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Framing of Civil Society Organizations' Communication on Facebook: Examining the Impact on Audience Engagement in Norway

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Abstract: Public support is crucial for mitigating and adapting to the effects of climate change. Civil Society Organizations (CSOs) play a significant role in normative governance aimed at influencing attitudes and mobilizing citizens to take action. Civil society organizations (CSOs) use digital media to this purpose. The framing of information presented by CSOs has been shown to shape how people perceive and respond to it. This paper aims to examine how cognitive or topical framing and moral foundational framing interact in predicting public engagement with CSOs' communication about climate change on Facebook. To this end, several computational methods – including topic modeling, semantic network analysis, and automatic text processing based on a Moral Foundations dictionary – are combined, using data gathered on Facebook. The results of the empirical analysis reveal that CSOs use different topical frames and moral foundations in order to influence policymakers and mobilize citizens. CSOs elicit most engagement on Facebook when they combine a “Climate mobilization” topical frame with the moral foundations of care and fairness pertaining to the ethics of autonomy.

Keywords: climate change; Advocacy; Facebook; framing; moral foundations; normative governance

Public support for policies addressing climate change is paramount for reducing greenhouse gas emissions, mitigating its impacts, and promoting adaptive measures for communities and ecosystems. In this effort, Civil Society Organizations (CSOs) play a crucial role by raising awareness about the causes and consequences of climate change, advocating for climate policies, and mobilizing citizens to take action. Since the late 1980s, CSOs have been instrumental in global efforts to combat climate change, acting as mediators between scientific expertise and the public while using public relations tactics to raise awareness from their unique perspectives (Vu et al. 2020).

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Digital media have revolutionized advocacy work for CSOs, reshaping their approaches and strategies. New digital technologies, especially social media platforms, offer novel avenues for CSOs to directly communicate with the public and policymakers, bypassing traditional media organizations (Bennet and Segerberg 2013; Figenschou and Fredheim 2020). The networked media logics influence content production, distribution, and usage on social media, empowering users to create content at minimal cost (Klinger and Svensson 2018).

Prior research has shown that advocacy groups primarily use social media to provide information and raise awareness among their supporters (Kingston and Stam 2013), but less for dialogue, community building, and mobilizing supporters (Guo and Saxton 2013). While insider advocacy strategies involve direct engagement with policymakers and stakeholders, CSOs also employ outsider advocacy strategies, leveraging grassroots mobilization and public pressure to effect policy change (Kollman 1998). Social media are, thus, a potent tool for outsider advocacy strategies – as CSOs engage with policy-makers, stakeholders, and diverse audiences (Figenschou and Fredheim 2020; Trapp and Laursen 2017). Yet, CSOs communication on social media, beside advocating for policy changes, play an decisive role in norm-based governance aimed at mitigating the collective action problems raised by climate change.

In this context, understanding the normative governance strategies (Raymond et al. 2021) employed by CSOs on social media and their impact on audience engagement becomes crucial. Normative governance strategies encompass framing issues in alignment with societal norms and values, emphasizing the moral imperative for action, and connecting policies to deeply held beliefs. Investigating how CSOs leverage normative governance on social media can shed light on its effectiveness in shaping public attitudes, behaviors, and support for climate policies.

This empirical research aims to explore a central dimension of the normative governance strategies adopted by CSOs on social media platforms and evaluate their influence on audience engagement. By examining the framing of CSOs' communication, we seek to understand how different frames resonate with different segments of the public and whether certain frames are more effective in engaging audiences. More precisely, the study explores how different types of framing – topical framing and moral framing – eliciting different cognitive processes – “cool” and “hot” cognitive processes – interact in order to provoke different forms of audience engagement on Facebook.

This study contributes to the growing body of literature on digital media, advocacy, framing and normative governance, providing insights into the evolving role of CSOs in the digital era. By illuminating the impact of framing strategies on social media, this research offers valuable implications for CSOs, policymakers, and

practitioners seeking to enhance public support for climate policies and address the urgent challenges of climate change.

1 Theoretical Framework: Framing and CSOs' Communication on Social Media

In presence of collective action dilemmas, where individuals can benefit by cooperating to solve a group problem but also face the temptation to free ride and act selfishly, research has shown that norms can play a significant role in overcoming collective action problems. Ostrom's work (Ostrom 1998, 2009) demonstrated how groups can create and maintain such norms to address challenges successfully. Norms have been found to influence various aspects of political behavior, including corruption (Helmke and Levitsky 2004), policy implementation (Winter and May 2001), and the adoption of new domestic policies (Mildenberger and Tingley 2019). Norms have also been found to promote individual behavior changes (Deitelhoff and Zimmermann 2013; Finnemore and Sikkink 1998), especially in tackling collective action issues such as climate change within countries (Raymond, Kelly, and Hennes 2021). People have been shown to be highly attentive to others' behaviors and perceptions of what is normal, leading them to conform to these perceived norms (Davis et al. 2018; Muthukrishna et al. 2016). Social norms can effectively encourage collective action without the need for external incentives or penalties (Davis, Hennes, and Raymond 2018). While normative-based governance, as conceptualized by Raymond, Kelly, and Hennes (2021), comprises four strategies – including the use of different framing of messages based on different values appealing to different groups, the mobilization of descriptive and injunctive norms in communication, the enhancement of norm internalization to optimize external incentives for behavior change, and the use of epistemic norms in order to address challenges of misinformation and trust – this study will be concerned with the first strategy namely, framing of messages.

1.1 Dual-Process Framing

Framing involves highlighting certain aspects of an issue and downplaying others, in order to influence how people perceive the issue and the proposed solutions (Boräng et al. 2014). Since policy issues have multiple potential dimensions, framing – selecting and emphasizing particular aspects of an issue – is an important tool for policy actors, including civil society organizations (Baumgartner and Mahoney 2008; Daviter 2009; Entman 1993; Klüver et al. 2015). Frames can be thought of as 'schemata

of interpretation' which help people organize what they perceive (Goffman 1974). According to Entman (1993), frames 'highlight some bits of information about an item that is the subject of communication, thereby elevating them in salience' (Entman 1993, p. 53). If scholars agree, following Daviter (2009), that frames are about 'what actors perceive to be at stake in an issue thus depends on what facet or dimension dominates the actor's perception at a given time' (Daviter 2009, p. 1118), they have differentiated frames into several categories, including generic and issue specific frames (Boräng and Naurin 2015; De Bruycker 2017; Eising et al. 2015) as well as emphasis and equivalence frames – such as opportunities versus risks, gains (benefits) versus losses (costs), and positive consequences versus negative consequences (De Bruycker 2017). In any cases, frames are strategic tools that civil society organizations rely on in order to achieve their political goals, both when it comes to influencing policy outcomes (Boräng and Naurin 2015; Bunea and Ibenskas 2015; Klüver, Mahoney, and Oppen 2015; Rasch 2018) and to influencing public opinion (De Bruycker and Beyers 2019; Druckman 2004; DÜR 2019; Tresch and Fischer 2014).

If traditional framing studies have focused on the cognitive dimension of framing, social-psychologists have increasingly advanced dual-process theories, which describe how affective and cognitive systems, termed "hot" and "cool" (Bargh 1994), work together or sometimes conflict. Automatic processes, which have been part of brain function for millions of years, are fast, effortless, and efficient, closely linked to perception and causing cognitive and behavioral changes without conscious reflection. In contrast, controlled processes, a more recent human development due to language and the capacity for private reflection, occur slowly and with conscious awareness, and are more distinct from perception. Bargh's research shows that many morally relevant behaviors can be triggered by automatic processes in response to subtle environmental cues. From such a viewpoint, moral reasoning is a rapid intuitive process (Haidt 2008) in which moral intuitions can be triggered by different issues and may impact on attitudes and behaviors (Graham et al. 2013). As a consequence, the frames emphasized in communicating issues related to climate change can be seen as influencing attitudes and behaviors through the triggering of moral intuitions (automatic processes) and through reflected rational arguments (controlled processes). In order to take into account for the duality of processes, topical framing is differentiated from moral framing in the rest of this contribution.

1.2 Topical Framing and Engagement with Climate Change on Social Media

Framing has been shown to influence public perceptions and attitudes towards climate change in multiple studies (Badullovich et al. 2020). According to a recent

survey experiment in several countries reported by Dasandi et al. (2022), different frames significantly impact public support for climate policies connected to climate change. Overall, the results of the experiment revealed that a positive frame, with health and environmental themes, on a global and immediate scale, led to heightened public support for climate policies in the majority of the observed countries excluding India. The effects of these frames on the public's perception of the scientific consensus on climate change were evaluated in a separate national experiment in the US (Linden et al. 2018). Furthermore, experiments examining public reactions towards different climate change frames revealed a varied response depending on the segment of the audience (Maibach et al. 2010). However, studies found that the effects of framing are contingent on political ideologies and partisanship (Singh and Swanson 2017; Weber 2016).

A recent review of the literature related to framing in climate change communication (Guenther et al. 2023), summarizing previous reviews of literature on communication framing (Borah 2011; D'Angelo et al. 2019; Matthes 2009) as well as on climate change media communication (Schäfer and Schlichting 2014), emphasizes the fact that most studies focus on text-based frames, are primarily based in sociological tradition of framing (Gamson and Modigliani 1989; Goffman 1974) – as opposed to the psychological tradition of framing (Scheufele and Iyengar 2014) – and are more concerned with thematic frames than generic frames. Guenther et al. (2023) advance the idea of “frame locations” – distinguishing four locations: the frames of communicators and journalists, frame content, audience frames, and framing effects – and propose to use “framing” as a bridging concept for organizing the literature related to climate change framing. Guenther et al. (2023) found that in frame content studies, thematic frames dominated over generic frames and that the two most commonly identified generic frames were “Climate action” frame (including hope, action, mitigation, adaptation, solution, efficiency, progress, innovation, and development frames) and the “Harmful impacts” frame (including ecological, meteorological, apocalypse, disaster, risk, threat, and consequences, effects frames).

Additionally, research suggests that the way in which an issue is framed can have a significant impact on how social media users engage with and share news. Wahlström et al. (2013) have found that climate activists use “global justice” or “system change” in their framing while Grotenbreg and Van Buuren (2017) have shown that the use of diagnostic, prognostic, or motivational frames in government policy depends on policy goals. Vu et al. (2020) have examined the framing of climate change by global climate nonprofits on Facebook, analyzing content from 289 NGOs in 18 countries. They found that, among the three protest frames (diagnostic, prognostic, or motivational frames), the diagnostic protest frame was the most popular, and that messages tended to focus on the present impacts of climate change rather

than efficacy. Action was the most frequently discussed aspect of climate change, while efficacy was the least common. More generally, news sharing on social media appears to be influenced by generic frames (Valenzuela et al. 2017) such as conflict frames (stories that pit one group or idea against another), economic frames (related to users' personal financial well-being), human interest frames (related to experiences and emotions of individuals), and morality frames (highlighting issues of fairness, justice, and rights).

1.3 Moral Foundations Framing and Support for Climate Change Policies

Social media platforms do not merely serve as communication mediums, but they have become influential platforms that can stimulate moral emotions and play a determining role in shaping users' moral beliefs, as well as the diffusion of moral emotions in digitalized networks (Brady et al. 2020; Crockett 2017; Huskey et al. 2018). Frames are often most effective when they appeal to morally relevant intuitions that are strongly held by an individual i.e. when they appeal to individuals' moral foundations (Feinberg and Willer 2012; Haidt 2001). Moral foundations theory (Graham et al. 2013) is a psychological theory that proposes that human moral reasoning and judgement are based on a small set of innate moral foundations or intuitions. Moral Foundations Theory argues that human moral judgment is mainly intuitive and non-rational, and it can be divided into distinct categories of moral intuition. Each category processes different kinds of moral stimuli and helps maintain elements of human social interaction. The concept of "moral foundation" refers, thus, to a set of psychological principles or building blocks that underlie people's moral judgments and ethical beliefs. These foundations are considered to be innate and universal, shaping individuals' moral reasoning and guiding their perceptions of right and wrong across different cultures and societies. These foundations or moral intuitions include five core domains: care/harm, fairness/cheating, loyalty/betrayal, authority/subversion, and sanctity/degradation. According to the theory, individuals differ in the degree to which they rely on each foundation in their moral reasoning. The theory has been used to explain variations in moral judgment and political ideology across cultures and individuals (Jonathan Haidt and Graham 2007).

These moral foundations are rooted in biological evolutionary benefits and universal across societies in spite of differences in their cultural expression. Care/Harm, exemplified by maternal care, is a value common in mammals with a biopsychological basis that is similar across humans and societies. Fairness/Cheating is linked to reciprocal altruism. Fairness involves temporary sacrifice for another's benefit, with an overarching reciprocal advantage. Sensitivity to fairness is universal

and evident early in human development. Loyalty/Betrayal relates to group belonging and allegiance towards a group, and is often expressed by in-group cohesion and conflict with out-groups. Authority/Subversion is akin to different forms of dominance and social hierarchy. Attitudes towards authority tend to differ across cultures and political ideologies. Sanctity/Degradation is related to the immune system and physiological disgust. This foundation also influences moral reactions towards certain social groups, such as immigrants and sexual minorities.

Drawing on cross-cultural research and advancements in intuitive processing and moral emotion studies (Haidt 2001), Moral Foundations Theory (MFT) was built on Shweder's work, explaining psychological factors in moral disagreement, political values, and cross-cultural differences in moral judgment. MFT's moral foundations of care/harm and fairness/cheating, based on (Shweder et al. 1997) of autonomy, focus on individuals as recipients of moral actions. They respond to individuals' suffering, rights, and welfare. Care/harm addresses compassion and harm reduction, reacting to violence or suffering. Fairness/cheating deals with justice and equality, responding to perceived injustice or imbalances. The other three foundations, termed binding foundations, strengthen social cohesion and protect the collective, focusing on individuals as agents of moral acts. Derived from Shweder et al.'s ethic of community, the loyalty/betrayal and authority/subversion foundations emphasize group unity and hierarchical order. Loyalty/betrayal responds to group loyalty threats, while authority/subversion reacts to challenges against hierarchy and tradition. The sanctity/degradation foundation, akin to Shweder et al.'s concept of divinity, safeguards the in-group's purity and is triggered by actions violating its essence. Graham et al. (2013) suggested additional foundations like liberty/oppression, but these have received limited empirical study. MFT posits that these universal moral foundations, influenced by culture, ecology, and individual differences, produce a wide array of moral judgments, values, and practices, suggesting that all moral judgments stem from these innate, evolved intuitions.

MFT posits that people have different moral intuitions that are triggered by different issues, and these moral intuitions can influence their attitudes and behaviors (Graham et al. 2013). Moral foundational framing has been shown to impact on charitable donations (Hoover et al. 2018), on attitudes and behaviors towards refugees (Mobayed and Sanders 2022), and on information virality in social movement protest (Wang and Liu 2021). Concerning climate change, Adger et al. (2017) have shown that people consistently use moral reasoning to explain their views on climate adaptation. Li and Su (2018) reviewed 10 experimental studies that looked at the effects of message framing on public engagement with climate change, using 26 comparison pairs. The study found that message framing generally had a positive effect on individuals' engagement with climate change and its two subcategories – behavioral intentions and support for climate policy. It found that

message frames emphasizing the environmental, economic, and moral dimensions of climate change had a small-to-medium impact on individuals' engagement with climate change. However, message frames around public health implications or geographical identity had little effect on individuals' engagement with the issue. The moral foundations of care and fairness have been found to be positively associated with support for individual-level actions to address climate change, such as reducing energy consumption, recycling, and using public transportation (Dickinson et al. 2016; Milfont et al. 2019). People who scored higher on measures of the moral foundation of authority and respect for tradition were less likely to support individual-level actions to address climate change (Milfont, Davies, and Wilson 2019). In the U.S., Feinberg and Willer (2012) found that liberals tend to view the environment in moral terms, while conservatives do not, and that this difference partially explains the relation between political ideology and environmental attitudes. The study also found that contemporary environmental discourse is based largely on moral concerns related to harm and care, which are more deeply held by liberals than by conservatives. However, reframing pro-environmental rhetoric in terms of purity, a moral value that resonates primarily with conservatives, largely eliminated the difference between liberals' and conservatives' environmental attitudes. The hypothesis according to which political polarization on environmental conservation issues may be caused by the chronic use of ideological and moral framing in persuasive messages that appeal more to liberals and egalitarians has been investigated by (Wolsko et al. 2016). Their study conducted a series of three experiments to examine the effect of moral framing on pro-environmental messaging on liberals and conservatives' conservation intentions, climate change attitudes, and donations to an environmental organization. The results showed that while liberals did not differ across conditions, conservatives shifted substantially in a pro-environmental direction after exposure to a moral frame that portrayed protecting the natural environment as a matter of obeying authority, defending the purity of nature, and demonstrating one's patriotism to the United States, underscoring the potential importance of moral re-framing in climate change communication.

1.4 The Norwegian Case

Norwegian civil society boasts a robust level of citizen engagement, evident in the widespread memberships and active volunteers within voluntary organizations. These organizations have historically fostered inclusivity, playing a pivotal role in promoting social integration and ensuring both social and political equality. Typically, these civil society organizations have adopted a hierarchical structure, encompassing local, regional, and national chapters, mirroring the popular

movements model. Unlike societies where the state and civil sectors might be at odds, Norway thrives on a close-knit and cooperative relationship between the two. This harmonious bond underscores the nation's state-friendly ethos.

The voluntary sector in Norway stands out for its impressive organizational density, housing a diverse array of organizations. In fact, nearly every interest or activity, be it political, economic, or cultural, finds representation within a dedicated club, association, or organization (Enjolras and Strømsnes 2018). However, over recent decades, the landscape of Norwegian civil society and its interplay with the state has evolved significantly. Key transformations include the emergence of novel citizen groups, a trend towards more specialized and decentralized organizational structures, heightened bureaucratization and professionalization, a transition from corporatism to lobbying, and the establishment of a renewed contractual relationship between the state and civil society (Enjolras and Strømsnes 2018).

Furthermore, according to Grendstad et al. (2006), the environmental movement in Norway functions distinctively compared to other countries. Firstly, Norway's political and social framework is unique in its inclusivity; opposing interests are not sidelined but are often embraced by the government. The second anomaly is ideologically driven, emphasizing the protection of humans within nature. This perspective is shaped by Norway's emphasis on social hardship and self-sufficiency in local living, influenced by its vast geography and low urbanization rate. Lastly, Norway, as an oil-producing country, faces a complex dilemma. There's an inherent tension between its climate policies, which aim to reduce greenhouse gas emissions, and its economy, given that a significant portion of its public budget is derived from oil-related revenues. In this context, civil society organizations (CSOs) in Norway are actively advocating for a reduction in oil production to align with environmental goals and combat climate change. Yet, and despite an active civil society, a recent comparative polls¹ indicates that 24 % of people in Norway think it is false that climate change is mainly caused by human activities.

These characteristics position civil society organizations as key players in Norway's climate governance. Consequently, they are anticipated to leverage their social media communication as an instrument for normative governance.

1.5 Research Questions and Hypotheses

The research by Dickinson et al. (2016) found distinct differences in climate change attitudes based on political ideology and moral foundations. Liberals, who placed a high value on care and fairness, were found to be more willing to personally mitigate

1 https://peritia-trust.eu/wp-content/uploads/2022/06/4-Climate-change_EU.pdf.

climate change, while conservatives valued sanctity more and were also positively inclined to take action, albeit less so than liberals. Interestingly, in-group loyalty and respect for authority – moral foundations typically associated with conservative ideologies did not show a significant association with climate change action. Therefore, we propose:

H1: The use of the moral language of care, fairness, and sanctity in CSOs climate change communication will be positively associated with public engagement outcomes on social media.

Furthermore, as the above literature suggests, different moral foundations may provoke different types of engagement. To explore the relationships between the five moral foundations and three types of public engagement on social media (affective, cognitive, and social spreading engagement), we advance the following research question:

RQ1: Which types of moral foundations can best predict public cognitive, social and affective engagement with CSOs climate change communication on social media?

Additionally, as the literature on framing indicates, different framings of the climate challenge by CSOs in their communication on Facebook are likely to influence the reception and levels of engagement with their messages. Topical framing has been shown to have a positive effect on individuals' engagement with climate change (Li and Su 2018). More specifically, frames that emphasize the environmental, economic, and moral dimensions of climate change have an impact on individuals' engagement with climate change while frames emphasizing public health implications or geographical identity do not influence engagement with climate change communication. Yet, we do not know a-priori which topical frames characterize CSOs communication about climate change on Facebook and consequently formulate the following research question:

RQ2: Which communication frames can best predict public cognitive, social and affective engagement with CSOs climate change communication on social media?

Finally, different cognitive frames may also combine with moral foundations in promoting various types of social media engagement. Indeed, following dual-process theories, affective and cognitive systems, or “hot” and “cool” cognitions are expected to work together in producing engagement with communication on social media. While moral foundation framing operates through intuition – i.e. “hot” cognition – topical framing is perceived through “cool” cognition. However, “hot” and “cool”

cognitions can be expected to provoke a stronger reaction when they converge i.e. when moral foundations and topics convey messages that are closely related. To explore these possible interactions between these two types of cognition and their influence on engagement – the ways moral foundations interact with climate change topical frames in predicting different rates of affective, cognitive, and social engagement with CSOs communication on social media – we propose the following research hypothesis:

RQ3: Which type of moral foundations – classified according to the type of ethics they belong to (autonomy, community, divinity) – when interacting with different topical frames produce a positive effect on audience's engagement with climate change posts on Facebook?

2 Data and Methods

2.1 Sampling and Data Collection

The data were gathered starting with a sample of Norwegian national civil society organizations that have responded to a nationwide survey in 2019 (Arnessen and Sivesind 2020). A national organization was defined as a voluntary organization where the activities and services have a national scope and can be used regardless of where one lives in the country. The survey focused on the whole population of nationwide organizations and not a sample of it. The population was established on the basis of information obtained from public registers. In all, 958 national organizations among a population of 3,875 organizations answered the survey, yielding a response rate of 25 %. Facebook posts data for all those organizations that have answered the survey and have a Facebook Public Page (among the 958 organizations having completed the survey, 660 had a Facebook page). Facebook was chosen because it is the most pervasive social media platform among Norwegian users. According to IPSOS (2021), 83 % of the Norwegian population has a Facebook profile (compared to 27 % for Twitter) and 69 % use the platform daily (compared to 9 % for Twitter). Additionally, nearly 70 % of voluntary organizations with a national scope use Facebook pages. Access to the Facebook pages and the crawling of their public content was enabled via Facebook CrowdTangle. The crawled CrowdTangle dataset included all the posts published by the 660 organizations having a Facebook Page and containing the term “climate change”, with a total of 2,884 posts posted by voluntary organizations with a Facebook page during the period January 1, 2018 to

January, 1, 2023. Manual examination of the posts has confirmed that the posts included in the data set are related to climate change.

2.2 Analytical Approaches

To answer the research questions, several computational methods applied to a text corpus will be harnessed and combined. These includes topic modeling, semantic network analysis, automatic text processing based on a Moral Foundations dictionary, and text classification using Large Language Models.

2.2.1 Frames Analysis

Framing is about how the media influences audience's thinking about an issue by presenting selective information. Two main conceptual approaches to framing have been the object of scholarly dispute: equivalency framing and emphasis framing (Walter and Ophir 2019). While equivalency framing involves presenting logically equivalent information to produce framing effects, emphasis framing involves selectively presenting issues to influence audience's thinking and reactions through a focus on different arguments, perspectives, and facts. To study emphasis framing, scholars have mainly relied upon manual coding of frames in corpora and used both deductive (identification of predefined, theoretically-based, and limited sets of frames in corpora) and inductive (open-coding of texts without relying on predefined coding schemes) methods. More recently, unsupervised machine learning approaches that are less resources-demanding and reduce considerably the reliance on manual coding. Walter and Ophir (2019) have proposed such a machine learning method combining semantic network analysis and topic modeling.

2.2.2 Semantic Network Analysis

Semantic Network Analysis is a method used to identify frames in media content by mapping texts into networks using semantic units (such as words or concepts) as nodes and the relationships between them as edges (Baden 2018). Network analysis provides a graphic representation for complex data, but it also has disadvantages, such as a reliance on low-level linguistic results and difficulty in relating the results to theoretical concepts, or alternatively, when using pre-defined concepts as nodes, limitations due to the reliance on dictionary methods or pre-existing knowledge.

2.2.3 Topic Modeling

Topic Modeling is an unsupervised method for text analysis which uses a Bayesian generative approach to identify topics in a corpus of documents (Blei et al. 2001). The method is praised for its inductive and automated procedure, as well as its linguistic flexibility and transparency (DiMaggio et al. 2013). However, the use of topic modeling for framing analysis raises some questions, as the theoretical meaning of topics remains unclear and they may change based on the resolution chosen by the researcher. Topics can be connected into larger themes or meta-topics, but this needs to be done manually, which presents the disadvantages of manual processing, including challenges of efficiency, reproducibility, bias, and scale (Walter and Ophir 2019). Such a manual approach prevents also the use of statistical analyses provided by network analysis and semantic network analysis.

In order to overcome the limitations of both topic modeling and semantic network analysis when applied to framing analysis, Walter and Ophir (2019) have developed a method that combines both approaches, consisting of a three-step process. First, frame elements are identified using topic modeling, but without equating individual topics to frames. Second, the topics are placed in a network structure based on their co-occurrence over documents. Third, community detection algorithms are used to cluster the topics into coherent frames.

2.2.4 Moral Foundations

To identify moral foundations in CSOs Facebook posts, the extended Moral Foundations Dictionary (eMFD) was computationally harnessed using the Python library provided by Hopp et al. (2021). The eMFD was developed by Hopp et al. (2021) – based on previous dictionaries (Frimer 2019; Graham et al. 2009) – through a comprehensive crowd-sourced reconstruction process in order to assign to each word a probability that it indicates a particular moral foundation. The eMFD score python library was used to score the Facebook dataset, annotating each post with a vector of five scores corresponding to the five moral foundations to be used in subsequent analyses. To ensure the reliability and validity of the findings, a random sample of the machine coding results have been manually validated.

2.3 Measurements

2.3.1 Dependent Variables

Five dependent variables – the total number of interactions, the number of shares per post, the number of comments, the number of positive affective reactions, and

the number of negative affective reactions – will be used in the multivariate analysis. While the total number of interactions may be thought as an overall indicator of engagement with CSOs communication on Facebook, the other dependent variables capture three types of engagement: *cognitive engagement* expressed by the number of time a post has been commented; *affective engagement* by the play of reactions enabled by Facebook affordance (either positive, such as “like” and “love”, or negative, such as “sad” and “angry”); and *social engagement* measured by the number of “shares” indicating the extent to which a post has been spread to other Facebook users (Figures 1 and 2).

2.3.2 Independent Variables

2.3.2.1 Moral Foundations

The five moral foundation variables – care/harm, fairness/cheating, loyalty/betrayal, authority/subversion, and sanctity/degradation – have been computed using the extended Moral Foundation Dictionary (eMFD) method (Hopp et al. 2021), and retaining for further analysis sentiment score.

2.3.2.2 Frames Analysis: Topic Modeling

Topic modeling enables analyzing the textual content of the data to obtain an overview of the thematic structure of the updates on social media posted by CSOs. A forty-topic model emerged as the optimal solution to describe the topical structure of the Facebook posts by CSOs. The results of the analysis consist of a list of most frequent words for each of the 40 topics. The topics were interpreted and labelled manually after careful examination of the key-terms constituting each topics (see the Supplementary Information for details on the topic model). Each document (Facebook post) is a mixture of topics. The information regarding this mixture is described by the theta matrix produced by the Latent Dirichlet Allocation (LDA) implemented in *R*, in which columns represent the various topics and the rows represent the documents. Following the method proposed by Walter and Ophir (2019), the theta matrix – giving the probability of a topic in a given post [$P(\text{topic-}k|\text{document-}d)$] – has been extracted from the topic model and the cosine similarity between topics based on the document they share has been computed.

2.3.2.3 Frames Analysis: Network of Topics

The pairwise cosine similarity between topics has been then used to create the semantic network, in which topics served as nodes and similarities between them as edges providing information about the extent to which topics are related. The semantic network offers a representation of the estimated topic model and constitutes the basis for the next step of the analysis. The next step consists in applying a

community detection algorithm to the network in order to identify communities of topics that reveal common frames (Figure 3). Several community algorithms – Louvain, Walktrap, Spinglass, Greedy, and Eigen – were applied and the result of the Spinglass algorithm retained for further analysis and visualization in Figure 3. Based on this semantic network linking topics into “communities”, three communities or frames have been manually labelled: “climate politics” (green), “climate global crisis” (orange), and “climate mobilization” (violet) (Figure 3).

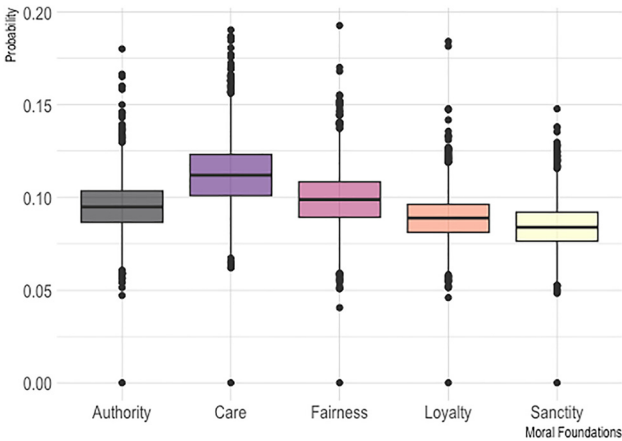


Figure 1: Moral foundations probabilities computed with eMFD.

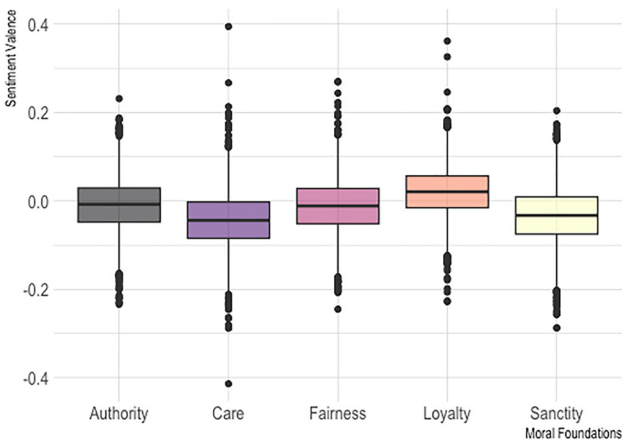


Figure 2: Moral foundation sentiments computed with eMFD.

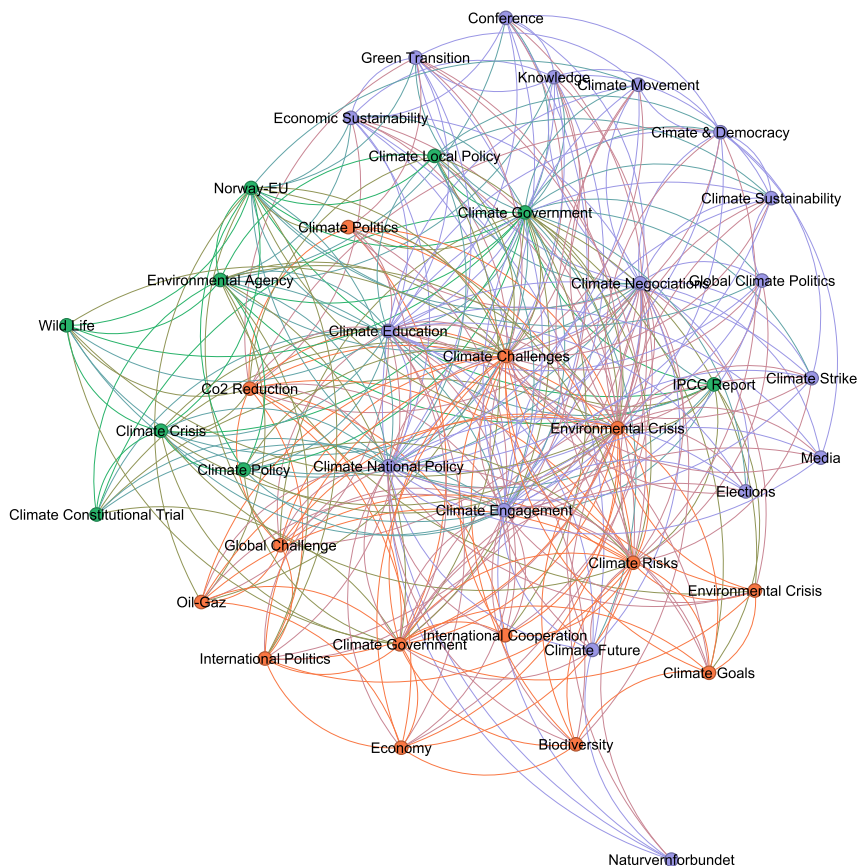


Figure 3: Topic network drawn from CSOs Facebook posts. Nodes represent topics; edges represent co-occurrence of topics in documents (calculated using cosine similarity); size represents the prominence of each topic; color represents community membership. Network is weighted, fully connected and undirected.

Combining the results of the computation of moral sentiments and communication frames, with the dependent variables yields the variables to be used in the regression analyses, which descriptive statistics are displayed in Table 1. In addition, the variable “Followers” is used as control variable for regressing on the dependent variables. Our data source provided the number of followers of each Norwegian CSO’s Facebook account at the post’s publication time. We log-transformed the variable due to its skewness. Further, Whether a social media message contains richer media forms, such as photos, videos, or URLs, has been found to be associated with the level of public engagement (Liu, Xu, and Tsai 2020). To control for the effect

Table 1: Summary statistics.

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
Total interactions	2,457	77.88	127.799	0	9	87	971
Comments	2,484	9.015	34.79	0	0	4	668
Shares	2,484	7.694	27.532	0	0	6	596
Affective positive	2,484	68.39	160.612	0	8	66	3,132
Affective negative	2,484	8.043	50.123	0	0	1	1,570
Care	2,484	0.648	1.069	0	0.094	0.807	25.331
Fairness	2,484	0.638	1.028	0	0.107	0.79	20.284
Loyalty	2,484	0.644	1.422	0	0.092	0.758	43.971
Authority	2,484	0.66	1.075	0	0.095	0.803	15.158
Sanctity	2,484	0.649	0.938	0	0.105	0.825	9.164
Autonomy	2,484	0.64	0.89	0	0.18	0.81	23
Community	2,484	0.65	1.1	0	0.17	0.8	30
Divinity	2,484	0.65	0.94	0	0.1	0.83	9.2
Frame-1 climate politics	2,484	0.202	0.049	0.058	0.172	0.224	0.619
Frame 2 climate global crisis	2,484	0.326	0.061	0.129	0.292	0.351	0.705
Frame-3 climate mobilization	2,484	0.373	0.058	0.17	0.34	0.405	0.781
Followers	1,583	39,481.96	30,927	96	7,508	69,255	125,961
Media richness	2,484						
1	1,684						
2	602						
3	198						

of media richness, we adopted their measure by coding each post into one of the following three categories from the lowest to the highest level of media richness: (1) with hyperlinks ($n = 1,684$, 67.79 %); (2) with photos or other visual content ($n = 602$, 145, 24.23 %); and (3) with videos (e.g. YouTube videos, native videos uploaded directly to Facebook) or live streaming ($n = 198$, 7.97 %).

3 Results

To assess if the moral foundations of care, fairness, and sanctity influence engagement with climate-related Facebook posts, we conducted a regression analysis using these moral sentiments and various norms against Facebook post engagement metrics. Table 2 presents the regression results (Ordinary Least Square), with columns indicating different social media interactions: Total Interactions, Comments, Shares, Affective Positive (positive emotional reactions), and Affective Negative (negative emotional reactions).

Table 2: Linear regression (OLS) of moral foundations sentiments, frames and norms on engagement variables.

	Total interactions	Comments	Shares	Affective positive	Affective negative
(Intercept)	−366.61***	−90.45***	−50.14***	−591.50***	−65.12*
Care	0.69	1.00	−1.13	−2.97	5.50***
Fairness	−0.72	0.20	0.96	−2.49	0.19
Loyalty	6.74*	0.68	2.33***	17.21***	−2.70
Authority	−1.28	−0.87	0.04	−2.05	−1.41
Sanctity	7.02*	−1.17	1.91**	−0.46	−0.18
Frame 1 climate politics	20.17	23.23	20.71	217.52*	20.13
Frame 2 climate global crisis	86.81	38.40	27.52	296.79**	16.10
Frame 3 climate mobilization	124.53	39.57	43.69**	329.83***	73.62*
Followers at posting [log]	35.91***	6.67***	2.29***	37.69***	4.12***
Media richness	10.37**	2.48	2.56**	21.86***	−2.95
Observations	1,557	1,583	1,583	1,583	1,583
R^2/R^2 adjusted	0.115/0.110	0.049/0.043	0.030/0.024	0.078/0.073	0.020/0.014

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

For the “Total Interactions” metric, contrary to our expectations, the moral foundations of care and fairness showed no significant relationship with interactions. In contrast, the loyalty and sanctity foundation demonstrated a positive significant correlation. Factors such as the number of an organization’s Facebook followers and media richness (presence of photos, links, and videos in posts) also positively correlate with interaction counts. Topical frames are not significantly associated with the total interaction outcome variable. The R^2 values denote the variance percentage in the outcome measure explained by the independent variables. The initial model accounts for 11.5 % of the variance ($R^2 = 0.110$), suggesting that other unconsidered factors also impact the outcome.

For other engagement metrics, the sanctity foundation is positively and significantly linked to shares. The loyalty foundation has a positive relationship to shares and positive affective reactions, while the foundation of care is positively associated with negative affective reactions. The topical frame “climate mobilization” is positively associated to shares, positive and negative emotional reactions. The frames “climate politics” and “Climate global crisis” are positively associated with affective positive reactions.

In sum, contrarily to the first hypothesis (H1), only the moral foundations of sanctity and loyalty are positively associated with most interaction metrics. The topical frame of mobilization and the moral foundations of loyalty and sanctity

appear to predict most forms of engagement with CSOs posts on Facebook, albeit not across all forms of engagement.

To address the third research question (RQ3) – how the interplay of topical frames, and moral foundations impacts public cognitive, social, and affective engagement with CSOs' climate change communication on social media – we refer to Table 3. This table showcases regression results, factoring in interaction terms between frames and moral foundation sentiments grouped according to the three types of ethics – autonomy, community, divinity – Underlying these moral foundations. Notably, only a handful of these interaction terms are statistically significant.

Table 3: Linear regression (OLS): interactions between frames, moral foundations sentiments and norms.

	Total interactions	Comments	Shares	Affective positive	Affective negative
(Intercept)	−320.94***	−91.11***	−39.58*	−548.12***	−62.60
Autonomi	−61.27	−55.36	−34.45	−56.97	−118.60**
Community	28.04	39.08	26.49	−60.15	91.87
Divinity	−47.81	17.95	−8.35	12.06	28.48
Frame 1 climate politics	−104.83	10.08	−6.91	−2.41	17.68
Frame 2 climate global crisis	103.76	48.38	26.12	287.74**	27.31
Frame 3 climate mobilization	53.44	39.17	31.45	331.75**	54.94
Followers at Posting [log]	35.83***	6.65***	2.24***	37.69***	4.16***
Media richness	10.61**	2.62*	2.72**	22.09***	−2.82
Autonomy × frame 1 climate politics	173.37	92.93*	56.41	370.55	124.28
Community × frame 1 climate politics	−39.78	−21.24	−2.05	106.17	−82.50
Divinity × frame 1 climate politics	137.41	−44.27	6.49	−5.30	−46.28
Autonomy × frame 2 climate global crisis	15.18	−7.20	24.19	−75.27	26.60
Community × frame 2 climate global crisis	−64.69	−0.47	−34.21	101.22	−42.43
Divinity × frame 2 climate global crisis	1.44	−15.14	8.82	8.73	−13.36
Autonomy × frame 3 climate mobilization	58.98	108.62**	41.74	11.58	247.01***
Community × frame 3 climate mobilization	20.11	−93.38*	−32.91	64.63	−175.89**
Divinity × frame 3 climate mobilization	70.15	−14.52	15.18	−42.03	−41.22
Observations	1,557	1,583	1,583	1,583	1,583
R^2/R^2 adjusted	0.118/0.108	0.057/0.047	0.030/0.020	0.081/0.071	0.031/0.020

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Examining the “Total Interactions” outcome variable, no correlations emerge between topical frames types of ethics. Interactions between the “climate mobilization” frame and the ethics of autonomy are positively linked to comments and negative affective reactions. Conversely, comments and negative affective reactions are negatively influenced by interactions between the “climate mobilization” frame and moral framing in terms of community ethics.

4 Discussion and Conclusion

This article delves into the effectiveness of Norwegian civil society organizations’ (CSOs) climate change communication, focusing on the mobilization of moral values as well as various topical frames. Our research enriches academic discussions on moral foundations, and communication framing by extending its scope to CSOs’ advocacy and governance via social media. The study also pinpoints potential strategies for enhancing CSOs’ communication and normative governance through moral foundations and topical framing.

Methodologically, we employed cutting-edge computational techniques to discern moral foundations and frames within Facebook posts. While our results underscore the significance of the moral sentiment of loyalty and sanctity in driving social media engagement, they also reveal that the incorporation of moral foundations in CSOs’ social media discourse doesn’t robustly predict engagement levels across all types of engagement.

This study has yielded three pivotal insights:

1. *Moral Foundations & Engagement:* We explored how moral foundations influence engagement with climate-related Facebook posts. The findings indicate that these foundations impact engagement metrics in varied ways. Specifically, the moral foundations of care, loyalty and sanctity influence total interactions. Care, loyalty and sanctity boosts engagement, but provoke different types of reactions. While cognitive engagement (comments) and social spreading (shares) are positively affected by loyalty and sanctity, affective engagement is swayed by care and loyalty. Care increases negative emotional reactions, whereas loyalty amplifies positive emotional responses. In other words, mobilizing the moral foundations pertaining to the ethics of community tends to provoke cognitive engagement, whereas the mobilization of the moral foundation of care (ethics of autonomy) generates negative emotional engagement and the mobilization of the moral foundation of sanctity (ethics of divinity) elicits positive emotional engagement.
2. *Topical Frames & Engagement:* In evaluating how different frames affect public engagement with CSOs’ climate change communication on social media, it is evident that, overall, most frames do not significantly alter engagement across

types of engagement. However, there are exceptions: The topical frame “climate mobilization” is positively associated to shares, and positive and negative emotional reactions while the frames “climate politics” and “Climate global crisis” are positively associated with affective positive reactions.

3. *Interplay of Foundations and Frames*: Delving into the interactions between moral foundations and frames, the study discerns that the blend of frames and moral sentiments (grouped in terms of ethics that underly them) most potently drives negative emotional engagement when triggered by the climate mobilization frame moderated by the ethics of autonomy (positively) and by the ethics of community (negatively).

Audience engagement is not universally influenced by all moral foundations or topical frames. Certain combinations of these elements prove more impactful than others. For instance, the “Climate politics” frame, which pertains to civil society organizations’ (CSOs) discussions on climate policy at both national and global scales, embodies CSOs’ advocacy efforts targeting policymakers. This type of communication, aimed primarily at shaping policies, doesn’t seem to resonate widely with audiences. The audiences of environmental CSOs, composed mainly of their members and supporters, do not engage with communication aimed at policy-makers, but is swayed by messages that talk directly to them (climate mobilization frame).

Yet, the “Climate mobilization” frame positively impacts engagement only when paired with the ethics of autonomy and community. While prior studies (Dickinson et al. 2016; Milfont, Davies, and Wilson 2019) have indicated that the moral foundations of care and fairness (pertaining to the ethics of autonomy) bolster support for climate change actions, our research reveals a correlation between these foundations and negative emotional engagement with CSOs’ Facebook posts. This raises the issue of interpreting negative emotional reactions on Facebook. These do not necessarily entail absence of support, but may indicate that the climate change messages appealing to the ethics of autonomy provoke negative emotions in the audience.

The main finding of this study, looking at the interplay between “cool” cognition (topics) and “hot” cognition (moral sentiments), indicates that the combination of a “Climate mobilization” topical frame with the moral foundation pertaining to the ethics of autonomy garners the most engagement on Facebook. What are the significance and implications of this finding? Firstly, the “Climate mobilization” frame suggests a call to action, an urgent rallying cry for collective effort. When paired with the ethics of autonomy, which emphasizes care and fairness in relation to the natural world, it resonates deeply with audiences. These principles align closely with the values and objectives that many such organizations promote. The foundation of care emphasizes empathy and compassion, key drivers in mobilizing support for social

causes and humanitarian efforts. By appealing to the intrinsic human desire to nurture and protect, civil society organizations can effectively galvanize their audience to take action against injustices or hardships faced by others. Similarly, the foundation of fairness, rooted in the ideas of justice and equality, speaks directly to those who are concerned about social equity and the fair treatment of all individuals. This principle resonates with individuals who believe in the autonomy of each person to lead a life free from discrimination and bias. The combination of call for action in the face of emergency and deeply rooted values taps into a profound sense of moral obligation to act in order to avoid climate disasters, framing not just as a practical necessity but as a moral imperative. Additionally, the fusion of a call to action with a deeply held moral value can elicit strong emotional responses.

For organizations aiming to mobilize support for climate initiatives on platforms like Facebook, intertwining actionable frames with moral foundations, appears as an effective communication strategy. This study, thus, suggests that the moral foundations pertaining to the ethics of autonomy (care and fairness), when paired with mobilization efforts, can be particularly effective, at least in the Norwegian context. In essence, the synergy between the “Climate mobilization” frame and ethics of autonomy taps into deep-seated human values and the current zeitgeist of urgency around climate change.

This study, while insightful, has certain limitations that future research could address. Firstly, the research is confined to the Norwegian context, limiting its generalizability to other national settings. Further, the study zeroes in on the communication of national civil society organizations on Facebook. Consequently, its findings might not extend to other social media platforms or different modes of institutional climate change communication. Finally, the research employs several computational techniques, each with its own set of limitations. The frame analysis uses cosine similarity to gauge semantic resemblance. The moral foundation analysis adopts a dictionary approach to detect and quantify specific concepts. These methods, while robust, might occasionally miss out on contextual meanings and cultural nuances. They may not capture the depth and subtleties that a qualitative analysis might offer. Nevertheless, this study illuminates the strategies of Norwegian civil society organizations on Facebook concerning climate change normative governance. It unveils their intent to rally their members and supporters, achieving the highest engagement on Facebook when intertwining the “Climate mobilization” topical frame with the moral foundation of sanctity.

In conclusion, this research offers a comprehensive exploration into the communication strategies of Norwegian civil society organizations on Facebook, particularly in the realm of climate change communication. While the study is rooted in the Norwegian context and primarily focuses on Facebook, its findings shed light on the intricate interplay between topical frames, moral foundations, and audience

engagement. Notably, the combination of the “Climate mobilization” frame with the moral foundation pertaining to the ethics of autonomy emerges as a potent driver of engagement. However, the study’s methodological approach, relying on computational techniques, underscores the need for further research that can delve deeper into contextual meanings and cultural nuances. Despite its limitations, this research serves as a foundational step, highlighting the importance of tailored communication strategies for civil society organizations aiming to mobilize support and drive impactful change in the ever-evolving landscape of climate governance. Future studies can build upon these insights, expanding the scope and refining methodologies to offer a more holistic understanding of digital communication in the age of climate advocacy.

References

- Adger, W. N., C. Butler, and K. Walker-Springett. 2017. “Moral Reasoning in Adaptation to Climate Change.” *Environmental Politics* 26 (3): 371–90.
- Arnessen, D., and K. H. Sivesind. 2020. “Organisasjonslandskap I Endring 2009–2019 Fra Ideologisk Samfunnsendring Til Individuell Utfoldelse? [The Changing Organizational Landscape 2009–2019.” In *From Ideological Societal Change to Individual Blossoming*. Oslo: Senter for forskning på sivilsamfunn og frivillig sektor. <https://samfunnsforskning.brage.unit.no/samfunnsforskning-xmlui/handle/11250/2639499>.
- Baden, C. 2018. “Reconstructing Frames from Intertextual News Discourse: A Semantic Network Approach to News Framing Analysis.” In *Doing News Framing Analysis II: Empirical and Theoretical Perspectives*, edited by P. D’Angelo, 43–66. New York: Routledge.
- Badullovich, N., W. J. Grant, and R. M. Colvin. 2020. “Framing Climate Change for Effective Communication: A Systematic Map.” *Environmental Research Letters* 15 (12): 123002.
- Bargh, J. A. 1994. “The Four Horsemen of Automaticity: Awareness, Intention, Efficiency, and Control in Social Cognition.” In *Handbook of Social Cognition: Basic Processes; Applications, Vols. 1-2*. 2nd ed., 1–40. Hillsdale: Lawrence Erlbaum Associates, Inc.
- Baumgartner, F. R., and C. Mahoney. 2008. “Forum Section: The Two Faces of Framing: Individual-Level Framing and Collective Issue Definition in the European Union.” *European Union Politics* 9 (3): 435–49.
- Bennet, W. L., and A. Segerberg. 2013. *The Logic of Connective Action: Digital Media and the Personalization of Contentious Politics*. New York: Cambridge University Press.
- Blei, D. M., A. Ng, and M. I. Jordan. 2001. “Latent Dirichlet Allocation.” *Journal of Machine Learning Research* 3: 993–1022.
- Borah, P. 2011. “Conceptual Issues in Framing Theory: A Systematic Examination of a Decade’s Literature.” *Journal of Communication* 61: 246–63.
- Boräng, F., R. Eising, H. Klüver, C. Mahoney, D. Naurin, D. Rasch, and P. Rozbicka. 2014. “Identifying Frames: A Comparison of Research Methods.” *Interest Groups & Advocacy* 3 (2): 188–201.
- Boräng, F., and D. Naurin. 2015. “‘Try to See it My Way!’ Frame Congruence between Lobbyists and European Commission Officials.” *Journal of European Public Policy* 22 (4): 499–515.

- Brady, W. J., M. J. Crockett, and J. J. Van Bavel. 2020. "The MAD Model of Moral Contagion: The Role of Motivation, Attention, and Design in the Spread of Moralized Content Online." *Perspectives on Psychological Science* 15 (4): 978–1010.
- Bunea, A., and R. Ibenskas. 2015. "Quantitative Text Analysis and the Study of EU Lobbying and Interest Groups." *European Union Politics* 16 (3): 429–55.
- Crockett, M. J. 2017. "Moral Outrage in the Digital Age." *Nature Human Behaviour* 1 (11): 769–71.
- D'Angelo, P., J. Lule, W. R. Neuman, L. Rodriguez, D. Dimitrova, and K. Carragee. 2019. "Beyond Framing: A Forum for Framing Researchers." *Journalism & Mass Communication Quarterly* 96: 107769901882500.
- Dasandi, N., H. Graham, D. Hudson, S. Jankin, J. vanHeerde-Hudson, and N. Watts. 2022. "Positive, Global, and Health or Environment Framing Bolsters Public Support for Climate Policies." *Communications Earth & Environment* 3 (1): 239.
- Davis, T., E. P. Hennes, and L. Raymond. 2018. "Normative Motivation and Sustainable Behavior: New Insights from an Evolutionary Perspective." *Nature Sustainability* 1 (5): 218–24.
- Daviter, F. 2009. "Schattschneider in Brussels: How Policy Conflict Reshaped the Biotechnology Agenda in the European Union." *West European Politics* 32 (6): 1118–39.
- De Bruycker, I. 2017. "Framing and Advocacy: A Research Agenda for Interest Group Studies." *Journal of European Public Policy* 24 (5): 775–87.
- De Bruycker, I., and J. Beyers. 2019. "Lobbying Strategies and Success: Inside and outside Lobbying in European Union Legislative Politics." *European Political Science Review* 11 (1): 57–74.
- Deitelhoff, N., and L. Zimmermann. 2013. "Things We Lost in the Fire: How Different Types of Contestation Affect the Validity of International Norms." *International Studies Review* 22 (1): 51–76.
- Dickinson, J., P. McLeod, R. Bloomfield, and S. Allred. 2016. "Which Moral Foundations Predict Willingness to Make Lifestyle Changes to Avert Climate Change in the USA?" *PLoS One* 11: e0163852.
- DiMaggio, P., M. Nag, and D. Blei. 2013. "Exploiting Affinities between Topic Modeling and the Sociological Perspective on Culture: Application to Newspaper Coverage of U.S. Government Arts Funding." *Poetics* 41 (6): 570–606.
- Druckman, J. N. 2004. "Political Preference Formation: Competition, Deliberation, and the (Ir)relevance of Framing Effects." *American Political Science Review* 98 (4): 671–86.
- Dür, A. 2019. "How Interest Groups Influence Public Opinion: Arguments Matter More Than the Sources." *European Journal of Political Research* 58 (2): 514–35.
- Eising, R., D. Rasch, and P. Rozbicka. 2015. "Institutions, Policies, and Arguments: Context and Strategy in EU Policy Framing." *Journal of European Public Policy* 22 (4): 516–33.
- Enjolras, B., and K. Strømsnes. 2018. *Scandinavian Civil Societies and Social Transformations: The Case of Norway*. New York: Springer.
- Entman, R. M. 1993. "Framing: Toward Clarification of a Fractured Paradigm." *Journal of Communication* 43 (4): 51–8.
- Feinberg, M., and R. Willer. 2012. "The Moral Roots of Environmental Attitudes." *Psychological Science* 24 (1): 56–62.
- Figenschou, T. U., and N. A. Fredheim. 2020. "Interest Groups on Social Media: Four Forms of Networked Advocacy." *Journal of Public Affairs* 20 (2): e2012.
- Finnemore, M., and K. Sikkink. 1998. "International Norm Dynamics and Political Change." *International Organization* 52 (4): 887–917.
- Frimer, J. A. 2019. *Moral Foundations Dictionary 2.0*. Retrieved from: <https://osf.io/ezn37/>.
- Gamson, W. A., and A. Modigliani. 1989. "Media Discourse and Public Opinion on Nuclear Power: A Constructionist Approach." *American Journal of Sociology* 95 (1): 1–37.
- Goffman, E. 1974. *Frame Analysis: An Essay on the Organization of Experience*. Cambridge: Harvard University Press.

- Graham, J., J. Haidt, S. Koleva, M. Motyl, R. Iyer, S. P. Wojcik, and P. H. Ditto. 2013. "Chapter Two – Moral Foundations Theory: The Pragmatic Validity of Moral Pluralism." In *Advances in Experimental Social Psychology*, 47, edited by P. Devine, and A. Plant., 55–130 Burlington: Academic Press. ISBN 9780124072367. <https://doi.org/10.1016/B978-0-12-407236-7.00002-4>.
- Graham, J., J. Haidt, and B. A. Nosek. 2009. "Liberals and Conservatives Rely on Different Sets of Moral Foundations." *Journal of Personality and Social Psychology* 96: 1029–46.
- Grendstad, G., P. Selle, K. Strømsnes, and O. Bortne. 2006. *Unique Environmentalism: A Comparative Perspective*. New York: Springer
- Grotenbreg, S., and A. Van Buuren. 2017. "Facilitation as a Governance Strategy: Unravelling Governments' Facilitation Frames." *Sustainability* 9 (1). <https://doi.org/10.3390/su9010160>.
- Guenther, L., S. Jörges, D. Mahl, and M. Brüggemann. 2023. "Framing as a Bridging Concept for Climate Change Communication: A Systematic Review Based on 25 Years of Literature." *Communication Research* 51 (4): 00936502221137165.
- Guo, C., and G. D. Saxton. 2013. "Tweeting Social Change: How Social Media Are Changing Nonprofit Advocacy." *Nonprofit and Voluntary Sector Quarterly* 43 (1): 57–79.
- Haidt, J. 2001. "The Emotional Dog and its Rational Tail: A Social Intuitionist Approach to Moral Judgment." *Psychological Review* 108 (4): 814–34.
- Haidt, J. 2008. "Morality." *Perspectives on Psychological Science* 3 (1): 65–72.
- Haidt, J., and J. Graham. 2007. "When Morality Opposes Justice: Conservatives Have Moral Intuitions that Liberals May Not Recognize." *Social Justice Research* 20 (1): 98–116.
- Helmke, G., and S. Levitsky. 2004. "Informal Institutions and Comparative Politics: A Research Agenda." *Perspectives on Politics* 2 (4): 725–40.
- Hoover, J., K. Johnson, R. Boghrati, J. Graham, and M. Dehghani. 2018. "Moral Framing and Charitable Donation: Integrating Exploratory Social Media Analyses and Confirmatory Experimentation." *Collabra: Psychology* 4 (1): 9.
- Hopp, F. R., J. T. Fisher, D. Cornell, R. Huskey, and R. Weber. 2021. "The Extended Moral Foundations Dictionary (eMFD): Development and Applications of a Crowd-Sourced Approach to Extracting Moral Intuitions from Text." *Behavior Research Methods* 53 (1): 232–46.
- Huskey, R., N. Bowman, A. Eden, M. Grizzard, L. Hahn, R. Lewis, N. Matthews, R. Tamborini, J. B. Walther, and R. Weber. 2018. "Things We Know about Media and Morality." *Nature Human Behaviour* 2 (5): 315.
- IPSOS. 2021. IPSOS's sosiale medier tracker. <https://www.ipsos.com/nb-no/ipsos-some-tracker>.
- Kingston, L., and K. Stam. 2013. "Online Advocacy: Analysis of Human Rights NGO Websites." *Journal of Human Rights Practice* 5: 75–95.
- Klinger, U., and J. Svensson. 2018. "What Media Logics Can Tell Us about the Internet?" In *Second International Handbook of Internet Research*, edited by J. Hunsinger, L. Klastrop, and M. Allen, 1–14. New York: Springer.
- Klüver, H., C. Mahoney, and M. Opper. 2015. "Framing in Context: How Interest Groups Employ Framing to Lobby the European Commission." *Journal of European Public Policy* 22 (4): 481–98.
- Kollman, K. 1998. *Outside Lobbying: Public Opinion and Interest Group Strategies*. New Jersey: Princeton University Press.
- Li, N., and L. Y.-F. Su. 2018. "Message Framing and Climate Change Communication: A Meta-Analytical Review." *Journal of Applied Communications* 102. <https://doi.org/10.4148/1051-0834.2189>.
- Linden, S. v. d., A. Leiserowitz, and E. Maibach. 2018. "Scientific Agreement Can Neutralize Politicization of Facts." *Nature Human Behaviour* 2 (1): 2–3.
- Liu, W., W. W. Xu, and J.-Y. Tsai. 2020. "Developing a multi-level organization-public dialogic communication framework to assess social media-mediated disaster communication and engagement outcomes." *Public Relations Review* 46 (4): 101949.

- Maibach, E., M. Nisbet, P. Baldwin, K. L. Akerlof, and G. Diao. 2010. "Reframing Climate Change as a Public Health Issue: An Exploratory Study of Public Reactions." *BMC Public Health* 10: 299.
- Matthes, J. 2009. "What's in a Frame? A Content Analysis of Media Framing Studies in the World's Leading Communication Journals, 1990–2005." *Journalism & Mass Communication Quarterly* 86 (2): 349–67.
- Mildenberger, M., and D. Tingley. 2019. "Beliefs about Climate Beliefs: The Importance of Second-Order Opinions for Climate Politics." *British Journal of Political Science* 49 (4): 1279–307.
- Milfont, T., C. Davies, and M. Wilson. 2019. "The Moral Foundations of Environmentalism: Care- and Fairness-Based Morality Interact with Political Liberalism to Predict Pro-environmental Actions." *Social Psychological Bulletin* 14. <https://doi.org/10.32872/spb.v14i2.32633>.
- Mobayed, T., and J. G. Sanders. 2022. "Moral Foundational Framing and its Impact on Attitudes and Behaviours." *Behavioral Sciences* 12 (5). <https://doi.org/10.3390/bs12050118>.
- Muthukrishna, M., T. J. Morgan, and J. Henrich. 2016. "The when and Who of Social Learning and Conformist Transmission." *Evolution and Human Behavior* 37 (1): 10–20.
- Ostrom, E. 1998. "A Behavioral Approach to the Rational Choice Theory of Collective Action: Presidential Address, American Political Science Association, 1997." *American Political Science Review* 92 (1): 1–22.
- Ostrom, E. 2009. "A General Framework for Analyzing Sustainability of Social-Ecological Systems." *Science* 325: 419–22.
- Rasch, D. 2018. "Lobbying Success in the European Union." In *The Role of Information and Frames*. New York: Routledge.
- Raymond, L., D. Kelly, and E. P. Hennes. 2021. "Norm-Based Governance for Severe Collective Action Problems: Lessons from Climate Change and COVID-19." *Perspectives on Politics*: 1–14. <https://doi.org/10.1017/S1537592721003054>.
- Scheufele, D., and S. Iyengar. 2014. "The State of Framing Research: A Call for New Directions." In *The Oxford Handbook of Political Communication*, edited by K. Kenski, and K. H. Jamieson. Oxford: Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199793471.013.47>.
- Shweder, R. A., N. C. Much, M. Mahapatra, and L. Park. 1997. "The 'big Three' of Morality (Autonomy, Community, Divinity) and the 'big Three' Explanations of Suffering." In *Morality and Health*, 119–69. Florence: Taylor & Frances/Routledge.
- Singh, S. P., and M. Swanson. 2017. "How Issue Frames Shape Beliefs about the Importance of Climate Change Policy across Ideological and Partisan Groups." *PLoS One* 12 (7): e0181401.
- Trapp, N. L., and B. Laursen. 2017. "Inside Out: Interest Groups' 'outside' Media Work as a Means to Manage 'inside' Lobbying Efforts and Relationships with Politicians." *Interest Groups & Advocacy* 6 (2): 143–60.
- Tresch, A., and M. Fischer. 2014. "In Search of Political Influence: Outside Lobbying Behaviour and Media Coverage of Social Movements, Interest Groups and Political Parties in Six Western European Countries." *International Political Science Review* 36 (4): 355–72.
- Valenzuela, S., M. Piña, and J. Ramírez. 2017. "Behavioral Effects of Framing on Social Media Users: How Conflict, Economic, Human Interest, and Morality Frames Drive News Sharing." *Journal of Communication* 67 (5): 803–26.
- Vu, H. T., M. Blomberg, H. Seo, Y. Liu, F. Shayesteh, and H. V. Do. 2020. "Social Media and Environmental Activism: Framing Climate Change on Facebook by Global NGOs." *Science Communication* 43 (1): 91–115.
- Wahlström, M., M. Wennerhag, and C. Rootes. 2013. "Framing 'The Climate Issue': Patterns of Participation and Prognostic Frames Among Climate Summit Protesters." *Global Environmental Politics* 13 (4): 101–22.
- Walter, D., and Y. Ophir. 2019. "News Frame Analysis: An Inductive Mixed-Method Computational Approach." *Communication Methods and Measures* 13 (4): 248–66.

- Wang, R., and W. Liu. 2021. "Moral Framing and Information Virality in Social Movements: A Case Study of #HongKongPoliceBrutality." *Communication Monographs* 88 (3): 350–70.
- Weber, E. U. 2016. "What Shapes Perceptions of Climate Change? New Research since 2010." *WIREs Climate Change* 7 (1): 125–34.
- Winter, S. C., and P. J. May. 2001. "Motivation for Compliance with Environmental Regulations." *Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management* 20 (4): 675–98.
- Wolsko, C., H. Ariceaga, and J. Seiden. 2016. "Red, White, and Blue Enough to Be Green: Effects of Moral Framing on Climate Change Attitudes and Conservation Behaviors." *Journal of Experimental Social Psychology* 65: 7–19.

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