Social Movement Studies

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/csms20

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To cite this article: Anders Svensson & Mattias Wahlström (2023) Climate change or what? Prognostic framing by Fridays for Future protesters, Social Movement Studies, 22:1, 1-22, DOI: 10.1080/14742837.2021.1988913

To link to this article: https://doi.org/10.1080/14742837.2021.1988913

SOCIAL MOVEMENT STUDIES
2023, VOL. 22, NO. 1, 1–22
https://doi.org/10.1080/14742837.2021.1988913

Routledge
Taylor & Francis Group

Climate change or what? Prognostic framing by Fridays for Future protesters

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ABSTRACT

Since August 2018, Greta Thunberg and Fridays for Future have captured the attention of the world by mobilizing millions of young students as well as adults to join their climate strikes. The movement has stressed the urgency of global warming and urged politicians to listen to science and take action. The collective action framing has thus been broad and inclusive, but correspondingly vague in terms of its demands. It is therefore pertinent to explore what climate strikers believe should be done to address climate change. By analysing responses to an open survey question posed to participants in the climate strikes in March and September 2019 from Stockholm, Malmö, Vienna, Berlin, Warsaw, Florence and Brussels, this article uses a mixed-methods approach to investigate prognostic framing in the European climate movement. Distinguishing between two dimensions of projected change—its character and its main agents—this study re-conceptualizes the common distinction between institutionalist and anti-institutionalist approaches as a split between top-down and bottom-up as well as the system change and system development types of prognostic framing. While top-down change within the current system is identified as the most common prognostic frame, considerable numbers of survey respondents instead stress individual lifestyle changes. A bottom-up change of the system to address global warming is somewhat surprisingly more likely to be articulated by middle-aged respondents than by youths. The latter frame also receives disproportionate support from the most left-leaning participants, which demonstrates the continued relevance of the left–right dimension in green politics.

ARTICLE HISTORY
Received 11 January 2021
Accepted 26 September 2021

KEYWORDS
Agency; climate movement; Fridays for Future; global climate strikes; prognostic framing

Introduction

In August 2018, as a reaction to the passivity of politicians and world leaders in relation to the disastrous consequences of ongoing global warming, 15-year-old Swedish student Greta Thunberg skipped school to strike outside the Swedish parliament. She questioned why she should be in school when no one was doing anything to save the future for which she was studying (Witt, 2020). Her strikes became global news, and soon she was followed by other young students from all over the world under the banner Fridays for Future (FFF). During 2019, the mobilization grew into a global mass

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movement and several global climate strikes were organized, the largest of which – in September 2019 – mobilized about 7.6 million people from 185 countries (de Moor et al., 2020).

In a recent article in this journal, de Moor et al. (2021a) argued that, together with the contemporary mobilization of Extinction Rebellion (XR), FFF represents a wave of climate activism that is new in several respects, not only in demography and tactics but also with respect to activists' understanding of the climate issue and what to do about it. However, in terms of substantial future visions and suggested solutions, its official rhetoric has been rather vague. Rather than proposing specific solutions, the dominant message from the movement has been that the politicians should listen to science and act on it (Evensen, 2019). Nevertheless, Thunberg herself acknowledged that this might not be possible without fundamental societal change:

> We have watched as politicians fumble, playing a political game rather than facing the facts that the solutions we need cannot be found within the current system. They don't want to face the facts—we need to change the system if we are to act on the climate crisis (Thunberg et al., 15 March 2019).

However, we argue that to interpret properly the meaning(s) attached to contemporary climate activism, articulations by spokespersons and interpretations of external commentators need to be complemented by the meanings that the participants in a mobilization confer to it (Wahlström, 2018). This is especially true about loose and inclusive mobilizations like the Global Climate Strikes of FFF, which brought together both new and seasoned activists with varying degrees of affiliation to existing environmental organizations. Social movement events may function as a kind of *hyper-projective* setting in which the future is reflected upon in ways that open novel paths of action (Mische, 2014). Based on their experiences of such events, even rank-and-file protesters may work as important nodes in spreading alternative ideas about the future to the wider society and some may become future opinion leaders (Stoddart et al., 2012).

The aim of this study is to map and explain the prognostic framing of the issue of climate change by protesters attending the global climate strikes organized by FFF. This will be pursued using a mixed-methods approach where we analyse responses to an open-ended survey question posed to participants about how the issue of climate change should be addressed. The responses were collected during the climate strikes in March and September 2019, in seven large cities in different parts of Europe, thus providing a broad sample to represent the contemporary European climate movement. To elaborate the discursive context of these responses, we draw on movement texts from Facebook as well as speeches and texts by Greta Thunberg during the period of the protests. Furthermore, our aim is to understand and explain why prognostic framing differs between respondents. To pursue this aim we ask, what are the dominant types of prognostic framing within the European climate movement on the issue of climate change? To what degree do socio-demographic and ideational differences affect prognostic framing? By answering these questions, we hope to provide insight into the potential future impact of FFF as well as the development of the European climate movement.

In the following section, we introduce a brief history of the climate movement and its articulation of solutions to the climate issue before we move on to explore the discursive components on which the predominant ways of framing the climate issue are based. After our subsequent discussion of research methods, we present our qualitative analysis of the main prognostic frames identified in our material. Individual and contextual predictors of these frames are then explored in a multilevel multinomial logistic regression analysis.

Prognostic framing in the climate movement

Originally introduced to sociology by Goffman (1974), the term 'framing' denotes the activity of articulating and applying frames of interpretation. By attaching meaning to events or phenomena, frames help individuals and collectives to orientate themselves, organizing experience and guiding action (Snow et al., 1986). Social movement scholars have used this perspective to illuminate the relationship between meaning and mobilization (Snow et al., 2018). Frames focus attention, gather diverse elements into one logical package, and may contribute to reshaping the way in which events, objects and actors relate to each other.

A collective action frame can be understood as an articulation that performs one or more of three core framing tasks: diagnostic framing (what is the problem?), motivational framing (why should we act?), and prognostic framing, which is what should be done about this problem (e.g., Snow et al., 2018). Gamson (1992) also emphasized the ways in which mobilizing frames highlight injustices, the possibility of taking collective action and the people who can take this action. While collective action is often characterized as an ongoing and dispersed activity, collective action frames have typically been operationalized as strategically articulated statements by social movement organizations. Several recent studies have attempted to capture the aggregated ongoing meaning-making activities among participants in protest events (Ketelaars et al., 2014, 2017; Wahlström et al., 2013). Whereas Wahlström et al. (2013) showed the diversity of prognostic framing among participants and between protest locations, Ketelaars et al. (2014) argued that there is more agreement among protest participants on what the problem is than what should be done about it.

The main issue for the early climate movement was to bring climate change onto the political agenda (Hadden, 2015). To this end, the movement relied heavily on natural science. To maintain credibility in relation to climate change deniers, the Climate Action Network (CAN), which was founded in 1989, decided to make peer-reviewed science the basis for all their political demands, thus framing climate change as a scientific issue. Divisions within the climate movement began to surface during the negotiations over the Kyoto Protocol, especially concerning carbon markets, North–South equity and the use of disruptive tactics.

In the run-up to COP-15 in 2009, several newcomers to the climate movement felt sceptical of the scientific approach of CAN, leading to the formation of the Climate Justice Now (CJN) coalition in Bali 2007 by, *inter alia*, Friends of the Earth International, Carbon Trade Watch and Action Aid Asia (Hadden, 2015). By articulating a system-critical perspective, especially emphasizing the unequal relationship between the Global North and the Global South as well as the connection between

the climate issue and social inequality, CJN aimed to politicize climate governance through the climate justice frame (Cassegård & Thörn, 2017). In September 2008, the Climate Justice Action (CJA) network was formed by proponents of radical direct action on global justice issues. In contrast to the mainstream environmental movement at the time, these groups promoting climate justice prioritized politics over science, expressing an overall ambition to decentralize institutions and scepticism concerning carbon markets. The focus on climate justice was likely to have been reinforced by what Hadden (2015) identified as the *spillover* from the global justice movement to the climate justice movement. Indeed, in a survey of climate protesters around COP-15, about half of the respondents identified as belonging to the global justice movement (Wahlström et al., 2013). At the same time, only a relatively small proportion of these protesters articulated radical system-critical solutions to global warming. Protesters identifying as far-left and protesters identifying with the global justice movement were more likely to employ a system change or global justice frame, while centre-left protesters to a greater extent adopted individual-level prognostic framing. The increasing diversity in the climate movement led to a major split in 2009 between activists representing the scientific urgency frame, and the climate justice frame during COP-15 (Cassegård & Thörn, 2017; Hadden, 2015). Despite the relative minority position of climate justice activists in 2009, in the 2015 mobilization around COP21 in Paris, the climate justice frame was adopted by media, states and traditional environmental organizations, such as CAN (Hadden, 2015), but lost some of its anti-systemic edge in the process (Cassegård & Thörn, 2017). Tensions between more and less system-critical factions of the climate movement remained and there are indications that at least in the US context, anti-capitalist sentiments were widespread among climate protesters (Beer, 2020).

With respect to the recent wave of climate mobilization, de Moor et al. (2021a) argued that the FFF rhetoric about the responsibility of governments and people in power to act in line with scientific recommendations represents a return to the state, reminiscent of the scientific urgency frame used by the early climate movement. They supported this view with protest survey results demonstrating that many climate protesters agree that pressuring politicians into action is a key aim of the movement. Meanwhile, far fewer agreed when confronted with the statement: 'governments can be relied on to solve our environmental problems'. This result may not be surprising, considering the movement's rhetoric of governments not taking sufficient responsibility. In not trusting their governments to do what is needed, younger FFF activists seem especially likely to shoulder some responsibility themselves, turning to voluntary individual lifestyle changes as at least a partial solution to the climate problems (de Moor et al., 2020). Compared with their adult peers, youth FFF participants also seemed more hopeful about technical solutions to global warming.

However, because these reports rely almost exclusively on respondent ratings of statements presented to protesters, there is a risk that important distinctions and perspectives among them are overlooked. This problem is addressed in the present study through more laborious coding of responses to open-ended questions. Nevertheless, this more inductive approach was guided by existing theories of the discursive context in which the climate movement acts, which we turn to in the following section.

Climate issue framing and its discursive context

Collective action framing emerges in relation to existing discursive fields that can be more or less receptive to different frames (Snow et al., 2018). From a strategic point of view, framing agents work with existing ideas and beliefs in innovative ways to maximize frame resonance within the discursive field. The discursive context also provides the ideational building blocks that make collective action frames meaningful to those who articulate them. As a basis for our analysis of FFF participant framing, we therefore turn to some components of the discursive context that have arguably conditioned framing on climate action.

Bäckstrand and Lövbrand (2007, 2019) identify the political rationalities of *green governmentality, ecological modernization* and *civic environmentalism* as the three major discourses shaping climate governance and to some extent movement framing (Wahlström et al., 2013). The green governmentality discourse is characterized by arguments for a science-driven and centralized top-down process of climate managerialism, achieving results through international target setting and monitoring. The state is regarded as the primary agent of climate governance, and supranational institutions like the UN become centres for global policy-making. In contrast, the discourse of *ecological modernization* promotes a bottom-up process, identifying multiple agents as responsible for climate governance, from individuals to companies and governments. It is distinguished by trust that the free market has the capacity to solve the climate crisis through green growth, and therefore opposes legally binding documents. With a modernist mindset, the climate crisis is understood to be an opportunity for development. The discourse of *civic environmentalism* originates in green radical thought, promoting an eco-centric and just world order. It identifies inequitable power structures such as capitalism and patriarchy as responsible for dysfunctions of contemporary climate governance. This perspective, which could be summarized by the slogan 'system change not climate change', regained momentum before the Copenhagen summit under the banner of 'climate justice'. Typical solutions in this discourse include the complete abandonment of fossil fuels together with the transformation of socio-economic structures.

Several writers have argued that, despite the subversive potential of civic environmentalism, under conditions of neoliberal hegemony the climate struggle is in fact largely depoliticized. Swyngedouw (2010) has contended that scientization and construction of a global emergency common to all in fact suppresses conflicts of interests and makes the climate struggle unthreatening to the status quo. However, others, like Chatterton et al. (2013), have argued that parts of the climate movement does challenge the system in fundamental ways, particularly in relation to the climate justice frame. In turn, Kenis and Mathijs (2014) argued that even though some groups like CJA articulate politicizing discourses, mobilizing on such discourses is difficult in a post-political world (cf. de Moor, et al., 2021b).

Another expression of contemporary neoliberal governance structures, according to Thörn and Svenberg (2017), is increased steering of civil society through *responsibilization*. This captures how public authorities hand over climate governance responsibilities to civil society and business actors. Examples include encouraging civil society actors to establish codes of conduct for corporations and handing over responsibility for controlling other actors' observance of these codes of conduct. However, Thörn and Svenberg

find recent tendencies of resistance to advanced liberal responsibilization with social movement actors engaging in *politics of responsibility* by re-responsibilizing political institutions. However, this involves a dilemma for the movement, because imposing responsibility on the state may entail renouncing agency in climate politics by leaving it to other actors to devise solutions.

Given these broader developments, it is particularly pertinent to explore the prevalence of especially system-critical framing among participants in broader mobilizations, since those would indicate tendencies towards increased politicization in the climate movement. It is also possible that particular categories of protesters display stronger inclinations towards politicization or radical demands. For example, in relation to the left–right dimension of political antagonism, prior studies (e.g., Beer, 2020; Wahlström et al., 2013) indicate that climate protesters who align with leftist ideology would be more likely to adopt frames that build on *civic environmentalism* and entail radical system change as a solution to the climate crisis. Conversely, protesters identifying as politically right should be more likely to adopt frames that are more individualized and/or build on the *ecological modernization* discourse. Qualitative studies of contemporary climate movement activists also imply that youths may represent a particular radicalism, possibly with distinct characteristics (Pickard et al., 2020).

Research methods

This study uses a mixed-methods approach, starting with a qualitative analysis of movement texts and speeches as well as responses from FFF participants to an open-ended survey question. Referring back to a prior question about who is to blame for climate change, the respondents were asked: *what should be done to address this issue?* The result of the qualitative analysis was seven ideal types of prognostic frames, the most common of which were then used for quantitative analysis. The survey data were drawn from a survey dataset on participants in the March and September global climate strikes arranged by FFF. The survey was a product of a collaboration between researchers from around the world to collect random samples of protesters from 19 cities and 16 countries across Europe, North America, and Australia (de Moor et al., 2020; Wahlström et al., 2019). The study has passed the mandatory ethical vetting procedures in the respective countries where required by domestic regulations and recommendations.[1]

The data collection adhered to the core principles of a protest survey design developed to acquire comparable systematic random samples from the protest events (Walgrave & Verhulst, 2011). If free to choose, interviewers often go to approachable peers (Walgrave et al., 2016). To avoid this self-selection bias, interviewers are instructed by 'pointers' concerning whom to approach. In the case of a moving demonstration, pointers start from the front and back, each accompanied by a team of interviewers. The entire demonstration must be covered so that every protester has the same chance of being selected. The fieldwork supervisor estimates the size of the crowd and then decides how many rows to skip before sending in an interviewer. The larger the demonstration, the more rows are skipped. Pointers count the rows and select one interviewee from each, alternating between the left, right and middle. If the protest is static, interviewers are placed around the demonstration and instructed by pointers to hand out surveys towards the centre, increasing the number of steps by two for each person approached (de Moor

et al., 2020). For every fifth protester approached, interviewers conduct a short face-to-face interview, collecting data on age, education, gender and some attitudes. This is done to control for response bias. Finally, the survey is handed out as a flyer directing the person to an online survey. The webpage provides information about the study and that consent to participation (given by proceeding to the survey questions) can be withdrawn at any time. Minors redirected to a consent form to be signed and returned by a guardian prior to participation.

To control for change over time, we chose to include only the cities that were represented in both the March and September survey rounds. This automatically left out all non-European countries because these countries were only part of the second round. However, the included cities provided a good geographical spread within Europe, representing the north, south, east, west and centre. The cities included were Berlin (Germany), Florence (Italy), Brussels (Belgium), Malmö and Stockholm (Sweden), Vienna (Austria) and Warsaw (Poland), from which a total of 2,404 valid survey responses were collected (see Table A1 in the Appendix). The answers that were not in English were translated by professional translators.

FFF movement texts, including the texts and speeches by Greta Thunberg, were retrieved from three sources: the official website of FFF,[2] the Facebook events connected to the strikes, and a collection of speeches and opinion pieces by Greta Thunberg.[3] In total we analysed fourteen Facebook events, one for each city and protest, nine articles signed by Greta Thunberg and other movement spokespersons, and eight speeches by Thunberg. All speeches and articles were from the period of protest between august 2018 and January 2020.

In combination, this material represents three aspects of the movement: (1) the official message communicated by the official website of FFF, (2) the local variations in framing discernible from the Facebook events and (3) the more elaborate texts and speeches by Greta Thunberg in her role as spokesperson for the movement. To achieve this, we approached the material using the iterative–inductive approach suggested by O'Reilly (2009), meaning that we moved back and forth between previous research, movement texts and speeches and our data to derive the analytical categories. The analysis started with an open coding of the FFF movement texts. The approach was not completely inductive, since the specification of codes was informed by existing theories, e.g., on societal climate discourses. Subsequently, the notes and codes from this analysis were developed and refined by further coding of the content of the survey responses. The key themes identified in this analysis were translated into the first coding scheme for classification of whole survey responses according to predominant frames. After classifying a sample of the survey responses (randomly drawn from different countries and survey rounds), we revised the coding scheme in relation to salient themes that our initial coding scheme did not fully capture. This final coding scheme comprised seven ideal typical categories of prognostic framing. These were broken down into specified meaning components to look for when classifying responses (see next section for further discussion). To ensure internal consistency, only one coder (the first author) then classified the full set of survey responses.[4]

In terms of data quality, a large proportion of the analysed responses were rather detailed, presumably because these are issues that engage the survey respondents. However, short texts of this kind provide limited opportunities to validate

interpretations. Still, the survey responses taken together arguably provide sufficient complexity for the qualitative analysis. Furthermore, we acknowledge that our decision to classify responses only based on their predominant framing content meant that some information was excluded from the quantitative analysis. It should therefore be stressed that the quantitative analysis concerns only frames highlighted by respondents, not any frames that they to various degrees might conceivably support.

The quantitative analysis based on the coding was pursued using StataCorp STATA 16 to perform multilevel multinomial logistic regression, which allows investigation of more than one dependent variable in the same model (Mehmetoglu & Jakobsen, 2017). The four most common of our seven categories of prognostic framing were each treated as a dependent variable. The data are hierarchically structured; i.e., respondents are nested in cities, which are nested in countries. Hence, observations at the lowest level are not independent. In violating the assumption that errors are independent, one risks underestimating standard errors. Therefore, we used robust standard errors in the regression; weights were given to units according to their total influence, which we used to adjust the standard errors of our nested model. To investigate the country effect, we included country dummies in the model.

Qualitative analysis

We use two central analytical dimensions to categorize the FFF protesters' prognostic frames: the *type of change* proposed and the *agency component*, which describes the kind of actor envisioned to be the main driving force for change. In this analysis, we distinguish between three types of change, concerning *what* is changed (individuals or the system) and *how* fundamentally they change. First, *system development* perspectives argue that with a few technical or political adjustments, the contemporary socio-economic system will cope with the crisis. Second, *system change* means that dealing with the climate crisis requires a radical transformation of the social, economic, and cultural systems. Third, *individual change* means that if each and every person takes responsibility, the larger whole will become sustainable (possibly without much change on the system level).

The *agency component* (cf. Gamson, 1992) concerns who takes primary responsibility for the required changes (Thörn & Svenberg, 2017), but also – more fundamentally – who is considered the main actor taking control of change. Therefore, this is related to what Mische (2014) calls the *volition* dimension of projective discourses; i.e., who drives imagined future developments. In our analysis, we identify four types of agents: 1) *the government or supranational institutions*; 2) *the market*; 3) *individual actors*; and 4) *civic actors*. The main intersections of type of change and the agency component are illustrated in Table 1. The different combinations of these two logics should be considered as ideal typical frames with which protesters more or less align.

Responses that vaguely called for reduction in CO_2 emissions or burning of fossil fuels without an agency component or specifying how such reductions should be achieved were coded as the residual category *apolitical framing*. This category was included in the descriptive quantitative analysis but because of its lack of 'depth' and its openness to different interpretations, it was not included in the subsequent regression.

Table 1. Typology of prognostic frames according to type of change and agency component.

	Type of change		
Agency component	*System development*	*System change*	*Individual change*
Government actors	Top-down system development	Top-down system change	
Market actors	Liberal market development		
Individual actors			Individual behavioural change
Civic actors	Civic system development	Civic system change	

An overview of the discursive elements that we used to classify instances of the different categories can be seen in Figure 1 below. The element of agency is most often quite easy to distinguish as most suggestions for action starts with either 'we must' or 'they must'. Brief statements such as 'go vegan' or 'change the system' also have an implied agency component as it is quite clearly urging for the responsibility of everyone thus implying a 'we'. Regarding mode of change, we interpreted suggestions like taxes, scientific inventions and policy changes as belonging to one of the development categories as they indicate no aspirations of fundamentally altering the societal structure. Calls for 'system change' may be expressed explicitly by using the term itself or by phrases like 'abolish capitalism'. We also interpret 'system change' whenever there is a call for new norms and values which would fundamentally change the way we structure society. Figure 1 shows which of the core discursive elements are linked to which prognostic frames in our analysis. As the figure illustrates, these discursive elements are not exclusive but may appear in several frame categories, albeit in different combinations. The illustrated connections between discursive elements and prognostic frames can be understood as a map of conceptions about mode of change and agency among FFF protesters.

As some statements covered more than one category, we coded the most elaborated part, or (if equally elaborated) what the respondents mentioned first. In some cases, respondents use phrases like 'most of all . . . ' to show what type of prognostic frame they prefer. Below, we explain the six categories of prognostic framing in more detail.

Top-down system development

The top-down system development frame captures top-down climate managerialism exercised through coercive action, where the nation state or a supranational governmental organization is the primary agent for change. The frame is closely aligned with the discourse that Bäckstrand and Lövbrand (2019) called *green governmentality* and includes different propositions about government actions, be they prohibitions or tax increases:

> There should be more regulations that all environmentally and climate-damaging production of energy and goods should become more climate friendly, and that this should no longer be done on a voluntary basis (Respondent, Berlin).

This type of proposed change is classified as system development because it does not challenge the current social, economic, and cultural systems. Government and adult responsibility have also become a core part of the official position of FFF. Even though

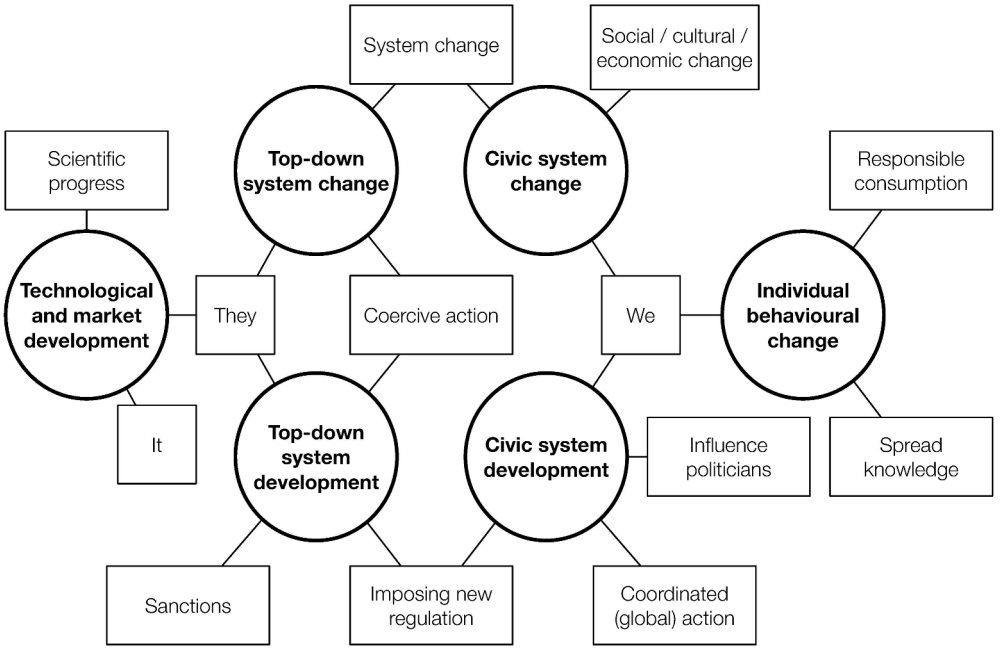

Figure 1. The seven prognostic framing categories (circles), linked to their distinct combinations of discursive elements (boxes).

much of Thunberg's discourse expresses more radical notions of change, it is easy to find quotes that encourage the idea of the responsibility of the state and leading politicians in driving change:

> The students who are striking in cities, towns and villages around the world are uniting behind the science. We are only asking that our leaders to do the same (Thunberg et al., 2019, March 15).

Top-down system change

Responses belonging to the top-down system change frame propose major transformations of the contemporary system through a top-down approach:

> Coercive measures to attain a radical change in ways of living, in a united and happy sobriety (Respondent, Brussels)

Because the ordinary citizen or business leader will not willingly change, they need to be forced into it; thus, ordinary citizens themselves do not possess the means to implement radical changes. The common denominator among this group of respondents is that societal transition towards a more sustainable society will only occur through top-down coercive action, with experts, politicians or other 'people in power' making unpopular decisions.

Technological and market development

Identified by Bäckstrand and Lövbrand (2019) as one of three meta-discourses of environmental governance, ecological modernization constitutes the blueprint for the category of *technological and market development*. This category is characterized by trust in what the market and private enterprises can accomplish with the support of technological innovation. Statements in this category express positive attitudes towards the prospects for green growth and a sustainable market economy, and reflect the view that the climate crisis can be dealt with as long as there are financial incentives to create alternatives:

> The market economy could solve the problem quickly. It must become financially lucrative to be environmentally friendly. A CO_2 tax would be a step in this direction (Respondent, Berlin)

However, such statements are rare among the respondents. This is not surprising, because the perspective is largely repudiated in Thunberg's rhetoric. Her speeches show great scepticism towards trusting the goodwill of corporations and the idea of green growth, which is essential for the idea of ecological modernization:

> People are suffering. People are dying. Entire ecosystems are collapsing. We are in the beginning of a mass extinction. And all you can talk about is money and fairy tales of eternal economic growth. How dare you! (Thunberg, 23 September 2019).

Nevertheless, this criticism of ecological modernization is not at all evident in the Facebook events. This absence may reflect the aspirations of the global climate strikes to be inclusive.

Individual behavioural change

This category captures proposed solutions based on actions at the individual level, meaning that responsibility for solving the crisis lies within the daily choices of everyone. Even though Greta herself could not be said to belong to this category, her own choices give an indication of the importance she places in everyone doing what they can to mitigate emissions, for example, by choosing to sail over the Atlantic instead of going by plane (Watts, 2019).

The individualist position is not evident in the Facebook events, which is not that strange considering that they are calls for collective action. However, among the respondents this category is fairly common, typically expressed in short statements about changes everyone can adopt in their daily lives:

> The first and simplest step could be recycling, trying not to use polluting vehicles (cars, motorbikes) when possible (Respondent, Florence).

Notably, whereas the statements stress individual-level changes, additional responsibilities delegated to other levels presumably varied among these respondents. Furthermore, these responses may be spurred by a sense of urgency leading to the idea that it is best to dig where you stand. Statements in this category may also be based on a belief that individual lifestyle choices together can (and should) produce a fundamental system change. Hence, the code encompasses a rather broad range of possible underlying positions.

Civic system development

Capturing expressions of what Bäckstrand and Lövbrand (2007) depict as the reform-oriented cousin of radical civic environmentalism, the *civic system development* frame emphasizes the role of civil society in pressuring governments into making the right decisions and including civil society in negotiations. The frame highlights the dual responsibility of both civil society and government actors to accomplish change within the current system.

Some elements of Thunberg's speeches and texts may be interpreted along these lines, but they generally imply more radical systemic change. However, the position of civic system development is evident in some Facebook events and in statements by many survey respondents. A respondent from Berlin proposes:

> Mass protest "from below", which drives governments and corporations to action: . . . and the implementation of international agreements.

Civic system change

Even though the slogan 'system change not climate change' has been a vital part of the climate movement in recent years, the system change position is not explicit in any of the Facebook events or on the FFF website. Although this may not seem surprising, considering the inclusive ambitions of FFF but it is still noteworthy considering Thunberg's typical rhetoric, which often stresses the need for system change:

> We have watched as politicians fumble, playing a political game rather than facing the facts that the solutions we need cannot be found within the current system. They don't want to face the facts—we need to change the system if we are to act on the climate crisis (Thunberg et al., 15 March 2019).

This statement clearly resonates with two radical anti-systemic trends in our survey data. First, we have a politically vague position that civic actors should work together to change the system: 'Raise the awareness of people and push together to change the current system' (Respondent, Malmö). Second, there are distinctly anti-capitalist statements such as 'A revolutionary reversal of the capitalist system' (Respondent, Brussels).

Quantitative analysis

Description of variables

Figure 2 shows the distribution of prognostic framing among the respondents (N = 2053). Our dependent variable *prognostic framing* was composed of the four most common frames identified in the qualitative analysis: *top-down system development* (reflected by almost half of all respondents), *individual behavioural change, civic system change*, and *civic system development*.

Our focal independent variable is *left–right self-placement*, a continuous variable ranging from 1 to 11 where 1 equals left and 11 equals right. This was recoded as an ordinal scale reflecting five groups,[5] plus the additional category 'neither left nor right' (comprising the options *do not know* and *to me this categorization is meaningless*). The distribution among the respondents is shown in Figure 3. We expected protesters who

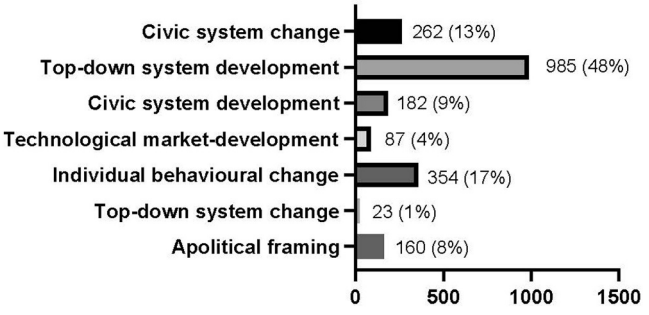

Figure 2. Distribution of seven types of prognostic framing among the respondents.

aligned with leftist ideology to be more likely to adopt *civic system change* as a solution to the climate crisis and being further to the right would increase the likelihood of articulating the *technological and market development* and *individual behavioural change* frames. Given that a novel trait of the global climate strikes is the age of the participants, we also investigate differences between age groups in relation to prognostic framing, with a focus on any distinct characteristics of the youngest segment of the participants. The age distribution is shown in Figure 4.

Trust in government was also included as a control variable. The distribution is shown

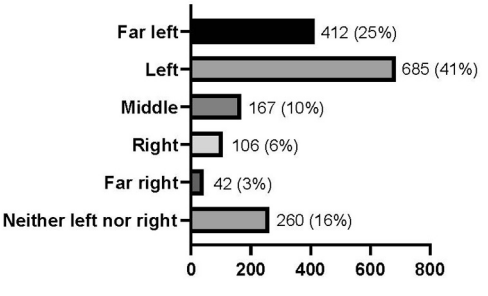

Figure 3. Left–right self-placement.

in Figure 5. We expected greater trust in government to increase the likelihood of adopting frames dependent on (at least partial) agency of governmental organizations: *top-down system development, top-down system change* and *civic system development*.

We included a grouped variable in which all levels of university education were merged into 'higher education', to see the effect of university education in relation to post-secondary non-tertiary education and secondary school education. The distribution among the respondents (Figure 6) shows that a slight majority of the respondents belong to the higher education category. Not surprisingly, *upper secondary education or less* is also a substantial category representing about one third of the respondents. We assumed

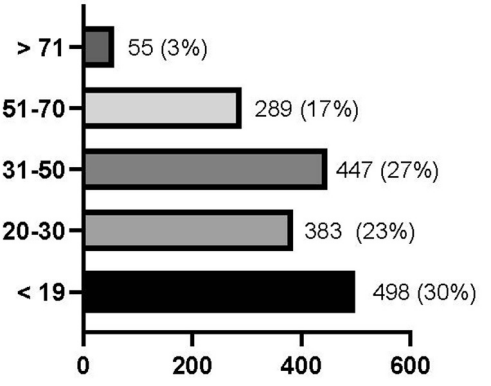

Figure 4. Age distribution among respondents.

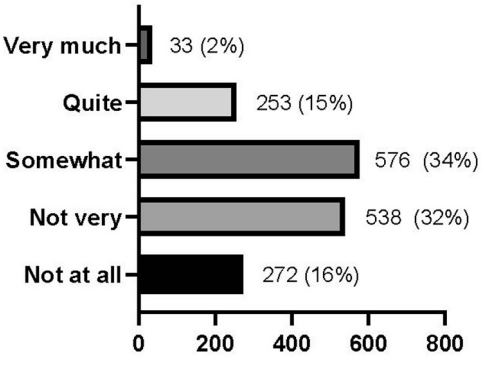

Figure 5. Distribution of level of trust in government among respondents.

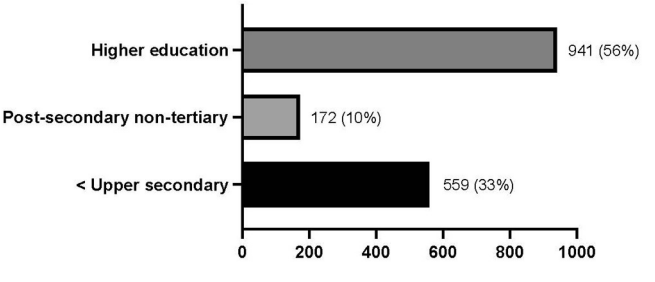

Figure 6. Distribution of educational level among respondents.

that higher education increases confidence, making people less likely to yield responsibility. Hence, we expected higher education to increase the likelihood of adopting the *civic system change* and *civic system development* approaches.

Gender was also included as a control variable. In the regression table, it is seen as the variable 'female', where 'male' and 'other' are coded as 0. Finally, we also included time of protest (March or September) as a binary variable and the countries as dummy variables to see the fixed country effect.

Results

The results from the multilevel multinomial logistic regression can be seen in Table 2. The coefficients are reported as log odds. Because it is difficult to estimate effect sizes from the log odds, we discuss positive values as higher likelihood and negative values as lower likelihood of belonging to each category. However, the focal relationship will also be analysed using predicted probabilities.

The most common frame expressed by the protesters, *top-down system development*, was chosen as the reference category for the dependent variable. Thus, all results in Table 2 should be interpreted as the higher or lower likelihood of belonging to these categories rather than the reference category. The results show a strong correlation between identifying as left and belonging to the *civic system change* category, because each step to the right on the political scale lowers the log odds of expressing this frame relative to *top-down system development*. This result is also consistent with previous research suggesting that system change framing among climate protesters is correlated with leftist ideology (Wahlström et al., 2013). The effect of left–right self-placement is illustrated in Figure 7, based on predicted probabilities. The y-axis represents the predicted probability on a scale from 0 to 1,

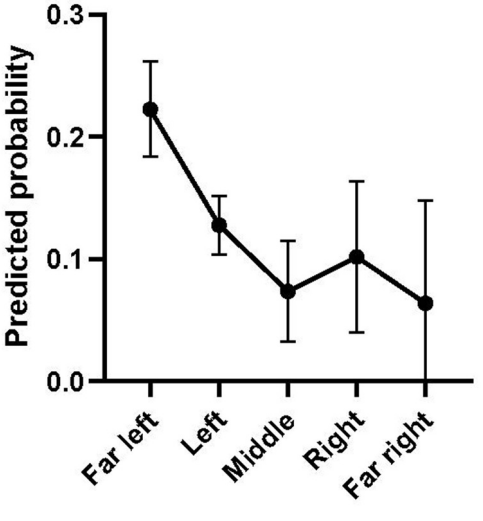

Figure 7. Predicted probabilities of civic system change framing, depending on left–right self-placement (error bars indicate 95% confidence intervals).

Table 2. Multilevel Multinomial logistic regression (robust standard errors).

Prognostic frames (ref. 'top- down system development')	Civic system change	Civic system development	Individual behavioural change
L-R self-placement (ref. 'Far left')			
Left	**−0.797*** **	0.141	**−0.344***
	(0.178)	(0.230)	(0.182)
Middle	**−1.242*** **	0.493	0.257
	(0.350)	(0.318)	(0.253)
Right	**−0.951****	0.130	0.154
	(0.396)	(0.400)	(0.299)
Far right	**−1.572****	0.377	−0.541
	(0.776)	(0.515)	(0.487)
Neither left nor right	**−0.937*** **	−0.0159	0.281
	(0.256)	(0.291)	(0.209)
Trust in government	**−0.290*** **	−0.00825	0.0769
	(0.0965)	(0.0942)	(0.0803)
Education (ref. <upper secondary)			
Post-secondary non-tertiary education	−0.312	0.436	−0.202
	(0.348)	(0.388)	(0.310)
Higher education	0.0420	−0.0589	−0.124
	(0.238)	(0.278)	(0.218)
Age (ref. <19 years)			
20–30 years	0.417	0.123	**−0.589*** **
	(0.289)	(0.301)	(0.224)
31–50 years	**0.741****	0.134	**−0.659*** **
	(0.309)	(0.339)	(0.247)
51–70 years	**0.928*** **	**0.807****	**−0.452***
	(0.321)	(0.325)	(0.257)
>71 years	0.238	**1.124****	0.0425
	(0.568)	(0.505)	(0.404)
Woman (ref. man or non-binary)	**−0.370****	−0.0398	0.210
	(0.156)	(0.180)	(0.144)
September protest (ref. March protest)	**0.389****	**−0.351***	0.100
	(0.164)	(0.185)	(0.144)
Country (ref. Sweden)			
Belgium	0.249	0.0253	0.156
	(0.230)	(0.314)	(0.237)
Austria	**−0.460***	−0.129	0.0966
	(0.266)	(0.333)	(0.252)
Germany	**−0.446***	0.291	0.0304
	(0.268)	(0.300)	(0.223)
Italy	0.413	**0.940*** **	**1.321*** **
	(0.286)	(0.345)	(0.244)
Poland	−0.593	**1.331*** **	−0.211
	(0.368)	(0.338)	(0.292)
Constant	−0.435	**−2.234*** **	**−1.142*** **
	(0.402)	(0.451)	(0.339)
N	1,621	1,621	1,621

with a value of 1 indicating 100% probability. The graph shows how predicted probabilities decrease towards the right on the political scale; respondents identifying as 'far left' have a 22% predicted probability of espousing civic system change, compared with a corresponding figure of 7% for respondents identifying with the middle of the left–right scale.

Returning to Table 2 we notice that moving up a step on trust in government leads to a decrease in the log odds of being in the *civic system change* category. Thus, there is an expected correlation between not trusting the government and arguing that system change is needed to deal with the climate crisis. Women were also significantly less likely than men or non-binary persons to articulate the *civic system change* frame.

Age group stands out as an important factor behind variations in framing. The 31–50 and 51–70 age groups report a significantly higher probability of belonging to the *civic system change* category in relation to the under-19 group. This contrasts to some extent with the narrative of a youth generation distinguished by its radical demands (Pickard et al., 2020). Furthermore, protesters between the ages of 20 and 70 years report a significantly lower likelihood of belonging to the category of *individual behavioural change*, compared with respondents aged 19 years and below. In slight tension with the overall message that politicians should take responsibility, the youngest protesters are the most likely to articulate solutions that emphasize individual responsibility. It is not clear whether to interpret this as a preference for 'Do-It-Ourselves' politics (Pickard, 2019), the result of neoliberal governmentality (Kyroglou & Henn, 2020), or a product of school curricula that stress individual lifestyle choices to address environmental problems (Maniates, 2001). Somewhat surprisingly, higher education shows no significant effect on prognostic framing.

Between the March and September events, there is a significant increase in the log odds of respondents being in the *civic system change* category in relation to *top-down system development*. There is also a significant decrease in the log odds of arguing for *civic system development* framing. Translated into predicted probabilities, there is an increase of belonging to the category of *civic system change* from 12% in March to 17% in September. At the same time, we can identify a decrease in the likelihood of protesters belonging to the category of *civic system development* from 12% in March to 8% in September. The increase in the likelihood of *civic system change* is a possible sign of radicalisation within the movement between March and September. The decrease in *civic system development* may be interpreted as a lost belief that the movement will be able to push leaders into change.

Finally, there are some significant differences between countries. Compared with Sweden, respondents from Austria and Germany are less likely to align with *civic system change* rather than *top-down system development*. Respondents from Poland show a highly significant increased likelihood of aligning with *civic system development* rather than *top-down system development* in comparison with Sweden. Respondents from Italy are more likely to fall into the categories of *civic system development* and *individual behavioural change*. Presumably, varying perceived national-level political opportunities (not captured by expressed *trust in government*) might explain these patterns (de Moor & Wahlström, Forthcoming). The apparently higher propensity among Italian respondents to suggest individual lifestyle changes is somewhat surprising, but needs to be interpreted in the light of the more collectivist connotations of political consumerist practices in Southern Europe (Lekakis and Forno, 2019).

Conclusion

Based on a qualitative analysis of prognostic framing by FFF protesters, we found two salient analytical dimensions: the type of proposed change – i.e., system change or system development – and the main direction of agency in driving change; i.e., top-down or bottom-up. Combined, they arguably form a more nuanced picture than the classic distinction between institutionalist and anti-institutionalist approaches of social movements. Coding survey responses revealed that the most prominent prognostic frame was that of *top-down system development*, highlighting the responsibility of government institutions for dealing with the climate crisis within the current system. In contrast, the more radical *civic system change* frame, envisioning collective action by civil society to achieve systemic change, is articulated by a smaller but vital faction of European climate protesters.

Our multilevel multinomial logistic regression analysis demonstrated significant age differences, with the youngest cohort of protesters having a higher likelihood of adopting the framing of *top-down system development* and *individual behavioural change*. While this deviates from depictions of radical youth revolting against adult authorities, it accords well with the FFF rhetoric of delegating the articulation of solutions to experts and politicians. Further research is needed to identify the extent to which these age differences in framing should be interpreted as generational (with persistent differences over time) or an expression of age cohort within individuals' political life-cycles.

The quantitative analysis also shows the continued utility of left–right ideology as a lens for understanding differences in prognostic framing of the climate issue, especially *civic system change* in relation to *top-down system development*. Deliberate attempts have been made by the FFF organizers not to attach any political colour to these protests. This may be a partial explanation why they have managed to mobilize such large numbers. However, as the question of solving the climate crisis grows in urgency, intra-movement differences in terms of left–right ideology are likely to surface and may lead to tensions. At the same time, differences in framing reveal a dilemma in relation to advanced liberal responsibilization. By adopting a top-down approach and refusing to become responsibilized, the movement yields up agency in climate governance. However, taking the lead through a bottom-up approach may require more influence and capabilities than the movement can muster. We believe that these tensions capture core challenges for the climate movement in its continued struggle.

Notes

1. Swedish Ethical Review Authority, approval no. 2019–04220.
2. https://fridaysforfuture.org/. Accessed 2020–06-02.
3. https://www.theguardian.com/profile/greta-thunberg. Accessed 2020–06-02.
4. The classification of survey responses was done in a Microsoft Excel spreadsheet, subsequently imported into STATA. The prior qualitative analysis was done manually, with pen and paper.
5. 1–2 = far left, 3–4 = left, 5 = middle, 6–7 = right and 8–11 = far right.

Acknowledgements

This work is indebted to all our colleagues in Austria, Belgium, Germany, Italy, Poland, and Sweden, who collaborated with us in gathering survey data on FFF protesters in March and September 2019. We direct a special thanks to Håkan Thörn, Joost de Moor and the anonymous reviewers of Social Movement Studies for valuable feedback on previous versions of this manuscript.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Swedish Research Council for Sustainable Development, Formas, [2019-01961, 2019-00261].

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Appendix

Table A1. Data on protest surveys included in the analysis.

City/ country	Date	Estimated # of participants	# of surveys distributed	# of web survey responses	Survey response rate (%)	Response Rate to the framing question (%)
Berlin, Germany	15/3	15,000–25,000	1,202	204	17	95
Berlin, Germany	20/9	100,000–270,000	433	115	27	92
Brussels, Belgium	15/3	30,000–35,000	733	166	23	92
Brussels, Belgium	20/9	15,000	733	183	25	93
Florence, Italy	15/3	10,000–30,000	1,000	195	20	87
Florence, Italy	27/9	50,000	1,000	118	12	70
Malmö, Sweden	15/3	600–650	528	114	22	89
Malmö, Sweden	27/9	1,500	633	184	29	92
Stockholm, Sweden	15/3	3,000–5,000	588	174	30	89
Stockholm, Sweden	27/9	40,000–50,000	599	132	22	92
Vienna, Austria	15/3	15,000–25,000	930	154	17	82
Vienna, Austria	27/9	30,000	1,007	266	27	89
Warsaw, Poland	15/3	6,700	916	220	24	54
Warsaw, Poland	20/9	12,000	719	179	25	83
Total			**11,021**	**2404**	**22**	**85**

Note: The estimations of numbers of participants were made by the local research teams.