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Damaschke, Saskia; Freudl, Vanessa; Görsch, Patricia; Marko, Louisa; Sandke, Noa

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The Dynamics of Digital Influence

Communication Trends in
Business, Politics and Activism

Edited by Alexander Godulla, Christopher Buller,
Vanessa Freudl, Isabel Merz, Johanna Twittenhoff,
Jessica Winkler and Laura Zapke



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Emotionality and fact orientation in environmental activism

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Abstract

The increasing threat of climate change is particularly characterized in public discourse in Germany by the environmental activism of Fridays For Future and Letzte Generation (translated: Last Generation). Both environmental movements mobilize by communicating the causes of problems, approaches to solutions and possible ways to motivate people. Although emotionalized and fact-oriented communication suggests a significant influence on this, the topic has not yet been researched. A comparative content analysis of 283 image and video posts from both climate protest movements on Instagram from 2023 revealed the predominant role of anger, determination, despair and regret in the diagnostic and prognostic attribution of both movements. Determination, hope and gratitude could be identified in the motivational function of the communication of both activist groups. While Letzte Generation often makes negative emotional statements, Fridays For Future is characterized by a more positive emotionality. Particularly with regard to the attribution of problems, both movements consistently refer to facts, whereby Letzte Generation in particular explicitly refers to sources. The work provides insights into the role of emotionality and fact orientation in a comparison of the two currently most relevant German climate protest movements. It thus offers a starting point for further research into the mobilization communication of environmental movements.

Keywords: Emotionality, fact orientation, collective action framing, environmental activism

Introduction

The climate crisis is one of the greatest threats to human well-being and the health of the planet (Lee et al., 2023). Yet, the generation of politicians now seems to take the crisis lightly and does not pursue a political solution in all seriousness (The Lancet Planetary Health, 2024). This highlights the need for society, often felt by young people in particular, to increase pressure on politicians (Skeiryte et al., 2022). Young environmental activists take to the streets, manage to mobilize masses of people, and risk prosecution by the judiciary with actions of civil disobedience (Buzogány & Scherhauser, 2022; De Moor et al., 2021). The main

aim of these actions is in times of permanent crises to maintain media attention for the effects of climate change and thus also to constantly increase the pressure on politicians (Buzogány & Scherhauser, 2022; De Moor et al., 2021). In Germany, two activist groups are particularly well known: Fridays For Future (FFF) and Letzte Generation (translated: Last Generation, LG). Although both groups are environmental movements that emerged from the need to tackle the climate crisis, they differ considerably in some respects, particularly in their choice of means of protest (Rucht, 2023a). While FFF gained notoriety through school strikes and continues to rely on peaceful protests today, LG employs more radical courses of action (Rucht, 2023a). The activists obstruct traffic by gluing themselves to roads or throwing food or orange paint at paintings in museums (Rucht, 2023a). This differentiation suggests that it may be interesting to examine the ways in which these two movements communicate, particularly on social media.

Environmental movements use social media to mobilize and disseminate information (Boulianne et al., 2020). These provide the advantage of swift and effortless information dissemination (Boulianne et al., 2020). While research on climate change communication in social media has predominantly concentrated on the text-based platform X (formerly Twitter), exploration of visual-based social media like Instagram, and broader investigation into visual components of environmental communication, has been sporadic (Pearce et al., 2019). The textual and visual components of communication depict how social movements portray themselves and climate change (Pearce et al., 2019). Their presentation significantly influences how situations are perceived and understood, a concept known as framing. Frames are “action-oriented sets of beliefs and meanings that inspire and legitimate social movement activities and campaigns” (Snow & Benford, 1992, p. 137). While the framing of FFF has been extensively studied, further research is warranted for the recently established Letzte Generation (Buzogány & Scherhauser, 2022; Svensson & Wahlström, 2023). The distinct forms of environmental activism between these two groups, particularly regarding their protest tactics, imply different framing strategies.

Emotions elicited by climate change significantly influence attitudes and behaviors, notably impacting support for eco-friendly policies and involvement in environmental activism (Feldman & Hart, 2016; Smith & Leiserowitz, 2014). Consequently, this also influences protest practices. Conversely, fact orientation, characterized by a factual, objective, and comprehensive portrayal of information, contrasts with emotionality (Pointner, 2010). Given the existential threat posed by climate change, it is reasonable to consider it both an emotional and scientific, fact-oriented issue. This opens a field of tension that has not yet been researched in the context of the climate protest movements that are most present in the media in Germany. To address this research gap, a comparative qualitative content analysis following the methodology outlined by Kuckartz and Rädiker (2022) is employed. 283 image and video posts extracted from

the German Instagram channels of FFF and LG were conducted. This study aims to investigate the following research leading question: *What role do emotionality and fact orientation play in the framing of FFF Germany and LG in their communication on Instagram?*

Theory

Social movements can be defined as a network of interactions between individuals or groups who share a common interest and become politically active to achieve it (Diani, 1992; Herrmann et al., 2023). They draw attention to injustices and conflicts, raise public awareness, and increase public pressure on policymakers (Buzogány & Scherhauser, 2022). The decentralized organizational structure, devoid of clear hierarchies and division of labor, is therefore a defining feature (Rucht, 2023b). Herman et al. (2023) argue that environmental movements belong to the most influential social movements because they have been involved in the emergence of green parties, significantly influenced nuclear power policy, and established environmental protection as a social value. Environmental movements engage in environmental activism, which involves collective civic action aimed at addressing environmental problems at a systemic level that goes beyond changing individual behavior (Alisat & Riemer, 2015). This research focuses on the two groups FFF and LG.

Greta Thunberg, the initiator of the FFF movement, started skipping school in August 2018 and instead sat in front of the Swedish parliament to protest politicians' inaction in the face of advancing global warming. Her actions were disseminated globally through the media, and as time passed, an increasing number of supporters joined the movement. By 2019 it had become a global phenomenon, mobilizing millions of people from over a hundred countries (Wahlström et al., 2020). In Germany, the movement reached its peak in terms of mass mobilization and public impact in September 2019, with reportedly 1.4 million protesters on the third Global Day of Action (Rucht, 2023a). The integration of highly committed individuals with less committed individuals characterizes the protests (Svensson & Wahlström, 2023). As a means of protest, FFF relies on peaceful strikes and dialog (Rucht, 2023a). The prevailing message of the movement is that politics should listen to science and act on it (Evensen, 2019).

However, groundbreaking and forward-looking successes have failed to materialize, and the movement's mobilizing power is waning (Rucht, 2023a). Another challenge is the lack of a clear command structure. This is because different leaders are espousing divergent political opinions, which is negatively impacting their public image. The most recent example of this is Greta Thunberg's stance on the Israel conflict (Schneider & Toyka-Seid, 2024). The resulting dissatisfaction leads to the question of how to give more weight to climate policy demands and how to increase pressure on political decision-makers. These considerations can be interpreted as a starting point for the formation of new movements that no longer consider peaceful strikes to be effective, but instead focus on rule-breaking actions (Rucht, 2023a). In Germany,

these include Extinction Rebellion and in particular, the recently formed LG (Rucht, 2023a). In contrast to the peaceful start of the movement at FFF, LG has been using more radical means from the beginning, such as hunger strikes and blockades (Rucht, 2023a). Compared to the mass protests of FFF, the street blockade as a means of protest requires only six to ten activists. To prevent the rapid dispersal of a protest by police, the activists typically stick their hands with super glue to the road at intersections, leading to arrests and prosecution by the police. While politicians label the group "climate terrorists", LG sees itself as an advocate of non-violent protest, employing civil disobedience (Rucht, 2023a). Rucht (2023a) defines civil disobedience as "a strictly non-violent breaking of rules or laws" (p. 12). This form of protest is primarily aimed at creating media resonance (Rucht, 2023a). LG mobilizes relatively few, but highly motivated activists who carry out actions in small groups (Rucht, 2023a). In contrast, FFF focuses on mass mobilization. The substantive demands of LG (such as cheaper public transportation) are not very radical and overlap with those of FFF (Rucht, 2023a).

Framing

Frames are elements and principles that guide and significantly influence the view and interpretation of situations (Goffman, 1974). They can therefore be understood as an interpretative framework. In this context, framing is understood as the production and dissemination of frames (Reese, 2008). The original core objective of the framing approach is the qualitative-oriented analysis of texts (Goffman, 1974). In communication studies, it is mainly applied in the field of media reception and impact research. Here, the framing approach can be used to examine the effects of framed media content on recipients. In the course of this, framing can also be understood as a conscious control instrument, through which desired reactions, such as approval, rejection, indignation or encouragement, are to be evoked on the part of the recipients. This is particularly relevant when mobilizing collectives (Snow & Benford, 1988).

Depending on the object of investigation and research discipline, numerous framing approaches have now emerged that enable the in-depth analysis of a wide range of structures and social phenomena. Benford and Snow's (1988, 1992) collective action frames, for example, provide information about the production and reproduction of cultural patterns of interpretation that social movements use to mobilize their supporters. In general: "Frames enable individuals, groups and organizations to interpret the world around them" (Gahan & Pekarek, 2013, p. 761). The collective action frames described below by Benford and Snow (1988, 1992) show how this works in concrete terms using the example of social movements.

The authors describe collective action frames as a collective interpretative framework, i.e. as an "action-oriented set of beliefs and meanings that inspire and legitimate the activities and campaigns of a social movement organization" (Benford & Snow, 2000, p. 614).

With the help of the framing concept of collective action frames, three central questions can be examined:

1. By what characteristic features is the interpretive framing of protest movements characterized?
2. On which factors does its mobilization potential depend?
3. What options are available to the actors involved to improve the impact of their interpretive frame? (Kern, 2008, p. 142)

All three questions demonstrate that framing is a crucial component in various areas of the mobilization process (Snow & Benford, 1988). A detailed look at the design of collective action frames shows that Snow and Benford differentiate between three core tasks: diagnostic framing, prognostic framing and motivational framing (1988, 1992). Diagnostic framing focuses on identifying the problem, the causes and the responsible parties (Snow & Benford, 1988). Prognostic framing refers to the development of solutions, approaches to solutions and strategies for their implementation (Benford & Snow, 2000). The third core task, motivational framing, aims to persuade target groups to participate in community actions (Snow & Benford, 1988).

Framing in environmental activism

A study by De Moor et al. (2021) on the framing of the environmental movements FFF and Extinction Rebellion (XR) shows that both environmental movements have a similar diagnostic framing. FFF and XR agree that global warming is made by humans (De Moor et al., 2021). FFF assigns responsibility for the climate crisis to politicians, criticizing their passivity. XR chooses a different approach by pointing out that the system is toxic and no individuals are to blame. With regard to prognostic framing, both FFF and XR see the solution in the fact that political decision-makers must recognize climate science findings and, based on these, introduce measures that effectively reduce greenhouse gas emissions (De Moor et al., 2021). In terms of motivational framing, both FFF and XR emphasize the relevance and power of collective mobilization.

While the framing of environmental movements in general and FFF in particular has been researched comparatively extensively (Maier, 2019; Svensson & Wahlström, 2023), there is hardly any research in this regard on LG. Possible explanations for this are the relative novelty of the group and the restriction of its activities to Germany and Austria. To the authors' knowledge, there are no studies that compare the framing of FFF and LG. This is a research gap that will be filled in the context of this study.

The study by Buzogány and Scherhauer (2022), which compares the framing of FFF and XR, can provide an approach to the topic. As an independent group within the environmental movement, XR cannot be equated with LG. But both movements were founded in

response to the failed mass protests of FFF, with the aim of increasing pressure on political decision-makers through rule-breaking actions (Rucht, 2023a). Therefore, a certain similarity in approach between XR and LG can be assumed. Buzogány & Scherhauser (2022) conclude that the diagnostic and prognostic frames of FFF and the concrete actions of the group align more closely with the mainstream discourse than those of XR. As a result, FFF activists are regarded as important interlocutors, and their demands are reflected in mainstream political debates. In contrast, XR is often perceived as too radical or utopian for the German political system (Buzogány & Scherhauser, 2022).

Activism communication on social media

Research on social movements such as the Arab Spring and Black Lives Matter has demonstrated the potential of social media as a tool for mobilizing, informing, and recruiting new members for social movements (Theocharis et al., 2015). The role of social media as a means of bypassing the gatekeeper function of traditional media and enabling the expression of opinions and demands to a global audience is a significant factor in the mobilization of social movements (Boulianne et al., 2020). Social media can thus be considered an indispensable component of the mobilization process (Maher & Earl, 2019).

Instagram is a well-established social media platform with approximately two billion users worldwide (*Social Networks nach Nutzern 2024*, 2024). FFF and LG both have high follower numbers (67,000 followers on the LG account and over half a million followers on the FFF Germany account). Instagram is particularly characterized by its focus on visual media content (Haq et al., 2022). The platform mainly serves a young audience; in Germany, 78 % of 16- to 19-year-olds use Instagram (*Instagram - Nutzerstruktur nach Altersgruppen in Deutschland 2022*, 2022). Since many young people belong to LG and FFF, it can be assumed that there is a broad overlap between Instagram users and activists. Conversely, visual platforms have been largely overlooked in research on climate change communication (Pearce et al., 2019). Studies that have examined Instagram have frequently been limited to textual elements or focused on individuals within the movement, rather than environmental movements as a whole (Molder et al., 2022). This study aims to address this gap and compares the two environmental movements, FFF and LG.

Emotionality

Social movement researchers consider emotions to be a particularly important factor in understanding how social movements initiate, sustain, or end activism. Emotions can be both a trigger for initiating and supporting mobilization, protest, and resistance, as well as an inhibiting factor (Jasper, 2011). In essence, emotions can be conceptualized as a "form of human experience as a short-term reaction to internal (e.g. memories) or external (e.g. threats) events" (Klimmt, 2013, p. 70). In line with the approach proposed by Kleres and

Wettergren (2017), emotions are conceptualized as conscious and unconscious information and motivation processes underlying rational action and decision-making. This paper employs the term "emotions" in a collective sense, in accordance with the perspective put forth by González-Hidalgo and Zografos (2020). This approach is based on the everyday understanding of emotions and, as a result, no distinction is made in this paper between emotions, affects, moods, and feelings (González-Hidalgo & Zografos, 2020). The primary focus of this study is on the repertoire of emotions utilized, which is why the often-used conceptual distinction between emotions and affects is not discussed in detail (Smith & Leiserowitz, 2014).

The consideration of emotions in the context of environmental activism is important because emotions experienced in the context of climate change are crucial for attitudes and behaviors. For example, numerous studies have demonstrated that emotions, most notably hope, are strongly related to activist engagement (Feldman & Hart, 2016; Ojala, 2012; Smith & Leiserowitz, 2014). Although emotions are well-researched in relation to messaging in the climate context, there is less research on how environmental movements use emotions in their messaging. Currently, there is a gap in research on whether and to what extent environmental movements use emotions in their communication. This paper attempts to close this research gap.

Fact orientation

Fact orientation is understood as "that which is known (or firmly believed) to be real or true [...] [or something that] has actually happened or is the case" (*Fact - Oxford English Dictionary*, n.d.). Orientation towards facts can therefore be defined as recourse or reference to verifiable facts (Strohschein, 2022, p. 194). In the context of this paper, fact orientation can be considered as the opposite of conjecture, interpretation or speculation (Pointner, 2010). In the political context, fact orientation is primarily defined in contrast to emotions and emotionality, often also in distinction with society's rejection of science (Durnová, 2019) and disinformation (Bernhard et al., 2024). Following on from this, a recent study by the Bertelsmann Foundation examines, for example, the population's perception of disinformation: the study concludes that respondents are more frequently confronted with disinformation when it comes to particularly controversial topics such as migration, war or climate change (Bernhard et al., 2024). However, respondents consider the need for truthful facts to be particularly high for these topics (Bernhard et al., 2024). In addition, technological developments and the growing influence of social media increase the potential for misinformation to deceive (Bernhard et al., 2024).

The concept of fact orientation has not yet been sufficiently researched in the area of communication by social (protest) movements. Although there are a few studies – mainly in political science – that analyze protest movements, such as the "March for Science" in the USA, with regard to the role of factuality and emotions (Durnová, 2019), this is done purely on a socio-political level and not on a communication science level. The communication science

perspective thus represents a research gap that can be approached with the help of the above definitions. Based on those definitions, fact orientation in the context of the communication of social protest movements can then be identified, for example, in the citation of well-founded studies or in the reference to statements by recognized scientists.

Methodology

In order to address the research leading question, three sub-questions are employed to provide further insight into the various dimensions.

RQ1: *What role do emotionality and fact orientation play in the framing of communication by FFF Germany on Instagram?*

RQ2: *What role do emotionality and fact orientation play in the framing of communication by LG on Instagram?*

RQ3: *How do FFF Germany and LG differ in terms of emotionality and fact orientation in the framing of their communication on Instagram?*

To answer the research questions, a comparative qualitative content analysis was conducted in accordance with the methodology proposed by Kuckartz and Rädiker (2022). This method allows for the uncovering of both manifest and latent content. For this purpose, a category system was created whose categories were formed both deductively and inductively with the aim of forming hypotheses. The deductively formed categories form a basis for the analysis and thus represent the operationalization of the research question (Springer et al., 2015). The exact definition of the various categories was recorded in a codebook. The category system comprises the main categories of *emotionality*, *fact orientation* and *collective action frames*. The deductive main categories *emotionality* and *fact orientation* result from the research questions and each have inductive subcategories. The *collective action frames* include the functions of diagnostic framing, prognostic framing and motivational framing. These three functions serve deductively as components of the individual frames (Snow & Benford, 1988, 1992). A prerequisite for the formation of the frames is that at least two of the three functions are fulfilled. In the course of the analysis, inductive categories emerge from the characteristics of the various functions.

The study is based on a sample drawn from the channels *@fridaysforfuture.de* (Fridaysforfuture.de, 2024) and *@letztegeneration* (Letztegeneration, 2024) on the social media platform Instagram. For each channel, 12 posts from each month of the year 2023 were chosen at random, 75% of which were image posts and 25% video posts. This resulted in a sample of 283 posts in total. The sample was examined by five coders, whereby intersubjective traceability was ensured (Brosius et al., 2022). The results of the coding of the two channels were

compared with each other to identify the communication patterns and differences between the two organizations. To answer the research questions, the emotionality and fact orientation within the collective action frames were analyzed separately and then compared.

Results

The subsequent section will explore the relationship between emotionality and fact-orientation in environmental activism, contextualizing this within the broader framework of collective action. The frames between the two activist groups, FFF and LG, are first considered separately and then compared.

Information events and actions (FFF)

FFF identifies the external circumstances of climate activism, e.g. the oppression of climate activists in Germany, as a problem. The activist group names the government's behavior and its lack of climate protection in the diagnostic framing as the cause of the climate movement. As one solution to these issues, FFF states that climate activism should be secure, especially in times of climate crisis. Another solution is participation in the climate movement. To encourage the target group to support and participate in the climate movement and its events, such as the global climate strike, the emotions of joy and determination are employed.

Phasing out fossil fuels (FFF)

FFF perceives the use and impact of fossil fuels as a problem: they cause greenhouse gases, are demonstrably harmful to the climate and fuels, such as coal, are mined in excess. Government actions exacerbate this issue through agreements with businesses. Politics is both blamed for and seen as a potential solution to climate change. Another proposed solution is the phase-out of fossil fuels. These solutions are communicated as fact-oriented statements which run through the entire collective action frame and are accompanied by the emotions of determination, anger, and indignation. To underscore the importance of the fossil fuel phase-out further emotions such as sarcasm and derision, incomprehension and horror, fear, as well as joy, love, and hope for improvement are used. The emotions of shock, regret, respect and recognition are used to highlight the activist group's hope that the government will commit to a fossil fuel phase-out at the World Climate Conference and join the High Ambition Coalition to commit to the 1.5 degree target.

Other potential solutions for phasing out fossil fuels include further protest actions that are emphasized with the fact that climate change threatens the livelihoods of numerous individuals through natural disasters. The facts are accompanied by the emotions of hope and shock, which can also be found in the motivational frame function of participating in the activist group, typically mentioned at the conclusion or commencement of a post. The described fact

orientation and the emotions of determination and anger also run through the various frame functions in this frame.

Mobility transition (FFF)

FFF is determined that it is a problem that many political investments are planned for the expansion of roads, while working conditions and the state of public transport urgently need to be improved. This is emphasized by anger, indignation, sarcasm and derision. The activists attribute responsibility to the government and politicians. The German Minister of Transport, Volker Wissing, and his actions are particularly emphasized, with him being accused of refusing to work, supported by additional emotions of determination and incomprehension.

The activist group is dedicated to the implementation of a mobility turnaround, which it considers to be a matter of urgency. In order to achieve this, it is necessary for the Ministry of Transport to undergo a change, which is highlighted by the emotions of determination, anger and indignation, sarcasm and derision, joy and gratitude. The emotions of pride, love and hope resonate with the solution approaches.

FFF uses the emotions of joy and gratitude that citizens recognize these problems and are committed to the change. FFF employs motivational framing to persuade the target group to take part and participate in the protest actions, using the emotions of determination, anger and indignation, as well as joy, love, pride and gratitude. The entire frame is based on several facts, which present the mobility transition as such: politics, emissions and the economy are cited as the reasons for climate change. The climate activists leave no doubt that future mobility will be sustainable and public, which needs more investments in public transport.

Climate Protection (FFF)

The climate crisis and its ecological and social consequences are at the center of this frame and it is described as diagnostic frame function, which is accompanied by the emotions of determination, anger/indignation, regret, incomprehension/disgust, sarcasm/mockery, but also by positive feelings such as joy, pride and hope. The government and the economy are named as the responsible parties. FFF reacts with anger and indignation to the planned abolition of the sector targets in the government's climate protection law. The government's missed climate targets are substantiated as fact by reports from the Federal Environment Agency. The activist group is determined not to allow the government to fail to meet the 1.5 degree target and regrets the political course on climate protection. One solution is therefore the government's support for climate protection, which is accompanied by the emotions of determination, anger and indignation, incomprehension and horror.

The activist group uses the same emotions as for the diagnostic frame function, with the emotions of determination, anger and indignation being more prominent to state that politics is a solution to climate change while the protest actions within the climate movement are

a solution for climate protection. The positive emotions of joy, pride and hope give the climate movement a sense of community and encourage citizens to participate in protest actions and information events. The reference to fact orientation runs through all frame functions highlighting the already high impact of the climate crisis on our lives and the earth. Further facts are used to emphasize the importance of politics for climate protection and to call for a reduction in emissions.

Political course in need of change (FFF)

As a major problem FFF diagnoses the climate-damaging policy course of the government, e.g. its failure to comply with the Paris Climate Agreement. FFF is annoyed and outraged by the current government and reacts to political events with sarcasm and derision in its contributions. The members of FFF are portrayed ambivalently. They move between being full of fear and despair and being proud and hopeful.

To illustrate the grievances in politics, facts such as the Paris Climate Agreement are mentioned and it is pointed out that the government is responsible for complying with it – thus politics is named as the reason for climate change. At the same time, the destruction of livelihoods is described as a fact-based consequence of climate change. To solve this problem, FFF proposes to change the government's course, which is backed up with facts such as the phase out of fossil fuels. The statement that politicians should drive forward climate protection is supported by the emotions of determination, anger and indignation, fear, despair, pride, joy and sarcasm or mockery. In addition, this solution is underlined by the fact that politics is part of the causes of climate change and therefore part of the solutions. FFF calls for protest actions and participation in these as well as in the movement itself to ensure that the politicians can no longer ignore the activists. In this motivational frame function FFF refers to the fact that politics is the cause of and solution to climate change and also refers to the ambivalent feelings of activists during participation in demonstrations.

Statements on current grievances (FFF)

In addition to addressing the issue of climate change, FFF also addresses other forms of grievance like the war between the Hamas and Israel or the outdated school system. The activist group ascribes a sense of historic responsibility to itself, which is accompanied by a range of emotions including determination, despair, solidarity, and sadness. In the context of the outdated school system, the fact-oriented statement that the economy is a cause of climate change is mentioned. The call for individual initiative and participation in community actions is resolutely aimed at encouraging the target group to take joint action.

Information events and campaigns (LG)

In this collective action frame, LG addresses the tension between police and climate activists. The attribution of the problem by politicians is repeated here as fact, often coupled

with a sense of misunderstanding. Within this frame, determination for protest actions serves as an emotionally charged means of communication. As a solution, reference is made to the movement's working groups, with guidance on how to familiarize oneself with protest practices. Additionally, gratitude is expressed for the support received thus far.

Phasing out fossil fuels (LG)

The LG blames fossil fuels for climate change, targeting both the German energy company RWE and the government for the support of harmful activities. Determination is evident as LG members oppose the government's fossil fuel agenda in relation to the diagnostic frame functions. Protest actions are highlighted by scenes of protesters being removed, evoking despair, regret, and anger. Sarcasm dramatizes the issue's gravity. Facts support these claims, including the government's disregard for science and violations of climate laws. Facts are presented as established truths. The proposed solution is to phase out fossil fuels through political advocacy and structural change. Emotions of anger, regret, despair and sarcasm align with this frame function as well. These emotions serve as responses to previous climate protection measures. Other facts predict future fossil fuel extraction exceeding the 1.5-degree target, and that proposed solutions will be politically managed by a societal council. Again, no sources are given. Determination is particularly emphasized in the motivational function.

Mobility transition (LG)

The frame for mobility transition, which holds politicians and the government responsible for ensuring climate-friendly transportation, is only addressed by the LG in a single post. It criticizes a political party's proposal to build more motorway lanes, advocating instead for expanding public transport for climate-friendly transportation. The post highlights the anger of a protester and references a fact-check from a tech portal to substantiate the argument about problematic car traffic.

Climate Protection (LG)

The climate protection frame addresses the government's role in climate change, expressing anger and despair over their perceived inaction. Negative emotions highlighting the magnitude of identified climate change problems are often contrasted with positive feelings to create a perspective and a sense of unity. Determination is evident throughout, particularly in the motivational frame dimension. In addition, there is a strong fact orientation. The problematic handling of climate-related issues by politics and the economy is often presented as a fact.

The most common reference to the effects of climate change is to natural disasters. Floods, droughts, and fires in other countries are used as examples to illustrate the issue. These are mainly discussed in the context of rising temperatures, which form the basis of the argumentation. While natural disasters are presented without sources, references to rising temperatures occasionally cite the report of the Intergovernmental Panel on Climate Change

or a quote from the UN Secretary-General. The latter, besides highlighting the issue, also serves as justification for the climate protest movement.

In the discourse on global warming and natural disasters, the destruction of livelihoods is also presented factually. A physician's statement further emphasizes health consequences in light of the aforementioned IPCC report. On the prognostic dimension of the frame, the climate movement is identified as a solution, advocating for climate-friendly policies and a societal council. The emotional intensity and fact orientation of other frame functions are reflected here as well. Anger and despair are followed by determination and hope. The cited facts center around politics as the cause of the problem and the mentioned consequences of climate change.

Political course in need of change (LG)

The present frame deals with direct criticism of the political course. Anger, despair, and incomprehension highlight the severity of the issue. Following this, determination, gratitude, joy, hope, and pride motivate participation in protest actions and donations. Facts center around blaming politics without referring to sources. Criticism from the UN Secretary-General supports the argument. The proposed solution involves adhering to political goals, supported by factual political commitments. A scientist's quote emphasizes the need for immediate zero emissions. Besides changing political course, the LG views its climate protest movement as a solution, driven by anger, fear, and determination, expressing hope, pride, and gratitude. The UN Secretary-General's quote and the facts blaming politics reinforce the movement's legitimacy.

Threat to livelihood (LG)

To address the threat to human livelihoods, determination, incomprehension, regret, and despair are emotionally expressed. The gravity of the threat is stylistically supported by conveying hopelessness, which accompanies expressions of incomprehension, regret, and despair. Within the same frame, these negative emotions are then met with determination to express the urge to protest. Politics is referred to as the root problem, supported by occasional references to the constitution and climate reports.

Criticism of the wealthy (LG)

The climate protest movement identifies the wealthy as drivers of environmentally harmful behavior. They state that the wealthy are responsible for more emissions, which is not substantiated by sources. The LG highlights natural disasters as a consequence which they connect to the destruction of livelihoods. Alongside the primary problem attribution of wealthy individuals, LG sees the government as an enabling force behind them. They express frustration and incomprehension over the imbalance of luxury compared to the crises for others.

Legal judgements and actions (LG)

Legal judgments against individual members of the protest movement are communicated using negative emotions of anger, fear, sorrow, shock, and incomprehension. These emotions are met with even greater determination, which is based on the conviction of the motives of the climate protest movement and rejects blame attribution. Thus, the cause of the frame draws attention to an endangered future. The group communicates solidarity with the affected members. Throughout the frame, factual evidence is rarely used.

Fundraising activities (LG)

One challenge for the LG is to secure financial support to continue its protest actions and to support the enforcement of its demand for a societal council. Consequently, fundraising efforts are initiated, expressing gratitude for past financial support. Subsequently, future plans are presented within the frame, emphasizing their determination. Occasionally, pride in their own protest actions can also be observed. However, fact orientation is not identified within the frame.

Comparing FFF and LG

While the LG utilizes nine different frames, FFF addresses only six. It is evident that various topics can influence the emotional intensity and fact orientation in communication, making a direct comparison of similar interpretive patterns between the two groups challenging. Both groups conduct informational events to educate about their respective motives and practices and to mobilize members. They attribute the need for protest to politics, viewing it as the root cause of climate policy issues. Problem attribution is presented as factual by both groups, although evidence for these facts is not provided. Additionally, the LG faces confrontations with the police due to their more radical protest practices, conveying a sense of incomprehension toward such governmental reactions. Determination is clearly evident in both groups, though the LG adopts a more serious tone in their determination to appeal to the audience's sense of responsibility, while FFF uses joy to motivate potential participants.

The frame for fossil fuel phase-out is prevalent, with both FFF and LG attributing climate-damaging energy production to coal power plants and government responsibility. Problem attribution lacks sources, with LG emphasizing scientific disregard, climate protection laws and future impacts of climate change and FFF focusing on political blame. LG advocates a societal council for coal phase-out, often depicted with sarcasm or mockery, contrasting with FFF's general political opposition. LG's communication highlights despair and anger, while FFF balances negative emotions with hope and respect. LG's tone is emotionally heavy, contrasting with FFF's hopeful mobilization approach. This suggests LG aims to raise audience awareness of responsibility, while FFF focuses on motivation through positive perspectives.

The mobility transition frame is largely led by FFF. Despite this, all functions of the frame share similarities: Political accountability is highlighted as the core issue, with protest advocated as the means to achieve a just transition. FFF displays a spectrum of emotions, including determination, anger, sarcasm, and misunderstanding in the diagnostic function. Joy, pride, love, hope, and gratitude are evident in the prognostic function. Determination, anger, outrage, joy, love, pride, and gratitude were found in the motivational function. The LG primarily emphasizes determination in their prognostic attribution of protest activities. Fact orientation, particularly in the diagnostic and prognostic functions, is emphasized by FFF. They assert the political neglect of science as a justification for expanding public transportation, while LG refers to a linked fact-check supporting the issue of climate-damaging car traffic.

In the climate protection frame, both movements again highlight the role of politics as the primary cause of climate crises, advocating for a shift to climate-friendly policies to counter natural disasters and livelihood destruction. While expressing similar emotions like anger and determination, LG emphasizes negative sentiments more strongly than FFF, evoking despair, sorrow, and fear but contrasting them stronger with emotions of love, hope, and determination in the motivational function. In contrast, FFF uses milder positive emotions such as joy and pride. Regarding fact orientation, both groups address similar themes, but LG occasionally provides more sources to validate their claims through external sources, referencing reports from the IPCC, statements from the UN Secretary-General, and expert opinions to validate their claims.

In the frame regarding the need for political change, both activist groups identify the government as the problem and push for policy shifts through protests. Emotionally, they express anger, fear, and despair, with FFF also using sarcasm. Both portray their protests positively with pride, joy, determination, gratitude, and hope while blaming politics for the problem. FFF cites the Paris Agreement, while LG relies on the UN Secretary-General's criticism of insufficient political measures. In the prognostic function, FFF mentions the transition from fossil fuels, while LG supports the same argument with a scientist's quote.

Comparing FFF and LG frames on Instagram reveals nuanced differences in emotional tone and factual presentation. In LG's posts, describing the problem is often accompanied by expressions of grief, pain, and courage, which are not found in FFF's posts. LG also emphasizes despair, love, regret, fear, and confusion more frequently. In contrast, FFF often employs humor and sarcasm, absent in LG's messaging.

The four hypotheses were derived from a contextualized consideration of emotionality in the collective action frames:

H1: The communication of FFF and the LG is characterized by negative emotionalization with regard to the attribution of problems and causes.

H2: *The communication of FFF and the LG is characterized by a negative emotionalization with regard to the attribution of solutions, which is contrasted by positive feelings.*

H3: *The communication of FFF and the LG is characterized by a positive emotionalization with regard to the motivation intention.*

H4: *In comparison to FFF, the LG mobilization communication is distinguished by a tendency to dramatize negative emotions.*

In their communication on Instagram, both activist groups adopt fact orientation, with the majority of the recognized facts being presented as true and generally valid statements. References to sources or external persons are only sporadically present, with the majority of instances occurring with the LG. This is particularly evident in the collective action frames of mobility transition, climate protection, and the need for policy change. Despite FFF's scientific roots, LG tends to substantiate facts with external sources more extensively. Both groups exhibit a high level of fact orientation, though many statements lack direct citation. In the evaluation, the fact orientation was contextualized within the context of the collective action frames, from which further hypotheses can be derived.

H5: *FFF and the LG are distinguished by their emphasis on fact-oriented communication regarding the identification of problems and causes, as well as the development of solutions.*

H6: *In comparison to FFF, the LG mobilization communication is distinguished by a more pronounced orientation towards sources of information and facts.*

Limitations

As research period, the year 2023 was chosen due to topicality and constant change of the groups. The findings of this qualitative content analysis are therefore limited in their informative value. A longer investigation period could enhance the informative value of the statements and reduce influence of year-specific events. The population only includes the main channels, information from the local groups were not included. A uniform number of posts and videos from each month of both channels was selected for the sample, yet the specified number of videos could not always be considered due to the fact that fewer were posted. Consequently, not all the available information was included in the analysis. To further enhance the informative value of the analysis, other forms of media could be considered or interviews with climate activists could be held to gain a more comprehensive understanding of the activists' communication.

To ensure consistent coding within the five coders, regular comparisons and detailed rules were employed. Still, it was not possible to completely avoid subjective interpretation due

to the ambiguous nature of the contributions. To ensure consistency, frame functions were first coded individually and later aggregated. The frames formed permit a detailed comparison of analogous aspects, as they are situated at disparate levels of abstraction. However, this renders an overarching comparison of the sample in terms of emotionality and fact orientation challenging. Although the results offer insights into these characteristics, they cannot be generalized to the entire communication of activist groups, as the frames only represent the sample.

Conclusion

The communication of FFF and the LG on Instagram was analyzed in terms of emotionality and fact orientation, with the results being contextualized within the framework of collective action frames. Of the ten frames identified, both groups utilize only half, including climate protection, phasing out fossil fuels, mobility transition, political course in need of change, and information events and campaigns. The climate protection frame is employed very often and is utilized by both groups in a relatively equal manner. Other frames, such as phasing out fossil fuels and the mobility transition, are predominantly utilized by FFF, while the frame on the political course in need of change is employed by the LG. As a result, FFF and LG not only use different emotions and fact orientation, but also present fundamentally different topics in their posts.

The analysis of the communication on Instagram by FFF and the LG reveals significant differences. Both movements exhibit a variety of emotions, with determination and anger or indignation being the most common and equally represented in both groups. FFF supports its mobilization intention by using positive emotions such as humor, sarcasm, and mockery to highlight desirable future prospects. In contrast, negative emotions dominate in LG. The exclusive use of sadness and pain by LG serves to underline this difference and indicates a dramatized linguistic formulation of the causes attributed to the problems identified. These different emotional strategies are reflected in the collective action frames of the two movements and could have an influence on their perception and mobilization power. There were also differences between the two groups in terms of fact orientation. A comparison of the fact-orientation indicates that the LG, due to its relatively recent inception and the intensity of public criticism directed at it because of its protest practice, is more likely to rely on evidence of its facts to strengthen and maintain its legitimacy. In contrast, FFF, as an established movement with a broad following and a basic sympathy of the population, is probably less questioned in principle and thus has less need for external validation.

Activism can have a significant impact on the political and economic changes needed to tackle climate change. Successful communication is crucial for mobilizing large masses and exerting social pressure. Examining the emotionality and fact orientation of both groups'

communication on Instagram provides important insights into their strategies and demands. These findings can help political decision-makers to better understand and take into account the concerns of environmental movements. The analysis suggests that, despite more negative emotions, LG communicates just as well-founded and fact-oriented as FFF, which could reduce existing prejudices and emphasize the seriousness of both movements.

References

- Alisat, S., & Riemer, M. (2015). The environmental action scale: Development and psychometric evaluation. *Journal of Environmental Psychology, 43*, 13–23. <https://doi.org/10.1016/j.jenvp.2015.05.006>
- Benford, R., & Snow, D. (2000). Framing Processes and Social Movements: An Overview and Assessment. *Annual Review of Sociology, 26*(1), 611–639. <https://doi.org/10.1146/annurev.soc.26.1.611>
- Bernhard, L., Schulz, L., Berger, C., & Unzicker, K. (2024). *Verunsicherte Öffentlichkeit*. <https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/verunsicherte-oeffentlichkeit>
- Boulianne, S., Lalancette, M., & Ilkiw, D. (2020). “School Strike 4 Climate”: Social Media and the International Youth Protest on Climate Change. *Media and Communication, 8*(2), 208–218.
- Brosius, H.-B., Haas, A., & Unkel, J. (2022). *Methoden der empirischen Kommunikationsforschung: Eine Einführung*. Springer Fachmedien Wiesbaden. <https://doi.org/10.1007/978-3-658-34195-4>
- Buzogány, A., & Scherhauser, P. (2022). Framing different energy futures? Comparing Fridays for Future and Extinction Rebellion in Germany. *Futures, 137*, 102904. <https://doi.org/10.1016/j.futures.2022.102904>
- De Moor, J., De Vydt, M., Uba, K., & Wahlström, M. (2021). New kids on the block: Taking stock of the recent cycle of climate activism. *Social Movement Studies, 20*(5), 619–625. <https://doi.org/10.1080/14742837.2020.1836617>
- Diani, M. (1992). The Concept of Social Movement. *The Sociological Review, 40*(1), 1–25. <https://doi.org/10.1111/j.1467-954X.1992.tb02943.x>
- Durnová, A. (2019). Der ‚March for Science‘ als Schauplatz der gesellschaftspolitischen Polarisierung zwischen Elite und Volk: Ein interpretativer Beitrag zur Analyse von Postfaktizität. *Zeitschrift für Politikwissenschaft, 29*(2), 345–360. <https://doi.org/10.1007/s41358-019-00186-3>
- Evensen, D. (2019). The rhetorical limitations of the #FridaysForFuture movement. *Nature Climate Change, 9*(6), Article 6. <https://doi.org/10.1038/s41558-019-0481-1>

- fact*—*Oxford English Dictionary*. (n.d.). Retrieved April 22, 2024, from https://www.oed.com/dictionary/fact_n
- Feldman, L., & Hart, P. S. (2016). Using Political Efficacy Messages to Increase Climate Activism: The Mediating Role of Emotions. *Science Communication*, 38(1), 99–127. <https://doi.org/10.1177/1075547015617941>
- Fridaysforfuture.de, [@fridaysforfuture.de]. (2024). *Instagram-Fotos und -Videos* [Instagram-Profil]. Instagram. <https://instagram.com/fridaysforfuture.de>
- Gahan, P., & Pekarek, A. (2013). Social Movement Theory, Collective Action Frames and Union Theory: A Critique and Extension. *British Journal of Industrial Relations*, 51(4), 754–776. <https://doi.org/10.1111/j.1467-8543.2012.00912.x>
- Goffman, E. (1974). *Frame Analysis: An Essay on the Organization of Experience*. Harvard University Print.
- González-Hidalgo, M., & Zografos, C. (2020). Emotions, power, and environmental conflict: Expanding the 'emotional turn' in political ecology. *Progress in Human Geography*, 44(2), 235–255. <https://doi.org/10.1177/0309132518824644>
- Haq, E.-U., Braud, T., Yau, Y.-P., Lee, L.-H., Keller, F. B., & Hui, P. (2022). Screenshots, Symbols, and Personal Thoughts: The Role of Instagram for Social Activism. *Proceedings of the ACM Web Conference 2022*, 3728–3739. <https://doi.org/10.1145/3485447.3512268>
- Herrmann, C., Rhein, S., & Dorsch, I. (2023). #fridaysforfuture – What does Instagram tell us about a social movement? *Journal of Information Science*, 49(6), 1570–1586. <https://doi.org/10.1177/01655515211063620>
- Instagram—Nutzerstruktur nach Altersgruppen in Deutschland 2022*. (2022). Statista. <https://de.statista.com/statistik/daten/studie/771453/umfrage/nutzerstruktur-von-instagram-nach-altersgruppen-in-deutschland/>
- Jasper, J. M. (2011). Emotions and Social Movements: Twenty Years of Theory and Research. *Annual Review of Sociology*, 37(1), 285–303. <https://doi.org/10.1146/annurev-soc-081309-150015>
- Kern, T. (Ed.). (2008). Mechanismen der Mobilisierung. In *Soziale Bewegungen: Ursachen, Wirkungen, Mechanismen* (pp. 111–174). VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-531-90764-2_5
- Kleres, J., & Wettergren, Å. (2017). Fear, hope, anger, and guilt in climate activism. *Social Movement Studies*, 16(5), 507–519. <https://doi.org/10.1080/14742837.2017.1344546>
- Klimmt, C. (2013). Emotion. In O. Jarren (Ed.), *Lexikon Kommunikations- und Medienwissenschaft* (2. Auflage, pp. 70–71). Springer VS.
- Kuckartz, U., & Rädiker, S. (2022). *Qualitative Inhaltsanalyse: Methoden, Praxis, Computerunterstützung : Grundlagentexte Methoden* (5. Auflage). Beltz Juventa.

- Lee, H., Calvin, K., Dasgupta, D., Krinner, G., Mukherji, A., Thorne, P. W., Trisos, C., Romero, J., Aldunce, P., Barrett, K., Blanco, G., Cheung, W. W. L., Connors, S., Denton, F., Di-ongue-Niang, A., Dodman, D., Garschagen, M., Geden, O., Hayward, B., ... Péan, C. (2023). *IPCC, 2023: Summary for Policymakers* (First, Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, S. 1–34). Intergovernmental Panel on Climate Change (IPCC). <https://doi.org/10.59327/IPCC/AR6-9789291691647>
- Letztegeneration, [@letztegeneration]. (2024). *Instagram-Fotos und -Videos* [Instagram-Profil]. Instagram. <https://instagram.com/letztegeneration>
- Maher, T. V., & Earl, J. (2019). Barrier or Booster? Digital Media, Social Networks, and Youth Micromobilization. *Sociological Perspectives*, 62(6), 865–883. <https://doi.org/10.1177/0731121419867697>
- Maier, B. M. (2019). “No Planet B”—An analysis of the collective action framing of the social movement Fridays for Future.
- Molder, A. L., Lakind, A., Clemmons, Z. E., & Chen, K. (2022). Framing the Global Youth Climate Movement: A Qualitative Content Analysis of Greta Thunberg’s Moral, Hopeful, and Motivational Framing on Instagram. *The International Journal of Press/Politics*, 27(3), 668–695. <https://doi.org/10.1177/19401612211055691>
- Ojala, M. (2012). Hope and climate change: The importance of hope for environmental engagement among young people. *Environmental Education Research*, 18(5), 625–642. <https://doi.org/10.1080/13504622.2011.637157>
- Pearce, W., Niederer, S., Özkula, S. M., & Sánchez Querubín, N. (2019). The social media life of climate change: Platforms, publics, and future imaginaries. *WIREs Climate Change*, 10(2), e569. <https://doi.org/10.1002/wcc.569>
- Pointner, N. (2010). Faktizität der Berichterstattung über Medienunternehmen. In N. Pointner (Ed.), *In den Fängen der Ökonomie? Ein kritischer Blick auf die Berichterstattung über Medienunternehmen in der deutschen Tagespresse* (pp. 291–297). VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-531-92206-5_19
- Reese, S. D. (2008). International Encyclopedia of Communication. In W. Donsbach (Ed.), *Media Production and Content*. Blackwell.
- Rucht, D. (2023a). Die Letzte Generation: Eine kritische Zwischenbilanz. *Forschungsjournal Soziale Bewegungen*, 36(2), 186–204. <https://doi.org/10.1515/fjsb-2023-0018>
- Rucht, D. (2023b). *Social movements: a theoretical approach*. Oxford University Press.
- Schneider, G. & Toyka-Seid, C. (2024). Fridays For Future. In Bundeszentrale für politische Bildung (Ed.), *Das junge Politik-Lexikon von www.hanisauland.de*

- Skeirytė, A., Krikštolaitis, R., & Liobikienė, G. (2022). The differences of climate change perception, responsibility and climate-friendly behavior among generations and the main determinants of youth's climate-friendly actions in the EU. *Journal of Environmental Management*, 323, 116277. <https://doi.org/10.1016/j.jenvman.2022.116277>
- Smith, N., & Leiserowitz, A. (2014). The Role of Emotion in Global Warming Policy Support and Opposition. *Risk Analysis*, 34(5), 937–948. <https://doi.org/10.1111/risa.12140>
- Snow, D., & Benford, R. (1988). Ideology, Frame Resonance and Participant Mobilization. *International Social Movement Research*, 1, 197–217.
- Snow, D., & Benford, R. (1992). Master Frames and Cycles of Protest. *Master Frames and Cycles of Protest*.
- Social Networks nach Nutzern 2024*. (2024). Statista. <https://de.statista.com/statistik/daten/studie/181086/umfrage/die-weltweit-groessten-social-networks-nach-anzahl-der-user/>
- Springer, N., Koschel, F., & Fahr, A. (2015). *Empirische Methoden der Kommunikationswissenschaft* (1. Auflage). UVK.
- Strohschein, B. (2022). Was sind Fakten? In B. Strohschein (Ed.), *Abwehr und Anerkennung in der Klimakrise: Wie über Wahrheiten, Fakten und Meinungen kommuniziert wird* (pp. 193–232). Springer Fachmedien. https://doi.org/10.1007/978-3-658-38161-5_8
- Svensson, A., & Wahlström, M. (2023). Climate change or what? Prognostic framing by Fridays for Future protesters. *Social Movement Studies*, 22(1), 1–22. <https://doi.org/10.1080/14742837.2021.1988913>
- The Lancet Planetary Health. (2024). COP28 reflections. *The Lancet Planetary Health*, 8(1), e1. [https://doi.org/10.1016/S2542-5196\(23\)00279-6](https://doi.org/10.1016/S2542-5196(23)00279-6)
- Theocharis, Y., Lowe, W., van Deth, J. W., & García-Albacete, G. (2015). Using Twitter to mobilize protest action: Online mobilization patterns and action repertoires in the Occupy Wall Street, Indignados, and Aganaktismenoi movements. *Information, Communication & Society*, 18(2), 202–220. <https://doi.org/10.1080/1369118X.2014.948035>
- Wahlström, M., de Moor, J., Uba, K., Wennerhag, M., & De Vydt, M. (2020). *Surveys of participants in Fridays For Future climate protests on 20-28 September, 2019, in 19 cities around the world*. <https://osf.io/asruw/>