation in conventional or disruptive collective actions?*). The data used in this study come from the European Values Study [EVS] 2017, which is a mix-mode collection survey spanning over 34 European countries. The total number of respondents in the dataset is 56,491 and the data collection took place between 2017-2020 (EVS, 2020). The reason for using EVS over other available datasets that include variables connected to protest participation (e.g., the European Social Survey [ESS]) was a deliberate one, as the ESS asks its respondents if they have participated only in the last 12 months. The EVS does not put a time restriction on the participation. As such, the data on protest participation give a less restrictive and more generalisable representation of protest participation. Variables from the EVS dataset were selected based on their connection with the five motivational factors investigated:

1) *Media usage*. This motivational factor was chosen as different media outlets help audiences to obtain information about current issues and help frame these matters (e.g., Boulianne et al., 2020; Ketelaars, 2017; Schranz et al., 2018), and because legacy media coverage and social media discussion are important factors for raising public and personal concerns about environmental issues (Liu & Li, 2021). This category of variables consisted of the extent to which the respondents follow politics via television, radio, daily newspapers and social media.
2) *Organisation affiliation*. This motivational factor was chosen as both contact with and membership in environmental organisations strongly "influences social identity" (Fielding et al., 2008, p. 324), because organisation and group norms can influence people's group identity. This category of variables consisted of whether the respondents were members of an environmental organisation or belonged to political parties/groups, and their level of confidence in ENGOs.
3) *Personal environmental concerns and sense of collective efficacy*. This motivational factor was chosen because organisation is dependent on other factors such as

attitudes, values, beliefs, and concerns which spurs engagement as well. Concern is important, but as pointed out by Wallis and Loy (2021), collective efficacy is very important for pro-environmental action. This category of variables consisted of the respondents' perceptions of their own capability and their perceptions on the environment. The respondents' answered whether or not they believed that it was too difficult for them to do much or whether or not they felt that there was no point doing something unless others did the same in relation to the environment. Furthermore, they were asked if they believed environmental threats to be exaggerated and whether they believed that the environment should be given priority over economic growth or vice versa.

4) *Demographic aspects*. This motivational factor was chosen as age and gender are known factors for protest participation (e.g., Norris, 2002). Yet, the demographic dispersion differs depending on the issue (Walgrave et al., 2010), the type of action (Dodson, 2015), and country of residency (Yates, 2011). This category of variables consisted of European region of residency, gender and age. The variable relating to country of residency was recoded into regional dummy variables, with Central and Eastern Europe acting as a reference category.
5) *Perceptions of the current political system in the respondents' country of residency*. This motivational factor was chosen because political distrust has been linked to the public's perception that social issues are not being addressed in an appropriate way (see Citrin, 1974; Hooghe & Marien, 2013; Klandermans, 2015). This distrust can turn to public grievance and contention, taking the form of protest actions. This category of variables consisted of the respondents' levels of confidence in their government, parliament and political parties, as well as the perceived levels of democracy and satisfaction with the political system in their own countries.

Protest participation was measured through four variables, consisting of whether or not the respondents had or would consider signing a petition, attending a lawful demonstration, or joining a boycott or unofficial strike.

The data analysis was conducted through multiple regression analysis (OLS), consisting of five models. For the first model of the regression, an index was created out of the four (the Protest Action Index, with a Cronbach's alpha of .786), to represent general protest propensity. In models 2-5, the protest variables were used as separate *y*'s. Building on the works of Tarrow (2011) and Tilly (2006), signing petitions and attending lawful demonstrations were categorised as conventional actions, and joining boycotts and unofficial strikes as more disruptive.

Combining action repertoire and linguistic style: 2x2 between-group experiment in Article 3

The third article in the compilation relates to RQ2 (*In what way do lexical choices of emotional appeals affect the interpretation of messages from movement subgroups with different action categories, and how do they influence the stated action behaviours and attitudes?*) in this compilation thesis. The article contributes to the discussion on emotional framing as a motivator for collective action through examination of the role the information source plays in relation to the emotional communication style emphasised in a message. The data were collected in collaboration with TSN/Sifo, a Swedish polling company, during the period between 31 May and 30 June 2021. The sample was a TSN/Sifo representative web panel of Swedes.

The study is based on a 2x2 between-group research design and was part of a larger experimental study. The treatments used forest fires as an example of a climate change consequence, as forest fires are an increasingly common phenomena that can easily be understood by most respondents, i.e., forest fires are less complex and abstract than other climate change related consequences. For this part of the larger experiment, the total number of respondents was 288, split into four treatment groups with approximately 70 respondents randomly assigned to each treatment.

Each respondent was given an overall description where the study was presented as a one on the public's perceptions and attitudes towards news media, social issues and environmental issues in particular. Thereafter, the respondents were asked to fill out a more generalised pre-survey, asking questions about demographic information, trust towards media and environmental organisations and institutions, media habits, and inclination to certain pro-environmental actions. After the pre-survey, the respondents were exposed to

one of the four treatments, which included a short description of the sender (i.e., XR and FFF). After the respondents had read the treatment texts, they were asked to fill out a post-survey, where they answered questions on how they viewed and perceived the text as well as their reaction and inclination to certain actions after reading the text. A Kruskal-Wallis test was also conducted as a control, and showed no measurable differences between the treatment groups.

Originating from a news report on how forest fires are becoming increasingly common, and how the preservation of marshes may combat them, the treatments were constructed by modifying the heading and the text to emphasise either the fires or the marshes through the use of linguistic repertoires stemming from Ereaut and Segnit (2006) (as outlined in Chapter 2). The four treatment texts were: (1) alarmistic text from Extinction Rebellion (alarmist-disruptive alignment), (2) optimistic text from Extinction Rebellion (optimist-disruptive alignment), (3) alarmistic text from Fridays for Future (alarmist-conventional alignment), and (4) optimistic text from Fridays for Future (optimist-conventional alignment). The emphasis in the alarmistic treatment was on the increased prevalence and intensity of forest fires, and in the optimistic one on the forest fire reduction that marshes may contribute to. The image in the text header was altered depending on the linguistic style; for the alarmistic treatment it depicted a raging forest fire (warm, red colours) and for the optimistic treatment it portrayed a marshland (cool, blue colours). Furthermore, effort was put into mirroring the aesthetics of XR's and FFF's websites by using similar design elements (fonts, colours and the use of their logotypes). An example of XR's original design and our XR alarmistic treatment can be found in the appendix of Article 3 (see Part II). The dependent variable categories within this experiment were:

1) Trust/competence of the information sender as perceived by the recipients. For these variables, the study drew from the work of, e.g., Bucy (2003), Frewer et al. (1996), Gaziano and McGrath (1986), and Sundar (1999).
2) Attitude change towards climate change amongst the respondents. Stemming from the core components on climate change attitudes (Pidgeon, 2012), these variables included concern, importance, perception of risk and threat and felt responsibility (see also the work of Bateman & O'Connor, 2016 and Urban, 2016).

3) Predisposition for collective actions and dissemination of information. Within this category, variables of actions taken drew from Stern (2000), Tarrow (2011) and Tilly (2006) and the variables on information dissemination drew from Boulianne et al. (2020), Klandermans and Oegema (1987) and Valenzuela (2013).

The study also used a behaviour manipulation check "by timing the duration between when the respondents entered the treatment […] and when they closed it" (Karlsson & Agin, 2022, n.p.). Based on this, a cut-off point at 15 seconds was set and respondents spending less than this on the treatment were omitted from the study. This allowed the included respondents to see the most heavily altered parts of the treatments, i.e., the headline, the opening paragraph and the photo.

On a final note, in relation to the third article, the message recipients were through their participation in the 2x2 experiment part of clarifying recipients' beliefs regarding sender action and communication and connecting both with recipients' action propensity, although this was not sampled during protest participation in this thesis. Details on ethical aspects (e.g., ethical review, participant consent, GDPR, etc.) can be found in Article 3 in Part II.

Chapter 4. Discussion of results

Chapter overview: Summary of results and discussion

This chapter will cover Articles 2–4, as these relate to the purpose and research questions within this compilation thesis. Furthermore, as the fourth article is a theoretical piece, the section of this chapter which relates to this specific piece will not entail a summary of results, as the respective sections for Articles 2–3 do. The full results, including detailed overviews of tables and figures, can be found in the respective articles in Part II. This chapter is structured in chronological order, starting with Article 2, which is divided into three segments: general, conventional and disruptive action participation relating to RQ1a (*To what extent do known factors of collective action encouragement generally influence an individual's inclination towards protest participation?*) and RQ1b (*How are these known factors tied to different collective actions, and what is the correlation between socio-geographical differences and the inclination towards participation in conventional or disruptive collective actions?*). This is followed by Article 3, which is divided into optimistic and alarmist linguistic repertoires and their connection to conventional and disruptive action repertoires and thus relates to RQ2 (*In what way do lexical choices of emotional appeals affect the interpretation of messages from movement subgroups with different action categories, and how do they influence the stated action behaviours and attitudes?*). The chapter ends with a discussion of RQ3 (*How can communication-action alignment be theoretically conceptualised and methodologically utilised?*), relating to Article 4. Thus, this chapter follows the same order in which the aims and research questions were presented in Chapter 1.

Recipients' inclination for climate engagement activities: Action repertoire dependency

Before moving on to discussing the results of Article 2 in relation to the RQs in this thesis, the key results need to be highlighted. This section will briefly do so. The results of Article 2 consist of a regression model that includes five models (Table 1). The first model relates to the respondents' predisposition for protest participation in general, connecting it to RQ1a in this compilation. Models 2 and 3 shows the relation of motivational factors with conventional protest actions – namely, petition signing and attendance at lawful demonstrations. Models 4 and 5 represents the repertoire of more disruptive actions, focusing on respondents' inclination for joining in either boycotts and unofficial strikes.

Table 1 is presented as a condensed version of the regression table in Article 2, to make it more efficient in relation to the purpose of this compilation thesis. None of the output data in the table have been altered, but some variables and their results have been removed. However, the constant, the *N*, the adjusted R^2, the F and the Durbin–Watson values have not been adjusted for the removal of the variables extraneous here. Doing so would have led to misleading results, but this needs to be kept in mind when discussing the results. The full table can be found in Part II, Article 2.

Table 1. Multiple Regression of Inclination towards Different Protest Actions (OLS)

	1. General protest participation	**2. Signing petitions**	**3. Attending lawful demonstrations**	**4. Joining boycotts**	**5. Joining unofficial strikes**
Constant	-.304	.961	.619	.721	1.138
Adjusted R^2	.239	.217	.167	.175	.067
N	39241	41041	40925	40521	40289
Df1	21	21	21	21	21
F	588.087	541.369	391.518	410.005	138.512
Durbin–Watson	1.617	1.617	1.769	1.725	1.699
Follow politics on TV	-.007	-.007*	.014***	-.010***	-.009***
	(.004)	(.003)	(.003)	(.003)	(.003)
Follow politics in the daily papers	.071***	.051***	.035***	.041***	.012***
	(.004)	(.003)	(.003)	(.003)	(.002)
Follow politics on social media	.083***	.041***	.053***	.040***	.030***
	(.004)	(.003)	(.003)	(.002)	(.002)
Member of an environmental organisation	.353***	.167***	.198***	.211***	.126***
	(.019)	(.014)	(.013)	(.012)	(.011)
Belongs to political parties/groups	.407***	.207***	.252***	.233***	.120***
	(.022)	(.016)	(.015)	(.014)	(.013)
Economic growth vs. Protecting environment	.164***	.102***	.094***	.095***	.035***
	(.011)	(.008)	(.008)	(.007)	(.006)
Northern Europe (*ref. Central and Eastern Europe*)	.574***	.343***	.273***	.345***	.156***
	(.015)	(.011)	(.010)	(.101)	(.009)
Southern Europe (*Ref. Central and Eastern Europe*)	.310***	.166***	.345***	-.021	.113***
	(.019)	(.014)	(.013)	(.012)	(.011)
Western Europe (*Ref. Central and Eastern Europe*)	.572***	.566***	.268***	.231***	.051***
	(.014)	(.010)	(.101)	(.009)	(.008)
Gender	-.146***	-.011	-.096***	-.095***	-.088***
	(.010)	(.007)	(.007)	(.006)	(.006)
Confidence in government	-.146***	-.063***	-.062	-.078***	-.086***
	(.009)	(.006)	(.006)	(.005)	(.005)
Confidence in parliament	-.017	-.010	-.004*	-.004	-.019***
	(.009)	(.006)	(.006)	(.005)	(.005)
Confidence in political parties	.042***	.004	.014	.025***	.039***
	(.009)	(.006)	(.006)	(.006)	(.005)
Level of democracy in own country	-.004	.005**	-.002	-.006**	-.003
	(.003)	(.002)	(.002)	(.002)	(.002)
Level of satisfaction with the political system in own country	-.021***	-.015***	-.015***	-.010***	-.004*
	(.003)	(.002)	(.002)	(.002)	(.002)

*Note: Condensed version of Table 3 in Article 2. Significance: *p < .05, **p < .01, ***p < .001 (two-tailed). Standard errors in parenthesis.*

As a reference, Table 2 shows the general predisposition of the respondents towards each of the actions within the EVS data set. Table 2 suggests that respondents generally are more inclined to participate in conventional actions. However, despite the relatively low levels of previous participation in disruptive actions, the respondents showcased relatively equal levels of participation plausibility.

Table 2. General Protest Predisposition in Article 2 Data Set

	Would never do	Might do	Have done	*N*
Signing petitions	28.5	30.6	40.9	54.169
Attending lawful demonstrations	42.8	37.7	19.5	53.839
Joining in boycotts	52.4	36.3	11.3	53.126
Joining unofficial strikes	69.9	24.6	5.4	52.766

Note: Data source European Values Study 2017 (EVS, 2020). Respondent answers in percentages rounded to one decimal.

The inclination to participate in conventional actions (petitions and lawful demonstrations) is relatively high compared to that for more disruptive actions (boycotts and unofficial strikes) in Table 2. This underlines the idea that it is not sufficient to treat protest actions as something that may have homogenous motivational factors, as individual perceptions of the different actions appear to be heterogenous. Yet, as the plausibility is relatively high for the disruptive actions as well, it is interesting to investigate how motivational factors correlate with the general approach before moving on to investigating the actions as part of their respective action repertoire.

General protest participation

The general model within the larger regression (Table 1) reached an adjusted R^2 of 23.9%, indicating that this regression model's results validate previous research; the motivational factors included in Article 2 do indeed correlate with general protest participation. For general predispositions for protest participation, the single most influential factor was that of demography. European regional affiliation was highly linked with the inclination to participate. In the general model, the most influential regions were the Northern- and Western parts of the continent, where both of these regions showed β-values over .550***. Participation was also more plausible for men (β=−.146***), those who had lower confidence in the government of their country (β=−.146***) and those who reported that

they were less satisfied with the political system in their country (β=−.021***). Those who had confidence in political parties were, however, more inclined to participate (β=.042***).

Furthermore, and related to collective efficacy, the respondents who were members of an environmental organisation or a political party/group (β=.353*** and β=.407***) or believed that the environment should be given priority over financial growth (β=.164***) were also more prone to participate in protests in general. The variables used to measure the correlation between media usage and protest propensity was likewise in line with previous research (e.g., Boulianne et al., 2020) and showed that these variables contribute as motivational factors. However, they showed a relatively low level of correlation with protest propensity overall. Social media (β=.830***) and television (β=−.007) where the two that stood out in this model, with social media having the highest relation (β=.083***) and television being the only one with a negative value (β=−.007). Despite this slight negative relationship, television did not, however, reach statistical significance.

Thus, the conclusion drawn from Article 2 in relation to RQ1a in this compilation thesis is that known motivational factors for general protest participation do indeed influence peoples' inclination to participate. When treating protest actions as a homogenous group, men who live in Northern/Western Europe and have lower levels of confidence in the government of their country, as well as a low level of satisfaction with their current political system are more likely to participate in protests in general. This participation tendency is also stronger for those who are affiliated with either a political party/group or with an environmental organisation, but it does not matter much which type of media outlet they prefer. However, as mentioned, this is when treating protest actions as something uniform. The extent of the relation with protest propensity varies a great deal between the different factors and indicate that, as discussed consecutively throughout Chapter 2, what motivates some people does not necessarily motivate all. Thus, the results relating to RQ1b will help further the understanding of recipients' inclination for protest participation.

Conventional protest participation

The truly interesting results of Article 2 become apparent when the actions are divided into the two most common action repertoires – that is, into either conventional or disruptive

actions. The adjusted R^2 does, however, fluctuate when we look at the other models in the regression. For the two conventional actions, the adjusted R^2 for petition signing is rather similar to the R^2 of the first model, keeping above the 20% mark (precisely 21.7%). For the other conventional action, the attendance of lawful demonstrations, there is a bit of a decline, with the model explaining 16.7% of the variance. Thus, it is clear that there is a slight difference between what motivates participation tendencies in conventional actions rather than in general participation.

The different variables for the effect of media usage remain low over both action models, where we see a decrease in all but one column; the most substantial result is that television has gone from being negative both in the general model and in the petition-signing model, to positive e in the case of lawful demonstrations, yet it still remains low (here reaching β=.014***). It is also interesting that the relationship between daily papers is higher for petition-signing, whilst lawful demonstrations have a stronger connection with social media usage.

The most prominent variables continued to be the four geographical regions of Europe. Here, however, the models showed some interesting deviations from the general model, with respondents living in Southern Europe being more prone to attending lawful demonstrations than they were to signing petitions (β=.345*** for demonstrations, β=.166*** for signing petitions). This can be compared with the general results for Southern Europe, where this particular geographical variable was β=.310***. However, for the regions that seemed to be most inclined towards protest participation in the general model, we now see that the opposite seems to apply: Western regions show β= .566***for signing petitions and β=.268*** for lawful demonstrations. The corresponding results for Northern Europe show less of a break, with β=.343***for signing petitions and β=.273*** for lawful demonstrations, but respondents in this region are still more inclined to sign petitions. This, yet again, indicates that it is crucial *not to treat protest actions as a homogenous form of contention,* as these results indicate that what appeared to be the conclusion in the general model – that the Northern/Western regions showed a higher protest propensity than the other regions – is misleading.

What is more, when it comes to the variables related to collective efficacy, affiliation with an environmental organisation is less important for the inclination to participate in conventional actions. However, it is still an important factor, with a relatively high level of correlation (β=.167*** for signing petitions and β=.198*** in the case of lawful demonstrations, compared to β=. 353*** for protesting in general). The same tendency is seen when it comes to the other previously important political party/group affiliations. The value is still higher than those for environmental organisation affiliation (here it is β=.207*** for petitions and β=.252*** for demonstrations). Compared to the β=.407*** this variable reaches for the general model, this is yet another indication that protest actions should be viewed as heterogenous actions instead of a generalised occurrence.

Furthermore, and potentially more crucial, the results also show that there are differences *even within* the different action repertoires. This highlights the need not only to investigate the action repertoires separately, but also to investigate the actions within the different repertoires separately. These differences may be due to one of the central themes of this thesis: context. Context is, as we have seen, key for an individual's understanding and for the creation of perceptions of the issue about which the individual wishes to express contention. But context is also key for action classification. As has been touched upon earlier, what is considered conventional in one geographical/societal context may not be viewed as conventional in another context.

This becomes even more apparent when looking at the results of the variables related to the respondents' perceptions of their country's political system. For the conventional actions, the confidence in government matters less than in the general model (where it was β=−.146); for signing petitions, the value is β=.063***, but is not significant for lawful demonstrations. The previously motivational factor of low confidence in political parties (β=−.042*** in the general model) is not significant for either of the conventional actions. Furthermore, the variable related to the level of satisfaction with the political system experience by respondents was previously β=−.021***, but in the conventional models both actions reach β=−.015***. A slight decrease, yet when combined with the results of the other variables related to the political systems, we see that, for the conventional actions, the level of satisfaction and the amount of confidence is less relevant.

This is interesting, as one of the main reasons della Porta and Diani (2020) listed for why social movements develop is a "when a feeling of dissatisfaction spreads, and insufficiently flexible institutions are unable to respond" (p. 13). These results become even more noteworthy in relation to the disruptive actions in the next section.

Disruptive protest participation

The respondents answered that they had participated in disruptive actions to a lesser degree than the two conventional actions. Looking at the boycotts and unofficial strikes in Table 1, we see that the variation of adjusted R^2 is interesting, particularly in the case of what motivates participation in unofficial strikes. For disruptive actions, the R^2 reaches 17.5% for boycotts and a low 6.7% for unofficial strikes. This low number for unofficial strikes indicates that something more than the previously emphasised motivational factors creates the basis for participation in unofficial strikes. This further strengthens the notion that various types of protest actions need not to be treated as a homogenous group of protests in general; rather, they need to be explored in relation to other actions within the same action repertoire, as well as investigated as stand-alone actions to understand what motivates protest participation. This becomes even more evident when we look at the results of the two disruptive actions, as (1) the results differ both between the conventional and disruptive actions and (2) between the disruptive actions themselves.

To begin by putting the disruptive action repertoire in contrast with the conventional repertoire, from the results of Article 2 (as shown in Table 1), the first noteworthy thing is that all the media usage variables are significant for disruptive actions. This was not the case for protest in general or for conventional actions, and all but the slightly negative variable for television (reaching β=−.010*** for boycotts and β=−.009*** for unofficial strikes) have a positive effect. Affiliation with either an environmental organisation or a political party/group remains influential. For the variables that concern political context, disruptive actions have a slightly stronger negative relation with confidence in government than the conventional actions do (here reaching β=−.078*** for boycotts and β=−.086***, compared to the only significant one for conventional actions, β=−.063***, signing petitions), indicating that motivation for disruptive participation is a

slightly more related to lower levels of trust in government. These are not in themselves extreme, but the results are interesting in comparison with the level of satisfaction with the political system. For both conventional actions, this variable reached β=−.015***, whilst in the disruptive models the values are lower: β=−.010*** for boycotts and β=−.004*** for unofficial strikes. The geographical regions remain influential, but is also where the differences in the disruptive action repertoire become most visible.

Respondents from the northern parts of Europe are more inclined to participate in boycotts (β=.345***) than in unofficial strikes (β=.156***), and the same can be seen for the respondents in Western Europe as well (β=.231*** for boycotts and β=.051*** for unofficial strikes). However, for Southern Europe, the tendency is rather different. The result for boycotts are negative here, but lacks significance, and for unofficial strikes it reaches β=.113***, indicating that the respondents in this region are more prone to strikes than boycotts. The differences between the two disruptive actions can also be seen within the two affiliation variables. Being a member of an environmental organisation or a political party/group tends to be more important when joining a boycott (β=.211*** for environmental organisation and β=.233*** for political party/group) than an unofficial strike (where it only reaches β=126*** and β=.120***, respectively). For media usage, the difference in actions within this repertoire is most apparent when it comes to the influence of daily papers. In the case of boycotts, daily papers reach β=.041***, but for unofficial strikes, it is β=.012***. There is also a slight trend visible for the political system variables, where the respondents who have lower levels of confidence in the government or parliament and higher confidence in political parties are more inclined to join an unofficial strike. There is, however, less effect on the variables of satisfaction.

Membership is a key influence on social identity (Fielding et al., 2008), which can be seen as a type of group identification or collective identity. Considering this, the results for affiliation with a political groups/parties and environmental organisations on the propensity to participate in disruptive actions are noteworthy, especially in relation to the collective efficacy variables. Depending on which protest action the propensity for participation concerns, these are of varying importance. The varying results indicate that there are other factors at play here, which are potentially different for all different actions.

Thus, there might be motivational factors that are primary or secondary (supportive) and that need to be taken into consideration when calling for protest actions – these primary and secondary motivators being key for communication and dissemination of protest messages.

Concluding discussion of the results of Article 2/RQ1a and RQ1b

Based on the results above, we can see that there are some similarities between the two types of conventional actions, but that the geographical context stands out as something that influences the respondents' predispositions for participation. Northern/Western European respondents are more inclined to sign petitions and to join in boycotts than to attend lawful demonstrations. They are, however, less inclined to join an unofficial strike. For the respondents from Southern Europe, the opposite relationship appears, as these respondents are more inclined to participate in a lawful demonstration than any other action. They are more inclined to sign petitions than to join in unofficial strikes, but the differences between these two actions are less prominent than for the respondents in Northern/Western Europe. These results underline the importance of context even further. One of the other results that further validates previous research (e.g., Fielding et al., 2008; Van Stekelenburg & Klandermans, 2013) is the correlation between affiliation with either an environmental organisation or a political party/group and participation, which can be thought of as something that reinforces the social identity and creates a sense of 'personal duty' to participate. Furthermore, on the note of efficacy, the results on confidence in and satisfaction with the political system show that dissatisfaction is a motivational factor, but is not wholly in line with the previous statement by della Porta and Diani (2020), who state that social movements and protest stem from dissatisfaction and insufficient actions are taken by institutions.

These results matter for several reasons, but first and foremost because the influence on geography highlights the context in which a message is given. The propensity for either conventional or disruptive actions in certain regions implies that what is considered disruptive in one region may be considered more conventional in another, depending on societal, political and/or historical factors. When constructing messages designed to adhere to either a disruptive or conventional subgroup, these results indicate

that context awareness – and perceptions of the public one aims to construct messages for – are key for finding the most suitable lexical choices/emotional appeals. As we shall see, understanding how the general public views and categorises a subgroup's actions is key for how to communicate in a trustworthy way and to inspire certain types of actions.

Linguistic communication style and action repertoires in conjunction: Effects on recipients' inclination for collective action

This section is related to the third article and the second research question in this compilation thesis, where the latter aims to investigate how the lexical choices of emotional appeals affect the interpretation of messages from movement subgroups with different action categories and how they influence the stated action behaviours and attitudes. Covering three dimensions of relationships with the linguistic communication styles of alarmism and optimism and the sender, the three tables within this section (Table 3–5) show the impact the styles and sender combination have on recipients': (1) levels of trust and competence, (2) attitudes towards climate change and (3) their inclination for collective action and information dissemination. This part of the chapter is therefore divided into three subsections. Each subheading corresponds with one of the three dimensions, before a closing summary is provided. It should, however, be noted that the results presented in Tables 3–5 is not always statistically significant, but that the general tendencies of the effect are intriguing enough to lead to the theoretical discussion on the communication–action alignment related to RQ3.

Levels of trust and competence

First and foremost, the results in Table 3 indicate a relationship between the linguistic style of the emotional appeal and action repertoires. When the conventional action group (FFF) is put forth as sender of an optimistic message, they score better on both the competence and trustworthiness dimensions. The same is seen when the disruptive action group (XR) is presented as the sender of an alarmist message. When FFF is connected with an alarmist linguistic style and when XR is connected with an optimistic style, the opposite is seen through lower scores on both trustworthiness and competence. Thus, in relation to these

dimensions, it seems to be beneficial for the subgroups to adopt a linguistic style of communication that aligns with the action repertoire to which they adhere (communication–action alignment).

Table 3. Alarmist and Optimistic Communication Styles and Their Impact on Trust

Variable	XR Alarmist (N=71)	XR Optimistic (N=70)	Mann–Whitney test XR	FFF Alarmist (N=76)	FFF Optimistic (N=71)	Mann–Whitney test FFF
Competence variables. **Rate between 1 (not at all) and 7 (fully agree) to what extent do you perceive this text to be…**						
Based on facts	5.12 (1.277)	4.85 (1.352)	U= 1641.5 p= .312	4.85 (1.466)	5.31 (1.441)	U= 1537.5 p= .028
Separates facts from opinion	4.67 (1.492)	4.54 (1.330)	U= 1933 p= .478	4.29 (1.588)	4.86 (1.479)	U= 1509 p= .036
Informative	5.44 (1.274)	5.24 (1.334)	U= 2214 p= .466	5.04 (1.257)	5.37 (1.381)	U= 2093.5 p= .055
Accurate	5.10 (1.418)	4.96 (1.427)	U= 1215 p= .681	4.82 (1.628)	5.09 (1.601)	U= 856.5 p= .343
Professional	4.78 (1.402)	4.65 (1.351)	U= 2072.5 p= .526	4.76 (1.293)	5.12 (1.295)	U= 2034 p= .060
Well-written	4.82 (1.403)	4.99 (1.237)	U= 2135.5 p= .518	4.74 (1.320)	5.09 (1.368)	U= 2172 p= .090
Useful	4.89 (1.427)	4.85 (1.363)	U= 2185 p= .908	4.67 (1.644)	5.06 (1.506)	U= 2022.5 p= .093
Interesting	5.29 (1.198)	5.35 (1.359)	U= 2238.5 p= .632	5.04 (1.455)	5.17 (1.534)	U= 2434 p= .444
Makes me feel knowledgeable about the topic	4.24 (1.467)	4.68 (1.460)	U= 1942 p= .072	4.29 (1.363)	4.33 (1.582)	U= 2450.5 p= .917
Trustworthiness variables. **Rate between 1 (not at all) and 7 (fully agree) to what extent do you perceive this text to be…**						
Balanced	4.64 (1.410)	4.44 (1.349)	U= 1970 p= .329	4.36 (1.306)	4.75 (1.445)	U= 1695.5 p= .093
Credible	5.19 (1.396)	5.13 (1.347)	U= 2204 p= .737	4.96 (1.535)	5.50 (1.252)	U= 1930 p= .036
Biased	4.00 (1.567)	4.18 (1.560)	U= 2067 p= .605	4.19 (1.533)	3.70 (1.669)	U= 1727 p= .088
Objective	4.51 (1.659)	4.35 (1.207)	U= 1809.5 p= .243	4.27 (1.484)	4.63 (1.551)	U= 1890.5 p= .165
Fair	4.84 (1.281)	4.66 (1.281)	U= 1581.5 p= .462	4.69 (1.404)	4.85 (1.506)	U= 1577.5 p= .452
Sensationalist	3.46 (1.659)	3.49 (1.664)	U= 2136.5 p= .863	3.58 (1.781)	2.97 (1.727)	U= 1725.5 p= .066

Comment: For ease of comparison and overview we have chosen to use means and standard deviations for the descriptive data, while the Mann–Whitney test is ranked based (proper for non-parametric t-tests when ordinal scales are used).

The results also show that when the conventional group breaks the communication–action alignment, their levels of trustworthiness and competence fluctuates more than in the disruptive case, indicating that FFF are being rewarded more than XR when following the communication–action alignment. When adhering to the communication–action alignment, the subgroups are perceived as less biased and sensationalist as well, but the

optimistic communication style tends to make the information recipients feel slightly more knowledgeable than the alarmist communication style, regardless of the action repertoire.

These results also show that the subgroup categorised as adopters of the conventional action repertoire, FFF, score higher than the XR in their best performing condition. This may be because XR is categorised as disruptive, which means that their actions are less socially acceptable (Tarrow, 1998) than those of the conventional subgroup. Thus, the results in this dimension show the general tendency of rewarding both groups when they align their linguistic style and their action repertoire, and more clearly so in the conventional case. Hope appeals thus seem to be a more suitable approach for groups that are categorised as conventional through their particular action repertoire, and fear appeals appear to be more suitable for those taking actions that can be categorised as disruptive.

Attitudes towards climate change

The second dimension is shown in Table 4, which relates to respondents' attitudes towards climate change and to the urgency of the issue. Here, the general tendency is similar to that found in the first dimension: both groups are rewarded for aligning their linguistic communication style with their action repertoire. The main difference here, however, is found within the comparison between the two subgroups in their aligned cases. In this dimension, XR now receive higher scores that FFF on several occasions, which indicates that issue context also is key when deciding on the most suitable action repertoire. Yet, as the questions are phrased in terms of 'serious', 'worry' and 'extent of counteraction', the questions themselves imply a certain amount of alarmism, which may be a contributing factor raising the scores of the disruptive action group.

Table 4. Attitude Towards Climate Change

Variable	XR Alarmist (N=71)	XR Optimistic (N=70)	Mann–Whitney test XR	FFF Alarmist (N=76)	FFF Optimistic (N=71)	Mann–Whitney test FFF
Attitude towards climate change						
Rate between 1 (not at all) and 7 (fully agree) of How serious do you perceive forest fires to be *now* for…						
Yourself, your family and loved ones	3.59 (1.809)	3.50 (1.808)	U= 2235 p= .626	3.51 (1.711)	3.70 (1.857)	U= 2412 p= .475
Your county	4.13 (1.803)	4.01 (1.715)	U= 2218 p=.678	3.97 (1.755)	4.40 (1.605)	U= 2154.5 p= .136
Your country	5.34 (1.288)	5.00 (1.485)	U= 2032.5 p= .161	4.93 (1.644)	5.39 (1.114)	U= 2319 p= .213
Other parts of the world	6.07 (1.119)	5.89 (1.187)	U= 1981 p=.342	6.04 (1.176)	6.18 (1.043)	U= 2201 p= .417
Rate between 1 (not at all) and 7 (fully agree) of How serious do you perceive forest fires to be in the *future* for…						
Yourself, your family and loved ones	4.40 (1.867)	3.98 (1.869)	U= 1910.5 p= .169	4.12 (1.845)	4.40 (1.975)	U= 2191 p= .296
Future generations	5.50 (1.635)	5.15 (1.479)	U= 1872 p= .048	5.23 (1.679)	5.60 (1.326)	U= 2217 p= .325
Your county	4.90 (1.616)	4.83 (1.497)	U= 2056.5 p= .676	4.70 (1.746)	5.02 (1.544)	U= 2177.5 p= .320
Your country	5.75 (1.318)	5.33 (1.397)	U= 1781 p= .031	5.32 (1.595)	5.68 (1.190)	U= 2307 p= .308
Other parts of the world	6.34 (1.079)	6.14 (1.082)	U= 1846.5 p= .226	6.20 (1.077)	6.18 1.036)	U= 2389 p= .909
How urgent do you believe it is to act to stop future forest fires as a consequence of climate change?	5.24 (1.382)	5.04 (1.429)	U= 2016.5 p= .296	5.23 (1.592)	5.31 (1.352)	U= 2515 p= .997
Rate between 1 (not at all) and 7 (fully agree) of How worried are you that…						
… climate change can lead to more and more serious forest fires in the future	5.28 (1.526)	4.84 (1.500)	U= 1848.5 p= .027	4.73 (1.796)	5.16 (1.410)	U= 2333 p= .296
… forest fires can affect you and your loved ones personally	3.77 (1.872)	3.52 (1.703)	U= 2181 p= .388	3.58 (1.887)	3.72 (1.870)	U= 2422.5 p= .593
Rate between 1 (not at all) and 7 (fully agree) to what extent do you feel the responsibility to counteract forest fires lies with…						
Politicians and governments	6.19 (.944)	6.25 (.936)	U= 2239 p= .617	5.99 (1.341)	6.03 (1.154)	U= 2492 p= .929
Businesses and corporations	5.66 (1.265)	5.38 (1.446)	U= 2104.5 p= .281	5.39 (1.541)	5.29 (1.563)	U= 2506 p= .737
Farmers and the forest industry	5.78 (1.077)	5.46 (1.380)	U= 2091 p= .202	5.20 (1.525)	5.32 (1.631)	U= 2410.5 p= .468
Individual citizens	4.96 (1.519)	4.93 (1.468)	U= 2350 p= .893	4.81 (1.761)	4.86 (1.665)	U= 2575.50 p= .961

Comment: Table 4 shows the results concerning RQ1a. In general, the trend of higher scores for the action–communication alignment holds in these variables, too, but there are few variables where this difference reaches statistical significance.

In this section, we also find that three of these variables are significant for XR (i.e., that forest fires are a serious threat for future generations, for the country in the future and that forest fires will be a more severe threat in the future because of climate change). Hence, we see that in the context of the issue of climate change, the alarmist-disruptive alignment is

more rewarded than the optimistic-conventional one, which is in line with the findings of previous studies and partially in line with the theories on fear appeals as a suitable conveyer of urgent threats. Relating to the previous studies and the theories on urgency and perceptions of threat, it is also worth noting that even if the communication–action alignment trend is visible, another general trend emerges in this table: Regardless of action repertoire and linguistic communication style, forest fires are perceived as more serious threats for other parts of the world, both now and in the future. This indicates that proximity, both on a geographical and a temporal level, is a problematic aspect in climate change communication. Thus, the suggestion of local emphasis by Roser-Renouf et al. (2014) is less accurate than the findings of Spence et al. (2012).

Inclination for collective action and information dissemination

The third dimension (Table 5) shows the same general tendency as the previous two tables, as both subgroups score higher when their linguistic style aligns with their action repertoire. The most interesting information given in this table is, however, not the reinforcement of this tendency; rather, it is what the different types of alignments lead to that is intriguing. That the different types of action repertoires can be seen as tactics chosen by the subgroups (Tilly, 2006) to convey their performed messages is known, but here the results also indicate that it seems these action repertoires have rather different roles in what they may accomplish with their messages (both the textual/verbal and the performed). In the case of aligning optimism-conventionalism, the respondents showed stronger inclinations towards dissemination of information, and in the case of alarmism-disruptiveness, the respondents showed stronger tendencies to participate in collective actions. Thus, it is possible that the different action repertoires invoke different action responses from message recipients, as well based on the interpretation of the combined message of the subgroup's linguistic style and action repertoire.

Table 5. Collective Action and Dissemination of Information

Variable	XR Alarmist (N=71)	XR Optimistic (N=70)	Mann–Whitney test XR	FFF Alarmist (N=76)	FFF Optimistic (N=71)	Mann–Whitney test FFF
Collective action and dissemination of information						
Rate between 1 (not at all) and 7 (fully agree) of How likely are you to do any of the following after reading the text…						
…like on social media	2.70 (2.029)	2.93 (2.068)	U= 2003.5 p= .498	2.69 (2.119)	3.49 (1.164)	U= 2010.5 p= .041
…comment on social media	1.82 (1.322)	1.87 (1.485)	U= 2197.5 p= .946	2.03 (1.663)	2.03 (1.564)	U= 2492 p= .909
… share on social media	2.08 (1.461)	1.93 (1.537)	U= 2073 p= .389	2.15 (1.776)	2.28 (1.778)	U= 2444 p= .629
… talk to family, friends or acquaintances about the text?	4.22 (1.862)	4.13 (1.918)	U= 2332.5 p= .723	4.19 (2.129)	4.29 (1.985)	U= 2499 p= .834
Rate between 1 (not at all) and 7 (fully agree) of to what extent would you consider disseminating (digitally or physically) the following types of information about forest fires…						
Scientific reports	3.98 (1.819)	3.55 (2.032)	U= 1940.5 p= .217	3.67 (2.205)	4.17 (2.066)	U= 2144.5 p= .171
News articles	3.63 (1.865)	3.34 (2.056)	U= 2044 p= .365	3.22 (1.932)	3.58 (1.887)	U= 2138 p= .250
Content from an ENGO/ESM	3.12 (1.966)	2.94 (2.030)	U= 2096 p= .594	2.88 (1.952)	3.14 (1.781)	U= 2152 p= .281
Rate between 1 (not at all) and 7 (fully agree) of to what extent would you consider doing any of the following to reduce the risk of future forest fires…						
Sign a petition	3.99 (2.161)	3.97 (2.099)	U= 2333 p= .838	3.75 (2.126)	4.40 (2.118)	U= 2001.5 p= .060
Participate in an organised demonstration (physical attendance)	2.41 (1.595)	2.35 (1.760)	U= 2206 p= .622	2.28 (1.825)	2.37 (1.808)	U= 2169 p= .628
Participate in an organised manifestation online	3.22 (2.012)	2.97 (2.037)	U= 1934.5 p= .397	2.70 (1.971)	3.05 (2.034)	U= 2132 p= .227
Become a member of an ENGO or ESM	3.29 (1.985)	3.04 (2.039)	U= 2152 p= .320	2.85 (1.963)	2.98 (1.996)	U= 2239 p= .664
Do voluntary work for an ENGO or ESM	2.57 (1.588)	2.61 (1.783)	U= 2193 p= .811	2.76 (1.895)	2.50 (1.700)	U= 2261 p= .538
Participate in a boycott	3.27 (2.012)	2.79 (2.042)	U= 1896 p= .142	3.08 (2.026)	2.97 (2.210)	U= 2194.5 p= .651
Contact a politician or government official	2.72 (1.695)	2.80 (1.922)	U= 2281.5 p= .892	2.71 (1.904)	2.56 (1.684)	U= 2381.5 p= .651
Encourage others to do any of the aforementioned	3.22 (1.893)	2.85 (2.017)	U= 2020 p= .191	2.85 (1.889)	3.52 (2.024)	U=1838.5 p= .037
To what extent do you perceive that you can be a part of counteracting forest fires	3.67 (1.677)	3.33 (1.759)	U= 2139 p= .234	3.58 (1.742)	3.49 (1.712)	U= 2431 p= .823

Comment: Table 5 shows the results corresponding with RQ1b. Here, too, there are generally higher scores in the action–communication alignment treatments.

Understanding of this relationship between actions and words could be of practical use for movement subgroups, not only to promote the certain action in which they wish the general population to engage, but it can also be useful for subgroups that are all within the same

movement subset, as this knowledge "could be used to create advantageous collaborations between subgroups trying to achieve the same goal" (Karlsson & Agin, 2022, n.p.). It is also interesting within the sphere of communication science, as there the source is part of the study of message effects (e.g., Bolsen et al., 2019), but where the discussion could benefit from a broader understanding of how different sources in the same context and with the same goal both knowingly and unknowingly are interlinked in the larger context of message reception.

Concluding discussion of results in Article 3/RQ2: Linguistic-action alignment is key

There was also another, overarching, observation made in this study. Although alignment meant relatively high scores for trust and the respondents' perceptions of forest fires as an issue that needs to be addressed, "the low means […] for both information dissemination and collective action indicate a gap between perceiving a problem and doing something about it on an individual level" (Karlsson & Agin, 2022, n.p.). This can be viewed as a manifestation of the cognitive dissonance of the recipients, which indicates that trust in the sender and the message is not all that is needed to counteract cognitive dissonance. It is, however, a start, and one that can be thought of in relation to hope and fear appeals as well. In the results, we see that the conventional group had an overall higher level of trust than the disruptive group, but that the alarmist linguistic style in combination with the disruptive action repertoire made people more inclined to act than the optimistic linguistic style. Thus, this suggests that both are needed in the context, which further highlights the need for collaborations between subgroups using different types of alignment.

The main takeaway from Article 3 is thus that the language used seems to be connected to the chosen action repertoire. This indicates that the linguistic–action alignment matters not only for the perception of the sender and their message but is also connected to the effectiveness and the outcome of both alignment types. This points us to the third research question, where the aim is to discuss how this indication of alignment can be theoretically conceptualised and methodologically utilised. There were also a few variables that seemed to go against the alignment (e.g., *biased* and *sensationalist* in Table 3 and *do voluntary work* or *contact a politician* in Table 5). These results have not been overlooked,

but are connected to the next section. We have therefore arrived at the intersection of the Figure1 presented in the theoretical chapter.

Discussing communication action alignment: Theoretical conceptualisation and methodological utilisation

If we agree on the scientific consensus of the severity and the need for preventive action on climate change, and if we accept that social movements do play a role in swaying public opinion, the messages of the climate subsets' subgroups and other communication actors become key for understanding how different forms of attitudes and actions can be instigated. But, because the subgroups' messages consist of two parts (i.e., the textual/verbal and the performed message), it is important to understand how both parts work in conjunction with each other to find out which combination leads to what types of perceptions and actions amongst the information recipients. In the previous section, relating to Article 3 in the compilation, the results pointed towards it being potentially beneficial for subgroups to align their linguistic style with their action repertoire, as alignment tended to generate higher levels of trust, and different alignment styles yielded different action responses.

Considering the discussion in chapter 2, relating to the three sets of repertoires that were outlined and their respective communication-oriented *vesica piscis*, the discussion in the following section can be thought of as the previously unnumbered intersection of the Venn diagram outlined in Figure 1, where all three repertoires overlap. This part of the chapter is thus intended to discuss this intersection (as positioned in Figure 3) from a theoretical and methodological view, using the three subgroups (FFF, XR and ELF) as exemplifying cases. This section therefore relates, in particular, to Article 4 in this compilation (which can be found in Part II).

Inspired by, and indebted to, the work on contentious language by Tarrow (2013) and the idea of discursive repertoires put forth by Steinberg (1999), where "collective actors are partly captives within the discursive field that they seek to manipulate" (p. 772), and in relation to RQ3 in this thesis, I propose that this alignment of communication and action can be viewed as a joint repertoire: the *Communicative Action Repertoire* [CAR].

1. Repertoires in linguistics.

2. Repertoires in educational science.

3. Repertoires in social movement studies.

4. The understanding/ interpretation of the communication style by both the members of a sub-group and the public.

5. The understanding of words used by social movement sub-groups in their actions.

6. The different contexts that different types of actions imply and the communication style they entail.

7. CAR: The application of appropriate action for the used communication style or the appropriate communication style for the chosen type of action.

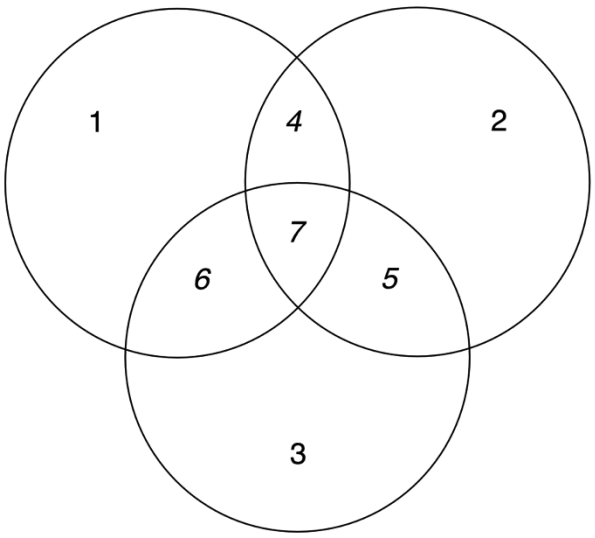

Figure 3: Repertoire intersections and position of the communicative action repertoire

The joint repertoire of CAR is identified through the communication aspects from the three outlined repertoire realms in the *vesica piscis* (as discussed in Chapter 2) and their combination. The combination of repertoires in linguistics and repertoires in educational science (the communicative repertoire) leads to the overlap marked 4: the understanding/interpretation of the communication style by both the members of a subgroup and the public. The overlap of the communicative repertoire and the repertoires found in social movement studies leads to number 5: the understanding of words used by social movement subgroups in their actions. The different contexts that different types of actions imply and the communication style they entail in the intersect marked 6 is found in the linguistic repertoire and the action repertoire, as well as in the communication repertoire in social movement studies. The core of this overlap (7 in Figure 3) can help researchers explore why some communication actors (exemplified by subgroups) resonate with a certain type of audience or why they do not, as well as help understand the development in audiences' perceptions of actions.

Through this joint repertoire, it should also be theoretically possible to understand when an action previously considered disruptive becomes so familiar to, and accepted by, the audience that it crosses over and becomes a conventional action (and from violent towards disruptive as well). Potentially, this could aid in understanding the social tipping

points of public perceptions as well. It could also be of practical use for social movement subgroups, as they can consider CAR when choosing tactics for achieving their goals.

Theoretical conceptualisation of the Communicative Action Repertoire

The quotation from Steinberg (1999) pointed towards captivity, and from this stems the notion much of this compilation thesis has, both explicitly and implicitly, leaned upon: the expectancy/perceptions of the message recipients. As seen in the previous sections, and in Article 3, there seems to be an intertwining of lexical frameworks and collective action which affects the message recipients' perception of the message. When the subgroups adhered to a lexical style that aligns with their action repertoire, the subgroups were rewarded in terms of trust. This can be thought of as meaning that the recipients' perceptions of a particular performed message (action) also mean that they expect a certain verbal/written message from the subgroup in their role as message constructors/sender. Thus, the words and the actions of a subgroup need to match the expectations the message recipients' have based on their perception of the action taken by the subgroup. What constitutes a match is, however, dependent on the context in which both the message is conveyed and the context in which the recipients receive it. Hence, a subgroup's approach in one country may not be the most suitable in another country, indicating that there needs to be a certain level of flexibility in CAR approaches within a subgroup, as societal and cultural influences may affect the perceptions and expectations of broad and diverse audiences situated in different contexts. Structures and cultures are also interesting in relation to language, as the language runs through the entirety of the subgroup's rhetorical approach and thus the subgroup's structure, culture, identity and programme. As we saw in Table 1, the Northern parts of Europe showed the least fluctuating β-value for both conventional and disruptive actions (signing petitions; β=.343***, lawful demonstrations; β=.273***, boycotts; β=.345*** and unofficial strikes; β=.156), and Sweden, located in the north of Europe, was also the setting for the experiment resulting in Tables 3–5. Thus, it should be noted that the perspective of this discussion stems from the Northern European context and so, therefore, do the perceptions/expectations of linguistic styles and the action repertoires as well.

Returning to the first sphere in Figure 3 above, the purpose, the setting and the participants (Finegan, 2004) of the linguistic/verbal repertoires outlined by Gumperz (1964) can be tied to the individuality and the suitability found within the communicative repertoire (Rymes, 2010). This therefore forms an interesting connection between these two sets of repertoires, which fits well with what Kriesi et al. (2009) and Mattoni (2013) have stated about communication repertoires, and what Tarrow (1998) has stated about action repertoires, as well as Tilly's (2006) thoughts about identity, standing and programme within social movements. Actions are a part of a movement's foundational repertoire and stem from the context in which a particular subgroup originates. But the performed message this constitutes cannot, alone, be understood completely by a message recipient, which means that the performed message needs to be complimented by a verbal/textual message that is a suitable (*aptus*) complement to the performed message. The suitability is thus related to both the social/cultural/societal context of the recipient, the context of expectations (i.e., the action repertoire and the perception of the repertoire within the social/cultural/societal context of the recipient) and the issue context (meaning the context of the issue on which the subgroups within a subset of a movement are trying to shift public opinion and create action). This also means that the second (the difference issue definition makes), fourth (evaluation of potential consequences of actions) and fifth (taking actions one feel will be most suitable to address the issue) steps of the systematic approach by Dewey (Biesta & Barbules, 2004; Morgan, 2014) relate to this as well. Issue definition is made by the lexes chosen by the subgroup (and interpreted by the recipients). The evaluation of potential consequences of actions (including the actions and inactions of the recipients) is made based on the interpretation of the lexes chosen for issue definition. The choice of taking an action which is perceived as most suitable to address the issue is also related to the interpretation of the conjoined message, as we saw in the third article (where the optimist-conventional alignment led to information dissemination and the alarmist-disruptiveness led to protest actions). To summarise and put the repertoire overlap in a more schematic way:

> Repertoires in social movement studies overlap with repertoires in linguistics through what can be described as the different contexts that different types of actions imply and the communication style they entail. […] Linguistic repertoires and lexical repertoires intersect by the understanding/interpretation of the words that characterise different communication styles, by both members of a sub-group and by the public/message recipients. […] Lexical repertoires and repertoires in social movements are connected through the understanding of individual words used by the sub-groups in their specific actions and their overall messages. Together, they all meet like a three-way junction, and CAR can thus be found in the middle as the application of the appropriate action for the used communication style (made up by different lexis) or the appropriate communication style for the chosen type of action. (Agin, 2022, n.p.)

It may be argued that what is proposed in CAR is an extension of framing or very similar to the concept of 'frame resonance' (Snow & Benford, 1988) or 'symbolic resonance' of which Tarrow wrote (2013), and the idea of CAR is indeed related to these concepts. There is, however, one central difference in CAR: "while these revolve around terms that are adopted, utilised and developed (e.g., the 'strike' or the 'boycott'), the CAR model is more concerned with the embedded thematic in all of a sub-groups communication, both the internal and external, and its link to the actions taken by the sub-group" (Agin, 2022, n.p.). Thus, CAR is not just a complement to the language of contention but rather an "expression of contention that holds an additional layer" (Agin, 2022, n.p.) which includes the meanings and understandings of words in relation to the action repertoire based on the social/societal context in which the subgroup operates. Thus, CAR is more about understanding the utilised lexes in relation to action than it is about the usage of certain lexes in a particular action repertoire (which indeed can be thought of as an extension to framing or even considered a type of lexical framing). In the analytical framework, the linguistic styles of alarmism (including lexical choices which are ostentatious, gloomy and indicate fear and doom) and optimism (hopeful, altruistic, pushing a 'yes-we-can' sort of socially acceptable emotional appeal) were outlined. However, the style connected to the violent group, the aggressive one, is (as exemplified in Table 6) indicated by a harsh, ferocious, threatening and unsympathetic linguistic style.

Table 6. Examples of CAR

ESM subgroup	**Earth Liberation Front (ELF)**	**Extinction Rebellion (XR)**	**Fridays for Future (FFF)**
Actions utilised	*Sabotage/ecotage tactics; arson*	*Civil disobedience, mass arrests*	*Peaceful marches and school strikes*
Lexical choices	Aggression	Alarmism	Optimism
Examples of communicative styles	"Inflict […] damage" "profiting from destruction and exploitation" "atrocities committed" "each committed person […] take responsibility" "If not you who, if not when" "We are the burning rage of this dying planet" "The war of greed ravages the earth" "speed up the collapse of industry" "scare the rich and undermine the foundations of the state" "show the enemy that we are serious" "Our greatest weapons are imagination and the ability to strike when least expected" "actions have been censored to prevent our bravery from inciting others to take action" "lets dance as we make ruins of the corporate money system" "Attack: transformers […] blow them up […] burn or flood buildings"	"non-violent civil disobedience […] to halt mass extinction and minimise the risk of social collapse" "Our world is in crisis. Life itself is under threat" "We hear history calling to us from the future" "we rebel for this" "We rise in the name of truth and withdraw our consent for ecocide, oppression and patriarchy" "Our rebellion is the gift the world needs" "We are unprepared for the danger our future holds" "We face floods, wildfires, extreme weather, crop failure, mass displacement and the breakdown of society" "The time for denial is over. It is time to act" "Conventional approaches […] have failed because powerful political and economic interest prevent change"	"Their call for action sparked an international awakening" "uniting around the globe" "part of a hopeful new wave of change" "inspiring millions of people to take action" "The goal of the movement is to put moral pressure on policymakers" "We strike because we care for our planet and each other" "We have hope that humanity can change" "Build a better future" "No one is too small to make a difference" "We strike because there is still time to change" "The sooner we act, the better our shared future will be" "No matter what happens, it is never "too late"." "Striking together brings us hope, and it really does lead to direct change" "There is a better life on the other side of the crisis"
Citations retrieved from	Best & Nocella, 2006, pp. 407-409	Extinction Rebellion https://extinctionrebellion.uk/	Fridays for Future https://fridaysforfuture.org/

Note: Table 6 is a shortened version of the table found in Article 4 (therein as Table 2) and gives examples of expressions used by the three subgroups FFF, XR and ELF. These have been categorised into optimism for FFF, alarmism for XR (drawing from the categorisation of Ereaut & Segnit, 2006, and the action repertoires of both groups, as outlined in the methodology) and a third one, aggression, for the violent subgroup ELF.

Table 6 is, however, not only an example of CAR, it is also an example of when the lexical choices and the action repertoire align, meaning that it is also an example of *communicative action repertoire alignment* [CARA].

Theoretical conceptualisation of CARA

Whilst CAR may be seen as any type of combination of lexical choices and action repertoires, the results in Article 3 indicate that the optimal relationship is that of alignment, i.e., CARA. For FFF, XR and ELF, this means that the examples in Table 6 are aligned. When CARA is applied, suitability is highly prominent in the overarching message (i.e., the verbal/textual and the performed). However, there were a few variables in Tables 3 and 5

for which the results seemed to go against the general tendencies of alignment – that is, where *misalignment* seemed to be preferred by the recipients.

As is discussed in relation to this in the third article, the three different action repertoires attract different sorts of activists who believe that a certain type of action is the most suitable to achieve their goals and thus favour it above the others. As FFF is a subgroup that is categorised as conventional, those who relate more to this particular action approach would be hesitant to participate in more disruptive actions, but, as is seen in the case of boycotts in Table 5, this is not the case. Rather, the results indicate that the inclination to participate in a boycott is higher in cases where an alarmist linguistic style is adopted, regardless of the action repertoire, which indicates a misalignment between the conventional-optimistic CARA. Yet there might be a reason why this misalignment occurs and

> it could be interpreted as confirming the communication-action alignment idea, because the *communication style* in that treatment is on the disruptive side (alarmistic) and thus a higher inclination for a *disruptive action* could be explained. The same thing could be proposed as an explanation for the inclination to contact a politician and/or government official. It may well be that a misaligned message could make the recipient reach out to urge the politician or government official to acknowledge the severity of the issue (if expecting an alarmistic message) or to propose a solution (if expecting an optimistic message). (Karlsson & Agin, 2022, n.p., italics in original).

When a subgroup of any type of movement chooses a particular action repertoire, this is most often not an action with which the public is unfamiliar. Rather, as the existence of movements go back in history, their tactics are part of public knowledge and perceptions, which means that the public not only knows about several different action types but also expects certain actions in relation to a specific action repertoire (Benford & Snow, 2000; della Porta, 1995; Meyer et al., 2002; Tarrow, 1998). Regardless of the subjective meaning of the words used, the choice of action repertoire thus means that the public (and in many cases also the members of the subgroup) expects the subgroup to act in a particular way. If the subgroup does not, the subgroup will be perceived (by the public and in some cases by its own participants) as illogical. Thus, once a subgroup has selected an action repertoire as their own, that choice binds them to adopting the accompanying (aligned) linguistic

repertoire. If the subgroup opts for another combination than the one expected, the mental models the message recipients have of the subgroup will perhaps not lead the recipient to psychological discomfort, which is the case in cognitive dissonance, but can at the very least be confusing or contradictory as it creates a form of cognitive dissonance in perceptions.

Utilisation of CARA and communicative action repertoire misalignment:

As FFF started with an action (i.e., Thunberg initiating the school strike), her choice of action determined the most suitable and consonant style to communicate for FFF. Yet, as XR's first public appearance was preceded by a discussion of their aims and demands, the linguistic style of that discussion and the lexes used in the aims and demand instead determined the most logical and *aptus* action repertoire. Thus, CARA can be initiated from both the verbal/textual or the performance side of message construction. This opens a practical application of CARA for movements, as it does not matter which part of the message construction comes first. It also presents research with a methodological approach to connect the action and communication of movements to a deeper understanding of emotional appeals that framing analysis is ill-equipped to do. As an entry point to this section, another table from Article 4 is of guiding assistance. Table 7 is a simplified schematic overview of how different combinations of CAR may be interpreted and what kinds of cognitive response may be roused in the public and in the activists themselves with implementation of either CARA or its opposite: *communicative action repertoire misalignment* [CARM].

Table 7. Overview of CARA and CARM

Action type / **Style of Communication**	**Violent collective action** (ELF)	**Disruptive collective action** (XR)	**Conventional collective action** (FFF)
Aggressive: Harsh, ferocious, unsympathetic and threatening	**Alignment (CARA)**	Confusion (CARM)	Contradiction (CARM)
Alarmist: Unruly, loud and ostentatious	Confusion (CARM)	**Alignment (CARA)**	Confusion (CARM)
Optimistic: Socially accepted, hopeful and benign	Contradiction (CARM)	Confusion (CARM)	**Alignment (CARA)**

Note: This is a slightly modified version of Table 3 in Article 4. The modification is modest and done to better fit the context in which it is presented in this chapter.

The methodological aspect of CARA and CARM is indebted to Ereaut and Segnit (2006), whose categorisation of linguistic repertoires provided a stepping stone for the communication styles in Table 7. Finding the most suitable lexical choices for each communication style can also be done using a dictionary or thesaurus; however the use of a lexical database which includes synonyms and/or semantically related words and expressions, such as WordNet (Fellbaum, 2010; Miller, 1995), is both kindly suggested and highly advised.

Practical application for message optimisation and a methodological approach for research

For the methodological utilisation (both for practice and research), the categorisation of subgroups as adhering to either CARA or CARM may be beneficial, as they lead to different action responses amongst the public (as seen in Table 5). Depending on what kind of action response the subgroup(s) aim to entice from the message recipients, knowledge of which type of CARA or CARM primarily leads to which action response is important. Through this knowledge, subgroups and other communication actors can optimise both their verbal/textual and their performed messages to fit their desired outcome. As was seen earlier, a little bit of confusion may inspire certain actions as well, but too a big leap – for example, using an optimistic communication style in combination with a violent action repertoire – may cause a too severe a clash in the perceptions of the message recipients, thus leading them to overlook the message as a whole, as it creates a mental model of contradiction. As exemplified in Article 4: "One can burn down a building or blow up a mechanical harvester (like ELF) and then proclaim to be 'part of a hopeful new wave of change' (like FFF), but in line with cognitive dissonance, this will most likely feel contradictory to […] the bystanders" (Agin, 2022, n.p.). If or when a subgroup, or a subset, of a movement is undergoing structural changes, including pragmatic changes, institutionalisations or tactical interactions (Tarrow, 1998), it could also be possible for the subgroups/subsets undergoing that change to consider CARA/CARM as a "tool for easing the transition from one repertoire of collective action to another by providing a guideline for interim communication" (Agin, 2022, n.p.).

For researchers, it is within this contradiction and confusion that CARA and CARM become useful, both from a quantitative and qualitative methodological perspective. Tsang (2019) stated that message recipients who experience either of these feelings tends "to remember and avoid similar discomfort later on" (p. 401).

Quantitative and qualitative application

From a quantitative point of view, CARA/CARM can be used as (1) a baseline for identification measures in experiments (similar to the approach taken in Article 3), or (2) for creating surveys where either trustworthiness, message reception or differences in perceptions and interpretations of CARA/CARM depending on social, geographical or cultural context are explored. The lexical choices that are found in the theoretical conceptualisation of CAR can also (3) serve as marker for these and assist in the investigation of both internal and external communication in relation to message constructors' actions and the additional contexts within which they operate.

Even if the claims made by Tsang (2019) can be interpreted as meaning that misalignment would cause the public to reject and discard a subgroup, applying the CARA/CARM in studies can (4) help identify to what extent misalignment can be applied before the mental models of recipients cannot cope with the dissonance between action and message. From a qualitative perspective, CARA/CARM may be utilised when (1) creating interview guides aiming to explore message reception, or (2) to obtain deeper, more nuanced knowledge about the perceptions and understandings of the interaction and the interconnectedness of words and actions as well.

Developments, transitions and mental models

In relation to the aforementioned transitions that movements may undergo, the concept of CARA/CARM opens up the possibility for researchers to trace the developments within these movements, both from a historical perspective (by viewing and reviewing records of movements throughout history) and to chart the changes in real time. The latter may then be put in contrast with social tipping points or changes in social/political structures at local, regional or national levels. Moreover, CARA/CARM could also potentially be used to trace movements that have already undergone transitions – for example, those that have taken

the step from being a movement subgroup to a more formal, institutionalised ENGO – to expand the knowledge of when the opportune time for a subgroup to take that leap is, if such an opportune time even exists or if it varies depending on the CAR of origin. A final note on the utilisation of CARA/CARM: it is also possible to use this categorisation to investigate if support for a subset or subdivision of a movement can benefit from an equal distribution of the different CAR-categories, or if a more unified approach would lead message recipients to more cohesive and similar mental models. CAR, CARA and CARM can thus potentially help explain how to overcome or combat the fragmentation of mental models that are driving cognitive dissonance/social dilemmas – and not just in the context of climate change.

Chapter 5. Concluding remarks

Meanwhile, on Spaceship Earth…

In the analogy in the introduction chapter, we parted with the crew of Spaceship Earth whilst they were caught up in a communicative deadlock. Opposing messages from different factions of the crew were sowing doubt amongst other factions. Although contention with the status quo had led smaller factions of predominantly young crew members to take matters into their own hands, their performed actions and communicative efforts had different effects on other factions of the crew. The dream of a universal message that would convey complex and abstract threats to create collective action for preventive social change appeared to be just that – a dream. Though a universal message still remains a dream, this doctoral compilation thesis has contributed to furthering the knowledge on the impact that communication and collective action, in conjunction, have on individuals' perceptions of movements' messages, as well as the individuals' inclination towards certain attitudes and behaviours after receiving the message/experiencing the action performance. What is needed is not words. Nor is it action. It is the combination of both.

The importance of both words and actions: An example

As an example, in 2021, Greta Thunberg (the figurehead of FFF), held a speech at the pre-COP Youth4Climate summit in Italy. In her speech, Thunberg scolded world leaders for their inaction on climate change adaptation and mitigation. In particular, she called them out on their use of empty words:

> Build back better. Blah, blah, blah. Green economy. Blah blah blah. […] Net-zero by 2050. Blah, blah, blah […] This is all we hear from our so-called leaders. Words, words that sound great but so far has led to no action. (Thunberg, 2021, 1:09)

While actions may speak louder than words in some cases, as Thunberg argued, it is not necessarily a universal truth. On 13 November 2021, just shy of seven weeks after Thunberg's Youth4Climate-speech, the COP26 president Alok Sharma delivered that tearful apology for the late changes in the Glasgow Climate Pact that was mentioned in the introduction. Sharma's apology was given as a reaction to how India and China watered down the commitments on coal power at the very last minute of the conference, from

'phasing out' to 'phasing down' (Glover, 2021). It was an apology for *one single word* in the entire agreement. One may wonder why a single word requires an apology, especially because when we communicate, we do not do so in terms of isolated words – rather we combine words into longer entities that give the words context and meaning. So, why would a single word in the Glasgow Climate Pact require an apology? Because, as was mentioned, 'out' and 'down' are both examples of lexes that signal a decrease. Yet, 'down' is not as finite and thus allows for even small decreases to be in line with the agreement on coal power. This not only allows for smaller actions to be in line with the agreement – it also signals less urgency. We may say that actions speak louder than words, but in contrast, we also frequently say that the pen is mightier than the sword, indicating the opposite relationship between words and actions. However, the overarching conclusion drawn from this thesis can be found in relation to both the speech of Thunberg and the apology by Sharma: words and actions work best in conjunction, and the most suitable actions and words for creating collective action are those that align.

Revisiting the research questions

Through an exploration of the public's mental models, levels of threat perception and collective efficacy regarding the climate issue, taking cognitive dissonance and emotional appeal into consideration, this thesis has investigated the perceptions, attitudes and inclinations for protest/information dissemination actions amongst the general public through method triangulation. It has done so by emphasising the relation between the linguistic styles of textual messages and action repertoires as part of the performed messages of subgroups within the overarching environmental movement. Thus, to return to the questions posed in the introduction, the following answers can be summarised:

RQ1a: To what extent do known factors of collective action encouragement generally influence an individual's inclination towards protest participation?

First, the most influential factors for general predisposition to participate in protests are to which geographical region the individuals adhere and their perceptions of political systems as the latter overlap with geography. Second, affiliation with either an environmental organisation or a political party/group is also influential, as is the level of confidence in the

political system within the individual's country of residency. The level of media usage is, however, not as influential as the abovementioned factors.

The conclusion we can draw from this research question is that, whilst these motivational factors indeed influence the predisposition to participate in protests, it gives a rather unnuanced image of what motivates participation in different types of actions.

RQ1b: How are these known factors tied to different collective actions, and what is the correlation between socio-geographical differences and the inclination towards participation in conventional or disruptive collective actions?

What motivates participation in either conventional or disruptive actions is highly dependent on the geographical context, as is the level of satisfaction (or dissatisfaction) with the political system. Individuals living in Northern/Western European countries showed higher inclination to either sign petitions or join in boycotts than to participate in lawful demonstrations. Individuals living in the Southern European region were, however, more inclined to take part in lawful demonstrations than in any of the other actions. The stand out action was that of unofficial strikes, where very little of the variation was explained through these previously known motivational factors.

The conclusions drawn from this research question is thus that whilst some motivational factors that influence the general tendency to participate in protests still remain influential, motivation is highly dependent on the geographical context and there might be certain actions for which these factors have little motivational effect (e.g., unofficial strikes). There is much to be explored and much knowledge to be gained from further studies into motivation for participation in various separate protest actions.

RQ2: In what way do lexical choices of emotional appeals affect the interpretation of messages from movement subgroups with different action categories, and how do they influence the stated action behaviours and attitudes?

The lexical choices showed almost unified tendencies for perceptions of trust in the sender and the severity of the issue when optimism was combined with the conventional action repertoire and when alarmism was combined with the disruptive action repertoire. Furthermore, lexical–action alignment matters not only for the perception of the sender

and their message, but was also connected to the effectiveness and the outcome of both alignment types. Optimistic-conventional alignment tended to inspire the respondents to information dissemination, whilst an alarmist-disruptive alignment received higher marks for recipients' inclination to take collective action.

The conclusion drawn from this section of the thesis is that there seems to be much to be gained from adhering to an alignment between lexical choices and action repertoires. This alignment may be key for understanding why some movement subgroups are successful in inspiring certain actions whilst others inspire other actions.

RQ3: How can communication-action alignment be theoretically conceptualised and methodologically utilised?

The final question is hard to summarise in a short section, but an attempt can be made by presenting the concept of CAR as a theoretical model in which movement subgroups can find either an optimistic, alarmist or aggressive linguistic style which they can select and adopt as a tactic. Through CAR, they can find suitable lexes that are semantically connected to that style and utilise in combination with their action repertoire. The concepts of CARA and CARM can then be used as a practical approach for the subgroups, in relation to the results found in RQ2, depending on their desired outcome. CARA and CARM may also be utilised as a baseline categorisation for investigation and evaluation within several methodological approaches in the social sciences.

The conclusions drawn from this final discussion are that there is a need for better understanding of the interconnectedness of actions and words, and the communication-action alignment approach is a suitable way to approach this interconnectedness, both in the context of climate change, but also in connection with other complex and abstract issues that require message recipients to construct consonant mental models to break potential cognitive dissonance.

A final note: Future pathways for approaching complex and abstract issue communication

The interconnectedness of actions and words within social movements have been explored using the contemporary issue of climate change as a case of context. The complexity of communicating about climate change is reflected through the research that is being conducted, which spans several research areas and disciplinary traditions including (but not limited to) media and communication, economics, political, psychological, and natural sciences (Nerlich et al., 2010). The combination of the abstractness, scientific complexity, slow-moving pace and inexactness of predictions makes the climate change issue difficult to communicate. All the thoughts and potential applications presented in this chapter – and in the thesis at large – are not necessarily restricted to communication on climate change. CAR and CARA/CARM provide an entry point for any constructor of a message that involves complex and abstract issues. As stated in the article overview in Chapter 1, the intersection of climate change communication (how to communicate about climate change) and social movement studies (how to choose and encourage protest actions for social change) also relates to linguistic pragmatics. Although this has not been an extensively investigated feature in this thesis, it is a potential pathway for further research inquiries that would broaden the scope of CARA/CARM. Furthermore, although given attention in the analytical framework and forming the basis for understanding the linguistic part of CAR, the empirical engagement with lexes is relatively small. Further and expanded research is needed on the specific lexes of conventional, disruptive and violent CARs, particularly on how these are perceived in different socio-geographical contexts and in relation to other actors.

According to CARA/CARM, there are several ways to communicate effectively, depending on what type of actor is communicating and what that actor wishes to achieve. The primary objective of a message constructor is thus to understand not only their target audience, but to also understand how the target audience views the message constructor. Understanding the perceptions and expectations that the target audience has of the message constructor is key to finding lexes that are appropriate and align with the sender's perceived ethos. Thus, CARA/CARM can be applicable not only for social movements, but for other

actors (e.g., the media, researchers or authorities on various levels of society) that have a performative ethos as well. In the context of climate change communication, these other actors have their role to play. Taking the results of RQ2 into consideration, we saw that different types of CARA resulted in different action inclinations amongst the recipients, which indicates that the subgroups' functions within their context varies (although they have the same overarching purpose). The same can potentially be applicable for other actors. It is possible that different media outlets/channels, different researchers, fields, research institutions and different levels and functions of authorities may have different roles both in and between their own sphere. Nevertheless, all actors working with some form of communication exchange on a particular issue with the general public are also part of a larger sphere. Thus, it is plausible that these various actors also fill certain roles not only between those in their own smaller sphere, but also in the larger one where they relate and interact with one another. Understanding what constitutes the most suitable approach for communicating the climate issue, and the role of the various message constructors in relation to each other, may potentially lead to faster implementation of mitigation and adaptation strategies for climate change. It is not a universal message that is needed: What is needed is knowledge of how a myriad of messages interact and together form a larger message for change.

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Communicating climate action

There is a common saying that actions speak louder than words, that what a person does is more telling than what they are saying. But it is also frequently pointed out that the pen is mightier than the sword. So, when to use the pen? And when to use the sword?

This doctoral compilation thesis investigates the interconnectedness of words and actions in relation to social movement messages and climate change communication; what the pen and the sword can create if aligned. Together words and actions are part of a larger message whole. To explain this, the thesis introduces the theoretical concept of the Communicative Action Repertoire (CAR). Communications and actions that align with each other are seen by members of the public as coming from a more trustworthy and more knowledgeable source. In general, communication aligned with a conventional CAR will inspire communicative action on the part of recipients inclined to take action, while communication aligned with a disruptive CAR will inspire direct action. Thus, where message recipients must construct a cohesive mental model of an abstract and complex issue, like the climate crisis, CAR alignment provides a map for practitioners and scholars alike to analyse and structure cohesive messages that minimise potential cognitive dissonance.

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