

**Engaging in Climate Activism:
How Fridays for Future and Extinction Rebellion communicate Climate Change on
Instagram**

Janina Kober | S2237296

1st Supervisors: Sikke Jansma MSc. and Dr. Ir. Peter de Vries

2nd Supervisor: Michael Schaab MSc.

Faculty of Behavioural, Management and Social Sciences

University of Twente

July 7, 2022

Abstract

Purpose. While the climate crisis is increasing, climate movements like Fridays For Future (FFF) and Extinction Rebellion (XR) try to motivate as many people as possible to become active on part of the climate. To pursue this goal and communicate about climate change, FFF and XR frequently make use of social media platforms like Instagram. However, little is known so far about the extent to which the movements might differ concerning their Instagram use to communicate about climate change. Thus, during this research, the question ‘How do Fridays For Future and Extinction Rebellion communicate about climate change on Instagram?’ will be answered. *Methods.* This research makes use of qualitative content analysis. 80 Instagram posts per movement are coded based on the codes of post sentiment, emotion, SIMPEA model, agent, type of activity, picture type, and picture content. Before the start of the coding process, interrater reliability was found to be sufficient for every code. *Results.* The results have shown that both movements focus on rather similar content, however, their way of communicating differs to some extent. For example, while XR makes use of strong emotional language, and presents the audience with fear-eliciting future scenarios, FFF makes less use of judgmental language and focuses on present situations. *Discussion and Conclusion.* This research provides an extensive overview of the used communication strategies of FFF and XR. Thus, it serves as a suitable starting point for future research to investigate the effectiveness of their communication strategies.

Keywords: Climate movements, Communication Strategies, Instagram, Content analysis

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As the climate crisis increases, so does the need for taking climate-related actions that positively affect the climate. Today, more and more environmental movements are taking on the task of motivating as many people as possible to engage in these actions (Bugden, 2020; Ramelli 2021).

Concerning the effectiveness of environmental movements, Saunders et al. (2014) investigated the connection between people's level of electricity use and their contact with environmental movements. Their study revealed that participants whose electricity use is low compared to the other participants are usually in contact with environmental movements. On the other hand, people with high electricity use do not have contact with environmental organizations. This suggests that people's active engagement with the issue through environmental movements can contribute to positive changes in their behaviours (Saunders et al., 2014). As Brulle (2000) has argued, besides these positive effects on a personal level, the actions of environmental movements can also provide an important basis for the government to act. This is because their climate protests draw citizens' attention to the topic, thus pressuring the government to legislate environmentally friendly laws (Brulle, 2000). This effect of climate protests on people's awareness was also found by Ramelli et al. (2021), who analyzed the stock prices of European firms at the time of the first climate strikes taking place. They found that the stock prices for climate-damaging companies, such as carbon-intensive firms, decreased. This shows that an increase in citizens' awareness of the climate crisis through climate activism affects the stock prices of firms, forcing these firms to act in the long term (Ramelli et al., 2021). These findings suggest that climate movements and their activism have a positive impact on citizens' behaviours as well as on climate policies.

Due to external factors such as the global coronavirus pandemic and the accompanying rule of socially distancing, climate movement protests have increasingly taken place online (Wilson, 2020). Today, the internet is the most used source when it comes to dealing with the subject of climate change (Schäfer, 2012). This usage of digital technologies has been shown to have positive effects on the spread of activism (Fisher et al., 2020). This is because the online environment offers the opportunity to simplify global communication and global forms of activism (Theocharis et al., 2017). Especially social media platforms provide a place for spreading awareness for the topics they want to inform about (Afnan et al., 2019).

These positive effects of climate movements, especially in the online environment, give reason to examine the topic of climate communication on social media more closely, focusing on the two largest climate movements of our time, Fridays For Future and Extinction Rebellion.

History of FFF and XR

The climate-activists movement Fridays for Future (FFF) started as a one-woman strike by the climate activist Greta Thunberg in August 2018 by sitting down in front of the Swedish parliament with a sign saying, “school strike for the climate” (Kühne, 2019). Soon, she was joined by others and the strikes spread to other countries, organized by people like Luisa-Marie Neubauer, a young German woman who supported Greta Thunberg’s idea of a strike and organized several demonstrations in Germany. The main demands of FFF include limiting the rise of global temperature, focusing on climate justice and equity and relying on science as the only source of information concerning climate change (Kühne, 2019). Today, according to their website, FFF is represented in almost every country worldwide and digitally most present on Twitter, Instagram, Facebook and YouTube (*Fridays for Future*, 2022).

Only two months after the beginning of FFF, another environmental movement was created, called Extinction Rebellion, or XR in short (Gunningham, 2019). This environmental movement was started in October 2018, and already had 45 countries that became active on behalf of XR in 2019. While they are regularly performing so-called “acts of civil disobedience”, XR primarily accuses the government of being responsible for the increasing climate crisis. This also shows in their main demands, all addressing the government. These demands include speaking “the truth” by announcing the climate crisis as being a case of emergency, becoming active, reducing greenhouse gas emissions, and creating pro-climate and ecological justice movements. Today, XR has 130 climate-activist groups across the UK alone (Gunningham, 2019). To communicate their demands and wishes online, they primarily use Twitter, Instagram, Facebook and YouTube (*Extinction Rebellion*, 2022).

Climate Change Communication Strategies

When taking a look at the literature, multiple strategies were found to be effective in motivating people to take climate-related action (Anderson & Maffey, 2021; Bloodhart et al., 2019; Frantz & Mayer, 2004; Fritsche et al., 2018; Gillan & Starks, 2007; Graber, 1996; Han & Barnett-Loro, 2018; Howarth et al., 2020; Lee et al., 2020; Nairn, 2019; Nerlich et al.,

2010; Ojala, 2012; Roosen et al., 2017; Schofer & Hironaka, 2005; Tannenbaum et al., 2015; Wallis & Loy, 2021).

First, as argued by Bloodhart et al. (2019), the use of emotions is a decisive factor to convince people of engaging in climate-related action. Messages about the climate crisis that entail negative emotions are generally preferred over messages that do not entail emotions. This is because these messages convey that the speaker strongly cares about the subject. Thus, they usually better match the audience's stance of perceiving the subject of climate change as an emotional one. Also, a message that entails negative emotions tends to receive more attention than messages without negative emotions (Bloodhart et al., 2019).

According to Wallis and Loy (2021), one particularly effective emotion to initiate more climate activism is to provoke feelings of anger. They argue that this is particularly effective in case the anger is directed against a specific group or phenomenon that proved to be ineffective so far, such as current climate policies, as this would increase people's need to become active themselves.

Furthermore, the emotion of fear has the potential to motivate people to engage in climate-related action. This was concluded by Nairn (2019), who found that fear-related feelings like despair can increase young people's desire to prevent threatening scenarios by engaging in climate-related activism. Similar results were found by Tannenbaum et al. (2015), who investigated multiple studies that have shown the positive effects of fear-eliciting messages and scenarios on people's intentions, attitudes, and behaviours. However, this effect is strengthened if the messages are combined with efficacy messages. These can either refer to the recipient's self-efficacy, meaning the recipient's ability to perform recommended actions, or to response-efficacy, meaning the extent to which the recommended action can avoid the threat (Tannenbaum et al., 2015). Howarth et al. (2020) further argue for the importance of efficacy, as they assume that solely pessimistic messages lead to a feeling of helplessness in people, thus not convincing them to take climate-related action.

Similar to efficacy messages, the emotion of hope can be used as a tool to increase the motivation for taking climate-related action (Ojala, 2012). This is first because hope leads people to focus more on positive instead of negative aspects. For example, in the case of fighting the climate crisis, a positive factor is people's increased awareness of the issue of climate change. Secondly, hope is of importance as it entails having trust in other people acting, thus leading the individual person to feel less alone with the issue. This can be seen in the example of people feeling hopeful because an increasing number of politicians take the issue of climate change seriously (Ojala, 2012).

As it is proposed by the Social Identity Model of Pro-environmental Action (SIMPEA model), another effective method to increase people's level of environmental engagement is to focus on their social identity within a group (Fritsche et al., 2018). The SIMPEA model focuses on the role of social identity in behavioural responses to environmental crises. It hypothesizes that the factors of ingroup identification, ingroup norms and goals, and collective efficacy play a crucial role in environmental action. For example, it was shown that putting a focus on the identification as a group member creates a feeling of social inclusiveness. Also, it increases the feeling of being part of a collective, which is needed to take collective action. This effect is even strengthened if people feel an emotional significance within the group, such as being convinced by its positive effects or when perceiving the ingroup performing better in comparison with an outgroup. In addition, the feeling of collectiveness can be implemented by distinguishing social groups, for example, people who are climate sceptical and people who are not climate sceptical. Furthermore, the factor of common ingroup norms and goals is an important one, as it gives meaning to the group members' actions, thus guiding them in their behaviours. For example, one ingroup goal of environmental movements might be to protect biodiversity. In order to reach their goals, it is also important for people to have a feeling of efficacy. However, for environmental engagement, it is even more important to have a feeling of collective efficacy. This kind of efficacy is rated higher concerning problem-focused coping during the climate crisis and engaging in pro-environmental behaviours. This is because, for a problem as far-reaching as the climate crisis, the action of many people is required in order to make a difference (Fritsche et al., 2018).

Furthermore, for people to engage in action-taking, it is first necessary for them to feel capable of taking action (Bandura, 1977). More concretely, Bandura (1977) explains that this feeling of capability can especially be enhanced by providing concrete ideas on how to act in situations that require immediate action-taking, such as the increasing climate crisis. This was also found by Frantz and Mayer (2004), who argue that in order for people to engage in pro-environmental actions, they need to be given realistic action plans that facilitate their behavioural change.

Similar results were found for the provision of distressing scenarios (Nerlich et al., 2010). According to Nerlich et al. (2010), the use of distressing information and scenarios should solely be used in combination with a suggested solution to the problem, to make the readers feel capable of working on a solution towards it. Thus, Nerlich et al. (2010) point to something similar like Tannenbaum et al. (2015) did when talking about the emotion of fear.

For both factors, they recommend a complementary recommendation for action. However, while this is an indispensable factor for using threatening scenarios, it is only a recommendation for the use of fear as an effective communication tool (Nerlich et al., 2010; Tannebaum et al., 2015).

Furthermore, according to a study by Mayer and Frantz (2004), people's level of connectedness to nature can predict their ecological behaviour. Connectedness to nature relates to the extent to which people feel as being a part of the natural world, such as feeling connected with animals and plants. Meanwhile, ecological behaviour relates to behaviour that is advantageous for the environment, for example, turning off the lights when leaving a room. With regards to this, Mayer and Frantz (2004) found that people's connectedness to nature has a positive correlation with their ecological behaviour, making it likely that a focus on nature within climate movements' communication contributes to more climate engagement.

However, apart from the different types of activism, it is important to also engage with whom this activism is primarily intended to address (Han & Barnett-Loro, 2018; Nerlich et al., 2010). As concluded by Han and Barnett-Loro (2018), to investigate how climate-related actions can be increased, it is necessary to explore how the movement leaders relate the issue of the climate crisis to political powers. Thus, it should be investigated to what extent important bodies such as the government are addressed by climate movements (Han & Barnett-Loro, 2018). This is also highlighted by Nerlich et al. (2010), who established that the engagement of people, in general, is important for working on the climate crisis. However, as the government has the power either to provide a good basis for environmentally friendly actions or to deny it, it is necessary to address the government in the first place (Nerlich et al., 2010).

Furthermore, companies play an important role in climate activism, as environmental movements often focus their attention on company employees to drive pro-environmental changes within the company (Gillan & Starks, 2007). This is primarily done by making use of protest and shareholder activism, meaning to pressure shareholders within the companies who are unsatisfied with their company's management (Gillan & Starks, 2007). Furthermore, scientists like astronomers are an important group when it comes to the topic of climate communication, as they are usually trusted by the public, wherefore they should be included as possible agents in climate communication as well (Anderson & Maffey, 2021). Moreover, environmental organizations such as environmental NGOs have the power to positively affect the environment and are thus important for climate movement's communication (Schofer & Hironaka, 2005). Lastly, it was documented that in the timeframe from 1993 to 2018, there

was a strong increase in young people's interest in climate change, wherefore it seems to be important to include them as possible agents as well (Lee et al., 2020).

Furthermore, social media platforms like Instagram can offer a good opportunity to better remember and process climate-related information due to its great number of visual stimuli (Graber, 1996). Thus, it is important to investigate to what extent both movements make use of visualizations to communicate about climate change. With regards to this, it is mentioned by Roosen et al. (2017) that especially visual art like drawings can support the effective visualization of climate change. This is because drawings enable visualizing climate change in a way that builds a connection to people's everyday life, making it more approachable to them. Moreover, drawings can increase people's willingness to reflect on themselves, as they often entail elements that need conscious processing in order to understand their messages (Roosen et al., 2017).

Research Question

Based on these communication strategies, both environmental movements' climate communication strategies will be investigated through a narrative analysis of their posts on Instagram. Finally, the research question 'How do Fridays For Future and Extinction Rebellion communicate about climate change on Instagram?' will be answered, as well as the following sub-questions:

1. To what extent do FFF and XR use different communication strategies in terms of sentiment and emotions?
2. To what extent do FFF and XR include elements of the SIMPEA model?
3. To what extent do FFF and XR make use of different kinds of activism, and from which agent perspective?
4. To what extent do FFF and XR use visualizations to communicate about climate change?

Methodology

Study Design

A qualitative content analysis was chosen for this study. The qualitative design offers the possibility to examine a complex topic in a flexible way (Maxwell, 2008). With regards to this research, this means examining the topic of climate change communication subjectively and being able to respond flexibly to the used variables, such as the use of the SIMPEA model within the arguments of both climate movements.

Furthermore, content analysis was used by analyzing Instagram posts from both FFF and XR. This is because the content analysis is a suitable technique when it comes to systematically investigating a large amount of data and comparing it on basis of objective text or picture characteristics. With regards to this research, it thus enables analyzing both movement's communication strategies and other text and picture components (Stemler, 2000).

The reason why FFF and XR were chosen for this analysis is mainly their high and ubiquitous presence in the media today. Especially the first calls from FFF made the subject of climate change more present for many people and started a general interest in this topic, wherefore it is important to explore how they are trying to reach their audience nowadays (Wahlström et al., 2019). Furthermore, a direct comparison with the second-largest climate movement, XR, is useful for identifying possible similarities and differences in the arguments of both climate movements.

Also, the analysis of a social media platform like Instagram is well suited. Since it is one of the three most famous social networking sites, it is omnipresent for most people, especially from younger generations (Rashid & Zaaba, 2020). In addition, events such as the corona pandemic have shown that the online environment enables users to constantly stay in contact (Greenaway et al., 2020). Thus, it offers them a great opportunity to stay socially connected, which can further have a strong impact on climate-related action (Greenaway et al., 2020).

Corpus Selection

I chose Instagram as the platform for data collection due to its high popularity among younger generations, with FFF having 539.722 and XR having 674.597 followers (fridaysforfuture. (2022); extinctionrebellion (2022)). Thus, the corpus of this project consists of Instagram posts of both environmental movements.

To enable a comparison of both movements that is as unbiased as possible, I decided to analyze the same number of posts for both movements. In this case, 80 posts per movement were analyzed. Furthermore, I decided to exclude posts that were written in another language than English, to ensure that there are no biases due to translation issues. Also, posts that entailed videos or GIFs instead of images were excluded to have the same basis of analysis for all posts.

Concerning the time frame, I chose a time frame that is as recent as possible to display current data that are still relevant today. With regards to this, I only make use of the last 80 posts before the 24th of February 2022 due to the escalating Ukraine conflict. The Ukraine conflict has affected the posting behaviour of both climate movements since they, instead of

communicating about the climate, mainly addressed the Ukraine conflict. Due to the movement's different frequency of posting, the time frame of the most recent 80 Instagram posts from FFF is from June 2021 until February 2022, while the time frame of the most recent 80 Instagram posts from XR is from November 2021 until February 2022.

Description Codebook

For the codebook, seven codes were used for interpretation, including the code of *post sentiment*, *emotion*, *SIMPEA model*, *type of activism*, *agent*, *picture type*, and *picture content* (see Appendix). Besides that, three identifier codes were used, meaning codes that can be applied for each post and are objectively observable, including the code of *sender*, *month*, and *post popularity*.

For the codes of interpretation, I chose the deductive codes on basis of their elaborated significance found in the literature. First, this means an investigation of the code *sentiment*, which could be either negative, neutral or positive. Furthermore, for the code of *emotion*, the emotions of *anger*, *fear* and *hope* will be explored. Moreover, the three main factors of the *SIMPEA model* were included. For the code of the *type of activism*, the sub-codes of an *action plan*, as well as the provision of a *threatening scenario* and the *connectedness to nature* were included. Moreover, I chose to control for different *agents* to investigate which persons are mostly addressed by the climate movements. These were, among others, the *government*, *companies*, and *young people*. Furthermore, to analyze the movement's use of visualization, the *picture types*, such as *drawings*, and the *picture contents*, such as *nature* were interpreted.

However, some of the codes were also based on inductive coding. These were, for the code of *emotion*, the sub-codes *sadness* and *joy*, to account for emotions that are likely to be encountered in everyday life. Furthermore, the sub-codes of *criticism*, *demands*, *movement support* and *education* were added as these occurred in a high frequency, thus representing *types of activism* that seem to play an important role in the communication of both movements. Moreover, to better understand the visual use of both movements, the sub-codes *photo* and *text* were added for the code picture type, and the sub-codes *event* and *information* were added for the code picture content.

Concerning the code levels, it can be distinguished between the *whole post level*, referring to both the post's picture and text, *picture level* referring only to the post's picture, *within text level* referring to sentences being analyzed exclusively per code, and *within sentence level* referring to sentences entailing multiple sub-codes, here solely used for the code *Agent* (see Appendix).

Data Analysis

The primary data are taken from the social platform Instagram and are analysed through the use of the qualitative research tool Atlas.ti (<https://atlasti.com/>).

To have a reliable codebook for each code, interrater reliability tests were done by calculating Cohen's Kappa, with a psychology student as the second coder. One round of coding was done with samples of 8 posts per environmental movement. The first round of coding resulted in a sufficient Cohen's Kappa for every code, except for the codes of *emotion* and *SIMPEA model* (see table 2). After clarifying the disagreements between the coders, the codebook was adjusted for both codes. For the code of *emotion*, it was clarified that the use of emoticons could also be used for interpretation and that sarcasm can be counted as part of the emotion of anger. For the code of the *SIMPEA model*, the differences between the sub-codes were clarified further. Afterwards, the second round of coding was done. The second round resulted in a Cohen's Kappa of 1.00 for the code of *emotion*, and a Cohen's Kappa of 0.682 for the code of *SIMPEA model*. Thus, the codes can be considered as being sufficient.

Table 2

Cohen's Kappas for all coding categories after second round of coding

Rating Category	Cohen's Kappa
Sentiment	0.647
Emotion	1.00
SIMPEA model	0.682
Type of activism	0.821
Agent	0.665
Picture type	0.862
Picture content	0.788

Results

Monthly likes

When taking a look at the monthly likes of both movements' posts, it is noticeable that most of XR's posts (52 out of 80) have a post popularity of up to 4500 likes, which is the lowest number of likes within the sub-codes of post popularity (see table 3). Furthermore, there were only two posts where the post popularity was above 19000 likes. Also, the number

of posts per month was relatively equal, with 18 being the lowest number of posts in January 2022, and 22 being the highest number of posts in November 2021 (see table 3).

On behalf of FFF, most of their posts (60 out of 80) have a post popularity of up to 4500 likes as well, however, none of their posts is above the highest number of 19000 likes (see table 4). Also, the number of posts per month differs for FFF, as their posting frequency increases until September 2021, and then rapidly decreases in October 2021 (see table 4).

Table 3

Number of codings for the codes month and post popularity for XR

Post popularity	>0<4500	>4500<9000	>9000<14500	>14500<19000	>19000
Month					
November 2021	10	8	2	1	1
December 2021	15	2	2	0	1
January 2022	14	3	1	0	0
February 2022	13	5	2	0	0

Table 4

Number of codings for the codes month and post popularity for FFF

Post popularity	>0<4500	>4500<9000	>9000<14500	>14500<19000	>19000
Month					
June 2021	6	3	1	0	0
July 2021	9	1	0	0	0
August 2021	10	4	1	0	0
September 2021	12	6	1	0	0
October 2021	3	2	0	0	0
November 2021	1	0	0	0	0
December 2021	3	0	0	0	0
January 2022	8	1	0	0	0
February 2022	8	0	0	0	0

Sentiment and Emotions

To answer the first sub-question ‘To what extent do FFF and XR use different communication strategies in terms of sentiment and emotions?’ it is noticeable that the great majority of XR’s posts (65 out of 80) have a negative sentiment, while only 9 posts were coded as being positive (see table 5). It can be noticed that especially the emotions of anger and fear coincide with this negative sentiment.

For the emotion of anger, it shows that it is often conveyed through using judgmental and emotional expressions such as “NORTHERN DRILLERS = AFRICAN KILLERS!! 🇬🇧 🌍” (6:516 ¶ 324 in XR, January 2022) or by speaking of a “pathetic limp rag of a document” (6:523 ¶ 332 in XR, November 2021). Also, it is noticeable that this emotion is often directed against one or multiple groups, such as the government and companies, as it is shown in the following citation: “the government remains captured by the coal and gas industries 🇬🇧 And [...] we demand truth from these compulsive liars (...)” (6:154 ¶ 50 in XR, November 2021).

When taking a closer look at which group this anger is expressed against, it stands out that the government is most often associated with this emotion. This can be seen in the citations “(...) throwing out career politicians looking for an oil dredged euro (...)” (6:78 ¶ 17 in XR, February 2022) and “Doing all this while [...] world ‘leaders’ [...] offer[] fake greenwashing solutions using our money, all the while continuing the destructive practices supported by taxpayers money” (6:63 ¶ 5 in XR, February 2022). Here, XR accuses the government of not acting honest but instead being profit-oriented at the expense of the population and the climate.

Furthermore, the emotion of fear often occurs in combination with a threatening scenario, as it is shown in the following quote: “There is no future in fossil fuels and continuing down that path would cause irreversible damage and shave years off of a livable future.” (6:552 ¶ 353 in XR, November 2021). More specifically, these scenarios often contain what the name of this movement implies, namely the extinction of both humans and animals (see: “🇬🇧 🇬🇧 CODE RED FOR KOALAS AND HUMANS 🇬🇧 🇬🇧” (6:544 ¶ 349 in XR, November 2021); “COP IS KILLING US” (6:403 ¶ 255 in XR, November 2021); “AS THE SEAS DIE; WE DIE” (6:352 ¶ 231 in XR, December 2021).

When it comes to the use of positive emotions, XR makes the most use of hope, where they often use the message of hope being greater than negative emotions such as fear through their multiple used slogan “Action > Hope > Fear” (6:317 ¶ 185 in XR, December 2021).

Also, they introduce the concept of “radical hope”, which describes the idea that facing the climate-related reality and consequently taking action, can actually make a difference. However, in these posts themselves, they do not give any information about climate change (6:270 ¶ 153 in XR, January 2022).

Regarding FFF’s post sentiment, it can be said to be also mainly negative, with 45 out of 80 posts being coded as negative. However, more than a quarter of their posts is also coded as being positive, thus FFF is posting twice as many positive posts as XR (see table 5).

Concerning their use of emotions, FFF posted 21 posts entailing the emotion of anger, almost as often as XR (see table 5). Furthermore, it is noticeable that FFF expresses their anger for similar reasons as XR. FFF is also mainly angry at the government for not acting as can be seen in their accusation of the government only “giv[ing] empty promises”, but not actively working on a solution to the problems (5:930 ¶ 370 in FFF, June 2021). FFF’s anger is thus mainly directed against the government, however, it is also directed at companies and banks, such as the Standard Chartered Bank that is investing in fossil fuel companies and thereby is “STILL founding our destruction” (5:836 ¶ 285 in FFF, July 2021). Furthermore, FFF requests the state to actively separate from companies that act climate destructive. This is sometimes expressed through very direct and general statements such as “STOP FUNDING OUR DESTRUCTION!” (5:782 ¶ 245 in FFF, August 2021), but also through concrete proposals for action, such as sanctioning companies in case their actions negatively affect the climate (for example, see: “ ! The oil spill has affected the health of residents of several districts, fishing activity, life, nature, among other consequences. We must demand that the transnational company REPSOL take the responsibility of this disaster, as well as appropriate sanctions from the State. #RepsolHazteCargo” (5:585 ¶ 78 in FFF, January 2022)).

In addition to this criticism for inaction, FFF specifically criticizes the government and companies for greenwashing, similarly to XR. Here, FFF frequently gives background information on how companies and the government practice greenwashing, such as fashion industries supporting deforestation in the Amazon Forest (5:630 ¶ 108 in FFF, December 2021). However, as opposed to XR, FFF also calls attention to this greenwashing by making use of rhetorical questions or ironic statements such as “ ☹ How can a country have a 'Green Capital' when they are investing in the biggest fossil oil pipeline in the world?! 😡” (5:605 ¶ 96 in FFF, January 2022), showing that they do not trust the label of “Green Capital” and, thus, accuse the country of being dishonest about their climate politics. This rhetorical device

is often used by FFF to express their anger. For example, to convey their anger at the Brazilian president Jair Messias Bolsonaro for supporting the Amazon’s deforestation, FFF describes him as being the “newest Olympic champion [due to winning] the gold medal of dishonour in the CLIMATE DESTRUCTION category” (5:809 ¶ 265 in FFF, August 2021).

Based on this, it shows that XR and FFF both frequently include the emotion of anger within their posts, and for similar reasons. However, there are differences in how this emotion is conveyed, with XR making frequent use of strong emotional and judgmental statements, and FFF mainly including rhetorical questions and irony within their posts.

Furthermore, as opposed to XR, FFF makes regular use of the emotion of sadness. This emotion is often used in combination with statements about social injustice, especially putting the focus on the people who are suffering the most from the climate crisis and its consequences, such as extreme weather events. These are, for example, residents from the Philippines, who were affected by Typhoon Rai (see 5:618 ¶ 100 in FFF, December 2021: “With a Category 5 strength, Typhoon Odette (internationally known as Rai) is one of the strongest storms globally this year and has affected millions in the Philippines. Affected residents were prompted to evacuate and need assistance.”).

When taking a look at the emotion of fear within their posts, it becomes apparent that FFF barely makes use of this emotion, in contrast to XR. Also, the content of their posts containing fear differs from XR’s content, as FFF’s expression of fear almost exclusively relates to present events, while XR presents its audience with threatening scenarios in the future (see table 5).

Table 5

Number of codings for the codes sentiment and emotion for both XR and FFF

Sentiment	Positive		Neutral		Negative	
	XR	FFF	XR	FFF	XR	FFF
Emotion						
Anger	0	0	0	0	20	21
Fear	1	0	0	0	21	5
Sadness	0	1	0	0	7	14
Hope	3	2	0	0	8	3
Joy	3	9	1	0	2	1

Elements of the SIMPEA Model

To answer the second sub-question ‘To what extent do FFF and XR include elements of the SIMPEA model?’, it can be said that XR makes use of all three elements of the SIMPEA model (see table 6). However, it becomes evident that the factors of ingroup identification as well as ingroup norms and goals occur twice as much as the factor of collective efficacy. Thus, concerning the factor of ingroup identification, XR frequently refers to their rebellion by calling themselves rebels. Also, they are constantly highlighting their group coherence, by stressing the word “together” multiple times (6:14 ¶ 29 in XR, January 2022) and stating sentences like “We are all we need” (6:291 ¶ 165 in XR, December 2021).

With regards to XR’s norms and goals, they mention multiple social values and norms, such as “bring[ing a] sense of peace and appreciation to everyone [they] encounter” (6:292 ¶ 165 in XR, December 2021). Also, they frequently highlight political goals such as “quitting coal and gas” (6:21 ¶ 50 in XR, February 2022) and supporting democracy and people’s participation in politics (6:220 ¶ 124 in XR, January 2022). Concerning the factor of collective efficacy, they rarely include it within their posts (see table 6).

Regarding FFF’s use of the strategies of the SIMPEA model, it appears that they put a focus on their ingroup goals, as these are by far the most frequently included in their posts (see table 6). Here, they also mention political as well as social goals. From a political perspective, they write about specific goals such as “oppos[ing] the East African Crude Oil Pipeline” (5:615 ¶ 92 in FFF, January 2022). However, they also put a special focus on social goals, namely, to acquire climate justice and, in addition, social justice, as according to FFF, “[c]limate justice is social justice” (5:823 ¶ 273 in FFF, August 2021). Based on this, it becomes apparent that FFF puts a focus on their ingroup goals even though, as opposed to XR, they do not refer to concrete ingroup norms within their posts. Concerning the factor of collective efficacy, they mention it just as little as XR, thus not using it as a regular communication strategy (see table 6).

Table 6*Number of codings for the code SIMPEA Model for both XR and FFF*

Movement	XR	FFF
SIMPEA Model		
Ingroup Identification	11	3
Ingroup Norms and Goals	10	16
Collective Efficacy	4	1

Types of Activism

When answering the third sub-question ‘To what extent does XR makes use of different types of activism, and from which agent perspective?’, it becomes evident that XR mainly takes action by expressing criticism, and that this criticism is primarily directed at the government (see table 7).

XR mainly criticizes the government for not acting in the interest of the population and not taking enough responsibility in their position. This is, for example, expressed by XR stating that it would be needed to remind the members of parliament that they are “after all, public servants” (6:12 ¶ 25 in XR, February 2022). With regards to this, XR also makes concrete suggestions for the government on how to take more responsibility, for example by being honest about “the massive shortcomings in waste management and disambiguat[ing] the effectiveness of recycling.” (6:38 ¶ 115 in XR, February 2022). Also, they accuse the government of causing the climate crisis by focusing on economic growth instead of climate protection (“Over the years, the G20 have a single focus: (GDP-based) economic growth. (...) We cannot expect the people that cause climate crisis to come out with policies needed to get out of it.” (6:63 ¶ 5 in XR, February 2022)). More concretely, XR calls the government corruptive, by stating that the government would entail “career politicians and (...) lobbyist[s], the 1st world word for ‘corruption’” (6:6 ¶ 17 in XR, February 2022) and that “the government [would] remain[] captured by the coal and gas industries” (6:20 ¶ 50 in XR, February 2022).

Besides making use of criticism, XR also poses multiple demands, mainly addressing the government as well. For example, they ask the government to stand up for climate-neutral housing, as well as to limit emissions (see 6:5 ¶ 17 in XR, February 2022: “Climate Neutral Housing NOW!”; 6:8 ¶ 21 in XR, February 2022: “While we should all be mindful of how we consume, we also need to hold society's most-polluting accountable and put pressure on policymakers to limit emissions.”).

Furthermore, XR is active by frequently asking for support of their movement, thus asking readers to join their movement or to sign their supported petitions (see 6:1 ¶ 5 in XR, February 2022: “Speak up. Join the movement. Act now.”). Almost as often, XR puts a focus on education. Here, a distinction can be made between climate-related education from a political and economic perspective and education that looks at the climate from a purely ecological perspective.

Concerning political and economic education, XR is especially highlighting the issue of social injustice that is driven by the climate crisis, and how income and the ecological footprint affect each other. This can for example be seen in the quote “(...) The top 1% of earners globally emit an average of 121 tons of greenhouse gases a year while the top 0.01% emit 2,700 tons over the same period.” (6:82 ¶ 21 in XR, February 2022). Furthermore, XR educates their readers about new laws that are discussed or might be implemented in the future, such as the policing bill (6:237 ¶ 132 in XR, January 2022: “We are live [...] to talk about the policing bill and what it could mean for nonviolent protest and for democracy in the UK”).

Concerning XR’s education about ecological factors of the climate crisis, they mainly explain which factors or behaviours negatively affect the climate crisis, such as livestock that would “generate about 32% of anthropogenic, or human-generated, methane, mainly from the planet’s billion-plus cattle [and] also accounts for 80-90% of the US’ total water consumption.” (6:301 ¶ 173 in XR, December 2021). Also, they highlight the negative consequences of the climate crisis, for example by mentioning the “most extreme weather events” due to the climate crisis (6:323 ¶ 189 in XR, December 2021).

On the other side, FFF puts a focus on educating their audience, as they provide information about different topics in 55 out of their 80 posts (see table 7). Here, they educate about how companies and banks negatively affect the climate, for example by requesting to “[f]ind out more about fossil fuel giant Total Energies role in the climate crisis” (5:606 ¶ 96 in FFF January 2022) and explaining “the link between big banks and colonialism” (5:780 ¶ 245 in FFF, August 2021).

Furthermore, similarly to XR, they highlight the great importance of climate and social justice by frequently educating about how the climate crisis affects society, wherefore especially “the struggles of the most affected peoples and areas (MAPA) in [the] local communities and around the world” must be put in the center of climate-related action (5:831 ¶ 281 in FFF, July 2021). Moreover, FFF educates frequently about nature disasters that are currently happening due to the climate crisis, such as the Hunga-Tonga Hunga-Ha'apai volcano (5:589 ¶ 88 in FFF, January 2022: “Over the past two days, the island nation of Tonga has been harshly impacted by the environmental and humanitarian devastations unleashed by the eruption of the Hunga-Tonga Hunga-Ha'apai volcano in the South Pacific. From shortages of basic resources, atmospheric pollution, and the destruction of infrastructure, the national community is experiencing diverse challenges as a result of the crisis”). Here it becomes apparent that while FFF focuses on educating about these currently happening nature disasters in a neutral language, XR mainly broaches the issue of nature disasters in combination with threatening future scenarios.

Moreover, it is noticeable that opposed to XR, FFF explains their way of striking and how they organize climate actions by providing multiple guides about their strikes and guides that entail “the basics of striking” (5:702 ¶ 178 in FFF, September 2021) and educate about “the knowledge, tools and resources to participate in global youth climate action (...)” (5:866 ¶ 310 in FFF, July 2021).

Ongoing, similarly to XR, FFF expresses criticism multiple times. As it was also the case for the emotion of anger, their criticism is mainly directed against the government, for example against the Swedish government for “coloni[zing] the Sámi” (5:128 ¶ 44 in FFF, January 2022) or generally against “people in power [who would] fail to act properly during a crisis” (5:98 ¶ 3 in FFF, February 2022). Also, they frequently criticize companies for “harming people while prioritizing profit” (5:124 ¶ 39 in FFF, February 2022), and especially highlight this issue by regularly using the hashtag “PeopleNotProfit” (5:105 ¶ 8 in FFF, February 2022).

Concerning other types of activism, FFF makes use of asking for movement support. Similarly to XR, they ask their audience multiple times to join their strikes or their movement (see 5:714 ¶ 190 in FFF, September 2021: “Join us this September 24th, have you reached to your local group yet?”).

Ongoing, FFF poses demands, even if not in the same frequency as XR. However, their demands mainly include taking action and working on climate reparations as well as social justice (5:685 ¶ 162 in FFF, September 2021: “From North to South, Brazilian groups

are organizing to demand better climate policies and socially just solutions to the various crisis that are hitting the country.”).

However, just like XR, FFF hardly makes an effort to include natural elements within their posts, thus not putting a focus on increasing people’s connectedness to nature. Also, both movements are focused on addressing the government and companies within their posts, and only rarely address other people like scientists and young people, or organizations like NGOs (see table 7).

Table 7

Number of codings for the codes type of activism (ToA) and agent for both XR and FFF

Agent	Companies		Government		NGO		Scientists		Young people	
	XR	FFF	XR	FFF	XR	FFF	XR	FFF	XR	FFF
ToA										
Movement support	1	0	0	2	0	0	0	0	0	0
Action plan	0	0	1	0	0	0	0	0	0	0
Connectedness to nature	0	0	0	0	0	0	0	0	0	0
Criticism	6	11	42	13	2	0	0	0	0	0
Demands	4	1	9	1	0	0	1	0	0	0
Education	2	3	3	5	0	1	0	0	0	3
Threatening scenario	0	0	1	0	1	0	0	0	0	0

Use of Visualizations

Lastly, the sub-question ‘To what extent do FFF and XR use visualizations to communicate about climate change?’ can be answered by looking at the types as well as contents of their pictures. Here, it becomes evident that both movements only rarely make use of drawings (see table 8). Instead, XR uses mainly photos and text to visualize their messages. Concerning the content of their pictures, they mainly use them to present information. Almost as often they use them to depict climate-related events and actions. However, they rarely use them to show elements of nature, thus they do not necessarily focus on increasing people’s connectedness to nature.

At the same time, FFF makes primarily use of text instead of photos (see table 8). While for XR the provision of information and the presentation of events were applied relatively equally, for FFF, the provision of information is by far used the most often. Furthermore, just like XR, they rarely show natural elements within their pictures.

Based on this, it can be concluded that XR has a relatively balanced focus on the visual representation of climate-related actions through photos and the transmission of information via text, while FFF mainly uses their pictures to provide further text and, at the same time, focus more on providing information about the subject of choice.

Table 8

Number of codings for the codes picture type and picture content for both XR and FFF

Picture type	Drawing		Photo		Text	
	XR	FFF	XR	FFF	XR	FFF
Picture content						
Event	1	0	35	20	0	1
Information	1	4	5	3	34	49
Nature	0	0	3	1	1	2

Discussion and Conclusion

Main Findings

To answer the main research question of how FFF and XR communicate about climate change on Instagram, it becomes evident that although they stand for the same cause and their content is rather similar, there are differences in how they communicate it.

First, the most prominent difference between the movements is their use of language. While XR makes use of more judgmental language, including emotionally charged words, FFF uses neutral language more frequently, and makes more use of ironic sentences, expressing their anger and criticism more subliminally. While it cannot yet be supported by literature whether these different ways of anger expression have different effects on motivation, the fact that both movements make use of anger is in agreement with the literature as it recommends including the emotion of anger to motivate people to engage in climate-activism (Wallis & Loy, 2021).

Furthermore, besides the emotion of anger, the movements differ in what feelings they want to elicit in their audience. This is first due to XR focusing on threatening future scenarios to elicit fear in the readers, while FFF's posts entail the emotion of sadness more frequently while talking about currently happening nature disasters. On one hand, these fear-

eliciting posts on side of XR fulfil the literature-supported strategy of motivating action through fear (Nairn, 2019). However, this effect might be limited as XR usually does not add subsequent efficacy messages as is recommended in the literature (Tannenbaum et al., 2015). Thus, it could be assumed that the way how XR makes use of threatening scenarios does not increase people's feeling of efficacy and, instead, leave them with a feeling of fear and helplessness (Howarth et al., 2020; Tannenbaum et al., 2015). However, so far there is no evidence to what extent the emotion of sadness might play a role in communicating about climate change.

Furthermore, XR pays more attention to the movement's social inclusiveness, as they frequently highlight the positive aspects of being part of their ingroup, thus increasing the reader's ingroup identification and possibly eliciting the wish to become part of the group (Fritsche et al., 2018). As opposed to this, FFF puts a greater focus on their movement's goals instead of ingroup norms and identification. Based on this, both movements act in accordance with communication strategies that are considered as being efficient according to literature, however, they set a different focus within the recommended strategies of the SIMPEA model. XR focuses on ingroup identification, making the group appear emotionally significant to the reader. Thus, like it was argued by Fritsche et al. (2018), they possibly increase the reader's motivation to become part of their collective. At the same time, they also focus on the ingroup norms. Meanwhile, FFF puts a focus on presenting their ingroup goals, thus not putting a focus on the reader's emotions but instead on concrete ideas of what to achieve as a group. However, as both movements only rarely make use of collective efficacy messages, it can be concluded that according to Fritsche et al. (2018), both movements do not put focus on motivating their audience to engage in problem-based coping.

Lastly, both movements have different ways of presenting their audience with climate-related information. Based on the number of posts entailing climate-related education, it seems to be a more important part of FFF's activism than of XR's activism to educate the audience without criticizing. This also goes along with the observation of FFF making more use of texts entailing neutrally worded climate-related information in comparison with XR. Also, FFF includes education about the organization of climate strikes.

However, even though FFF makes more use of it, educating their audience also seems to play an important role in the postings of XR. Thus, although the information they inform about differs, the inclusion of information seems to be an important aspect for both movements. This gives rise to the assumption that the focus on education could create a new theoretical angle that the literature has not explored yet.

Furthermore, a great similarity in the communication of the movements is that they both frequently criticize the government and companies. Thus, even if they express it differently in their use of language, it could be important to investigate this factor further to find out what effect the use of regular criticism has on the audience.

Moreover, both movements pursue similar goals and interests, which are reflected in the content of their posts. First, they both make mainly use of negative sentiment and the emotion of anger, two factors that were suggested as being effective to increase people's motivation of taking climate-related action (Bloodhart et al., 2019; Wallis & Loy, 2021).

In addition, even though XR makes use of it to a greater extent, both movements frequently express their anger against specific groups, meaning especially the government. Thus, they follow the suggestion by Han and Barnett-Loro (2018) and Nerlich et al. (2010) to directly address powerful agents like the government to increase climate-related actions. Also, XR and FFF both frequently address companies and are, therefore, in agreement with Gillan and Starks (2007) who argued that environmental movements often protest against companies to achieve positive change for the climate. However, the movements also resemble each other since they do not address scientists or the works of scientists within their posts, thus disagreeing with what is recommended by Anderson and Maffey (2021). Also, they only rarely address environmental NGOs and young people. Therefore, they do not make use of addressing people who on average have a high interest in climate protection and whose motivation for action could therefore be easily increased (Lee et al., 2020; Schofer & Hironaka, 2005).

Furthermore, FFF and XR both do not present their audience with concrete plans for action, as it is suggested by the literature (Bandura, 1977; Frantz & Mayer, 2004). Thus, it can be argued that they do not support their audience's feeling of capability, which is an important aspect to facilitate behavioural change, especially within situations that require immediate acting (Bandura, 1977). Instead, the content of their posts frequently entails the call for supporting their movements, an aspect that has not been explored in the literature so far. Also, both movements pose various demands, mainly addressing the government, which is another factor that could give rise to further investigation. Lastly, both movements rarely include elements of nature within their posts, thus they are not trying to increase people's connectedness to nature as it was recommended by Mayer and Frantz (2004).

Based on this, in order to answer the main research question, it can be concluded that even though FFF and XR communicate about rather similar content and address the same people, the ways how they communicate it on Instagram differs to some extent.

Limitations and Future Research

This research has two limitations. First, due to the research making use of qualitative content analysis, it lacks objectively observable information about the used communication strategies. This is because the qualitative content analysis is less standardized than quantitative analysis and, thus, leaves more room for individual interpretation, which poses a challenge for the analysis process (Elo & Kyngäs, 2008). However, the credibility of the analysis was ensured by calculating the interrater reliability, which improves the coding practice (Burla et al., 2008). Every code category used for analysis had a sufficient Cohen's Kappa, thus showing sufficient interrater reliability for this research. Therefore, the codebook offers a good basis to handle the problem of the lack of objectivity to a certain extent.

Secondly, a limitation of this research is that even though there is literature-based information on which communication strategies are seen as being effective, the research is still lacking information about the actual effectiveness of these strategies. This is because, in this research, the effect on the audience can only be estimated by the number of likes the posts got, and on basis of reflecting to what extent the posts entail communication strategies that are deemed as effective in literature.

However, the research reaches its goal of providing an overview of how FFF and XR communicate climate change on Instagram. This overview offers multiple advantages, first, it can help readers to become more aware of communication strategies that possibly affect their opinions. Moreover, the overview can provide the movements with important insights into how the readers might perceive their communication strategies and argumentations. Thus, the movements are given new ideas of how to adjust their postings in a way that they reach more people and possibly win them for their common cause. Also, the overview summarizes whom the movements address most frequently in their argumentations. Thus, it offers an opportunity for the movements to reflect on whom they want to address in the first place.

In practice, this overview can be used as a helpful tool for climate movements that struggle with finding more participants. This is because it encourages them to reflect on their communication strategies, and they can use the strategies proposed in the literature as a guide. Furthermore, the provided information about the advantages of social media platforms within climate activism might inspire local organizations to expand their reach by making use of online activism as well.

However, with regards to future research, especially the strategies that were based on inductive reasoning give rise to further investigation of the effectiveness of the movement's methods, as they have not yet been discussed in the literature. With regards to this, the use of

criticism as well as provision of education and asking for movement support were strategies that were used regularly, thus possibly providing new theoretical angles. Especially the movements' different ways of expressing criticism and their different focus in the educational field give reason to explore these subjects in more depth. For example, building on a study on the effectiveness of education, researchers could investigate which type of education is the greatest motivator to become climate active, regarding the subject matter and the way it is reported. Furthermore, concerning the movement's different ways of expressing criticism and anger, it could also be interesting for future research to investigate to what extent these different expressions might have a different effect on the audience.

Furthermore, based on this research's findings on both movements' communication strategies on Instagram, it might be interesting for future research to investigate the actual impact of their communication strategies on the audience. For example, this might be tested by conducting a quantitative research study about readers' opinions on statements made by FFF and XR. This could be done by having a questionnaire containing questions about participants' demographics as well as a broad range of statements from FFF and XR, with every statement containing a different communication strategy. The source of the statement as well as the included communication strategy would not be told at the beginning of the study to make it as unbiased as possible. After answering questions about their demographics participants read the statements and give them points on a 5-point Likert scale on which they rate to what extent the argument convinced them. This would enable researchers to investigate the effect these communication strategies have on the audience. Also, through the analysis of the demographics, they would get feedback about whom they reach best with their strategies.

Conclusion

Based on this research, it becomes evident that even though both movements focus on similar climate-related content and goals, they make use of different communication strategies. More concretely, both movements' posts on Instagram entail strategies that are described as being effective in the literature, such as making use of particular emotions and elements of the SIMPEA Model. However, their amount of usage and the way how they make use of these strategies differ. Also, there are strategies considered as being effective according to the literature that both movements do not make use of, for example, to provide the audience with a concrete plan for action. Moreover, the data collection revealed communication strategies both movements use that were not investigated in literature so far, such as expressing criticism, educating their audience, and asking for their movements' support.

Based on the new findings of both movements' communication strategies, future research should consider investigating the actual effectiveness of these strategies in more depth.

To conclude, this research provides an extensive overview of both movements' similarities and differences in their communication about climate change on Instagram. Thus, it might benefit future research for exploring the effectiveness of FFF's and XR's communication strategies.

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Appendix

Table 1



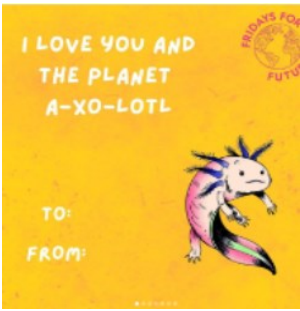

Codebook

Code	Sub-code	Definition	Example	Level
Emotion	Anger	Having an extreme feeling of dissatisfaction. It is often expressed through strongly emotional language and exaggerations. Can also be expressed through sarcasm and emoticons such as serious-looking faces or hands clenched into fists.	“Amazon exploits people, animals and the planet so that the rich can get richer and at the expense of all we hold dear.” (XR, November 2021)	Within text
	Joy	An emotion that goes along with being happy and feeling well. Often caused by success or life circumstances that are judged as being positive. Can also be expressed through emoticons such as happy looking faces and hearts.	“The 3rd edition of the Newsletter is out soon! 🇩🇪 😊” (FFF, June 2021)	
	Fear	Becoming aware of or perceiving danger, leading to being concerned or anxious. Can also be expressed through emoticons such as a face looking worried.	“It has been a scary few weeks and climate anxiety is very real.” (XR, December 2021)	
	Sadness	Not being happy. Often associated with grief. Can also be expressed through emoticons such as a person crying, or a tear drop.	“Swipe through. We could never hope to fit every single bit in the myriad of destruction the climate crisis causes in people’s lives, but here are a few of the most iconic and defining pictures that came from those events.” (FFF, January 2022)	






Code	Sub-code	Definition	Example	Level
	Hope	Having a desire for something to happen or becoming true and believing this to becoming fulfilled in the future.	“❤️ Do not give up hope! This fight moves beyond COP, hundred of thousands of people have said yes to system change and yes to a sustainable future where we can ALL thrive!” (XR, November 2021)	
SIMPEA Model	Ingroup identification	Perceiving a group as being emotionally significant in a positive way (for example, being proud to be a climate-activist). It is often represented by talking about metaphors and specific characteristics of the group.	“We are the red rebels. Red symbolizing the blood that we share with all living beings. The blood that unites us and makes us one. (...)” (XR, December 2021)	Within text
	Ingroup norms and goals	Ingroup norms are a group’s standards that are used to evaluate or judge behaviours. These norms serve as an instrument to distinguish different groups. Adhering to the norms often goes along with an identification with the group. Furthermore, ingroup goals are based on ingroup norms and give meaning and direction to the group members’ actions. They are often represented by specific activities and goals that are associated with the group.	“Everywhere in the world where people are fighting for life on earth, we appear and we give them courage, without words.” (XR, December 2021)	


Code	Sub-code	Definition	Example	Level
	Collective efficacy	Collective efficacy describes to what extent people believe that the group can reach its goals. Thus, a perception of high collective efficacy may serve as a motivator for collective action and increase people's feeling of control on a group level. For example, people might feel less threatened by the climate crisis if they perceive the collective efficacy as being high.	"What we actually need is efficacy – the understanding that if we act, we can make a difference in ourselves, in others, and in the world around us." (XR, December 2021)	
Agent	Government	People with (political) authority who have the power to affect the public business.	"The Korean government is outright lying to the people and the rest of the world by pretending to be taking climate action." (FFF, May 2021)	Within sentence
	Young people	People who belong to the Generation Z, usually students or pupils.	"The climate crisis is a child rights crisis. It impacts the rights of children and young people to healthcare, clean air and water, education and more." (FFF, July 2021)	
	Company	An organized association of persons who are doing business together.	" Amazon exploits people, animals and the planet so that the rich can get richer and at the expense of all we hold dear." (XR, November 2021)	
	NGO	A non-profit organization that acts independently of the government. Usually, it addresses political or social issues.	"The strike was initiated by Climate Strike Switzerland, trade unions, the feminist movement, farmers, NGOs and over 150 local climate groups (...)" (FFF, May 2021)	

Code	Sub-code	Definition	Example	Level
	Scientists	Persons who have expert knowledge concerning natural or physical sciences.	“ Scientists leaked part of the IPCC Report which is explicit when it says civilisation will not survive a heating planet if we don’t abandon the capitalist model.” (XR, November 2021)	
Types of activism	Criticism	Talking about something or someone in a disapproving way.	“However, the P4G summit is already ringing with hollow, greenwashing words. (...)” (FFF, May 2021)	Within text
	Action plan	Presenting specific steps and/or strategies in order to take climate-related action (apart from movement support).	“ ✘ CANCEL YOUR AMAZON PRIME. (...)” (XR, November 2021)	
	Threatening scenario	Predicting one or multiple future events that pose a source of threat.	“ 🔥 French oil giant and climate killer @total is on the cusp of building a massive crude oil pipeline right through the heart of Africa – displacing communities, endangering wildlife and tipping the world closer to full-blown climate catastrophe.” (FFF, May 2021)	
	Education	Educating about the factors that are connected to climate change, for example, factors that contribute to the climate crisis as well as current consequences of the climate crisis. Or referring to a different source that educates about it.	“The climate crisis is a child rights crisis. It impacts the rights of children and young people to healthcare, clean air and water, education and more.” (FFF, July 2021)	

Code	Sub-code	Definition	Example	Level
	Movement support	Inviting people to support the movement by joining the movement or supporting an event/project that is organized by the movement.	“  Join us on July 25th 1pm UTC  Register at fffutu.re/STCxMAPA ” (FFF, July 2021)	
	Connectedness to nature	Putting a focus on nature to increase the reader’s feelings of connectedness to nature.	“(…) Let’s remember our love for this beautiful planet that feeds, nourishes and sustains all life. Let’s recollect our sincere desire to protect all this, for now and for generations to come.” (XR, December 2021)	
	Demands	Presenting specific demands.	“OUR DEMANDS: Stop all coal projects right now. (…)” (FFF, May 2021)	
Sender	FFF	The post was created by fridaysforfuture .		Whole post
	XR	The post was created by extinctionrebellion .		
Post sentiment	Positive	The post is formulated and presented in a positive way, meaning that it makes primarily use of positive connoted words concerning text elements and bright colors concerning the picture.	 <p>“Happy Valentines Day  Send your favorite card to your crush, friend or the person you fight for climate justice with. (…)” (FFF, February 2022)</p>	Whole post

Code	Sub-code	Definition	Example	Level
	Neutral	The post is formulated in a neutral way, meaning that it does not make use of emotionally loaded language and the picture does neither contain an emotionally loaded message, nor does it make use of a distinct (light or dark) colour scheme.	 <p>“SWIPE THROUGH Climate Tweets” (XR; February 2022)</p>	
	Negative	The post is formulated and presented in a negative way, meaning that it makes primarily use of negative connoted words concerning text elements and dark colors concerning the picture.	 <p>“🚧 French oil giant and climate killer @total is on the cusp of building a massive crude oil pipeline right through the heart of Africa – displacing communities, endangering wildlife and tipping the world closer to full-blown climate catastrophe. (...)” (FFF, May 2021)</p>	
Publication month	June 2021 until February 2022.	The month the post was published on Instagram.		Whole post
Post popularity	>0<4500 >4500<9000 >9000<14500 >14500<19000 >19000	The number of likes the post had at the time of data collection (April 2022).		Whole post

Code	Sub-code	Definition	Example	Level
Picture type	Photo	The picture is a photo.	 <p>(FFF, May 2021)</p>	Picture
	Drawing	The picture is a drawing.	 <p>(FFF, February 2022)</p>	
	Text	The picture shows digitally typed in text.	 <p>(FFF, May 2021)</p>	
Picture content	Event	The picture shows a climate-activism related event.	 <p>(FFF, May 2021)</p>	Picture
	Nature	The picture shows nature.	 <p>(FFF, May 2021)</p>	

Code	Sub-code	Definition	Example	Level
	Information	The picture provides information or entails a link or website that can be used to access information.	 <p data-bbox="887 546 1074 577">(FFF, June 2021)</p>	